



THIS YEAR WE CELEBRATE 100 YEARS OF MASS SPECTROMETRY. Each conference registrant will receive a free reproduction of J.J. Thomson's 1913 edition of *Rays of Positive Electricity*. Pick up your copy in the "Museum" located adjacent to Exhibit Hall C. In the museum you will also find:

- Display of historical instruments and accessories
- History posters
- For sale: "Evolution of Mass Spectrometry: 1910-1940," set of two wall posters (36" X 17.5"), \$20 per set

Don't miss these other commemorative features of the meeting.

- Sunday, 6:45 - 7:45 pm: Michael L. Gross, The First Fifty Years of MS: Building a Foundation
- Wednesday Poster Session: Historical Posters, WP 001 and 002
- Thursday, 2:30 - 4:30 pm: Celebration of 100th Anniversary of Mass Spectrometry, Room 103

SPONSORS

ASMS gratefully acknowledges the support of these companies.



CONFERENCE SPONSORS



CONTRIBUTORS

- IDEX Health & Science
- New Objective
- SGE Analytical Science
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- Thermo Scientific
- Zef Scientific

TABLE OF CONTENTS

GENERAL INFORMATION	2
HOTELS AND TRANSPORTATION	5
ASMS BOARD OF DIRECTORS	6
INTEREST GROUPS AND COMMITTEES	7
AWARDS	8
CONVENTION CENTER FLOOR PLANS	10
POSTER / EXHIBIT HALL FLOOR PLAN	11
CORPORATE HOSPITALITY SUITES	12
ASMS CORPORATE MEMBERS	13
PROGRAM ACKNOWLEDGEMENTS	17
PROGRAM OVERVIEW	18
WORKSHOPS	23

Titles in the following sections are provided by authors. The complete abstracts are available online: www.asms.org

The PDF document of proceedings submissions for orals and posters are online one day after presentation at the conference.

SUNDAY	27
MONDAY ORAL SESSIONS	27
TUESDAY ORAL SESSIONS	33
WEDNESDAY ORAL SESSIONS	40
THURSDAY ORAL SESSIONS	46
MONDAY POSTERS	53
TUESDAY POSTERS	86
WEDNESDAY POSTERS	119
THURSDAY POSTERS	152
INDEX OF AUTHORS	183

GENERAL INFORMATION

Registration is open 10:00 am - 8:00 pm on Sunday and 7:30 am - 5:00 pm on Monday through Thursday.

SUNDAY TUTORIAL SESSION, 5:00 - 6:30 pm

Exhibit Hall A, Lower Level



5:00 - 5:45 pm
**A Wide Spectrum: Clinical
Diagnostics for the Masses**

Andrew Hoofnagle
University of Washington



5:45 - 6:30 pm
**The Nuts and Bolts of Protein
Hydrogen Exchange MS**

John Engen
Northeastern University

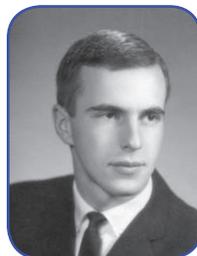
SUNDAY CONFERENCE OPENING, 6:45 - 7:45 pm

Exhibit Hall A, Lower Level

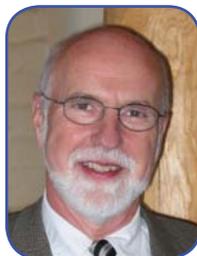


Welcome, Jenny Brodbelt
University of Texas, Austin
ASMS Vice President for Programs

Then...



Now...



The First Fifty Years of MS: Building a Foundation

Michael L. Gross

Washington University of St. Louis

SUNDAY WELCOME RECEPTION, 7:45 - 9:00 pm

Exhibit Hall BC. Conference name badge is required.

PLENARY SESSIONS

Monday, 4:45 - 5:30 pm

Exhibit Hall A, Lower Level



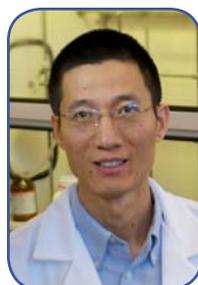
AWARD LECTURE

**Award for a Distinguished
Contribution in Mass Spectrometry**

Richard D. Smith
Pacific Northwest National Laboratory

Tuesday, 4:45 - 5:30 PM

Exhibit Hall A, Lower Level



AWARD LECTURE Biemann Medal

Yinsheng Wang
University of California, Riverside

Thursday, 4:45 - 5:30 PM

Exhibit Hall A, Lower Level



PLENARY LECTURE

Discovery of the Elusive Higgs Boson

Peter Onyisi
University of Texas at Austin

DON'T MISS

• ASMS MEETING, WEDNESDAY, 4:45 - 5:30 PM

Ballroom A

Enjoy a beverage while you applaud awards, hear the new initiatives under construction, and more!

• CLOSING GALA, THURSDAY, 5:45 - 9:00 PM

Exhibit Hall D

Let's celebrate! The event features a buffet, cash bar, fun and games. Ticket is required, \$30 for conference registrant, \$20 for student.

GENERAL INFORMATION

ORAL SESSIONS are 8:30 - 10:30 am and 2:30 - 4:30 pm on Monday through Thursday.

Session A (MOA, TOA, WOA, ThOA).....	Exhibit Hall A (lower level)
Session B (MOB, TOB, WOB, ThOB)	L100 (lower level)
Session C (MOC, TOC, WOC, ThOC)	Ballroom B
Session D (MOD, TOD, WOD, ThOD)	Ballroom A
Session E (MOE, TOE, WOE, ThOE)	Auditorium
Session F (MOF, TOF, WOF, ThOF)	Room 101
Session G (MOG, TOG, WOG, ThOG)	Room 102
Session H (MOH, TOH, WOH, ThOH)	Room 103

ORAL PRESENTATIONS are projected from ASMS computers running Microsoft Office 2010. Speakers are required to use the ASMS computers for their presentations.

SPEAKERS must load presentations at least one day prior to their talks. The speaker room is M101C (down to mezzanine level) and is open with a technician according to this schedule:

Sunday:	10:00 am - 8:00 pm
Monday through Wednesday:	7:30 am - 5:00 pm

POSTERS AND EXHIBIT BOOTHS are in Exhibit Hall BC. The Hall is open:

Sunday Reception	7:45 pm - 9:00 pm
Monday - Wednesday	7:30 am - 8:00 pm
Thursday	7:30 am - 3:30 pm

POSTER SET-UP is 7:30 am on the day scheduled and removal is 7:30 - 8:00 pm on the same day. Posters should not be removed early. Thursday posters must be removed by 3:30 pm. **Refer to the poster numbers in this final program for board assignments.** Presenters should supply pushpins or Velcro to mount their posters.

POSTER SESSIONS are 10:30 am - 2:30 pm, Monday through Thursday.

POSTER AUTHORS must be present at posters on scheduled days at these times.

10:30 am - 1:00 pm	Odd-numbered posters
12:00 - 2:30 pm	Even-numbered posters

Presenters who must leave a poster unattended should post a return time. Presenters should wear "Poster Presenter" badges which are available at the poster supply counter.

LUNCH CONCESSIONS in and near the exhibit hall are open 11:00 am - 2:00 pm.

EXHIBITORS must staff booths as follows:

Sunday Reception	7:45 pm - 9:30 pm
Monday - Thursday	10:30 am - 2:30 pm

WORKSHOPS are 5:45 - 7:00 pm on Monday, Tuesday, and Wednesday. Light refreshments are provided in the pre-function area on level two.

DINNER BREAK, 7:00 - 8:00 PM is time for a breath of fresh air before the opening of hospitality suites at 8:00 pm. Visit the "Meet Minneapolis" booth for restaurant suggestions and reservations. The booth also features useful information about Minneapolis museums, shopping, attractions, nightlife and much more!

FREE WiFi Access is provided in the Poster/Exhibit Hall. Computers are provided at stations throughout the convention center.

CONFERENCE PROCEEDINGS will be published online. Visit www.asms.org after July 15 to view or download the Proceedings. Submission to the Proceedings does not constitute publication and does not jeopardize the rights of authors to publish contents of their submissions. Speaker web casting slides will be printed to PDF and used for speakers who fail to submit.

WEB CASTING includes tutorial lectures, plenary lectures, and oral sessions. Web casting will be available to conference attendees for three months after the conference. ASMS does not retain rights to material included in web castings. To access the presentations, go to www.asms.org, select "web casting" on the annual conference page, and enter your last name and the User ID printed on your conference name badge.

CORPORATE HOSPITALITY SUITES may be open 8:00 pm, Monday through Wednesday. Suites are located in the **Hilton Hotel**.

CORPORATE BREAKFAST SEMINARS are hosted by some Corporate Members. Please reserve a seat at company exhibit booths. For list of companies hosting a breakfast, refer to Corporate Member listing in this program or www.asms.org.

EMPLOYMENT CENTER is located in the Poster/Exhibit Hall. The room is open to all conference attendees. Applicants and employers must enter resumes and employment opportunities online. No hard copies of resumes or employment opportunities will be posted in the center. There are computers in the center for searching the database of candidates and positions. Interview booths must be reserved one day in advance.

Sunday	1:00 - 8:00 pm
Monday - Wednesday	7:30 am - 5:00 pm
Thursday	7:30 am - 2:30 pm

GUEST REGISTRATION (\$10) includes designated name badge and entrance to the Sunday evening reception.

GENERAL INFORMATION

MEDIA EVENTS

Corporate media sessions are scheduled on Monday and Tuesday for members of the press and financial institutions.

Company	Monday	Hilton Hotel Location
Shimadzu	8:00-9:00 am	Marquette I-III, VII-IX
Bruker Daltonics	9:30-10:30 am	Conrad
AB SCIEX	11:00-12:00 pm	Symphony Ballroom
Agilent Technologies	1:30-2:30 pm	Grand Ballroom ABC
Thermo Scientific	3:00-4:00 pm	Grand Ballroom EFG
Waters Corporation	4:30-5:30 pm	Grand Ballroom D
Company	Tuesday	Location
PerkinElmer	9:30-10:30 am	Marquette IV-VII



CONFERENCE REGULATIONS

- Name badges are required for all conference sessions, including the exhibit hall and the employment center.
- No smoking is permitted in the convention center.
- Cell phones must be turned off in oral sessions.
- No photography or recording is allowed in oral sessions or in the Poster-Exhibit Hall.
- Material presented or displayed at the ASMS Conference, including but not limited to orals, posters, workshops, exhibit booths and hospitality suites, is the intellectual property of the presenter and may not be recorded, photographed, quoted, disseminated or transmitted by summary in any form without the express written authority of ASMS and the author of the material presented. Such materials, only upon approval by ASMS and the author, may be published in print or online, and must contain appropriate credits for all quotations or photographs.
- The placement of advertising in the meeting area is strictly limited. There are poster boards and tables in the Exhibit Hall for corporate member notices and literature. No signs on easels are permitted. Other approved notices and announcements may be posted on designated Boards in the Exhibit Hall.
- Hardware, accessories or any items for sale may be displayed only in corporate exhibit booths and hospitality suites.
- No organized activities (even off-site) other than those approved by ASMS are allowed during the conference week (5:00 pm on Sunday through 6:00 pm on Thursday).
- Corporate or institutional logos in slides or posters may appear only one time in the presentation.





CONFERENCE HOTELS

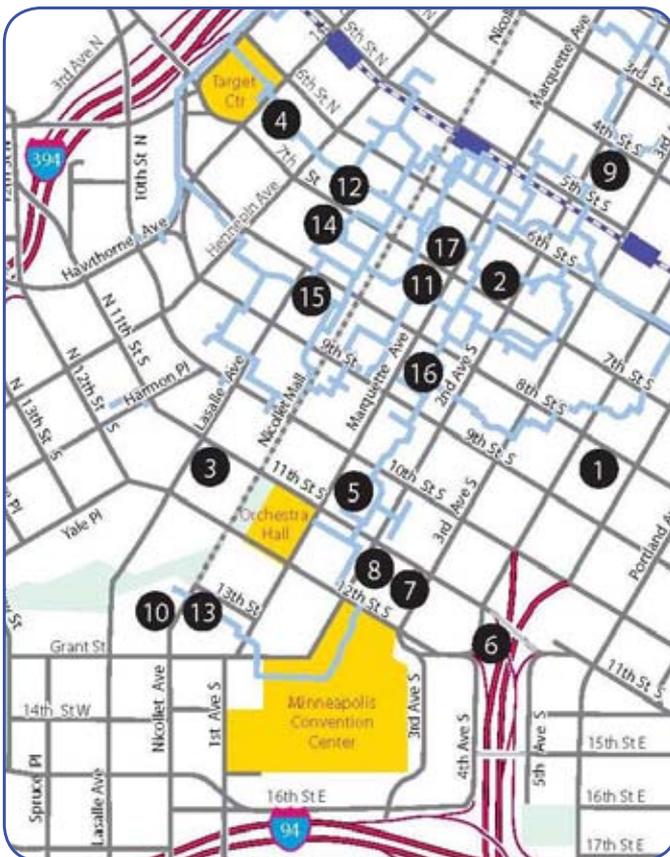
Map No.	Hotel	Telephone
1	Best Western	612-370-1400
2	Crowne Plaza	612-338-2288
3	Doubletree Suites	612-332-6800
4	Graves 601 Wyndham Grand	612-677-1100
5	Hilton Minneapolis	612-376-1000
6	Hilton Garden Inn	612-339-6633
7	Holiday Inn Express	612-341-3300
8	Hotel Ivy	612-746-4600
9	Hotel Minneapolis	612-340-2000
10	Hyatt Regency	612-370-1234
11	Marquette	612-333-4545
12	Marriott City Center	612-349-4000
13	Millenium	612-332-6000
14	Radisson Plaza	612-339-4900
15	Residence Inn	612-677-1000
16	W Minneapolis	612-215-3700
17	Westin Minneapolis	612-333-4006

TRANSPORTATION

Travel free through the heart of downtown Minneapolis. Look for “Free Ride” buses on Nicollet Mall between the Convention Center and Washington Avenue, including a connection with the Hiawatha light-rail line, with service to the airport and Mall of America. Free bus service is available approximately every 10 minutes from 7 am to 7 pm on weekdays and roughly every 15-30 minutes on evenings and weekends.

There is also an extensive skywalk system in Minneapolis.

Image below shows bus stops.



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Congratulations

to these members who were elected to the ASMS Board

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New Objective, Inc.

Secretary



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Marin Walker, Brent Watson



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<i>Bioinformatics for MS</i>	Lucas Kall Brian Searle
<i>Clinical Chemistry</i>	Cory Bystrom Brett Holmquist
<i>DNA/RNA</i>	Fenyu Meng Norman Chiu
<i>Drug Metabolism & Pharmacokinetics</i>	Don McKenzie Chandra Prakash
<i>Energy, Petroleum & Biofuels</i>	Michael McGinley Wolfgang Schrader
<i>Environmental Applications</i>	Kerry Peru
<i>Flavor, Fragrance and Foodstuff</i>	Marc Engel
<i>FTMS</i>	Franklin Leach Amy McKenna
<i>Fundamentals</i>	George Khairallah Glen Jackson
<i>Hydrogen Exchange & Covalent Labeling</i>	Lars Konermann David Schriemer
<i>Imaging MS</i>	Timothy Garrett Miam McDonnell
<i>Ion Mobility MS</i>	Matthew Bush
<i>LC/MS Related Topics</i>	Susan E. Abbatiello Helene Cardasis
<i>Metabolomics</i>	Gary Patti Paul West
<i>Metal Ion Coordination Chemistry</i>	Jinhua Ren Mike Van Stipdonk
<i>Peptide Fragmentation</i>	Nick Polfer Sharon Pitteri
<i>Pharmaceuticals</i>	Matthew Blatnik Brian Furmanski
<i>Polymeric Materials</i>	William Erb Gyorgy Vas
<i>Protein Therapeutics</i>	Sheng Gu Justin Sperry
<i>Quantitative Intact Proteomics</i>	Edward Dratz Julian Whitelegge
<i>Regulated Bioanalysis</i>	Fabio Garofolo
<i>Undergraduate Research in MS</i>	J.C. Poutsma
<i>Young Mass Spectrometrists</i>	Dian Su Bick Vu

COMMITTEES

<i>Asilomar Conference</i>	Glen Jackson, Chair Carolyn Cassady Scott McLuckey Ryan Julian
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<i>Nominating</i>	Alan Marshall, Chair Julia Laskin Joseph Loo Christine Miller Nathan Yates
<i>Publications</i>	Evan Williams, Chair Carthene Bazemore-Walker Lars Konermann Brandon Ruotolo Yu Xia Michael Gross (<i>ex officio</i>)
<i>Sanibel Conference</i>	Lisa Deterding, Chair Neil Kelleher J.C. Poutsma Jon Williams

ARCHIVIST

Michael Grayson

AWARD FOR A DISTINGUISHED CONTRIBUTION IN MASS SPECTROMETRY

2013 RECIPIENT: RICHARD D. SMITH

Award Lecture: 4:45 pm, Monday, Exhibit Hall A (lower level)



The increasing role of mass spectrometry (MS) in the physical and biological sciences can be attributed in a large part to the versatility afforded by the growing number of ionization methods and to mass spectrometry's increasing sensitivity. The development of the electrodynamic ion funnel in the laboratory of Dr. Richard Smith has been an important factor in the latter increase.

The ion funnel was originally created in the Smith lab in 1997 to replace ion transmission-limited skimmers and to efficiently capture ions in the expanding gas jet while radially focusing them. It has been adapted for a variety of uses and has proven to be a broadly applicable tool for ion focusing and manipulation at elevated pressures that challenged conventional approaches. Although it has undergone several iterations in the last 15 years, the defining features of the ion funnel have not changed: closely spaced ring electrodes of gradually decreasing inner diameter, out-of-phase RF potentials applied to adjacent electrodes, and a longitudinally-applied DC gradient. The ion funnel concept continues to be adapted in a growing number of applications such as ion trapping, ion cooling, low pressure electrospray, and ion mobility spectrometry; however, its original use, decreasing ion losses in the interface of high pressure sources, has remained its most prevalent. Currently, the funnel is employed by Bruker Daltonics' and Agilent Technologies and similarities can be seen in Thermo-Fisher's recent S-lens design found on the

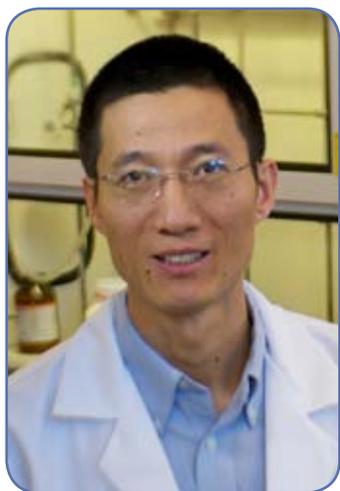
newer generations of Orbitrap instruments. In the ion funnel, Dr. Smith's obsession with sensitivity has provided a basis to greatly improve mass spectrometers, today allowing routine detection of low concentration species that would have been undetectable 15 years ago.

Dr. Richard Smith is Battelle Fellow and Chief Scientist in the Biological Sciences Division and Director of Proteomics Research at Pacific Northwest National Laboratory (PNNL).

BIEMANN MEDAL

2013 RECIPIENT: YINSHENG WANG

Award Lecture: 4:45 pm, Tuesday, Exhibit Hall A (lower level)



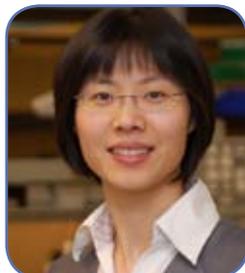
Dr. Yinsheng Wang has focused his research on discovering the biological consequences of DNA damage and on unraveling mechanisms of action for anti-tumor drugs and environmental toxicants. His laboratory's use and development of mass spectrometry, synthetic organic chemistry, biochemistry and molecular biology enables us to understand and quantify, at the molecular level, how various DNA damage products are repaired, and how they perturb the efficient flow and fidelity of genetic information during DNA replication and transcription.

Professor Wang has identified and characterized new DNA lesions, including bulky lesions induced by reactive oxygen species. His laboratory developed LC-MS/MS combined with a plasmid-based shuttle vector to quantitatively assess how structurally defined DNA lesions alter the frequency and efficiency of DNA replication and transcription in cells, and to measure the types and frequencies of mutations induced by lesions. They also discovered that N-2-(1-carboxyethyl)-2'-deoxyguanosine (N-2-CEdG) is the major stable DNA adduct derived from methylglyoxal, and demonstrated that it is the previously unknown endogenous substrate for DinB (polymerase IV). Dr. Wang's new methods have provided some long-sought biomarkers for oxidative stress: cyclopurine lesions including 8,5'-cyclo-2'-deoxyadenosine and 8,5'-cyclo-2'-deoxyguanosine.

Dr. Yinsheng Wang is Professor of Chemistry at the University of California-Riverside.

The Research Awards are fully funded by Thermo Scientific and Waters Corporation in the amount of \$35,000 each. Awards will be presented at the Biemann Medal Award Lecture, 4:45 pm, Tuesday, Exhibit Hall A

Sponsored by
THERMO SCIENTIFIC



Yu Xia
Purdue University

Sponsored by
WATERS CORPORATION



Matthew F. Bush
University of Washington

CALL FOR 2013 RESEARCH AWARD PROPOSALS

- OBJECTIVE** To promote academic research by young scientists in mass spectrometry.
- ELIGIBILITY** Open to academic scientists within four years of joining the tenure-track or research faculty in a North American university. Applicants may not have previously received an award under this program.
- APPLICATION** Applicants should submit the following no later than November 30.
1. Three-page proposal, including references and figures
 2. One-page fiscal proposal and justification
 3. List of current research support
 4. *Curriculum vitae*
 5. Two letters of recommendation may be e-mailed directly to ASMS: office@asms.org
- DEADLINE** Application materials 1-4 should be arranged in order and assembled as one PDF and emailed to office@asms.org. File may not exceed 5 MB.
- FISCAL** The awards of \$35,000 each will be made to a university in the name of the selected individual for the researcher's exclusive use. In accepting this award, the institution will agree to not charge overhead on the funds.
- INFORMATION** Contact ASMS. Telephone: (505) 989-4517 • office@asms.org

RON HITES AWARD FOR OUTSTANDING RESEARCH PUBLICATION IN JASMS



The Ron Hites Award recognizes an outstanding presentation of original research. Selection is based on a paper's innovative aspects, technical quality, likely stimulation of future research, likely impact on future applications, and quality of presentation. The award is named in honor of Professor Ron Hites of Indiana University, who led the creation of *JASMS* in 1988 while president of ASMS. The corresponding author receives a cash award of \$2,000 and all authors are acknowledged with certificates of commendation.

The Ron Hites Award recognizes an outstanding presentation of original research. Selection is based on a paper's innovative aspects, technical quality, likely stimulation of future research, likely impact on future applications, and quality of presentation. The award is named in honor of Professor Ron Hites of Indiana University, who led the creation of *JASMS* in 1988 while president of ASMS. The corresponding author receives a cash award of \$2,000 and all authors are acknowledged with certificates of commendation.



Left to right: Steven J. Ray, Gary M. Hieftje, and Alexander W. G. Graham

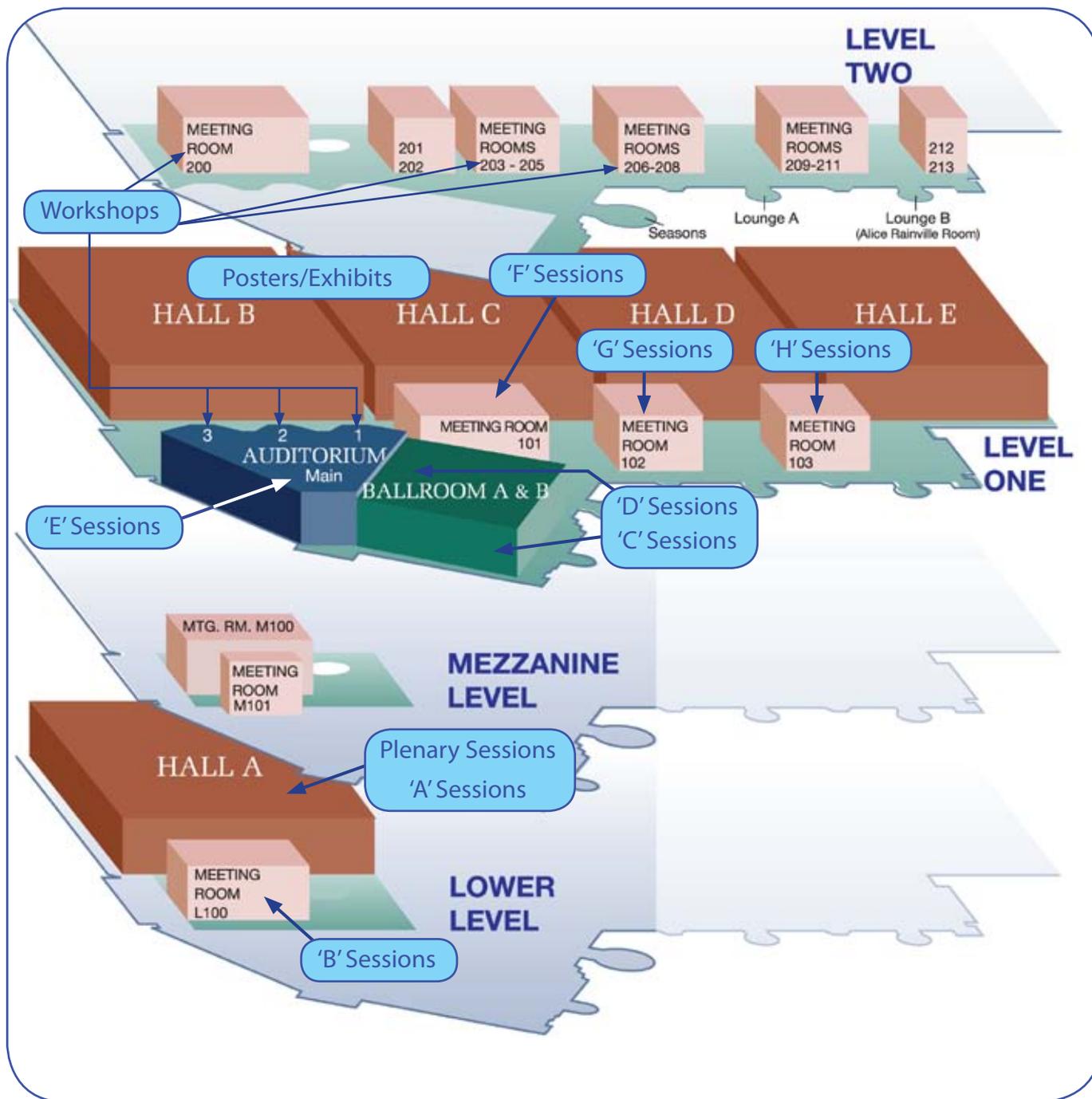
The 2013 award recognizes Alexander W. G. Graham; Steven J. Ray; Christie G. Enke; Charles J. Barinaga; David W. Koppenaar; Gary M. Hieftje for "First Distance-of-Flight Instrument: Opening a New Paradigm in Mass Spectrometry;" *J Am Soc Mass Spectrom* 2011, 22, 110-117.

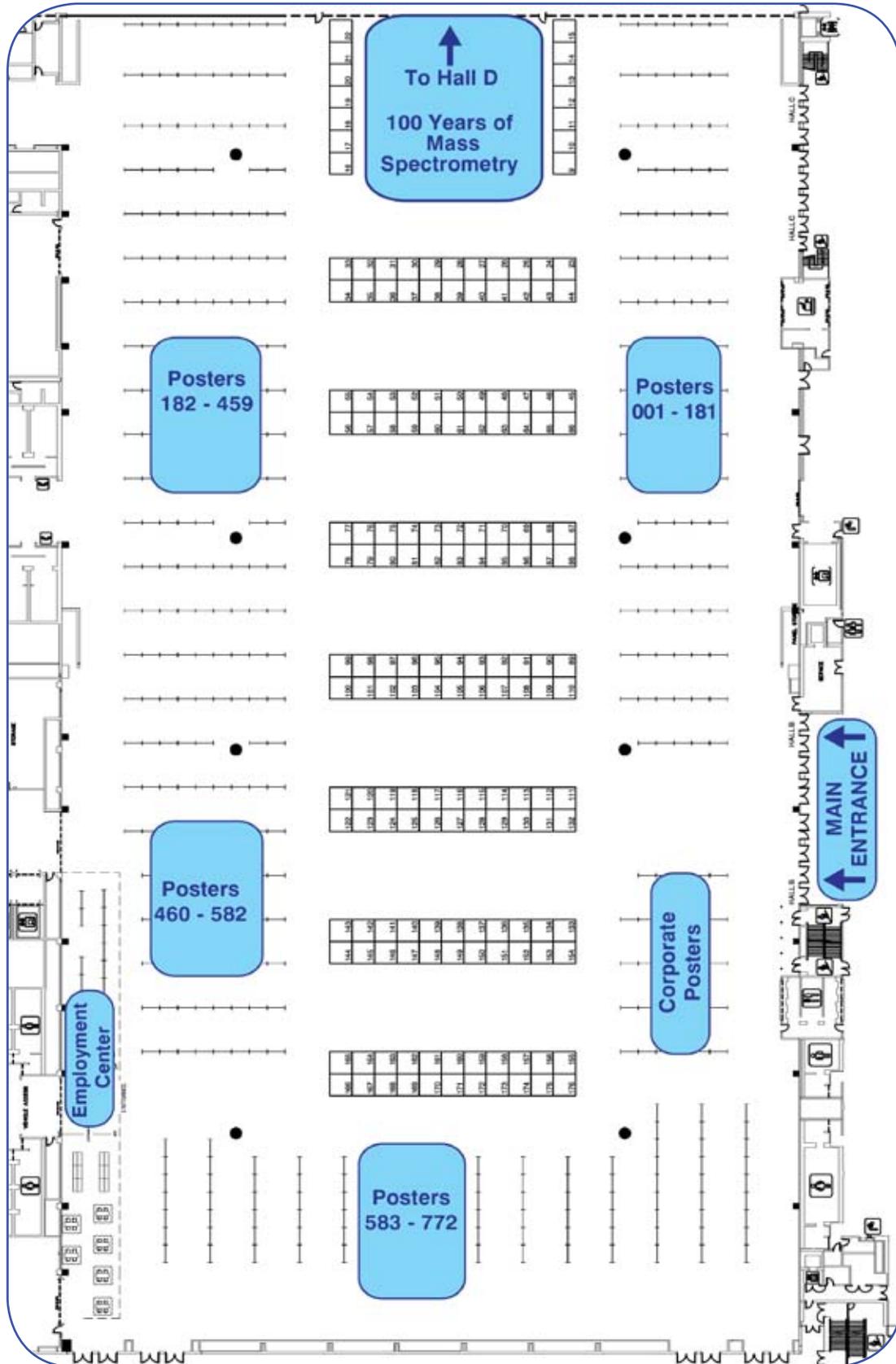


Charles J. Barinaga, David W. Koppenaar, and Christie G. Enke



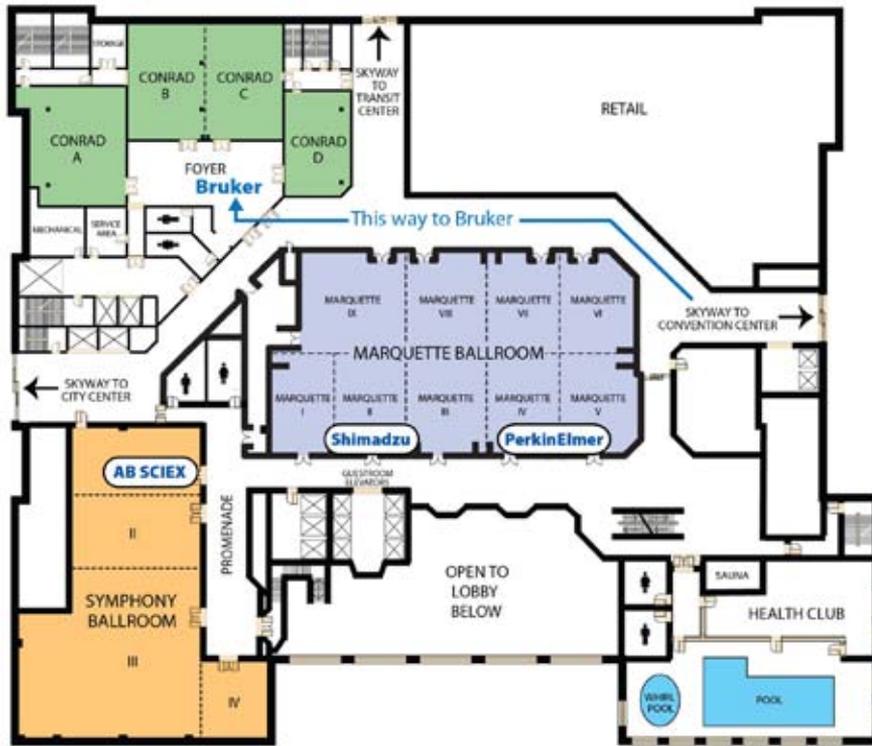
MINNEAPOLIS CONVENTION CENTER



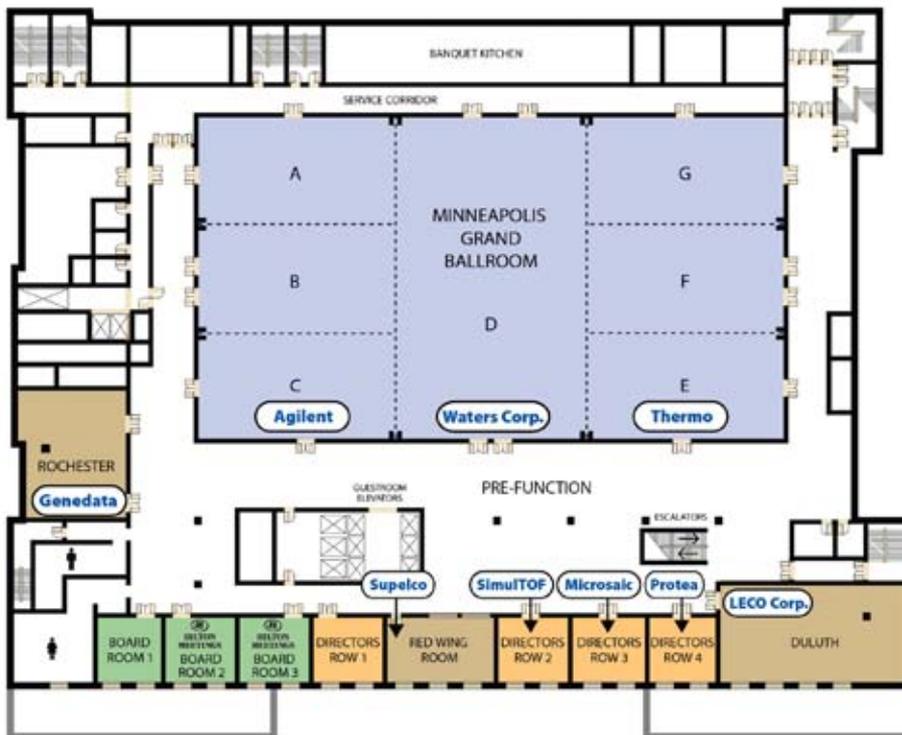




SECOND FLOOR



THIRD FLOOR



ASMS CORPORATE MEMBERS



Company	Booth	Poster or Tabletop	Hilton Minneapolis Hospitality Suite	Breakfast Seminar
1st Detect	33	Poster		
AB SCIEX	139		Symphony Ballroom.....	Mon/Tues/Wed, 7:15 am Conv Center Room 200DE Room 200GF (Mon only) Room 208AB (Mon/Tues) Hilton Minneapolis Symphony Ballroom
Advanced Chemistry Development (ACD/Labs) .6666	Poster		Monday, 7:00 am Conv Center, Room 200C
Advion.....	123			
Agilent Technologies.....	109	Poster	Grand Ballroom ABC	Mon/Tues/Wed, 7:00 am Conv Center, Room 205AB
Alliance Pharma, Inc.....	34	Poster		
Analytical Sales & Services	125	Poster		
Analytical Scientific Instruments	19			
Anasys Instruments	82			
Antec	144	Poster		
Apricot Designs, Inc.....	78			
Ardara Technologies LP	64	Poster		
Avanti Polar Lipids, Inc.	21			
Bertin Technologies	11			
Biocompare, American Laboratory		Tabletop		
Biocrates Life Sciences	164			
Bioinformatics Solutions Inc.	102	Poster		
Bioreclamation.....	128	Poster		
Biotage	122	Poster		Tuesday, 7:00 am Conv Center, Room 200J
Bonna-Agela Technologies Ltd.....	84			
Bruker Daltonics	110		Conrad	Mon/Tues, 7:00 am Conv Center, Room 205CD
C&EN.....		Tabletop		
CAMAG Scientific, Inc.	116			
Cambridge Isotope Labs	107			
Canadian Life Science.....	77	Poster		
CDS Analytical.....		Poster		
Cell Signaling Technology	100			
Cerno Bioscience	96			
CETAC Technologies.....	170			
Chemyx, Inc.....	149	Poster		
Chiral Technologies, Inc.	91	Poster		
ChromTech, Inc.	99			
Conquer Scientific	40			
CovalX.....	67			
CSS Analytical Co., Inc.....	95			
CTC Analytics	175			
Dani Instruments	48			
Denator AB	76	Poster		
Detector Technology, Inc.	55			
Deurion		Poster		
Digital Proteomics.....	35			
Dikma Technologies	17			

ASMS CORPORATE MEMBERS

Company	Booth	Poster or Tabletop	Hilton Minneapolis Hospitality Suite	Breakfast Seminar
Drummond Scientific	168			
EBARA Technologies.....	150	Poster		
Edwards.....	173			
EMCO High Voltage Corporation.....	57			
EMD Millipore	85	Poster		Tuesday, 7:00 am Conv Center, Room 200H
Excellims Corporation.....	59	Poster		
Expedeon	58			
ExSAR Corporation				
Extrel CMS	56			
FLIR Systems, Inc.	37			
Fluid Management Systems.....	165	Poster		
Fortis Technologies.....	87	Poster		
Frontage Laboratories, Inc.	157			
Genedata.....	46		Rochester	
Genetic Engineering & Biotechnology News		Tabletop		
Genovis	113	Poster		
GenTech Scientific Inc.	176			
GERSTEL, Inc.	140	Poster		
GL Sciences	90			
Glygen Corp.	44	Poster		
GMI, Inc.	47			
Hamamatsu Corporation	161	Poster		
Hamilton Robotics	25			
Harvard Apparatus.....	61			
Honeywell Burdick & Jackson	105			
Horizon Technology Inc.	20			
Hudson Surface Technology.....	72	Poster		
IAEA Careers.....	22			
iChrom Solutions	151			
IDEX Health & Science.....	89	Poster		
Institute for Systems Biology	171			
Integrated Analysis, Inc.	117			
Integrated Proteomics Applications Inc.	52			
International Equipment Trading Ltd.....	135			
International Labmate.....		Tabletop		
inVentiv Health Clinical.....	13			
ionBench.....	16			
IONICS Mass Spectrometry	129	Poster		
IonSense, Inc.....	142	Poster		
ITT Exelis.....	145	Poster		
Jaytee Biosciences Ltd.....	114			
JEOL USA, Inc.	29			
JPT Peptide Technologies	63			
Kanomax/MSI.TOKYO	60	Poster		
LEAP Technologies	166	Poster		
LECO Corporation.....	88	Poster	Duluth	Mon/Tues/Wed, 7:00 am Conv Center, Room 200A
LGC Ltd	124			
LNI Schmidlin	28			
Mac-Mod Analytical	24			
MassTech, Inc.....	162			
Matrix Science	138			

ASMS CORPORATE MEMBERS



Company	Booth	Poster or Tabletop	Hilton Minneapolis Hospitality Suite	Breakfast Seminar
McKinley Scientific.....	152			
MestreLab Research	126			
Microsaic Systems PLC.....	70	Poster	Directors Row 3	
Moeller Medical GmbH	26			
Morpho Detection Inc formerly Syagen Technology	134			
MS Bioworks.....	158			
MS Noise	155			
MSParts Inc	79			
mSPEC Group.....	80			
nanoLiter, LLC	18			
Nest Group, The		Poster		
New England Peptide	38			
New Objective, Inc.....	153	Poster		Tuesday, 6:45 am Conv Center, Room 200C
NIST	68			
Nonlinear Dynamics	54			
Oerlikon Leybold Vacuum.....	148			
OI Analytical.....	98	Poster		
Omni International	103			
OPOTEK, Inc.....	163			
Optimize Technologies	120	Poster		
Orochem Technologies Inc.	73			
Owlstone, Inc.....	97	Poster		
Pace Analytical Services	81			
Parker Hannifin.....	65	Poster		
PEAK Scientific Instruments.....	93	Poster		
PerkinElmer, Inc.	111	Poster	Marquette IV-VII.....	Tuesday, 7:00 am Conv Center, Room 200GF
Pfeiffer Vacuum	15	Poster		
Phenomenex, Inc.....	130			Monday 7:15 am, Conv Center, Room 200H
Phoenix S & T, Inc.	115			
PHOTONIS USA.....	45	Poster		
Physical Electronics.....	42			
Phytronix Technologies, Inc.....	141			
Polymer Factory Sweden AB.....	104			
Pressure BioSciences	36			
Prolab Instruments GmbH.....	146	Poster		
Promega Corporation	159			
Prosolia, Inc.....	41	Poster		
Protea Biosciences Group, Inc.	174		Directors Row 4	
Protein Metrics Inc.....	71			
Proteome Software.....	62			
Proton Onsite.....	50			
Rainin Instrument, LLC.....	32			
Research Scientific Services	51			
Resolution Systems, Inc.	172			
Restek Corporation.....	94			
RMI Laboratories LLC	83			

ASMS CORPORATE MEMBERS

Company	Booth	Poster or Tabletop	Hilton Minneapolis Hospitality Suite	Breakfast Seminar
SAES Getters SpA.....	27			
Sage Science	31			
Sage-N Research, Inc.	108			
Samin Science Co., Ltd.	12			
Science/AAAS		Tabletop		
Scientific Instrument Services	106	Poster		
Scientific Systems, Inc.....	167			
SGE Analytical Science	112			
Shimadzu.....	133	Poster.....	Marquette I-III, VIII-IX	Mon/Tues/Wed, 7:00 am Conv Center, Room 200B
Sierra Analytics.....	127			
Sigma Life Science.....	143			
Silantes GmbH	43			
SimulTOF Systems of Virgin Instruments Corp.....	75		Directors Row 2	
Spark Holland.....	147			
SpectralWorks Ltd.	101			
Spectroscopy Magazine	118			
Spellman High Voltage	74			
SPEware Corporation.....	49			
SunChrom GmbH.....	23			
Supelco.....		Poster.....	Red Wing	
Tandem Labs	131			
Tecan	156	Poster		Monday, 7:00 am Conv Center, Room 200J
Teledyne Tekmar	14			
Texere Publishing		Tabletop		
Thermo Scientific.....	154		Grand Ballroom EFG	Mon/Tues/Wed, 7:00 am Hilton Minneapolis Grand Ballroom EFG Thursday, 7:00 am Conv Center, Room 200DE
Thomson Instruments Company	119	Poster		
Tomtec.....	121			
Torion Technologies	86	Poster		
Tosoh Bioscience.....	69			
TSI Inc.	92			
Tymora Analytical Operations.....	136	Poster		
Veritomyx.....	30			
VICI Valco Instruments	160			
Voltage Multipliers Inc.....	39			
VRS	137			
Waters Corporation	132		Grand Ballroom D	By Invitation Only (2 locations) Mon/Tues/Wed, 7:00 am Conv Center, Room 200I Hilton Minneapolis Grand Ballroom D
Western Analytical Products, Inc.....		Poster		
Wiley.....	10			
Zef Scientific, Inc.	9			
Zhejiang Haochuang Biotech	53			
Zivak Technologies	169	Poster		

PROGRAM ACKNOWLEDGEMENTS



Jenny Brodbelt
Vice President for Programs



100 YEARS OF MASS SPECTROMETRY
Michael A. Grayson

STUDENT ASSISTANTS

Graduate students assist with many aspects of the conference, including registration, oral and poster sessions, and the employment center. The students each receive a stipend to help with their conference travel expenses.

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PROGRAM OVERVIEW

SATURDAY

9:00 AM - 4:30 PM	SHORT COURSES
2:00 - 5:00 PM	REGISTRATION

SUNDAY

9:00 AM - 4:30 PM	SHORT COURSES
10:00 AM - 8:00 PM	REGISTRATION
5:00 - 6:30 PM	<p>TUTORIAL LECTURES, Exhibit Hall A (lower level)</p> <div style="display: flex; flex-direction: column; gap: 10px;"> <div>  <p>5:00 - 5:45 pm A Wide Spectrum: Clinical Diagnostics for the Masses</p> <p>Andrew Hoofnagle University of Washington</p> </div> <div>  <p>5:45 - 6:30 pm The Nuts and Bolts of Protein Hydrogen Exchange MS</p> <p>John Engen Northeastern University</p> </div> </div>
6:45 - 7:45 PM	<p>CONFERENCE OPENING, Exhibit Hall A (lower level) Jenny Brodbelt, <i>ASMS Vice President for Programs</i></p> <p>Welcome, Jenny Brodbelt, University of Texas, Austin ASMS Vice President for Programs</p> <div style="display: flex; justify-content: space-around; margin: 10px 0;"> <div style="text-align: center;"> <p>Then...</p>  </div> <div style="text-align: center;"> <p>Now...</p>  </div> </div> <p>The First Fifty Years of MS: Building a Foundation Michael L. Gross Washington University of St. Louis</p>
7:45 - 9:00 PM	RECEPTION IN THE POSTER-EXHIBIT HALL , Exhibit Hall BC

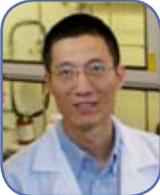
PROGRAM OVERVIEW

MONDAY

7:30 AM - 5:00 PM	REGISTRATION
8:30 - 10:30 AM	ORAL SESSIONS <ul style="list-style-type: none"> • MOA am Quantification of Targeted Proteins and Post-Translational Modifications, Exhibit Hall A (lower level) • MOB am Instrumentation: Time-of-Flight Mass Spectrometry: In Memory of Robert J. Cotter, Room L100 (lower level) • MOC am FAIMS and DMS: New Developments and Applications, Ballroom B • MOD am Biotherapeutics and Biomarkers: Advances in Quantitative Analysis, Ballroom A • MOE am Integrated Qualitative and Quantitative LC-MS for Small Molecule Analysis, Auditorium • MOF am Covalent Labeling, Chemical Probes, and Crosslinking for Biomolecule Structural Characterization, Room 101 • MOG am Fundamentals of Peptide Fragmentation, Room 102 • MOH am Nucleic Acids, Room 103
10:30 AM - 2:30 PM	POSTER SESSION AND EXHIBITS , Exhibit Hall BC
2:30 - 4:30 PM	ORAL SESSIONS <ul style="list-style-type: none"> • MOA pm PTMs: Comprehensive Analysis, Exhibit Hall A (lower level) • MOB pm Top-Down and Middle-Down Protein Analysis (Honoring Fred McLafferty's 90th birthday), Room L100 (lower level) • MOC pm Clinical Chemistry: Dried Blood Spot Analysis, Ballroom B • MOD pm Biotherapeutics, Impurities and Degradants: Structural Characterization, Ballroom A • MOE pm High Mass Accuracy in Drug Discovery and Development, Auditorium • MOF pm Protein-Protein and Protein-Ligand Interactions, Room 101 • MOG pm Fundamentals of Ion Activation and Dissociation, Room 102 • MOH pm Photoionization, Room 103
4:45 - 5:30 PM	AWARD LECTURE , Exhibit Hall A  Award for a Distinguished Contribution in Mass Spectrometry Richard D. Smith Pacific Northwest National Laboratory
5:45 - 7:00 PM	WORKSHOPS There are light refreshments on level two. <p style="text-align: center;">Level One Rooms</p> <ul style="list-style-type: none"> • The Informatical Difference between Targeted and Discovery-based Proteomics (organized by the Bioinformatics for MS Interest Group), Room 1 • Have Recent LC-MS Techniques Advanced to Substitute AMS in Analyzing Microdose and other Low Level Clinical Studies for Metabolites and Drug Related Material? (organized by the DMPK Interest Group), Room 2 • Trans-Proteomic Pipeline (TPP) and Related Open-Source Proteomics Resources, Room 3 <p style="text-align: center;">Level Two Rooms</p> <ul style="list-style-type: none"> • FRAGILE Modifications, Handle with Care during Peptide Fragmentation (organized by the Peptide Fragmentation Interest Group), Room 200 DE • Mass Spectrometry-based Characterization of Biotherapeutics (organized by the Protein Therapeutics Interest Group), Room 200 FG • How Can MS Analysis Be Used to Improve Analytical Results and Laboratory Efficiency (organized by the Flavor, Fragrance and Foodstuff Interest Group), Room 200 H • Nucleic Acids as Diagnostic and Therapeutic Biomarkers (organized by the DNA/RNA Interest Group), Room 200 I • Surviving and Thriving: A Panel Discussion for Both Students and PUI Faculty on How to Get the Most out of Undergraduate Research (organized by the Undergraduate Research in MS interest Group), Room 205 AB • Photoionization Mass Spectrometry, Room 205 CD • Consortium for Top Down Proteomics, Room 208 AB • Data Independent Acquisition, Room 208 CD
7:00 - 8:00 PM	DINNER BREAK
AFTER 8:00 PM	CORPORATE HOSPITALITY SUITES , Hilton Hotel

PROGRAM OVERVIEW

TUESDAY

7:30 AM - 5:00 PM	REGISTRATION
8:30 - 10:30 AM	ORAL SESSIONS <ul style="list-style-type: none"> • TOA am Quantitative Proteomics, Exhibit Hall A (lower level) • TOB am Imaging MS: Increasing Speed and Information Content, Room L100 (lower level) • TOC am Functional Foods, Phytochemicals, and Supplements, Ballroom B • TOD am PTMs: Glycosylation, Ballroom A • TOE am Systems Biology/Cellular Pathways, Auditorium • TOF am Metabolomics/Lipidomics: New MS Technologies and Applications, Room 101 • TOG am Ion Mobility: Separations, Room 102 • TOH am Antibodies and Antibody-Drug Conjugates, Room 103
10:30 AM - 2:30 PM	POSTER SESSION AND EXHIBITS , Exhibit Hall BC
2:30 - 4:30 PM	ORAL SESSIONS <ul style="list-style-type: none"> • TOA pm Instrumentation and Methods: FT, Ion Traps and Hybrid Instruments, Exhibit Hall A (lower level) • TOB pm Imaging MS: Biological Applications, Room L100 (lower level) • TOC pm Characterization of Product Variants in Biosimilars, Ballroom B • TOD pm Phosphoproteomics, Ballroom A • TOE pm Food Safety: Advances in MS for Characterization of Additives and Contaminants, Auditorium • TOF pm Ion Mobility: Structures, Room 101 • TOG pm Metabolites: Unusual and Uncommon, Room 102 • TOH pm Microorganisms: Identification and Characterization, Room 103
4:45 - 5:30 PM	AWARD LECTURE , Exhibit Hall A, Lower Level  <p>Biemann Medal Yinsheng Wang University of California, Riverside</p>
5:45 - 7:00 PM	WORKSHOPS There are light refreshments on level two. <p style="text-align: center;">Level One Rooms</p> <ul style="list-style-type: none"> • Environmental Applications of FTMS: Earth, Air & Water (organized by the FTMS Interest Group), Room 1 • Jumpstarting Your Career: a Career Development Workshop (organized by the Young Mass Spectrometrists Interest Group), Room 2 • The Galaxy Framework as a Solution for MS-based Informatics, Room 3 <p style="text-align: center;">Level Two Rooms</p> <ul style="list-style-type: none"> • LC-MS in the Clinical Lab: How Close is 24/7? (organized by the Clinical Chemistry Interest Group), Room 200 DE • Normalization Approaches to Imaging Mass Spectral Data (organized by the Imaging MS Interest Group), Room 200 FG • How to Work with your P.I.s More Effectively (and Without Them Knowing It) (organized by the Analytical Lab Managers Interest Group), Room 200 H • Current Topics in Metal Ion Chemistry (organized by the Metal Ion Coordination Chemistry Interest Group), Room 200 I • Ion Mobility MS: New Instrumentation & Enabling Technologies (organized by the Ion Mobility MS Interest Group), Room 205 AB • Quantitative Intact Proteomics (organized by the Quantitative Intact Proteomics Interest Group), Room 205 CD • Large Molecule by LC-MS Bioanalytical Method Validation (BMV): Status, Challenges, Solutions, Recommendations (organized by the Regulated Bioanalysis Interest Group), Room 208 AB • Practical ETD, Room 208 CD
7:00 - 8:00 PM	DINNER BREAK
AFTER 8:00 PM	CORPORATE HOSPITALITY SUITES , Hilton Hotel

PROGRAM OVERVIEW

WEDNESDAY

7:30 AM - 5:00 PM	REGISTRATION
8:30 - 10:30 AM	<p>ORAL SESSIONS</p> <ul style="list-style-type: none"> • WOA am PTMS: Advances in Isolation, Derivatization and Separation, Exhibit Hall A (lower level) • WOB am Informatics: Protein Quantification, Room L100 (lower level) • WOC am Carbohydrates: New MS Approaches, Ballroom B • WOD am Quantitative Analysis by MS in Drug Discovery and Development: Novel Approaches, Ballroom A • WOE am Instrumentation: New Developments in High Resolution and Mass Accuracy, Auditorium • WOF am Emerging Environmental Contaminants, Room 101 • WOG am Fundamentals: Ion Spectroscopy (Honoring Rob Dunbar's 70th Birthday), Room 102 • WOH am H/D Exchange: Biological Applications, Room 103
10:30 AM - 2:30 PM	POSTER SESSION AND EXHIBITS , Exhibit Hall BC
2:30 - 4:30 PM	<p>ORAL SESSIONS</p> <ul style="list-style-type: none"> • WOA pm Forensic Applications, Exhibit Hall A • WOB pm Principles of Protein Identification and Characterization, Room L100 • WOC pm Gas-Phase Ions: Reactions, Dynamics and Theory, Ballroom B • WOD pm Biomarkers of Drug Response, Efficacy and Toxicity: Novel MS Approaches, Ballroom A • WOE pm Instrumentation: New Developments in Ionization and Sampling, Auditorium • WOF pm Ecological and Human Health Environmental Chemistry and Toxicology, Room 101 • WOG pm Glycoproteins and Glycans: New MS Approaches, Room 102 • WOH pm H/D Exchange: New Development in Technology, Room 103
4:45 - 5:30 PM	ASMS MEETING , Ballroom A Awards, board reports, wine, beer, soft drinks - and more!
5:45 - 7:00 PM	<p>WORKSHOPS There are light refreshments on level two</p> <p style="text-align: center;">Level One Rooms</p> <ul style="list-style-type: none"> • Fundamentals in LC-MS Troubleshooting (organized by LC/MS & Related Topics Interest Group), Room 1 • H/D Exchange and Covalent Labeling (organized by H/D Exchange & Covalent Labeling Interest Group), Room 2 • LC-MS of Glycans and Glycopeptides: Advantages and Challenges, Room 3 <p style="text-align: center;">Level Two Rooms</p> <ul style="list-style-type: none"> • Fuel Analysis: Surveying Research Methods and their Application in Industrial Settings (organized by Energy, Petroleum & Biofuels Interest Group), Room 200 DE • Emerging Contaminants in Environmental Research: Hydraulic Fracturing Fluids and Shale Gas Produced Waters - Advances, Challenges and Opportunities using mass spectrometry (organized by Environmental Applications Interest Group), Room 200 FG • The Advancement of Polymer Mass Spectrometry (organized by Polymeric Materials Interest Group), Room 200 H • Challenges and New Directions in Plant Proteomics, Room 200 I • CHORUS – A Community Solution for the Storage, Visualization, and Sharing of Mass Spectrometry Data on the Cloud, Room 200 J • Ion Structures and Energetics, and Ion-Molecule Reaction Kinetics in the Gas Phase, in honor of Peter B. Armentrout's 60th birthday (organized by Fundamentals Interest Group), Room 205 AB • Proteins and Peptides as Pharmaceutical Agents (organized by Pharmaceuticals Interest Group), Room 205 CD • Lipid Mass Spectrometry & Lipidomics, Room 208 AB • Mass Spectrometry Applications in Art, Cultural Heritage, and Natural History, Room 208 CD
7:00 - 8:00 PM	DINNER BREAK
AFTER 8:00 PM	CORPORATE HOSPITALITY SUITES , Hilton Hotel

PROGRAM OVERVIEW

THURSDAY

7:00 AM - 5:00 PM	REGISTRATION
8:30 - 10:30 AM	ORAL SESSIONS <ul style="list-style-type: none"> • ThOA am Ambient Ionization: Instrumentation and Applications, Exhibit Hall A (lower level) • ThOB am Informatics: Metabolomics, Room L100 (lower level) • ThOC am Regulated Bioanalysis and Diagnostics using High Resolution LC/MS, Ballroom B • ThOD am Disease Biomarkers and Pathways, Ballroom A • ThOE am Space Science, Astrobiology, and Atmospheric Chemistry, Auditorium • ThOF am Imaging MS: Pharmaceutical Applications, Room 101 • ThOG am Energy, Petroleum, and Biofuels: Advances in MS Design and Informatics, Room 102 • ThOH am Epigenetic Modifications and Mechanisms, Room 103
10:30 AM - 2:30 PM	POSTER SESSION AND EXHIBITS , Exhibit Hall BC Thursday posters
2:30 - 4:30 PM	ORAL SESSIONS <ul style="list-style-type: none"> • ThOA pm Ambient and Atmospheric Pressure Ionization: Fundamentals, Exhibit Hall A (lower level) • ThOB pm Proteomics: Infection Diseases, Room L100 (lower level) • ThOC pm Lipids and Profiling, Ballroom B • ThOD pm Biomarkers in Drug Discovery and Development, Ballroom A • ThOE pm Plant"omics", Auditorium • ThOF pm Polymer- and Packaging-Related Contaminants and Degradants in Food, Drugs, and Consumer Products, Room 101 • ThOG pm Energy, Petroleum, and Biofuels: Advances in Sample Preparation and MS Interface Design, Room 102 • ThOH pm History: Celebration of 100th Anniversary of Mass Spectrometry, Room 103
4:45 - 5:30 PM	PLENARY LECTURE , Exhibit Hall A (lower level)
	 <p>Discovery of the Elusive Higgs Boson</p> <p>Peter Onyisi University of Texas at Austin</p>
5:45 - 9:00 PM	CLOSING GALA , Ballroom D



MONDAY WORKSHOPS, 5:45 - 7:00 PM

**The Informatical Difference between Targeted and Discovery-based Proteomics (organized by Bioinformatics for MS Interest Group); Brian Searle and Lukas Käll, presiding
Room 1**

Recent developments in data acquisition strategies and instrumentation have granted proteomicists to the ability to acquire not just the mass and intensity of the peptides in large-scale proteomics samples, but also sequence specific fragment ions as well. Informatically speaking, data independent acquisition facilitates researchers to first form hypotheses about which proteins are likely to be present in samples and ask targeted questions to identify them. However, unlike traditional targeted acquisition, such as with selected reaction monitoring, data is acquired discovery-based where peptides from all proteins present in each sample are fragmented indiscriminately. These fragments can be exploited by informatics informed by database searching strategies. This workshop will be discussion-driven after both points of view are briefly introduced.

**Have Recent LC-MS Techniques Advanced to Substitute AMS in Analyzing Microdose and other Low Level Clinical Studies for Metabolites and Drug Related Material? (organized by DMPK Interest Group); Chandra Prakash and Don McKenzie, presiding
Room 2**

Human micro dose studies require a highly sensitive analytical method such as Accelerator Mass Spectrometer (AMS). Unfortunately, the wide implementation of AMS in these analyses has been limited due to low-throughput sample preparation and high analysis cost. Over the last two decades, LC coupled with high resolution mass spectrometers (LC-HRMS) has become a reference analytical method for qualitative and quantitative analysis of pharmaceuticals. This workshop will discuss the advantages and disadvantages of LC-HRMS and AMS for the qualitative and quantitative analysis of drug and metabolites from low dose studies. The workshop will include 2 speakers (10-15 min per presentation) followed by Q&A and discussion with the audience.

**Trans-Proteomic Pipeline (TPP) and Related Open-Source Proteomics Resources;
Eric W. Deutsch and Luis Mendoza, presiding
Room 3**

This workshop will begin with a tutorial-style presentation on how to use the freely available and open-source suite of software tools for the analysis of proteomics shotgun datasets called the Trans-Proteomic Pipeline (TPP). The presentation will include demonstrations on use of format conversions, PeptideProphet, iProphet, PTMProphet, ProteinProphet, and related tools through the TPP graphical user interface, both in a local installation and on the Amazon EC2 cloud computing platform. Next we will present examples of how to use other resources from the Seattle Proteome Center including PeptideAtlas and SRMATlas for the planning of targeted proteomics experiments. The workshop will conclude with an open discussion on use of the tools, possible improvements, as well as future directions. There will be an opportunity to talk with the developers of the TPP.

**FRAGILE Modifications, Handle with Care during Peptide Fragmentation (organized by Peptide Fragmentation Interest Group) Nicolas Polfer and Sharon Pitteri, presiding
Room 200 DE (level 2)**

Many post-translational modifications (PTMs) on peptides, such as phosphorylation or glycation are easily detached during collision-induced dissociation (CID). This lability seriously complicates the localization of PTMs in sequencing experiments. This workshop aims to critically assess this problem for the proteomics community and to offer solutions to eliminate or at least minimize these redundant processes.

**Mass Spectrometry-based Characterization of Biotherapeutics (organized by Protein Therapeutics Interest Group); Justin Sperry and Li Tao, presiding
Room 200 FG (level 2)**

To provide a forum to discuss and share new techniques used to characterize and quantify biotherapeutics in various matrices by mass spectrometry. We will focus on the daily challenges faced by difficult samples such as antibodies, antibody-drug conjugates, vaccines, biosimilars, and/or heavily glycosylated proteins. The workshop will be a place for scientists to share their experiences in analyzing these samples by mass spectrometry-based methodologies. The workshop will also try to stimulate discussion on perspectives of new technologies that could improve the efficiency/throughputs in analyzing biotherapeutics.

**How Can MS Analysis Be Used to Improve Analytical Results and Laboratory Efficiency (organized by Flavor, Flavor, Fragrance and Foodstuff Interest Group); Marc Engel, presiding
Room 200 H (level 2)**

The following questions will be addressed:

- How can I use MS to get more accurate results?
- How can MS improve the efficiency of my lab?
- Are there MS techniques that I am not using in my lab that would improve the analyses that I am performing?

**Nucleic Acids as Diagnostic and Therapeutic Biomarkers (organized by DNA/RNA Interest Group); Norman Chiu and Fanyu Meng, presiding
Room 200 I (level 2)**

The discussion will focus on the mass spectrometry of nucleic acids biomarkers such as single nucleotide polymorphism (SNP), methylated DNA, non-coding RNA, and modified nucleosides. The use of these biomarkers for the diagnosis of diseases and therapeutic applications will be discussed. Comparison of using mass spectrometry to other analytical techniques for measuring nucleic acids biomarkers will be made during the discussion. The panelists of this workshop will include leaders from both industry and academy.

**Surviving and Thriving: A Panel Discussion for Both Students and PUI faculty on How to Get the Most out of Undergraduate Research (organized by Undergraduate Research in MS Interest Group); JC Poutsma and Chrisi Hughey presiding
Room 205 AB (level 2)**

A two-part panel discussion will address the rewards and challenges of undergraduate (UG) research in mass spectrometry. Each panel will be comprised of 3-4 panelists. The first part of the panel discussion will focus on how undergraduates can leverage their UG research experience to set themselves apart during a job search, when applying for graduate or professional schools and graduate fellowships. Members of this panel will include ASMS members that participated in UG research and are currently in graduate school, recently employed and/or individuals who hire recent grads. The second part of the panel discussion will focus on faculty concerns. Possible topics include time management, grant writing and the formation of scholarly writing support teams. Members of this panel will include beginning, mid- and late-career faculty.

**Photoionization Mass Spectrometry;
Jack Syage and Ralf Zimmerman presiding
Room 205 CD (level 2)**

Photoionization based methods are playing an increasingly important role in mass spectrometry. Among the various benefits of photoionization processes, their softness and selectivity are the most important ones. With the on-going improvement of laser based and incoherent light

WORKSHOPS

MONDAY WORKSHOPS, 5:45 - 7:00 PM *continued*

sources a further increase in techniques and applications is to be expected. The development of photoionization mass spectrometry (PIMS) based methods is also reflected in the scientific literature: In 2010 in total more than 1200 non-MALDI PIMS papers were published. The last decade has also seen the commercialization of APPI primarily for LC/MS and its emergence in important niche areas such as non-polar compounds, steroids, PAHs, petroleums, food safety, etc. PIMS is clearly making a practical and major impact in analytical MS. More recently photoionization mass spectrometers for on-line monitoring purposes were successfully commercialized.

Consortium for Top Down Proteomics; Nicolas Young and Ying Ge presiding Room 208 AB (level 2)

The Consortium for Top Down Proteomics was established in March 2012 with the following mission, "To promote innovative research, collaboration and education accelerating the comprehensive analysis of intact proteins". The consortium exists to bring together disparate researchers in top down proteomics and to educate the world on the

study of proteins in the intact state. At the ASMS 2013 meeting, we will review the results of current pilot projects, discuss nomenclature, data storage and data interchange. We will also review common roadblocks to successful top down proteomics experiments. A limited number of 5 minute 'lightning talks' will be available for researchers to provide updates on recent achievements and accomplishments of note. Contact workshop chairs if you are interested in presenting.

Data Independent Acquisition; Yishai Levin presiding Room 208 CD (level 2)

In recent years several alternative data acquisition modes have emerged in 'bottom-up' proteomics. Among these, Data Independent Acquisition (DIA) approaches have raised significant interest due to their improved identification reproducibility and quantitative performance. We will discuss the current status of various DIA approaches and the latest developments in instrumentation and software. We will host a panel of experts in the field and encourage discussion throughout the workshop.

TUESDAY WORKSHOPS, 5:45 - 7:00 PM

Environmental Applications of FTMS: Earth, Air & Water (organized by the FTMS Interest Group); Amy McKenna and Franklin Leach, presiding Room 1

This workshop will focus on the application of FTMS to characterize environmental samples. The discussion will include the requirement for high resolution FTMS for complex organic mixtures, such as dissolved organic matter, petroleum and atmospheric samples. We will highlight the threshold for current capabilities with 3-4 speakers, and will outline limitations for current techniques. This workshop will combine presentations with open discussion.

Jumpstarting Your Career: A Career Development (organized by the Young Mass Spectrometrists Interest Group); Dian Su and Bich Vu, presiding Room 2

The workshop will hold panel discussions on personal career management and planning. The topics will be related to effective career planning, high impact resumes, **job search strategies**, **power interviewing**, industrial and corporate internships, career pathways in academia, industry, and government organizations. Recruiters and representatives from industry, academia, and government organizations inside and outside the US will be invited to share best practices on career prospects.

The Galaxy Framework as a Solution for MS-based Informatics; Tim Griffin, presiding Room 3

The open source, community-developed, web-based Galaxy framework enables sharing of software and analysis workflows, promoting increased transparency in data analysis and adherence to standards. Originally designed for the genomics research community, Galaxy is gaining use by those in the MS-based proteomics and metabolomics community where new informatics solutions are urgently needed. Galaxy usage is driven by its unique and powerful features, not offered by other current solutions. This workshop seeks to inform current users of Galaxy on the newest developments, and introduce the framework to interested new users. Top developers of Galaxy for MS-based informatics will give short informal presentations on their work, followed by a panel discussion and an open question and answer period from the audience.

LC-MS in the Clinical Lab: How Close is 24/7? (organized by the Clinical Chemistry Interest Group); Brett Holmquist and Cory Bystrom, presiding Room 200 DE (level 2)

Keeping a clinical LC-MS lab running smoothly is a challenge, and labs employ many strategies to keep hardware running optimally. This

workshop will discuss how clinical laboratorians view lab infrastructure, service agreements, and staff training with an eye toward maximum productivity.

Normalization Approaches to Imaging Mass Spectral Data (organized by Imaging MS Interest Group); Timothy J. Garrett and Liam McDonnell, presiding Room 200 FG (level 2)

Normalization is commonly used in imaging mass spectrometry to reduce the impact of fluctuations that can influence peak intensities. This includes fluctuation in laser intensity (MALDI), primary ion gun (SIMS), electrospray emitter (DESI), mass spectrometer performance, and matrix coating inhomogeneities. Normalization approaches can include the use of the total ion current and/or a single mass-to-charge value as well as other methods. This interactive workshop will explore the use of normalization approaches and how the approach modifies the images produced, positively or negatively.

How to Work with your P.I.s More Effectively (and without Them Knowing It) (organized by the Analytical Lab Managers Interest Group); Nathan Dalleska and David Friedman, presiding Room 200 H (level 2)

Along with a panel of three invited laboratory managers, we propose to address three topics all related to good outcomes for scientist-users and service providers in the mass spectrometry core facility environment. 1) Strategies and Models for Cost Recovery for non-tangible effort (e.g., data interpretation and translation). 2) Convincing The Scientist to do the Right Experiment. Oftentimes researchers arriving in the Mass Spectrometry lab ready to do some science have neither the inclination nor funds to do a statistically-powered experiment. How do you enter the process from a position of information provider rather than a salesperson? 3) Recognition for your contribution. This will be an expansion of last year's "Who Ran That." We will begin the session with a short introduction and perspective (ca. 3 minutes each) from the panelists, followed by an open discussion of the above topics.

Current Topics in Metal Ion Chemistry (organized by the Metal Ion Coordination Chemistry Interest Group); Jianhua Ren and Michael van Stipdonk, presiding Room 200 I (level 2)

The workshop will serve as an informal venue for active metal ion researchers to discuss the current challenges and future directions of the field. Key topics of discussion will include ion formation, reactivity, structure and energetics studied by mass spectrometry, and complementary techniques such as ion spectroscopy and ion mobility as well as calculations. Some of the potential topics include, but are not limited to, separation and quantification of metalloproteins, structural elucidation of bio-mimicking systems, structures and reactions of metal

TUESDAY WORKSHOPS, 5:45 - 7:00 PM *continued*

clusters, micro-solvation of metals, and solving problems in metal ion chemistry using mass spectrometry experiments and theory. Those who wish to learn more about metal ion chemistry (especially young scientists) are strongly encouraged to attend.

Ion Mobility MS: New Instrumentation & Enabling Technologies
(organized by the Ion Mobility MS Interest Group);

Matthew Bush, presiding
Room 205 AB (level 2)

The performance of conventional and differential ion mobility mass spectrometers has escalated dramatically in recent years, which can be attributed to improved separations, more efficient ion transfer, and tighter integration of ion mobility devices into hybrid instruments. These improvements enable intricate and sensitive experiments probing mobility selected or separated ions, which has led to the adoption of ion mobility technologies in a wide range of applications, including challenges in gas-phase ion structure determination, native mass spectrometry, proteomics, and systems biology. We will showcase the latest developments in ion mobility mass spectrometry instrumentation and discuss remaining challenges.

Quantitative Intact Proteomics (organized by the Quantitative Intact Proteomics Interest Group);

Edward Dratz and Julian Whitelegge, presiding
Room 205 CD (level 2)

A continuation of the open forum format started three years ago will include discussion directed by topics submitted to the QIP Interest Group ahead of time. The major focus of this workshop will be on quantitative methods used for intact proteins: 2D gel-based (DIGE) using fluorescent tags, multiplexing and internal standards; Top-down using GelFree-type separations etc. The goal is to achieve cross-fertilization between different areas of the community with respect to experimental design, power analysis, multivariate statistical analysis, and fitness for purpose.

Large Molecule by LC-MS Bioanalytical Method Validation (BMV): Status, Challenges, Solutions, Recommendations (organized by the Regulated Bioanalysis Interest Group);
Steve Lowes and Fabio Garofolo, presiding
Room 208 AB (level 2)

LBA are currently the most popular approach to Large Molecule Bioanalysis. However, recent developments in LC-MS instrumentation is evolving as a viable technique for the accurate quantitation of therapeutic proteins and large peptides in biological fluids by offering a valid alternate to LBA. LC-MS in quantification of biologics has many advantage such as no needs for high affinity reagent; uniform approach; large linear range; higher selectivity and expected to be well accepted by regulatory agencies. It is commonly performed by using tryptic digestion, then purifying and detecting one or smaller signature peptides by LCMS. The analysis of these signature peptides can be very challenging since they can interact/adsorb strongly with both plastic and glass surfaces. Preparation techniques for both intact proteins and signature peptides purification are quickly evolving based on conventional techniques and immunoaffinity-based. Sensitivity and selectivity could also be difficult to achieve even when using the most advanced LC-MS. This workshop will focus on discussing the most recent developments in large molecule quantification in Regulated Bioanalysis by LC-MS highlighting the challenges faced during the method development, validation, samples analysis.

Practical ETD;

Katalin F. Medzihradzsky and Robert Chalkley, presiding
Room 208 CD (level 2)

ETD is a relatively young technique. Discussion will focus on

- i) the available search engines – advantages and drawbacks;
- ii) unusual/unexpected fragmentations;
- iii) combination of ETD with other dissociation methods;
- iv) derivatizations
- v) intact protein analysis

WEDNESDAY WORKSHOPS, 5:45 - 7:00 PM

Fundamentals in LC-MS Troubleshooting (organized by LC/MS & Related Topics Interest Group); **Helene Cardasis, presiding**
Room 1

This workshop will cover fundamental principles of troubleshooting logic with the goal of helping attendees reduce LC-MS instrument down time. We'll define the terms "primary symptom" and "secondary symptom" in the context of LC-MS instrumentation problems, and as a group will work through the identification and resolution of multiple real world examples. Time will be allowed for ample discussion and questions for the expert panel, as well as an "open mic" - "has anyone seen this?" therapeutic session of communal troubleshooting of current, ongoing audience instrument problems.

H/D Exchange and Covalent Labeling (organized by H/D Exchange & Covalent Labeling Interest Group);
Lars Konermann and David Schriemer, presiding
Room 2

The workshop will provide a forum for discussing HDX and covalent labeling approaches for protein analysis (structure, function, folding, dynamics). There will be a number of brief presentations introducing new advances in MS-based methods, experiments, data analysis and applications to the attendees. The goal of these presentations (5 min maximum) will be to stimulate discussion. The workshop will also contain a question and answer session, with questions being submitted in advance.

LC-MS of Glycans and Glycopeptides: Advantages and Challenges; **Yehia Mechref and Barry Boyes, presiding**
Room 3

The biosynthetic processes controlling the glycosylation of proteins and lipids invariably result in the formation of multiple glycan structures (positional and linkage isomers). A variety of glycan structures can

occupy a particular glycosylation site of a protein. Mass spectrometry alone might not be suited to attain a comprehensive characterization of all glycans associated with proteins and lipids. Accordingly, separation techniques in conjunction with mass spectrometry are currently being employed to define and quantify glycosylation of these many glycoconjugates. This workshop aims at addressing the advantages and challenges associated with LC-MS of glycans and glycopeptides. The discussion will include both condensed and gas phase separations. The use of different chromatographic modes, such as HILIC and RP, will be presented and discussed. Ion mobility mass spectrometry provides additional selectivity opportunities for the characterization of different glycans, when used both on-line and off-line with LC. Recent advances in the analysis of glycopeptides, including new formats for enrichment and separation will be also discussed.

Fuel Analysis: Surveying Research Methods and their Application in Industrial Settings (organized by Energy, Petroleum & Biofuels Interest Group); **Michael McGinley and Patrick Hatcher, presiding**
Room 200 DE

Rapid advances in sample workflows, instrument technologies, and informatics have revolutionized the elemental information that one can obtain from petroleum and biofuel samples. Analytical technologies continue to impact both the industrial process control of fuel manufacturing as well as the assessing the environmental impact of fuel accidents. In this interest group workshop discussions will revolve around the most recently developed analysis methods in both biofuel and petroleum in the academic setting as well as discusses the challenges in implementing such advances in an industrial setting. Finally, industrial stakeholders will discuss unmet analytical needs in moving energy technologies forward.

WEDNESDAY WORKSHOPS, 5:45 - 7:00 PM *continued*

Emerging Contaminants in Environmental Research: Hydraulic Fracturing Fluids and Shale Gas Produced Waters - Advances, Challenges and Opportunities using Mass Spectrometry (organized by Environmental Applications Interest Group); Kerry Peru and Xing-Fang Li, presiding
Room 200 FG

The workshop will focus on the challenges facing the environmental laboratory with emphasis on mass spectrometry analysis of emerging contaminants. The objective of the workshop is to discuss new contaminants, analytical strategies and research opportunities. This year's workshop will focus on emerging contaminants relating to hydrofracking and shale gas produced waters, discussions will be centered on how mass spectrometry can be used to fill the need of identifying and monitoring these contaminants. We welcome your questions and input to the discussion.

Advancement of Polymer Mass Spectrometry (organized by Polymeric Materials Interest Group); William Erb, presiding
Room 200 H

The workshop will include group discussions centered on the following topics related to synthetic polymers:

- Advancement of Polymer Separations and Chromatography
- New MS capabilities
- Academic and Industrial Applications of Polymer Analysis

Select scientists will give brief presentation (2-3 slides) on applications related to these topics to seed discussions.

Challenges and New Directions in Plant Proteomics; Michelle Cilia and Brett Phinney, presiding
Room 200 I

The purpose of the workshop will be to identify and discuss the unique analytical challenges that are specific to the proteomic analysis of plant and/or agricultural samples (including insects, plant pathogenic fungi, bacteria & viruses). Examples include, but may not be limited to sample prep, PTM identification, bioinformatics, functional validation and new technologies. We will select four abstracts from those submitted for consideration to the Plant Omics Oral Session that were not selected to be presented during the scientific session. Informal presentations will be limited to 15 minutes with 5 minutes for discussion. This format may be adjusted according to the number and quality of the abstracts we receive for consideration. We will preferentially select student and postdoctoral presenters to encourage participation and engagement of junior members of the society.

CHORUS – A Community Solution for the Storage, Visualization, and Sharing of Mass Spectrometry Data on the Cloud; Michael MacCoss, Nathan Yates, and Andrey Bondarenko, presiding
Room 200 J

The sharing and public dissemination of mass spectrometry data has become a major challenge. We would like to present a community effort to provide a free, professionally developed solution to the mass spectrometry field's needs. The application provides a "Google Docs" type interface optimized for mass spectrometry data. Data can be uploaded and kept private, shared with a group of collaborators, or made entirely public. We would like to discuss the motivations for initiating this effort, demonstrate what has been developed, describe our current short and long-term plans, obtain feedback, and encourage the involvement from the ASMS community.

Ion Structures and Energetics, and Ion-Molecule Reaction Kinetics in the Gas Phase, in honor of Peter B. Armentrout's 60th birthday (organized by Fundamentals Interest Group) Glen Jackson and George Khairallah, presiding
Room 205 AB

In December 2012, IJMS published a special issue edited by Mary Rodgers and David Clemmer in honor of Peter Armentrout's 60th

birthday. We plan to honor this special occasion by providing a series of invited short presentations and discussion on the major research areas in which Peter has been so influential. In the tradition of the fundamentals group, senior graduate students and postdoctoral scholars in research groups associated with ion structure, energetics and kinetics will give the presentations.

Proteins and Peptides as Pharmaceutical Agents (organized by Pharmaceuticals Interest Group); Matthew Blatnik and Carmen Santasania presiding
Room 205 CD

The pharmaceutical industry has made a significant shift towards macromolecule based therapies. According to a Reuter's consensus sales forecast, biologics are predicted to make up the majority of sales of the top ten best-selling drugs for 2014. The inherent complexity of macromolecules requires more sophisticated analytical tools, methods, and knowledge than traditional small molecule based therapeutic programs. Historically, antigen-antibody capture techniques have been used to quantify biological targets. While ELISA assays are still the predominant method for quantitation of biologics, recent emphasis has been placed on incorporating complimentary LC-MS strategies to enhance our understanding of biological therapies. This workshop will introduce this topic with a short presentation meant to capture the field in its current state; it will open immediately afterwards for panel led discussion and audience participation. Specific topics may include but are not limited to sample preparation/handling, LC-MS in general, data management and regulatory requirements.

Lipid Mass Spectrometry & Lipidomics; Gavin Reid and Stephen Blanksby, presiding
Room 208 AB

Lipidomics involves the comprehensive analysis of lipids in biological systems, and determination of their roles in cellular structure and function in different physiological or pathological states. Recent advances in the field have been enabled by the development and application of mass spectrometry strategies for the rapid and sensitive identification, characterization and quantitative analysis of the thousands of chemically distinct lipid species that may be present within a given system of interest.

The primary goal of the inaugural ASMS Lipids and Lipidomics workshop will be to bring together like-minded people in the field to gauge the potential interest in establishing an ASMS Interest Group in this area, as well as to discuss the current status and future needs of the various mass spectrometry technologies and data analysis strategies that are associated with worldwide lipidome analysis efforts. This discussion will be facilitated by several informal presentations, followed by an extensive discussion period, from several leading researchers in the field.

Mass Spectrometry Applications in Art, Cultural Heritage, and Natural History; Mehdi Moini, presiding
Room 208 CD

The purpose of this workshop is to bring together scientists, conservators, and curators interested in mass spectrometry (MS) applications to art and cultural heritage objects, as well as natural history specimens. This will be an interactive workshop in which various subjects relevant to the application of MS to museums' specimens will be discussed in a casual, dialog format. A preliminary list of topics include: 1) Analysis of proteinaceous and organic specimens such as silk and wool textiles, leather and animal guts objects, bone and tissues, ink, paper, paint, coatings, binders, and wood. 2) Analysis of the fundamental factors that cause degradation of museums' objects; identification of their deterioration markers, using degradation markers as clocks for dating objects, and studying environmental factors that affect deterioration. 3) Application of MS to paleo-organic matter such as fossilomics, amino acid racemization, and ancient DNA. 4) To be determined.



5:00 - 6:30 PM, SUNDAY
TUTORIAL SESSION
Jenny Brodbelt (University of Texas), presiding
Exhibit Hall A (lower level)



5:00 - 5:45 pm
A Wide Spectrum: Clinical Diagnostics
for the Masses

Andrew Hoofnagle
University of Washington



5:45 - 6:30 pm
The Nuts and Bolts of Protein Hydrogen
Exchange MS

John Engen
Northeastern University

6:45 - 7:45 PM, SUNDAY
CONFERENCE OPENING
Jenny Brodbelt (University of Texas), presiding
Exhibit Hall A (lower level)

Welcome, Jenny Brodbelt, University of Texas, Austin
ASMS Vice President for Programs

Then...



Now...



The First Fifty Years of MS: Building a Foundation
Michael L. Gross
Washington University of St. Louis

7:45 - 9:00 PM, SUNDAY
WELCOME RECEPTION
Exhibit Hall BC
Conference name badge is required.

8:30 - 10:30 AM, MONDAY MORNING
QUANTIFICATION OF TARGETED PROTEINS AND POST-
TRANSLATIONAL MODIFICATIONS
Hamid Mirzaei (University of Texas Southwestern), presiding
Exhibit Hall A (lower level)

MOA am 08:30 **Data Independent Acquisition with Improved Precursor Specificity on a Novel Hybrid Orbitrap (Q-OT-qIT) and a Q-Exactive;** [Jarrett Egerton](#)¹; Jesse Canterbury²; Dario Amodei³; Richard Johnson¹; Ying Ting¹; Gennifer Merrihew¹; Michael Senko²; Reiko Kiyonami²; Andreas Kuehn⁴; Yue Xuan⁴; Brendan MacLean¹; Markus Kellman⁴; Parag Mallick³; Olga Vitek⁵; Vlad Zabrouskov²; Michael MacCoss¹; ¹University of Washington, Seattle, WA; ²Thermo Fisher Scientific, San Jose, CA; ³Stanford University, Stanford, CA; ⁴ThermoFisher Scientific, Bremen, Germany; ⁵Purdue University, West Lafayette, IN

MOA am 08:50 **Using Variable Widths in Q1 Selection Windows to Improve Data Quality in Data Independent Acquisition;** [Christie Hunter](#); Sean Seymour; AB SCIEX, Foster City, CA

MOA am 09:10 **Simultaneous Protein Targeting and Discovery Offers Reproducible, Scheduled-Free, Quantification of Hundreds of Proteins across Multiple Experiments;** [Derek J. Bailey](#); Molly T. McDevitt; David J. Pagliarini; Michael S. Westphall; Joshua J. Coon; University of Wisconsin, Madison, WI

MOA am 09:30 **Improving the Quality and Production Timeline of Influenza Vaccines using Mass Spectrometry;** [Tracie Williams](#); Wanda Santana; Emily Winne; James Pirkle; John Barr; Centers for Disease Control and Prevention, Atlanta, GA

MOA am 09:50 **Comparative Phosphoproteomic Analysis of Checkpoint Recovery Identifies Regulators of the DNA Damage Response;** [Vincentius A. Halim](#)^{1,2}; Monica Alvarez-Fernández^{2,4}; Yan Juan Xu³; Melinda Aprelia³; Henk W.P van den Toorn¹; Albert J.R. Heck¹; Shabaz Mohammed¹; René H. Medema^{2,3}; ¹Utrecht University, Utrecht, The Netherlands; ²University Medical Center Utrecht, Utrecht, The Netherlands; ³Netherlands Cancer Institute, Amsterdam, The Netherlands; ⁴Spanish National Cancer Research Center (CNIO), Madrid, Spain

MOA am 10:10 **Quantitative Site-Specific Profiling of the Redox Dynamics on Protein Thiols Relevant to Photosynthesis in Cyanobacteria;** [Jia Guo](#)¹; Amelia Nguyen²; Yi Qu¹; Matthew J. Gaffrey¹; Ronald J. Moore¹; David G. Camp II¹; Richard D. Smith¹; Himadri B. Pakrasi²; Wei-jun Qian¹; ¹Biological Sciences Division, PNNL, Richland, WA; ²Washington University, St. Louis, MO

MONDAY MORNING ORAL SESSIONS



8:30 – 10:30 AM
MONDAY MORNING

INSTRUMENTATION: TIME-OF-FLIGHT MASS SPECTROMETRY

IN MEMORY OF ROBERT J. COTTER
Guido Verbeck (University of North Texas),
presiding
Room L100 (lower level)

- MOB am 08:30 **Opening:** Alfred L. Yergey, *National Institutes of Health*
- MOB am 08:50 **Recapturing Ions after Analysis by FT-TOF: Toward MSⁿ using TOF;** Ryan T. Hilger; Robert E. Santini; Scott A. McLuckey; *Purdue University, West Lafayette, IN*
- MOB am 09:10 **High Resolution Ion Mobility Conformational Space Mapping Combined with Time-of-Flight Mass Spectrometry for Complex Sample Characterization;** Jody May¹; Cody Goodwin¹; Ruwan Kurulugama²; George Stafford²; Alexander Mordehai²; John McLean¹; ¹*Vanderbilt University, Nashville, TN*; ²*Agilent Technologies, Santa Clara, CA*
- MOB am 09:30 **Sub-Second CE-ESI-MS using Microfluidic Devices and a Novel Method for Acquiring High Speed TOF-MS Data;** J. Scott Mellors¹; Nicholas Batz¹; Martin Green²; J. Michael Ramsey¹; ¹*University of North Carolina, Chapel Hill, NC*; ²*Waters Corporation, Manchester, UK*
- MOB am 09:50 **High Mass Intact Protein Detection with a Time and Position Sensitive Pixel Detector in Linear Time-of-Flight Mass Spectrometry (ToF-MS);** Shane Ellis¹; Julia Jungmann¹; Donald Smith¹; Andras Kiss¹; Chris Retif²; Ron M.A. Heeren¹; ¹*FOM Institute AMOLF, Amsterdam, Netherlands*; ²*Omics2Image, Amsterdam, Netherlands*
- MOB am 10:10 **Demonstration of Constant-Momentum Acceleration in Zoom-TOF Mass Spectrometry for Improved Sensitivity in Time-of-Flight Systems;** Elise A. Dennis¹; Alexander Gundlach-Graham¹; Steven J. Ray¹; Christie G. Enke²; Charles J. Barinaga³; David W. Koppelaar³; Gary M. Hieftje¹; ¹*Indiana University Department of Chemistry, Bloomington, IN*; ²*University of New Mexico, Albuquerque, NM*; ³*Pacific Northwest National Laboratory, Richland, WA*

8:30 – 10:30 AM, MONDAY MORNING
FAIMS AND DMS:
NEW DEVELOPMENTS AND APPLICATIONS
Yves LeBlanc (AB SCIEX), presiding
Ballroom B

- MOC am 08:30 **Performance of an Ultra-Sensitive u-FAIMS -IMS-QTOF Platform for Proteomics Measurements;** Yehia Ibrahim¹; William Danielson¹; Mikhail Ugarov²; Keqi Tang¹; William Frazer²; Erin Baker¹; Danielle Toutoungi³; Gordon Anderson¹; George Stafford²; Richard Smith¹; ¹*Pacific Northwest National Laboratory, Richland, WA*; ²*Agilent Technologies Inc., Santa Clara, CA*; ³*Owlstone Inc., Cambridge, UK*
- MOC am 08:50 **Decreased Gap Width in a Cylindrical FAIMS Device Improves Performance for Proteomics Applications;** Kristian E. Swearingen; Michael R. Hoopmann; Robert L. Moritz; *Institute for Systems Biology, Seattle, WA*

- MOC am 09:10 **Differential Ion Mobility Spectrometry for the Investigation of Ion Reactions in Transfer Optics;** Samantha Isenberg; Kyle Stevens; Gary Glish; *University of North Carolina, Chapel Hill, NC*
- MOC am 09:30 **FAIMS/MS/MS as an Emerging Technique for the Clinical Laboratory;** Richard A. Yost¹; Christopher R. Beekman¹; Jared J. Boock¹; Timothy J. Garrett¹; Julie A. Ray²; Mark M. Kushnir²; Alan L. Rockwood²; ¹*University of Florida, Gainesville, FL*; ²*ARUP Laboratories, Salt Lake City, UT*
- MOC am 09:50 **FAIMS Mass Spectrometry for the Identification of Sites of Glycosylation in Flagellin A from *Campylobacter jejuni*;** Helen Cooper; Sam Xin Hui; Gloria N. Ulasi; Alistair McIntosh; Andrew J. Creese; Charles W. Penn; *University of Birmingham, Birmingham, UK*
- MOC am 10:10 **Gas-phase Separation of Drugs and Metabolites using Modifier-Assisted Differential Ion Mobility Spectrometry after Liquid Extraction Surface Analysis;** Tiffany Porta; Emmanuel Varesio; Gérard Hopfgartner; *University of Geneva, Geneva, Switzerland*

8:30 – 10:30 AM, MONDAY MORNING
BIO-THERAPEUTICS AND BIOMARKERS: ADVANCES IN QUANTITATIVE ANALYSIS
Sheng Gu (Biogen Idec), presiding
Ballroom A

- MOD am 08:30 **Evolution of Candidate Biomarkers for Breast Cancer from Discovery to Large-Scale Assay Design and Assessment in patient plasma;** Thomas Lau¹; Michael Gillette¹; Regine Schoenherr²; Eric Kuhn¹; Jeffrey Whiteaker²; Jennifer Ross¹; Lola Fagbami¹; Tao Liu³; Pei Wang²; ChenWei Lin²; Dave Camp³; Francisco Esteva⁴; Amanda Paulovich²; Steven Carr¹; Richard Smith³; ¹*Broad Institute, Cambridge, MA*; ²*Fred Hutchinson Cancer Research Center, Seattle, WA*; ³*Pacific Northwest National Laboratory, Richland, WA*; ⁴*MD Anderson Cancer Center, Houston, TX*
- MOD am 08:50 **Toward the Absolute Quantification of CSF Tau Isoforms in the Picogram/Milliliter Range by a Simple and Cost-Effective Purification and μ LC-SIM-HRMS;** Nicolas Barthélemy¹; Christophe Hirtz²; Jerome Vialaret²; Susanna Schraen-Maschke³; Nicolas Sergeant³; Guy Lippens⁴; Isabelle Huvent⁴; François Fenaille¹; Christophe Junot¹; Sylvain Lehmann²; François Becher¹; ¹*CEA, iBiTec-S/SPI/LEMM, Gif-sur-Yvette, France*; ²*LBPC-IRB, CHU de Montpellier, Montpellier, France*; ³*Inserm, UMR 837, Lille, France*; ⁴*CNRS, UMR 8576, LGSF, Villeneuve d'Ascq, France*
- MOD am 09:10 **Mass Analyzer Comparison for Quantitative and Confirmatory Determination of OPNA Biomarker Butyrylcholinesterase Peptides from Human Serum by Liquid Chromatography-Mass Spectrometry;** Caroline Watson¹; Melissa Carter²; Thomas Blake²; Brian Crow²; Brooke Pantazides¹; Rudolph Johnson²; ¹*ORISE Centers for Disease Control and Prevention, Atlanta, GA*; ²*Centers for Disease Control and Prevention, Atlanta, GA*
- MOD am 09:30 **Determining and Monitoring with Quantitation the Site-Specific Glycosylation of Proteins in Serum;** Qiuting Hong¹; L. Renee Ruhaak¹; Suzanne Miyamoto²; Carlito Lebrilla¹; ¹*Chemistry, UC, Davis, CA*; ²*Comprehensive Cancer Center, UC, Davis, CA*

MOD am 09:50 **2D-LC/MS Technique for the Identification of Proteins in Biological Matrices: Is It Possible to Do It Quantitatively?** Luca Genovesi; Barbara Marsiglia; Luca Barbero; *Merck-Serono, Colletterto Giacosa, Italy*

MOD am 10:10 **Development and Application of LC-MS Methods for the Evaluation of Therapeutic Oligonucleotides;** Michael G. Bartlett; Buyun Chen; A. Cary McGinnis; *University of Georgia, Athens, GA*

**8:30 – 10:30 AM, MONDAY MORNING
INTEGRATED QUALITATIVE AND QUANTITATIVE LC-MS FOR
SMALL MOLECULE ANALYSIS**

**Kevin Schug (Univ of Texas at Arlington), presiding
Auditorium**

MOE am 08:30 **Integrated Quantitative and Qualitative Work-Flow for *in-vivo* Discovery Bioanalysis using Hybrid Quadrupole-Time-of-Flight Mass Spectrometry;** Asoka Ranasinghe; Celia D'Arienzo; Timothy Olah; *Bristol-Myers Squibb Company, Princeton, NJ*

MOE am 08:50 **Quantitative Monitoring of Tamoxifen Extended to Forty Metabolites in Human Plasma using LC-HR-MS: New Investigation Capabilities for Clinical Pharmacology;** Elyes Dahmane¹; Chantal Csajka¹; Serge Rudaz²; Julien Boccard²; Khalil Zaman¹; Laurent Decosterd¹; Eric Genin³; Bénédicte Duret³; Maciej Bromirski³; Serge Leyvraz¹; Bernard Testa¹; Bertrand Rochat¹; ¹*University Hospital of Lausanne, CHUV, Lausanne, Switzerland*; ²*University of Geneva, Geneva, Switzerland*; ³*Thermo Fisher, Paris - Bremen, European Union*

MOE am 09:10 **A Quantitative LC-MS Method Allows Rapid Identification of Fungal Natural Products, their Biosynthetic Pathways, and Complex Mechanisms Regulating their Production;** Jessica Albricht¹; Matthew Henke¹; Alexandra Soukup²; Nancy Keller²; Neil Kelleher¹; ¹*Northwestern University, Evanston, IL*; ²*University of Wisconsin, Madison, WI*

MOE am 09:30 **Workflow to Validate Compounds Identified in Enriched Autophagosome Fractions and Activated Mast Cell by UPLC-MSE;** Chad Satori¹; Joseph Koopmeiners¹; Jose Antonio Rodriguez-Navarro²; Audrey Meyer¹; Christy Haynes¹; Edgar A. Arriaga¹; Joseph J. Dalluge¹; ¹*University of Minnesota-Twin Cities, Minneapolis, MN*; ²*Albert Einstein College of Medicine, Bronx, NY*

MOE am 09:50 **Integrated High Throughput Quantitative and Qualitative Approaches for Pharmaceutical Research with HRMS (QqTOF);** Ian Moore^{1,1}; Brendon Kapinos²; Hui Zhang²; Veronica Zelesky²; Rick Schneider²; Gary Impey¹; John Janiszewski²; Loren Olson¹; ¹*AB SCIEX, Foster City, CA*; ²*Pfizer, Groton, CT*

MOE am 10:10 **Evaluation and Integration of Picoliter Dispensing Technology for LC-MS/MS Analysis of Small Molecules in High Throughput ADME and PK Workflows;** Brian Furmanski¹; Daniela Zima Kropf¹; Jeff Nielsen²; X. Steven Yan¹; Ken Ward²; Dennis Hruby¹; Robert Allen¹; ¹*Siga Technologies, Corvallis, OR*; ²*Hewlett-Packard Company, Corvallis, OR*

**8:30 – 10:30 AM, MONDAY MORNING
COVALENT LABELING, CHEMICAL PROBES, AND
CROSSLINKING FOR BIOMOLECULE STRUCTURAL
CHARACTERIZATION**

**David Hamby (Amgen, Inc.), presiding
Room 101**

MOF am 08:30 **Protein-RNA interactions: Large-Scale Identification of Peptides Crosslinked to RNA through Database Searches against Entire Proteomes;** Katharina Kramer¹; Timo Sachsenberg²; Saadia Qamar¹; Oliver Kohlbacher²; Henning Urlaub¹; ¹*Max Planck Institute for Biophysical Chemistry, Göttingen, Germany*; ²*Eberhard Karls University, Tübingen, Germany*

MOF am 08:50 **Structure, Function and Regulation of an Intact F-type ATPase Revealed by Chemical Crosslinking and Native Mass Spectrometry;** Carla Schmidt; Carol V. Robinson; *University of Oxford, Oxford, UK*

MOF am 09:10 **Inter-Subunit Contacts in Prion Oligomers Studied by Crosslinking of ¹⁵N-metabolically Labeled Prion Proteins;** Jason Serpa¹; Evgeniy Petrotchenko¹; David Wishart²; Christopher Borchers^{1,3}; ¹*University of Victoria-Genome BC Proteomics Centre, Victoria, Canada*; ²*University of Alberta, Edmonton, Canada*; ³*Dept of Biochemistry and Microbiology, U Victoria, Victoria, Canada*

MOF am 09:30 **Covalent Labeling of Oncogenic HER2-HER3 Tyrosine Kinase Dimers on Lipid Surfaces Reveals Key Intermolecular Interactions that Mediate Phosphorylation- Independent Activation;** Timothy Collier¹; John Monsey¹; Wei Shen¹; Karthikeyan Diraviyam²; David Sept²; Ron Bose¹; ¹*Washington University, St. Louis, MO*; ²*University of Michigan, Ann Arbor, MI*

MOF am 09:50 **Monitoring Large Scale Protein Conformational Changes Using Covalent Protein Footprinting and Mass Spectrometry;** Taylor A. Poor¹; Lisa M. Jones²; Manolo D. Plasencia³; Don L. Rempel⁴; George P. Leser^{1,5}; Michael L. Gross⁴; Robert A. Lamb^{1,5}; ¹*Northwestern University, Evanston, IL*; ²*Indiana University-Purdue University Indianapolis, Indianapolis, IN*; ³*WUSTL School of Medicine, St. Louis, MO*; ⁴*Washington University, St. Louis, MO*; ⁵*Howard Hughes Medical Institute, Evanston, IL*

MOF am 10:10 **pH-Dependent Changes in the Selectivity Filter of KcsA Assessed by Radiolytic Footprinting and Structural Mass Spectrometry;** Rhijuta D'mello¹; Vassiliy N Bavro²; Sayan Gupta¹; Mark R Chance¹; Stephen J Tucker²; ¹*Center for Proteomics and Bioinformatics, CWRU, Cleveland, OH*; ²*Clarendon Lab., Dept. of Physics, Univ. of Oxford, Oxford, UK*

**8:30 – 10:30 AM, MONDAY MORNING
FUNDAMENTALS OF PEPTIDE FRAGMENTATION**
**Kristina Hakansson (University of Michigan), presiding
Room 102**

MOG am 08:30 **Evidence of Third Residue Involvement in Diketopiperazine and Oxazolone b₂ Ion Formation in NAXIG and QAXIG Pentapeptides;** Lindsay Morrison¹; Julia Chamot-Rooke²; Vicki Wysocki¹; ¹*Ohio State University, Columbus, OH*; ²*Pasteur Institute, Paris, France*

MONDAY MORNING ORAL SESSIONS

MOG am 08:50 **Regioselective¹⁸O-Labeling to Quantify Competing H₃PO₄ versus HPO₃+H₂O Side Chain Neutral Losses from Protonated Phosphopeptide Ions during CID-MS/MS;** [Li Cui](#); Ipek Yapici; Babak Borhan; Gavin Reid; *Michigan State University, East Lansing, MI*

MOG am 09:10 **In-source Decay during MALDI Combined with Collisional Process in FTICR Mass Spectrometer;** [Daiki Asakawa](#); David Calligaris; Edwin De Pauw; *University of Liège, Liege, Belgium*

MOG am 09:30 **Peptide Fragmentation Patterns as a Measure of Antioxidant Capacity;** [Omar Hamdy](#); Ryan Julian; *UC-Riverside, Riverside, CA*

MOG am 09:50 **Gas-phase Fragment Ion Isomer Analysis Reveals the Mechanism of Peptide Sequence Scrambling;** Chenxi Jia; Zhe Wu; Christopher Lietz; Zhidan Liang; Qiang Cui; [Lingjun Li](#); *University of Wisconsin, Madison, WI*

MOG am 10:10 **Electron Transfer Dissociation of Conformationally Restricted Heptapeptides;** [Robert Pepin](#); Alex Marek; Bo Peng; Frantisek Turecek; *U of Washington, Chemistry, Seattle, WA*

**8:30 – 10:30 AM, MONDAY MORNING
NUCLEIC ACIDS**

**Natalia Tretyakova (University of Minnesota), presiding
Room 103**

MOH am 08:30 **Structure/Dynamics Investigation of a Tertiary Interaction in the HIV-1 Genome Packaging Signal by Concerted MS and IMS-MS Approaches;** [Jennifer Lippens](#); Maria Basanta-Sanchez; D. Fabris; *The RNA Institute, University at Albany, Albany, NY*

MOH am 08:50 **Targeted tRNA identification by Tandem Mass Spectrometry;** [Collin Wetzel](#); Patrick Limbach; *University of Cincinnati, Cincinnati, OH*

MOH am 09:10 **Protein-RNA Interactions Identified in Megadalton Ribonucleoprotein Complexes: the Human Spliceosomal U1, U2, and U6/U4.U5 snRNPs;** [Romina Hofele](#)¹; Katharina Kramer¹; Florian Richter²; Chung-Tien Lee¹; Dmitry Agafonov¹; Reinhard Lührmann¹; Henning Urlaub^{1,3}; ¹*MPI for Biophysical Chemistry, Goettingen, Germany*; ²*MPI of Immunobiology and Epigenetics, Freiburg, Germany*; ³*University Medical Center, Goettingen, Germany*

MOH am 09:30 **Characterization of Modified RNA by Top-Down Mass Spectrometry;** Monika Taucher; [Kathrin Breuker](#); *University of Innsbruck, Innsbruck, Austria*

MOH am 09:50 **ESI-MS Study of a Cyclic Polyamide Selectively Targeting the G-Quadruplex in c-myc Oncogene Promoter;** [Xiaojie Cui](#); Han Chen; Qiang Zhang; Jiang Zhou; Gu Yuan; *College of Chemistry and Molecular Engineering, Pe, Beijing, China*

MOH am 10:10 **Oxidation of the Methyl Group of Thymine and 5-Methylcytosine in DNA: Product Analyses by LC-MS/MS and Mechanistic Studies;** [Guru S Madugundu](#); J. Richard Wagner; *Université de Sherbrooke, Sherbrooke, Canada*

**10:30 AM - 2:30 PM
MONDAY POSTER SESSION**

**Exhibit Hall BC
Lunch concessions are open 11:00 am - 2:00 pm**

MONDAY AFTERNOON ORAL SESSIONS

**2:30 – 4:30 PM, MONDAY AFTERNOON
PTMs: COMPREHENSIVE ANALYSIS**
**Katalin Medzihradzky (UCSF), presiding
Exhibit Hall A (lower level)**

MOA pm 2:30 **Quantitative Proteomic and Phosphoproteomic Analysis of iPS-Derived Cardiomyocytes following Transfection with a miRNA Upregulated in Heart Failure;** [Justin Blethrow](#)¹; Vlad Zabrouskov¹; Derek Lemons²; Mark Mercola²; Laurence Brill²; ¹*Thermo Scientific, San Jose, CA*; ²*Sanford Burnham Medical Research Institute, San Diego, CA*

MOA pm 2:50 **Expanding the Depth of Coverage in Quantitative Phosphoproteomics through the Combination of Metal Oxide and Motif-Specific Antibody Enrichment Strategies;** [Erik J. Soderblom](#)¹; J. Will Thompson¹; Charles L. Farnsworth²; Brenna M. Richardson¹; Jeffrey C. Silva²; M. Arthur Moseley¹; ¹*Duke University School of Medicine, Durham, NC*; ²*Cell Signaling Technologies, Danvers, MA*

MOA pm 3:10 **Dynamic Phosphorylation Regulates Histone Deacetylase Localization, Interactions, and Cell Cycle-Dependent Functions;** [Amanda Guise](#); Rommel Mathias; Todd Greco; Irene Zhang; Ileana M. Cristea; *Princeton University, Princeton, NJ*

MOA pm 3:30 **Quantitative Proteomics Reveals Important Roles for Mitochondrial Acetylation in Metabolic Transitions;** Amelia J. Still; Brendan J. Floyd; [Molly Mcdevitt](#); Alex S. Hebert; Joshua J. Carson; Drew R. Gunderson; Brendan K. Dolan; Paul A. Grimsrud; Michael S. Westphall; David J. Pagliarini; Joshua J. Coon; *University of Wisconsin, Madison, WI*

MOA pm 3:50 **Quantification of Lysine Acetylation in *Escherichia coli* Using Label-Free Proteomics: Assessing the Role of Acetyl-CoA and Acetyl-Phosphate;** [Birgit Schilling](#)¹; Linda Hu²; Alexandria K. D'Souza¹; Misty L. Kuhn³; Dylan J. Sorensen¹; Bozena Zemaitaitis²; Bruno Lima²; Michael Scholle³; Milan Mrksich³; Wayne F. Anderson³; Alan J. Wolfe²; Bradford W. Gibson¹; ¹*Buck Institute for Research on Aging, Novato, CA*; ²*Loyola University Chicago, Maywood, IL*; ³*Northwestern University, Chicago, IL*

MOA pm 4:10 **High-throughput Identification of Protein Disulfide Bonds from Complex Samples;** [Shan Lu](#)^{1,2}; Bing Yang²; Sheng-Bo Fan³; Jia-Ming Meng³; Long Wu³; Kun Zhang³; Mei-Jun Zhang²; En-Zhi Shen²; Chun-Qing Song²; Yu-Xin Li²; Rui-Xiang Sun³; Si-Min He³; Meng-Qiu Dong^{1,2}; ¹*College of Life Science, Beijing Normal University, Beijing, China*; ²*National Institute of Biological Sciences, Beijing, China*; ³*ICT, Chinese Academy of Sciences, Beijing, China*



2:30 – 4:30 PM,
MONDAY AFTERNOON

**TOP-DOWN AND MIDDLE-DOWN PROTEIN ANALYSIS
HONORING FRED MCLAFFERTY'S 90TH BIRTHDAY**

Joseph Loo (UCLA), presiding
Room L100 (lower level)

- MOB pm 2:30 **Fragmenting Intact Macromolecules and Protein Assemblies: Native ESI and Top-down MS for Protein Biophysics and Analysis;** Michael L. Gross¹; Hao Zhang¹; Weidong Cui¹; Lisa M. Jones²; Justin Sperry³; James A Carroll³; Robert E. Blankenship¹; Weikai Li¹; ¹Washington University, St. Louis, MO; ²IUPUI, Indianapolis, IN; ³Pfizer, Chesterfield, MO
- MOB pm 2:50 **Top-down Mass Spectrometry Enabled Cardiac Proteomics for Understanding Heart Failure;** Ying Ge; *University of Wisconsin, Madison, WI*
- MOB pm 3:10 **Unequivocal Determination of Site-Specific Protein Disulfide Bond Reduction Potentials by Top-Down FT-ICR MS/MS;** Alan G. Marshall; Jenna Scotcher; Nicolas Young; *Ion Cyclotron Resonance Prog, Tallahassee, FL*
- MOB pm 3:30 **Detailed Characterization of Complex Protein and RNA Modification Patterns by Top-Down Mass Spectrometry;** Barbara Ganis; Kathrin Breuker; *University of Innsbruck, Innsbruck, Austria*
- MOB pm 3:50 **Antibody Characterization by Top-Down and Middle-Down Electron Transfer Dissociation using a High-Field Orbitrap FTMS;** Luca Fornelli¹; Anton N. Kozhinov¹; Ünige A. Laskay¹; Daniel Ayoub²; Alain Beck²; Yury O. Tsybin¹; ¹École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; ²Centre d'Immunologie Pierre Fabre, St Julien-en-Genevois, France
- MOB pm 4:10 **Comprehensive Top Down Proteomics of Human Cells: The Role of Mitochondria and Membrane Proteins in Cellular Senescence;** Adam Catherman; Kenneth Durbin; Owen Skinner; Dorothy Ahlf; Bryan Early; Philip Compton; Paul Thomas; Neil Kelleher; *Northwestern University, Evanston, IL*

**2:30 – 4:30 PM, MONDAY AFTERNOON
CLINICAL CHEMISTRY, DRIED BLOOD SPOT ANALYSIS
Karen Phinney (NIST), presiding
Ballroom B**

- MOC pm 2:30 **Multiplex Newborn Screening of Lysosomal Storage Diseases using Flow Injection Tandem Mass Spectrometry;** Mariana Barcenás¹; Martin Sadilek¹; Frantisek Turecek¹; Michael Gelb^{1,2}; Ronald Scott³; ¹Department of Chemistry, University of Washington, Seattle, WA; ²Department of Biochemistry, University of Washington, Seattle, WA; ³Department of Pediatrics, University of Washington, Seattle, WA
- MOC pm 2:50 **HPLC-ESI-MS/MS Analysis of Hemoglobin Peptides in Tryptic Digests of Dried-Blood Spot Extracts Detects HbS, HbC, HbE, HbO-Arab and HbG-Philadelphia Mutations;** Christopher A. Haynes¹; Stephanie Guerra²; Victor De Jesus¹; ¹Centers for Disease Control and Prevention, Atlanta, GA; ²Harvard University, Cambridge, MA

- MOC pm 3:10 **In-Paper Dried Blood Spot Enzyme Assays for the Reliable Determination of Plasma Enzyme Activities;** Eszter Szabo¹; Ildiko Szatmari²; Julia Denes³; Laszlo Szonyi²; Zoltan Takats³; ¹Eötvös Lóránd University, Budapest, HUNGARY; ²1st Dept. of Pediatrics, Semmelweis University, Budapest, Hungary; ³Imperial College London, London, UK
- MOC pm 3:30 **Application of LC-MS/MS to Determine the Exposure to Methyl and Propyl Parabens in Preterm Neonates using Dried Blood Spot (DBS);** Shirish Yakkundi¹; James McElnay¹; Mark Turner²; ¹Queen's University Belfast, Belfast, UK; ²Liverpool Women's NHS Foundation Trust, Liverpool, UK
- MOC pm 3:50 **Detergent-Assisted Elution: Method Optimization to Improve Analyte Elution and Assay Performance for Dried Matrix Spots (DMS) by uHPLC-MS/MS;** Naiyu Zheng¹; Jianing Zeng¹; Qin C. Ji¹; Aida Angeles¹; Shenita Basdeo¹; Anne-Francoise Aubry¹; Ishani Savant²; Navin Jariwala²; Mark E. Arnold¹; ¹Bioanalytical Sciences, Bristol-Myers Squibb Co., Princeton, NJ; ²DMCP, Bristol-Myers Squibb Co., Pennington, NJ
- MOC pm 4:10 **Sensitive Quantification of Insulin-like Growth Factor-1 and Its Synthetic Analogues in Dried Blood Spots;** Holly Cox; Daniel Eichner; *Sports Medicine Research and Testing Laboratory, Salt Lake City, UT*

**2:30 – 4:30 PM, MONDAY AFTERNOON
BIOTHERAPEUTICS, IMPURITIES AND DEGRADANTS:
STRUCTURAL CHARACTERIZATION
Justin Sperry (Pfizer), presiding
Ballroom A**

- MOD pm 2:30 **The Main Cause of Amino Acid Misincorporations in Recombinant Proteins;** Zhongqi Zhang; Bhavana Shah; Pavel Bondarenko; *Amgen, Inc., Thousand Oaks, CA*
- MOD pm 2:50 **Rapid Characterization and Comparison of Stressed anti-CD20 Drugs using Middle Down Mass Spectrometry;** Ashley Gucinski; Timothy Toby; Michaela Levy; Bo Wang; Michael Boyne; *U.S. FDA, Division of Pharmaceutical Analysis, Saint Louis, MO*
- MOD pm 3:10 **Assessing the Impact of Chemical Modifications on mAb Conformational Dynamics using Hydrogen/Deuterium Exchange Mass Spectrometry (HDX-MS);** Aming Zhang; Paul MacGregor; Yu Xue; Aston Liu; Leonard Olszewski; Ping Hu; *GlaxoSmithKline, King of Prussia, PA*
- MOD pm 3:30 **Characterization of Non-Native, Intermolecular Disulfide Linkages in a Recombinant Protein by LC-MS/MS;** Chris Morgan; Xiaoying Jin; X. Kate Zhang; *Genzyme, A Sanofi Company, Framingham, MA*
- MOD pm 3:50 **Comprehensive Comparison of Biosimilar Protein Drugs by High-Separation and High-Resolution LC-MS;** David Horn¹; Shiaw-Lin Wu²; Zhiqi Hao¹; ¹Thermo Fisher Scientific, San Jose, CA; ²Barnett Institute, Northeastern University, Boston, MA
- MOD pm 4:10 **One-Dimensional Liquid Chromatography Analysis of Host Cell Proteins in Therapeutic Antibodies using an Orbitrap Velos;** Ashley Bell; Richard Rogers; Tom Kowski; Bailey Robert; *Amgen, Seattle, WA*

MONDAY AFTERNOON ORAL SESSIONS

2:30 – 4:30 PM, MONDAY AFTERNOON HIGH MASS ACCURACY IN DRUG DISCOVERY AND DEVELOPEMENT

**Karin Keller (Cleveland HeartLab), presiding
Auditorium**

- MOE pm 2:30 **Rapid Antibody *de novo* Sequencing by Reference Sequence Matching**; Bianca Gruenwalder; Stefan Klostermann; Maximiliane Hilger; Roche Diagnostics GmbH, pRED, Penzberg, Germany
- MOE pm 2:50 **Evaluation of LC-HRMS Full Scan with Positive-Negative Switching for Increasing Throughput of Human *In Vitro* Cocktail Drug-Drug Interaction Assay**; Ragu Ramanathan¹; Brad Yuska¹; Kate Comstock²; Lakshmi Ramanathan¹; Tim Stratton²; Patrick Bennett²; Helen Shen¹; Zamas Lam¹; ¹QPS, LLC, Newark, DE; ²ThermoFisher, San Jose, CA
- MOE pm 3:10 **From MS Data to Information and from Information to Knowledge**; Ismael Zamora¹; Andreas Brink²; Eickhoff Kirsten²; Cece Esra Nurten³; Axel Paehler²; ¹Lead Molecular Design, S.L., Sant Cugat Del Valles, SPAIN; ²F. Hoffmann-La Roche Ltd, Basel, Switzerland; ³Pompeu Fabra University, Barcelona, Spain
- MOE pm 3:30 **Combing Sub-PPM Mass Accuracy and Isotopic Fine Structures for Structural Elucidation in Pharmaceutical Drug Development**; Guilong (Charles) Cheng; Ron Morris; Victor Soliman; Pfizer, Inc., Groton, CT
- MOE pm 3:50 **Comparative Analysis of Pharmaceutical Excipients using High Performance Time to Flight Mass Spectrometry – Purity Evaluation and Impurity Identification**; Jeffrey Patrick; Joe Binkley; Stephanie Amaya; Kevin Siek; LECO Corporation, St. Joseph, MI
- MOE pm 4:10 **Quality Control for Shuxuetong Injection by High Resolution Mass Spectrometry Based Statistical Analysis**; Zheng-Xiang Zhang; Tao Bo; Wei Chen; Zhi-Xu Zhang; Agilent Technologies, Beijing, China

2:30 – 4:30 PM, MONDAY AFTERNOON PROTEIN- PROTEIN AND PROTEIN-LIGAND INTERACTIONS **David Russell (Texas A&M University), presiding Room 101**

- MOF pm 2:30 **Dissecting Large Non-covalent Ring Protein Complexes by Surface Induced Dissociation Combined with Ion Mobility**; Mowei Zhou; Yun Zhang; Vicki Wysocki; Ohio State University, Columbus, OH
- MOF pm 2:50 **Probing the Limits of Mass Spectrometry in Analyzing Mega Dalton Assemblies**; Joost Snijder¹; Rebecca J. Rose¹; David Veessler²; John E. Johnson²; Albert J.R. Heck¹; ¹Utrecht University, Utrecht, The Netherlands; ²The Scripps Research Institute, La Jolla, CA
- MOF pm 3:10 **Time Window Expansion for HDX Analysis of an Intrinsically Disordered Protein**; Patrick Griffin¹; Devrishi Goswami¹; Srikrupa Devarakonda²; Michael Chalmers¹; Bruce Pascal¹; Bruce Spiegelman²; ¹The Scripps Research Institute, Jupiter, FL; ²Harvard Medical School, Dana-Farber Cancer INST, Boston, MA
- MOF pm 3:30 **Proteomic Mapping of Mitochondria in Living Cells via Spatially-Restricted Enzymatic Tagging**; Hyun-Woo Rhee¹; Peng Zou¹; Namrata Udeshi²; Jeffrey Martell¹; Tanya Svinkina²; Vamsi Mootha^{2,3}; Steven Carr²; Alice Ting^{1,2}; ¹Massachusetts Institute of Technology, Cambridge, MA; ²The Broad Institute of MIT and Harvard, Cambridge, MA; ³Harvard Medical School, Boston, MA

- MOF pm 3:50 **Utilization of Epitope-Tagged Knock-in Mice for IP-MS/MS Analysis of the Effects of Drug Treatments on the Dopamine Transporter Interactome**; Sarah Rogstad^{1,2}; John Caltagarone¹; Shiqi Ma¹; Alexander Sorkin¹; Christine Wu¹; ¹University of Pittsburgh, Pittsburgh, PA; ²University of Colorado, Anschutz Medical Campus, Aurora, CO

- MOF pm 4:10 **Monitoring the Pathways of Fibril Formation and Inhibition from the Amyloidogenic Protein IAPP using ESI-IMS-MS**; Lydia Young; Sheena E Radford; Alison E. Ashcroft; Faculty of Biological Sciences, University of Leeds, Leeds, UK

2:30 – 4:30 PM, MONDAY AFTERNOON FUNDAMENTALS OF ION ACTIVATION AND DISSOCIATION **Eric Dodds (University of Nebraska-Lincoln), presiding Room 102**

- MOG pm 2:30 **Charge Reversal Fourier Transform Ion Cyclotron Resonance Mass Spectrometry**; Vladislav Lobodin^{1,2}; Joshua Savory¹; Nathan Kaiser¹; Ryan Rodgers^{1,2}; Alan Marshall^{1,3}; ¹National High Magnetic Field Laboratory, Tallahassee, FL; ²Future Fuels Institute, Tallahassee, FL; ³Florida State University, Tallahassee, FL
- MOG pm 2:50 **Factors that Influence Competitive Intermolecular Solvation of Protonated Groups in Peptides and Proteins in the Gas Phase**; Yuanqi Tao; Ryan Julian; UC Riverside, Riverside, CA
- MOG pm 3:10 **Systematic nECD Mechanistic Exploration with Synthetic Peptides and Fixed-Charge Tags**; Ning Wang; Kristina Hakansson; University of Michigan, Ann Arbor, Michigan
- MOG pm 3:30 **Using Dissociation Energies to Predict Observability of b- and y- Peaks in Mass Spectra of Tryptic Hexapeptides**; Oleg Obolensky¹; Wells Wu²; Rong-Fong Shen²; Yi-Kuo Yu¹; ¹National Center for Biotechnology Information, NLM, Bethesda, MD; ²Center for Biologics Evaluation and Research, FDA, Bethesda, MD
- MOG pm 3:50 **Elucidation of Heterolytic N-C_α Bond Cleavage in ECD/ETD Mass Spectrometry**; Matthew D. Wodrich; Konstantin O. Zhurov; Clémence Corminboeuf; Yury O. Tsybin; Ecole Polytechnique Fédérale de Lausanne, 1015 Lausanne, Switzerland
- MOG pm 4:10 **Development of a Detailed Molecular Model for the Collision Induced Unfolding of Multiprotein-Ligand Complexes**; Shuai Niu; Brandon Ruotolo; University of Michigan, Ann Arbor, MI

2:30 – 4:30 PM, MONDAY AFTERNOON PHOTOIONIZATION **Jack Syage (Syagen/Morpho Detection), presiding Room 103**

- MOH pm 2:30 **Gas Chromatography – Atmospheric Pressure Photoionization – Tandem Mass Spectrometry (GC-APPI-MS/MS) in Neurosteroid Analysis**; Tina Suominen¹; Markus Haapala¹; Anna Takala¹; Raimo A Ketola²; Risto Kostianen¹; ¹University of Helsinki, Helsinki, Finland; ²Hjelt Institute, Helsinki, Finland
- MOH pm 2:50 **Studying the Effects of Simulated Solar Radiation upon Crude Oil using Fourier Transform Ion Cyclotron Resonance Mass Spectrometry**; Matthew Griffiths; Raffaello da Campo; Peter O'Connor; Mark Barrow; University of Warwick, Coventry, UK

MONDAY AFTERNOON ORAL SESSIONS

- MOH pm 3:10 **A New APPI Ion Source for Low Flow LC-MS and CE-MS Analysis of Small Molecules;** Sheng-Suan (Victor) Cai¹; Andy Gieschen²; Martin Greiner³; Brian Nies¹; Stefan Lukow¹; Michael Patterson¹; ¹Morpho Detection, Inc., Santa Ana, CA; ²Agilent Technologies, Inc., La Jolla, CA; ³Agilent Technologies, Waldbronn, Germany
- MOH pm 3:30 **GC and the Exactive Orbitrap – Two Approaches for Powerful GC APPI Interfaces;** Hendrik Kersten; Kai Kroll; Thorsten Benter; *University of Wuppertal, Wuppertal, Germany*
- MOH pm 3:50 **Fast Switchable Photon/Electron Ionization for Time-of-Flight Mass Spectrometry and Its Application for Gas Chromatography – Mass Spectrometry;** Thomas Groeger^{1,2}; Mohammad Reza Saraji-Bozorgzad²; Ralf Zimmermann³; ¹Joint Mass Spectrometry Centre, Oberschleissheim, Germany; ²Photonion GmbH, Schwerin, Germany; ³University of Rostock, Rostock, Germany
- MOH pm 4:10 **Thermal Analysis--Single Photon Ionization Mass Spectrometry for Highly Resolved Thermo-Chemical Evolved Gas Speciation: Coffee Roasting and Crude Oil Characterization;** Mohammad Reza Saraji-Bozorgzad; Andreas Walte; Thomas Groeger; Matthias Bente-von Frowein; *Photonion GmbH, Neuherberg, Germany*

4:45 - 5:30 PM, MONDAY AWARD LECTURE

Susan T. Weintraub (Univ of Texas HSC-San Antonio), presiding
Exhibit Hall A, Lower Level



Award for a Distinguished Contribution in
Mass Spectrometry

Richard D. Smith
Pacific Northwest National Laboratory

5:45 - 7:00 PM, MONDAY AFTERNOON WORKSHOPS

Light snacks are provided on level two.

LEVEL ONE ROOMS

- **The Informatical Difference between Targeted and Discovery-based Proteomics** (organized by the Bioinformatics for MS Interest Group), Room 1
- **Have Recent LC-MS Techniques Advanced to Substitute AMS in Analyzing Microdose and other Low Level Clinical Studies for Metabolites and Drug Related Material?** (organized by the DMPK Interest Group), Room 2
- **Trans-Proteomic Pipeline (TPP) and Related Open-Source Proteomics Resources**, Room 3

LEVEL TWO ROOMS

- **FRAGILE Modifications**, Handle with Care during Peptide Fragmentation (organized by the Peptide Fragmentation Interest Group), Room 200 DE
- **Mass Spectrometry-based Characterization of Biotherapeutics** (organized by the Protein Therapeutics Interest Group), Room 200 FG
- **How Can MS Analysis Be Used to Improve Analytical Results and Laboratory Efficiency** (organized by the Flavor, Fragrance and Foodstuff Interest Group), Room 200 H
- **Nucleic Acids as Diagnostic and Therapeutic Biomarkers** (organized by the DNA/RNA Interest Group), Room 200 I
- **Surviving and Thriving: A Panel Discussion for Both Students and PUI Faculty on How to Get the Most out of Undergraduate Research** (organized by the Undergraduate Research in MS interest Group), Room 205 AB
- **Photonization Mass Spectrometry**, Room 205 CD
- **Consortium for Top Down Proteomics**, Room 208 AB
- **Data Independent Acquisition**, Room 208 CD

AFTER 8:00 PM CORPORATE HOSPITALITY SUITES HILTON MINNEAPOLIS HOTEL

TUESDAY MORNING ORAL SESSIONS

8:30 – 10:30 AM, TUESDAY MORNING QUANTITATIVE PROTEOMICS

David Muddiman (North Carolina State Univ), presiding
Exhibit Hall A (lower level)

- TOA am 08:30 **18-plex SILAC, and there's room to grow;** Christopher M. Rose¹; Alexander S. Hebert¹; Anna E. Merrill¹; Derek J. Bailey¹; Joel C. Bradley²; William W. Wood²; Marwan Elmasri²; Michael S. Westphall¹; Joshua J. Coon¹; ¹University of Wisconsin, Madison, WI; ²Cambridge Isotope Laboratories, Andover, MA
- TOA am 08:50 **Highly Sensitive Proteomic Analysis of Age-Related Protein Aggregation;** Dirk M. Walther; Franz-Ulrich Hartl; Matthias Mann; *MPI of Biochemistry, Martinsried, Germany*
- TOA am 09:10 **Quantitative Proteomic Analysis of Reversible Cysteine Oxidation in Hearts from Mice Fed a Western Diet;** Jessica B Behring; Vikas Kumar; Pratibha Chauhan; Stephen A Whelan; Deborah A Siwik; Catherine E Costello; Wilson S Colucci; Richard A Cohen; Mark E McComb; Markus M Bachschmid; *Boston University School of Medicine, Boston, Ma*
- TOA am 09:30 **Increasing the Breadth and Depth of Multi-Notch MS3-based TMT Quantitation using a Hybrid Q-OT-qIT Mass Spectrometer;** Graeme McAlister¹; Edward Huttlin¹; Mark P. Jedrychowski¹; Martin Wuehr¹; Ramin Rad¹; David Nusinow¹; Philip Remes²; Jesse Canterbury²; Vlad Zabrouskov²; Justin Blethrow²; Shannon Eliuk²; Mike Senko²; Wilhelm Haas¹; Steven P. Gygi¹; ¹Harvard Medical School, Boston, MA; ²Thermo Fisher Scientific, San Jose, CA
- TOA am 09:50 **Peptide Barcodes: A Genetic Approach for N-Plexing Protein Quantification for Synthetic Biology Applications;** Pragya Singh^{1,2}; Becky J. Rutherford^{1,2}; Vikram R. Ramakrishnan³; Paul D. Adams^{1,2}; Jay D. Keasling^{1,2}; Christopher J. Petzold^{1,2}; ¹Lawrence Berkeley National Lab, Berkeley, CA; ²Joint BioEnergy Institute, Emeryville, CA; ³University of California, Berkeley, CA
- TOA am 10:10 **Highly Multiplexed and Sensitive Quantitation of Candidate Disease-related Biomarker Proteins in Human Plasma by 1-D and 2-D LC/MRM-MS;** Andrew Percy¹; Andrew Chambers¹; Juncong Yang¹; Martin Eisinger¹; Christoph Borchers^{1,2}; ¹University of Victoria-Genome BC Proteomics Centre, Victoria, Canada; ²Dept of Biochemistry and Microbiology, U Victoria, Victoria, Canada

TUESDAY MORNING ORAL SESSIONS

8:30 – 10:30 AM, TUESDAY MORNING IMAGING MS: INCREASING SPEED AND INFORMATION CONTENT Kevin Schey (Vanderbilt University), presiding Room L100 (lower level)

- TOB am 08:30 **High Speed AP-MALDI Imaging at High Spatial Resolution;** Bernhard Spengler¹; Andreas Römpf¹; Karl-Christian Schäfer¹; Sabine Guenther¹; Oliver Schulz¹; Alfons Hester¹; Christian Schinz¹; Christian Lotze¹; Jörg-Ulrich Pötzl¹; Oliver Lange²; Kerstin Strupat²; ¹Justus Liebig University, Giessen, Germany; ²Thermo Fisher Scientific GmbH, Bermen, Germany
- TOB am 08:50 **High-Speed Imaging using Nanospray Desorption Electrospray Ionization Mass Spectrometry: Toward 3D and MS/MS Imaging;** Julia Laskin¹; Ingela Lanekoff¹; Mathew Thomas¹; James Carson¹; Kristin Burnum¹; Jeeyeon Cha²; Sudhansu K Dey²; Mari Prieto³; Pengxiang Yang³; ¹Pacific NW National Laboratory, Richland, WA; ²Cincinnati Children's Hospital Medical Center, Cincinnati, OH; ³Thermo Fisher Scientific, San Jose, CA
- TOB am 09:10 **Mass Spectrometry Imaging with a LAESI Hybrid Iontrap FT-ICR Mass Spectrometer;** Andras Kiss¹; Donald F. Smith¹; Brent R. Reschke²; Matthew J. Powell²; Ron M.A. Heeren¹; ¹FOM Institute AMOLF, Amsterdam, Netherlands; ²Protea Biosciences, Inc., Morgantown, WV
- TOB am 09:30 **Ambient Molecular Imaging and Quantitative Analysis by Laser Ablation Electrospray Ionization Mass Spectrometry with Ion Mobility Separation;** Hang Li¹; Brian K. Smith¹; Peter Nemes²; Akos Vertes¹; ¹The George Washington University, Washington, DC; ²Food and Drug Administration, Silver Spring, MD
- TOB am 09:50 **Polarity Switching Multiplex MALDI Imaging on an LTQ-Orbitrap Hybrid Mass Spectrometer;** Andrew Korte^{1,2}; Young-Jin Lee^{1,2}; ¹Iowa State University, Ames, IA; ²Ames Laboratory/USDOE, Ames, IA
- TOB am 10:10 **Visualizing Biomolecular Modifications in Tissue: Integrating Mass Difference (Δ -m/z) Scanning Algorithms and MALDI FT-ICR Imaging Mass Spectrometry;** Jeffrey Spraggins; Raf Van de Plas; Kerri Grove; David Rizzo; Richard Caprioli; Vanderbilt University, Nashville, TN

8:30 – 10:30 AM, TUESDAY MORNING FUNCTIONAL FOODS, PHYTOCHEMICALS, AND SUPPLEMENTS Nadja Cech (Univ of North Carolina-Greensboro), presiding Ballroom B

- TOC am 08:30 **Analysis of an Adulterated Herbal Medicinal Product using UPLC-Qtof-MS;** Mark Powell¹; Margaret Maziarz²; Michael D. Jones²; Warren Potts²; Kate Yu²; ¹Quay Pharmaceuticals, Flintshire, UK; ²Waters Corporation, Milford, MA
- TOC am 08:50 **Screening Herbal Supplements using Statistical Modeling to Find and Identify Adulterants and Contaminants using Direct Analysis in Real Time (DART)-MS;** Nick Levitt¹; Joseph LaPointe²; Michael Festa²; Elizabeth Crawford²; ¹TwoCenter Technologies, Cambridge, MA; ²IonSense Inc., Saugus, MA

- TOC am 09:10 **Solvent- and Gas-Phase Deuteration of Polyphenolics Informs their Identification by Mass Spectrometry;** Mikel R Roe; Jerry Cohen; Adrian Hegeman; University of MN, St. Paul, MN
- TOC am 09:30 **Human Pharmacokinetics of Xanthohumol, a Flavonoid with Anti-Diabetic Activity Derived from Hops;** LeeCole Legette¹; Chanida Karnpracha¹; Ralph Reed¹; Jaewoo Choi¹; J. Mark Christensen¹; Jonathan Purnell²; J.Fred Stevens¹; ¹Oregon State University, Corvallis, OR; ²Oregon Health Sciences University, Portland, OR
- TOC am 09:50 **How Can Mass Spectrometry Help to Decipher Bioactive Peptides in Functional Food?** Michael Affolter; Alexandre Panchaud; Nestle Research Centre, Lausanne, Switzerland
- TOC am 10:10 **EnzymePredictor: A Tool for Predicting and Visualizing Enzymatic Cleavages of Digested Proteins;** Nora Khaldi^{1,2}; Vaishnavi Vijayakumar¹; Andrés Guerrero²; Norman Davey³; Carlito Lebrilla²; Denis Shields¹; ¹University College Dublin, Dublin, Ireland; ²University College Davis, CA; ³European Molecular Biology Laboratory, Heidelberg, Germany

8:30 – 10:30 AM, TUESDAY MORNING PTMs: GLYCOSYLATION Heather Desaire (University of Kansas), presiding Ballroom A

- TOD am 08:30 **Development of a Fully Characterized N-Glycan Library from Human Serum with Structures and Relative Abundances;** Ting Song; Danielle Aldredge; Javier González; Carlito Lebrilla; University of California, Davis, CA
- TOD am 08:50 **Applications of Aldehyde-Reactive Thermo Scientific Tandem Mass Tag (TMT) Reagents for Mass Spectrometry-based Quantitative Glycomics;** Sergei Snovidá¹; Karsten Kuhn²; John C. Rogers¹; ¹ThermoFisher Scientific, Rockford, IL; ²Proteome Sciences, Frankfurt, Germany
- TOD am 09:10 **Increasing the Accessibility of N-Glycopeptide Determination via an Integrated Informatics and Instrumental Strategy;** John Froehlich^{1,2}; Oliver Serang^{1,2}; Peter Warren¹; Hui Zhou^{1,2}; Judith Steen^{1,2}; Richard Lee^{1,2}; ¹Boston Children's Hospital, Boston, MA; ²Harvard Medical School, Boston, MA
- TOD am 09:30 **The Occurrence of Extracellular O-glycosylation in Murine Synaptosomes;** Katalin F. Medzihradsky¹; Jonathan C. Trinidad^{1,2}; Ralf Schoepfer³; Al Burlingame¹; ¹UCSF, San Francisco, CA; ²Department of Chemistry, Indiana University, Bloomington, IN; ³Department of Pharmacology, UCL, London, UK
- TOD am 09:50 **Glycoproteomic Analysis of Mycobacterium Tuberculosis Culture Filtrate Proteins using Multiple Fragmentation Techniques;** Geoffrey T. Smith; Michael J Sweredoski; Sonja Hess; Caltech, Pasadena, CA
- TOD am 10:10 **Comparative Glycoproteomics Analysis of Influenza Hemagglutinin (H5N1) Expressed in Vaccine and Vaccine Research Relevant Cell Substrates;** Yanning An; John Cipollo; FDA, Bethesda, MD

**8:30 – 10:30 AM, TUESDAY MORNING
SYSTEMS BIOLOGY/CELLULAR PATHWAYS**
Ileana Cristea (Princeton University), presiding
Auditorium

- TOE am 08:30 **Exploring Communication in the Tumor Microenvironment**; Catherine Fenselau¹; Meghan Burke¹; Waeowalee Choksawangkam¹; Rebecca Rose¹; Avantika Dhabaria¹; Nathan Edwards²; Suzanne Ostrand-Rosenberg³; ¹University of Maryland, College Park, MD; ²Georgetown University Medical Center, Washington, DC; ³UMBC, Baltimore, MD
- TOE am 08:50 **Global Quantitative Phosphoproteomic Analysis of RSK-Dependent Signal Transduction**; Jacob A. Galan¹; Kathryn M. Geraghty²; Evgeny Kanshin¹; Joseph Tcherkezian¹; Geneviève Lavoie¹; Benjamin E. Turk³; Bryan A. Ballif⁴; John Blenis²; Pierre Thibault^{1,5}; Philippe P. Roux^{1,5}; ¹Institute for Research in Immunology and Cancer, Montreal, Canada; ²Harvard Medical School, Boston, MA; ³Yale University School of Medicine, New Haven, CT; ⁴University of Vermont, Burlington, VT; ⁵Université de Montréal, Montréal, Canada
- TOE am 09:10 **Key Contribution of Post-Transcriptional Mechanisms to Circadian Metabolism Regulation Revealed by Perseus Analysis of Quantitative Proteomics and Cross-Omics Data**; Juergen Cox; Maria S Robles; Matthias Mann; *Max-Planck-Institute of Biochemistry, Martinsried, Germany*
- TOE am 09:30 **Acetylome Machinery Interactome Revealed by Data Dependent and Independent Mass Spectrometry Acquisition**; Jean-Philippe Lambert¹; Sarah Picaud²; Brett Larsen¹; Beatriz Gonzalez Badillo¹; Tony Pawson^{1,3}; Stefan Knapp²; Panagis Filippakopoulos²; Anne-Claude Gingras^{1,3}; ¹Samuel Lunenfeld Research Institute, Mount Sinai H, Toronto, Canada; ²Nuffield Department of Clinical Medicine, SGC, Oxford, UK; ³Department of Molecular Genetics, U Toronto, Toronto, Canada
- TOE am 09:50 **Quantitative Dynamics of the Link between Cellular Metabolism and Histone Acetylation**; Adam Evertts¹; Barry Zee²; Peter DiMaggio³; Michelle Cope²; Hilary Collier¹; Benjamin Garcia²; ¹Princeton University, Princeton, NJ; ²University of Pennsylvania School of Medicine, Philadelphia, PA; ³Imperial College London, London, UK
- TOE am 10:10 **Multi-notch MS3-based 8-Plex TMT Quantification of 8 Colorectal Cancer Cell Line Proteomes Reveals Functional Reflections of Tumor Mutation Profiles**; David P. Nusinow; Graeme McAlister; Edward L. Huttlin; Mark Jedrychowski; Wilhelm Haas; Steven P. Gygi; *Harvard Medical School, Boston, MA*

**8:30 – 10:30 AM, TUESDAY MORNING
METABOLOMICS/LIPIDOMICS:
NEW MS TECHNOLOGIES AND APPLICATIONS**
Mark Emmett (UTMB), presiding
Room 101

- TOF am 08:30 **Metabolomics: A Review of Issues Affecting Translational Research**; Paul Wood; *Lincoln Memorial University, Harrogate, TN*
- TOF am 08:50 **Identification of Unknown Metabolites Involved in Type 2 Diabetes with Accurate Mass GC-QTOF Mass Spectrometry**; John Meissen¹; Kohei Takeuchi²; Oliver Fiehn¹; ¹UC Davis, Davis, CA; ²Kao Corporation, Tokyo, Japan
- TOF am 09:10 **Comprehensive Pathway-Specific Metabolite Analysis of Central Carbon Metabolism using Three Complementary LC/ESI-MS Methods**; Jun Han¹; Adrien Nyakas¹; Tobias Eckle²; Christoph Borchers^{1,3}; ¹University of Victoria-Genome BC Proteomics Centre, Victoria, Canada; ²Department of Anesthesiology, U Colorado, Denver, CO; ³Dept of Biochemistry and Microbiology, U Victoria, Victoria, Canada
- TOF am 09:30 **Multi-Omics Profiling of Methionine-Restricted MCF7 Cells in 24 Hours using a Prototype UPLC-Compatible Microfluidic Device**; J. Will Thompson¹; Jay Johnson²; Giuseppe Astarita²; Xiaohu Tang¹; Giuseppe Paglia³; Jim Murphy²; Steven Cohen²; Mark Bennett⁴; Jen-Tsan Chi¹; James Langdridge²; Geoff Gerhardt²; M. Arthur Moseley¹; ¹Duke University School of Medicine, Durham, NC; ²Waters Corporation, Milford, MA; ³Center for Systems Biology, Univ of Iceland, Reykjavik, Iceland; ⁴Nonlinear Dynamics, Durham, NC
- TOF am 09:50 **Identification of Nuclear Lipids**; Huan He¹; Nicolas L. Young¹; Alan G. Marshall^{1,2}; ¹Ion Cyclotron Resonance Program, NHMFL, Tallahassee, FL; ²Department of Chemistry and Biochemistry, FSU, Tallahassee, FL
- TOF am 10:10 **The Use of Ion-Mobility Mass Spectrometry for Separation and Structural Elucidation of Lipids in Human Plasma. Application in Lipidomics Studies**; Carola W.N. Damen^{1,2}; Giorgis Isaac³; Jonathan P. Williams⁴; Johannes P.C. Vissers⁴; James I. Langridge⁴; Thomas Hankemeier^{1,2}; Rob J. Vreeken^{1,2}; ¹Netherlands Metabolomics Centre, Leiden University, Leiden, The Netherlands; ²Analytical Biosciences, LACDR, Leiden University, Leiden, The Netherlands; ³Waters Corporation, Milford, MA, Waters Corporation., Manchester, UK

**8:30 – 10:30 AM, TUESDAY MORNING
ION MOBILITY: SEPARATIONS**
John McLean (Vanderbilt University), presiding
Room 102

- TOG am 08:30 **An Efficient Approach for Flexible Ion Transport, Mobility Separation, and Reaction**; Richard D. Smith; Xinyu Zhang; Erin Baker; Yehia Ibrahim; Gordon Anderson; Keqi Tang; *PNNL, Richland, WA*
- TOG am 08:50 **Characterization of a New Uniform-Field Ion Mobility-Quadrupole Time-of-Flight Mass Spectrometer and its Application in Biomolecular Analyses**; Ruwan Kurulugama; Alexander Mordehai; Nathan Sanders; Ed Darland; Christian Klein; Crystal Cody; Bill Barry; George Stafford; John Fjeldsted; *Agilent Technologies, Santa Clara, CA*
- TOG am 09:10 **Toward Calibration Standards for Ion Mobility Spectrometry (IMS)**; William F. Siems¹; Larry A. Viehland²; Herbert H. Hill¹; ¹Washington State University, Pullman, WA; ²Chatham University, Pittsburgh, PA
- TOG am 09:30 **Stereoisomers Separation by Ion Mobility-Mass Spectrometry**; Virginie Domalain¹; Marie Hubert-Roux¹; Catherine Lange¹; Vincent Tognetti¹; Jacques Rouden²; Carlos Afonso¹; ¹Normandie Univ UMR 6014, FR 3038; Univ Rouen; CNRS, Mont St Aignan, France; ²Normandie Univ UMR 6507, FR 3038; ENSICAEN; CNRS, Caen, France

TUESDAY MORNING ORAL SESSIONS

- TOG am 09:50 **Petroleomics by TWIM-MS: Development, Optimization and Applications of a Powerful Analytical Tool for Crude Oil and Petrofueled Characterization;** Maíra Fasciotti^{1,2}; Clécio F. Klitzke²; Priscila M. Lalli^{2,3}; Yuri E. Corilo³; Renan S. Galaverna²; Marcos A. Pudenzi²; Heliara L. Nascimento²; Ramsés Capilla⁴; Wagner Bastos⁴; Erica Morais⁴; Romeu J. Daroda¹; Rosana Pereira⁴; Marcos N. Eberlin²; ¹*inmetro, Duque De Caxias, Brazil*; ²*University of Campinas, Campinas, Brazil*; ³*National High Magnetic Field Laboratory, Tallahassee, FL*; ⁴*petrobras, Rio de Janeiro, Brazil*
- TOG am 10:10 **Exploiting IM-MS Separation to Overcome Heterogeneity in Protein Self Assembly;** Justin Benesch; *University of Oxford, Oxford, UK*

8:30 – 10:30 AM, TUESDAY MORNING ANTIBODIES AND ANTIBODY-DRUG CONJUGATES Yury Tsybin (Ecole Polytechnique Federale), presiding Room 103

- TOH am 08:30 **An Integrated Top-Down and Bottom-Up Proteomic Approach to Characterize Antibodies;** Lennard Dekker¹; Si Wu²; Martijn Vanduijn¹; Nikola Tolić²; Christoph Stingl¹; Rui Zhao²; Theo Luider¹; Ljiljana Paša-Tolić²; ¹*Erasmus Medical Center, Rotterdam, Netherlands*; ²*Pacific Northwest National Laboratories, Richland, WA*
- TOH am 08:50 **In-Depth Mass Spectrometry Characterization of Therapeutic Antibodies for Efficient Biosimilar Development;** Wolfgang Jabs¹; Anja Resemann¹; Waltraud Evers¹; Catherine Evans²; Laura Main³; Carsten Baessmann¹; Detlev Suckau¹; Daniel Ayoub⁴; Elsa Wagner-Rousset⁴; Alain Beck⁴; ¹*Bruker Daltonik GmbH, Bremen, Germany*; ²*Bruker Daltonics GmbH, Fällanden, Switzerland*; ³*Bruker Daltonics Ltd, Coventry, UK*; ⁴*Centre d'Immunologie Pierre Fabre, St Julien-en-Genevois, France*

- TOH am 09:10 **Rapid Qualitative and Quantitative Characterization of Antibody Glycosylation Profiles by Native Mass Spectrometry using an Orbitrap Mass Analyzer;** Sara Rosati¹; Ewald T.J. van den Bremer²; Paul Parren²; Janine Schuurman²; Albert J. R. Heck¹; ¹*Utrecht University, Utrecht, Netherlands*; ²*Genmab, Utrecht, Netherlands*
- TOH am 09:30 **An Online Top-Down Mass Spectrometry Based Strategy Aimed at Complete *de novo* Sequencing of Monoclonal Antibodies;** Weihan Wang¹; A. Michelle English¹; Lissa Anderson¹; John Syka²; Sushma Shivaswamy³; Kevin Sunley³; John Simard³; Jeffrey Shabanowitz¹; Dina Bai¹; Donald Hunt^{1,4}; ¹*Department of Chemistry, University of Virginia, Charlottesville, VA*; ²*Thermo Fisher Sci, San Jose, CA*; ³*XBiotech USA Inc., Austin, TX*; ⁴*Department of Pathology, University of Virginia, Charlottesville, VA*
- TOH am 09:50 **Micro-Scale Native Top-Down LCMS of Cysteine-Linked Antibody-Drug Conjugates;** Shawna M. Hengel; Russell Sanderson; William McFee; Jay Jones; John Valliere-Douglass; Stephen C. Alley; *Seattle Genetics, Bothell, WA*
- TOH am 10:10 **New Technology for Producing Large Repertoires of Bacterially Expressed High-Affinity Antibodies;** Yinyin Li¹; Peter C. Fridy¹; Mary K. Thompson¹; Sarah Keegan²; David Fenyo²; Michael P. Rout¹; Brian T. Chait¹; ¹*The Rockefeller University, New York, NY*; ²*New York University, New York, NY*

10:30 AM - 2:30 PM
TUESDAY POSTER SESSION
Exhibit Hall BC
Lunch concessions are open 11:00 am - 2:00 pm

TUESDAY AFTERNOON ORAL SESSIONS

2:30 – 4:30 PM, TUESDAY AFTERNOON INSTRUMENTATION AND METHODS: FT, ION TRAPS AND HYBRID INSTRUMENTS

Jim Bruce (University of Washington), presiding
Exhibit Hall A (lower level)

- TOA pm 2:30 **Improving Data Dependent MSⁿ Performance with a Multitasking Mass Spectrometer;** Michael W. Senko¹; Philip Remes¹; Qingyu Song¹; Jesse Canterbury¹; Justin Blethrow¹; Vlad Zabrouskov¹; Oliver Lange²; Alexander Makarov²; ¹*Thermo Fisher Scientific, San Jose, CA*; ²*Thermo Fisher Scientific GmbH, Bremen, Germany*
- TOA pm 2:50 **Development of a Mass Spectrometer for Gas Phase Ion-Radical Reactions;** Ziqing Lin¹; Tsungchi Chen¹; Linfan Li¹; Yu Xia²; Zheng Ouyang¹; ¹*BME, Purdue University, West Lafayette, IN*; ²*Chemistry, Purdue University, West Lafayette, IN*
- TOA pm 3:10 **2D FT-ICR Optimized Pulse Sequence: Application to Human Plasma Triglyacylglycerols (TAG) Analyzed by nanoESI/IRMPD;** Fabrice Bray¹; Maria Van Agthoven¹; Lionel Chiron^{2,3}; Marie-Aude Coutouly³; Marc-André Delsuc²; Caroline Tokarski¹; Christian Rolando¹; ¹*Université Lille 1, Sciences et Technologies, Villeneuve d'Ascq, France*; ²*Université de Strasbourg, Strasbourg, France*; ³*NMRTEC, Illkirch-Graffenstaden, France*
- TOA pm 3:30 **Particle-in-Cell Simulation of Image Charge in Cylindrical and Harmonized ICR Cells;** Joshua Driver¹; Andriy Kharchenko^{1,2}; Ron Heeren²; Eugene Nikolaev³; Jon Amster¹; ¹*University of Georgia, Athens, GA*; ²*FOM Institute for Atomic and Molecular Physics, Amsterdam, Netherlands*; ³*Institute for Energy Problems of Chemical Physics, Moscow, Russia*
- TOA pm 3:50 **The Structure and the Performance of Mesh-Electrode Linear Ion Trap (MeLIT) Mass Analyzer;** Chuan-Fan Ding; Liang Wang; Fuxing Xu; *Fudan University, Shanghai, CHINA*
- TOA pm 4:10 **Intact Protein Characterization by 193 nm Ultraviolet Photodissociation in an Orbitrap Elite;** Jared B. Shaw; Jennifer S. Brodbelt; *The University of Texas, Austin, TX*
- 2:30 – 4:30 PM, TUESDAY AFTERNOON
IMAGING MS: BIOLOGICAL APPLICATIONS
Pierre Chaurand (University of Montreal), presiding
Room L100 (lower level)
- TOB pm 2:30 **On-Tissue Micro-Extraction: The Key to Success for Identification of Less Abundant Proteins in MALDI MSI;** Jusal Quanico^{1,2}; Julien Franck¹; Maxence Wisztorski¹; Claire Dauly³; Robert Day²; Michel Salzet¹; Isabelle Fournier¹; ¹*FABMS, Villeneuve D'Ascq, France*; ²*Institute de Pharmacologie de Sherbrooke, Sherbrooke, Canada*; ³*Thermo Fisher Scientific France, Paris, France*

- TOB pm 2:50 **Molecular Diagnosis of Atypical Spitzoid Neoplasms using Direct Tissue Profiling Mass Spectrometry**; Erin H. Seeley¹; Rossitza Lazova²; Alireza Sepehr³; Richard M. Caprioli¹; ¹Vanderbilt University, Nashville, TN; ²Yale University, New Haven, CT; ³Harvard Beth Israel Deaconess Medical Center, Boston, MA
- TOB pm 3:10 **Differential Molecular Profiling of Lipids and Glycans at the Tumor Margin of Clear Cell Renal Carcinoma Tissues by MALDI-MS Imaging**; Richard R Drake¹; Thomas Powers¹; E. Ellen Jones¹; Anand Mehta²; Raymond Lance³; Dean Troyer⁴; ¹Medical University of South Carolina, Charleston, SC; ²Drexel Institute for Biotechnology and Virology, Doylestown, PA; ³Urology of Virginia, Norfolk, VA; ⁴Eastern Virginia Medical School, Norfolk, VA
- TOB pm 3:30 **Development of Mass Spectrometry Imaging and LESA Techniques to Assess Region-Specific Corticosteroid Regeneration in Brain Assessed by Mass Spectrometry Imaging**; C. Logan Mackay¹; Diego Cobice²; Andrew McBride²; Pat Langridge Smith¹; Scott Webster²; Brian Walker²; Ruth Andrew²; ¹School of Chemistry, University of Edinburgh, Edinburgh, UK; ²QMRI, University of Edinburgh, Edinburgh, UK
- TOB pm 3:50 **Molecular Signatures of Mouse Embryo Implantation Sites using Nanospray Desorption Electrospray Ionization Imaging Mass Spectrometry**; Ingela Lanekoff¹; Kristin Burnum¹; Jeeyeon Cha²; Mathew Thomas¹; James Carson¹; Sudhansu K Dey²; Julia Laskin¹; ¹PNNL, Richland, WA; ²Cincinnati Childrens's Hospital Medical Center, Cincinnati, OH
- TOB pm 4:10 **Macroscopic Imaging Mass Spectrometry: 3D Surface Mass Spectrometry of a Man and a Woman**; Christopher M Rath^{1,2}; Mingxun Wang³; Guo Yurong¹; Antonio Gonzalez Pena⁴; Donna Berg-Lyons⁴; Gail Ackermann⁴; Kathleen Dorrestein¹; Robert Knight⁴; Nuno Bandeira³; Theodore Alexandrov^{1,5}; Pieter Dorrestein^{1,6}; ¹School of Pharmacy, U. California, San Diego, CA; ²Current: Novartis Institute for Biomedical Res., Emeryville, CA; ³Center for Computational Mass Spectrometry, UCSD, San Diego, CA; ⁴Chemistry and Biochemistry, U. Colorado Boulder, Boulder, CO; ⁵Center for Industrial Mathematics, U. Bremen, Bremen, Germany; ⁶Chemistry and Biochemistry, UCSD, San Diego, CA
- 2:30 – 4:30 PM, TUESDAY AFTERNOON CHARACTERIZATION OF PRODUCT VARIANTS IN BIOSIMILARS**
Tracie Williams (Ctr for Disease Control & Prevention), presiding Ballroom B
- TOC pm 2:30 **Use of Stable Isotope-Labeled Reference Standards and Antioxidants for Reliable Evaluation of Methionine Oxidation by LC-MS/MS in Therapeutic Proteins**; Pilsoo Kang¹; Tanya Mezhebovsky¹; Wei Chen²; James A. McCardle²; Sheng Zhang²; Eric Routhier¹; Philip Sass¹; ¹Morphotek, Exton, PA; ²Cornell University, Ithaca, NY
- TOC pm 2:50 **Comparability Analysis of Anti-CD20 mAb from Commercial (MabThera) and RNAi-Mediated Fucosylation Molecules by Two Orthogonal LC-MS Approaches**; Chen Li¹; Greg Thill²; Anthony Rossomando²; Shiaw-Lin Wu¹; Barry Karger¹; ¹Northeastern University, Boston, MA; ²Alnylam Pharmaceuticals, Cambridge, MA
- TOC pm 3:10 **Characterization of an IgG1 Biosimilar Candidate by High-Resolution Mass Spectrometry Methods**; Susanne Hensel; Stefanie Janzen; Gerhard Koerting; Stephanie Felske-Mueller; Andreas Wattenberg; Martin Blueggel; *Protagen Protein Services GmbH, Dortmund, Germany*
- TOC pm 3:30 **Assessing 'Scrambled' Disulfide Linkages: A Comprehensive Workflow for Routine Characterization of Biotherapeutics using High-Resolution LCMS and Electron Transfer Dissociation**; Asish Chakraborty; Stephane Houel; Henry Shion; Scott Berger; Weibin Chen; *Waters Corporation, Milford, MA*
- TOC pm 3:50 **Detailed Glycomic Characterization of Commercial Erythropoietin (EPO) Variants**; Myung Jin Oh¹; Serenus Hua¹; Chanyoung Han¹; Ha Neul Jeong¹; Gregory Staples²; Jong Shin Yoo^{1,3}; Rudolf Grimm^{1,2}; Hyun Joo An¹; ¹Chungnam National University, Daejeon, Korea; ²Agilent Technologies, Santa Clara, CA; ³Korea Basic Science Institute, Ochang, Korea
- TOC pm 4:10 **LC-Fluorescence-MS/MS Assessment of Bioreactor Parameters on IgG Glycosylation**; John Schiel¹; Karen Phinney¹; Cyrus Agarabi²; Erik Read²; Kurt Brorson²; ¹NIST, Gaithersburg, MD; ²CDER, FDA, Silver Spring, MD
- 2:30 – 4:30 PM, TUESDAY AFTERNOON PHOSPHOPROTEOMICS**
Susan Abbatiello (Broad Inst of Harvard & MIT), presiding Ballroom A
- TOD pm 2:30 **A Lower Limit on the Size of the Human Cancer Cell Line Phospho-Proteome**; Kirti Sharma; Rochelle C J D'souza; Juergen Cox; Igor Paron; Stefka Tyanova; Matthias Mann; *Max Planck Institute for Biochemistry, Martinsried (Near Munich), Germany*
- TOD pm 2:50 **LuciPHOR: A Powerful Algorithm for Phosphorylation Site Localization with False Localization Rate Estimation using Target-Decoy Approach**; Damian Fermin¹; Scott Walmsley¹; Anne-Claude Gingras^{2,3}; Hyungwon Choi⁴; Alexey Nesvizhskii¹; ¹University of Michigan, Ann Arbor, MI; ²University of Toronto, Toronto, ON; ³Samuel Lunenfeld Research Institute, Toronto, ON; ⁴National University of Singapore, Singapore
- TOD pm 3:10 **A Novel Phosphopeptide Standard to Evaluate Data Interpretation in a Realistic Phosphoproteomic Environment**; Sonja Radau¹; Marc Vaudel¹; Florian Beck¹; Ingo Feldmann¹; Lennart Martens²; Albert Sickmann¹; René Zahedi¹; ¹Leibniz – Institut für Analytische Wissenschaften, Dortmund, Germany; ²Department of Medical Protein Research, VIB, Ghent, BE
- TOD pm 3:30 **Effect of Post-Excision-Delay-to-Freezing Time on Protein Phosphorylation of Tumors: A Study by the NCI Clinical Proteomics Tumor Analysis Consortium (CPTAC)**; Philipp Mertins¹; DR Mani¹; Vladislav Petyuk²; Tao Liu²; Feng Yang²; Aaron Gajadhar³; Hannah Johnson³; Hui Zhang⁴; Douglas Levine⁵; Reid Townsend⁶; Sherri Davies⁸; Michael Gillette¹; Kelly Ruggles⁷; David Fenyó⁷; Karl Clauser¹; Jana Qiao¹; Marina Gritsenko²; Shunqiang Li⁶; Bai Zhang⁴; Yuan Tian⁴; Ronald Moore²; Narcisco Olvera⁵; Fanny Dao⁵; Daniel Chan⁴; Daniel Liebler⁹; Karin Rodland²; Gordon Mills⁸; Richard Smith²; Amanda Paulovich¹⁰; Matthew Ellis⁶; Forest White³; Steven Carr¹; NCI CPTAC Consortium¹¹; ¹The Broad

TUESDAY AFTERNOON ORAL SESSIONS

Institute, Cambridge, MA; ²Pacific Northwest National Laboratory, Richland, WA; ³Massachusetts Institute of Technology, Cambridge, MA; ⁴Johns Hopkins, Baltimore, MD; ⁵Memorial Sloan Kettering Cancer Center, New York, NY; ⁶Washington University, Saint Louis, MO; ⁷New York University, New York, NY; ⁸MD Anderson, Houston, TX; ⁹Vanderbilt University, Nashville, TN; ¹⁰Fred Hutchinson Cancer Research Center, Seattle, WA; ¹¹National Cancer Institute, Bethesda, MD

TOD pm 3:50 **SWATH MS Targeted Data Extraction: A Powerful Method to Resolve False Phospho-Site Assignments in Phosphopeptides;** Ludovic C. Gillet¹; Alessio Maiolica¹; Pedro Navarro¹; Umut Toprak¹; Christina Ludwig¹; Ruedi Aebersold^{1,2}; ¹Dept Biology, IMSB, ETH Zurich, Zurich, Switzerland; ²Faculty of Science, University of Zurich, Zurich, Switzerland

TOD pm 4:10 **Investigating Kinase Targets in Neurodegeneration using Mass Spectrometry;** Donald S Kirkpatrick; Daisy Bustos; Zejuan Sheng; Shuo Zhang; Sarah Huntwork-Rodriguez; Christine Pozniak; Tracy Kleinheinz; Claire Le Pichon; Anthony Estrada; Kimberley Searce-Levie; John Moffat; Joseph Lewcock; Haitao Zhu; *Genentech, Inc., South San Francisco, CA*

2:30 – 4:30 PM, TUESDAY AFTERNOON FOOD SAFETY: ADVANCES IN MS FOR CHARACTERIZATION OF ADDITIVES AND CONTAMINANTS

**Adrian Hegeman (University of Minnesota), presiding
Auditorium**

TOE pm 2:30 **Screening Large Sample Sets for Contaminants by DART-MS: Limitations & Advantages;** Luke Ackerman¹; Karim Bentayeb²; Timothy Begley¹; ¹FDA Center for Food Safety, College Park, MD; ²Univ. Zaragoza, Analytical Chem, Zaragoza, Spain

TOE pm 2:50 **Mass Accuracy and Isotopic Abundance Measurements in Complex Sample Matrices: Capabilities of HR-MS Instrumentation for Non-Targeted Analyses;** Ann M. Knolhoff; Timothy R. Croley; John H. Callahan; *FDA/CFSAN, College Park, MD*

TOE pm 3:10 **Sample Class Prediction for the Determination of Off-Flavors in Cranberries by GC/MS;** Jean Francois Sylvain²; Cindy Ricard²; Stephan Baumann¹; Dave Peterson¹; Marcus Kim¹; ¹Agilent Technologies, Inc., Santa Clara, CA; ²Atoka Cranberries Inc, Manseau (Québec), Canada

TOE pm 3:30 **On-Site Screening for Plasticizers, Melamine, and Residual Pesticides in Tainted Foods via Mobile Ambient Mass Spectrometry (MAMS);** Christopher Shiea¹; Chih-Chiang Chou²; Min-Zong Huang²; ¹Kaohsiung Medical University, Kaohsiung, Taiwan; ²National Sun Yat-Sen University, Kaohsiung, Taiwan

TOE pm 3:50 **Preventing Wine Spoilage: Rapid Screening and Quantitative Analysis of Off-flavor Phenolic Compounds by DART Mass Spectrometry;** Elizabeth Crawford¹; Paola Domizio²; Brian Musselman³; Lucy Joseph⁴; Linda Bisson⁴; Bart Weimer⁵; Richard Jeannotte⁵; ¹Institute of Chemical Technology Prague, Prague, Czech Republic; ²Università degli Studi di Firenze, Florence, Italy; ³IonSense, Inc., Saugus, MA; ⁴UC-Davis Dept. of Viticulture & Enology, Davis, CA; ⁵UC-Davis Dept. of Health and Reproduction, Davis, CA

TOE pm 4:10 **Non-Volatile Profiling of Whiskies using UHPLC/QTOF-MS;** Thomas S. Collins^{1,3}; Jerry Zweigenbaum²; Susan E. Ebeler¹; ¹U.C. Davis, Davis, CA; ²Agilent Technologies, Wilmington, DE; ³Treasury Wine Estates, Napa, CA

2:30 – 4:30 PM, TUESDAY AFTERNOON ION MOBILITY: STRUCTURES Erin Baker (Pacific Northwest National Lab) presiding Room 101

TOF pm 2:30 **Structure and Interactions of Membrane-Bound Peptides and Proteins Studied in Detergent Micelles by nano-ESI IMS-MS/MS;** Albert Konijnenberg¹; Jeroen van Dyck^{1,3}; Jens Obbels¹; Frederik Lermyte¹; Frank Sobott^{1,2}; ¹Biomolecular Mass Spec., University of Antwerp, Antwerpen, Belgium; ²Center for Proteomics, University of Antwerp, Antwerpen, Belgium; ³Radboud University, Nijmegen, The Netherlands

TOF pm 2:50 **MS-based Investigation of Tertiary and Quaternary Interactions in the 5'-Untranslated Region of HIV-1 Genomic RNA;** Daniele Fabris; Papa-Nii Asare Okai; Jennifer Lippens; Maria Basanta Sanchez; Matteo Scalabrin; *The RNA Institute, University at Albany, Albany, NY*

TOF pm 3:10 **Structural Mass Spectrometry to Interrogate Microbial Metabolomes for Natural Product Prioritization;** Cody Goodwin¹; Dagmara Derewacz¹; Ruwan Kurulugama²; Ed Darland²; Brian Bachmann¹; John McLean¹; ¹Vanderbilt Univ Dept of Chem, Nashville, TN; ²Agilent Technologies, Santa Clara, CA

TOF pm 3:30 **Application of Ion Mobility Mass Spectrometry to Analysis of Biological Samples;** Qi Wang¹; Kshitij Khatari¹; Ying Zhou¹; Crystal Cody²; Ruwan Kurulugama²; Ed Darland²; Erin Baker³; Joseph Zaia¹; Catherine E. Costello¹; ¹Boston University School of Medicine, Boston, MA; ²Agilent Technologies, Santa Clara, CA; ³Pacific Northwest National Laboratory, Richland, WA

TOF pm 3:50 **Do Electrosprayed Protein Ions Retain Memory of their Solution Phase Structure? Insights from Ion Mobility Mass Spectrometry;** Siavash Vahidi; Bradley B. Stocks; Lars Konermann; *Univ. of Western Ontario, London, Canada*

TOF pm 4:10 **Collision Cross Sections: The Effects of Size, Shape and Bath Gas;** Michael T. Bowers; Christian Bleiholder; Thomas Wyttenbach; *University of California, Santa Barbara, CA*

2:30 – 4:30 PM, TUESDAY AFTERNOON METABOLITES: UNUSUAL AND UNCOMMON Paul Thomas (Northwestern University), presiding Room 102

TOG pm 2:30 **Network Based Discovery of Known Unknowns;** Laura Sanchez¹; Jane Yang¹; Chris Rath¹; Paul Boudreau²; Xueting Liu¹; Nicole Bruns²; Anne Wodtke²; Rafael de Felicio²; Amanda Fenner²; Evgenia Glukhov²; William Gerwick²; Pieter Dorrestein¹; ¹UCSD, La Jolla, CA; ²Scripps Institution of Oceanography, La Jolla, CA

TOG pm 2:50 **The World of Acylpolyamines, Beta Carbolines, and Biogenic Amines: Understanding the Diversity of Spider Venoms through LC-IT-TOF Mass Spectrometry;** Daniel Menezes Saidemberg¹; Nicolí Barão Baptista Saidemberg²; Mario Sergio Palma³; ¹Shimadzu do Brasil, São Paulo/SP, BRAZIL;

- ²Endocrine Pancreas Laboratory/IB/UNICAMP, Campinas/SP, Brazil; ³LBEZ/CEIS/IB/UNESP, Rio Claro/SP, Brazil
- TOG pm 3:10 **Integrated Metabolomics Approach Enables Discovery of Novel Natural Products from *Streptomyces coelicolor* A3(2)**; Erin Carlson; *Indiana University, Bloomington, IN*
- TOG pm 3:30 **Identification of Imidacloprid Metabolites in Onion using High Resolution Mass Spectrometry and Accurate Mass Tools**; Jerry Zweigenbaum¹; Michael Thurman²; Imma Ferrer²; Paul Zavitsanos¹; ¹Agilent Technologies, Wilmington, DE; ²University of Colorado, Boulder, Co
- TOG pm 3:50 **Effective Detection and Structural Characterization of Uncommon Drug Metabolites using High Resolution Mass Spectrometry and Real-Time Polarity-Switching**; Qian Ruan; Mingshe Zhu; *Bristol-Myers Squibb, Princeton, NJ*
- TOG pm 4:10 **Automated Structure Elucidation of Unknown Metabolites In Metabolomics and Pharmaceutical Studies using the Masspec Algorithm and Tandem Mass Spectral Data**; Marshall M. Siegel; Gary Walker; *MS Mass Spec Consultants, Fair Lawn, NJ*

2:30 – 4:30 PM, TUESDAY AFTERNOON

MICROORGANISMS: IDENTIFICATION AND CHARACTERIZATION
Franco Basile (University of Wyoming), presiding
Room 103

- TOH pm 2:30 **Specialized Metabolite Discovery in Microorganisms through Visualization of Living Metabolomes using Live-Colony Mass Spectrometry and Molecular Networking**; Jeramie Watrous¹; Paul Boudreau²; Mingxun Wang¹; Menno vander Voort³; George Dimopoulos⁴; Nuno Bandeira¹; William Gerwick²; Pieter Dorrestein^{1,2}; ¹UCSD, La Jolla, CA; ²Scripps Institute of Oceanography, La Jolla, CA; ³Wageningen University, Wageningen, Netherlands; ⁴Johns Hopkins University, Baltimore, MD
- TOH pm 2:50 **Applications of an *in situ* Microextraction Based Surface Sampling System to Microorganism Analysis**; Mariam S Elnaggar¹; Cheng-Chih Hsu²; Xueting Liu³; Pieter Dorrestein²; Bartek Rajwa⁴; Justin Wiseman¹; ¹Prosofia, Inc., Indianapolis, IN; ²University of California, San Diego, CA; ³Inst. of Microbiology, Chinese Academy of Sciences, Peking, China; ⁴Purdue University, Lafayette, IN
- TOH pm 3:10 **Identification of Bacteria Using Rapid Evaporative Ionization Mass Spectrometry**; Nicole Strittmatter; Emrys A. Jones; Monica Rebec; Zoltan Takats; *Imperial College London, London, UK*
- TOH pm 3:30 **Rapid Identification of Intact Biothreat Viruses using MALDI Mass Spectrometry**; Lisa H. Cazares¹; Julie Constantino²; Rekha Panchal²; Sina Bavari²; ¹Geneva Foundation/USAMRIID, Frederick, MD; ²USAMRIID, Ft. Detrick, MD
- TOH pm 3:50 **Combination of Intact Cell Immunocapture and Multiplexed SRM Mass Spectrometry for the Sensitive and Specific Detection of *Yersinia Pestis***; Jérôme Chénau^{1,2}; Stéphanie Simon¹; Sofia Filali²; François Fenaille¹; Hervé Volland¹; Christophe Junot¹; Elisabeth Carniel²; François Becher¹; ¹CEA, DSV/iBiTec-S/SPI, Gif Sur Yvette Cedex, France; ²Institut Pasteur, Unité de recherche Yersinia, Paris, France

- TOH pm 4:10 **Development and Application of Assays for Targeted MS Analysis of the Complete Proteome of *Mycobacterium tuberculosis* by SRM and SWATH-MS**; Olga Schubert¹; Christina Ludwig¹; Jeppe Mouritsen¹; Hannes Roest¹; George Rosenberger¹; Patrick Arthur²; Manfred Claassen¹; Dave Campbell³; Zhi Sun³; Terry Farrah³; Martin Gengenbacher⁴; Stefan H. E. Kaufmann⁴; Robert Moritz³; Ruedi Aebersold¹; ¹ETH Zurich, Zurich, Switzerland; ²University of Ghana, Accra, Ghana; ³Institute for Systems Biology, Seattle, WA; ⁴Max Planck Institute for Infection Biology, Berlin, Germany

4:45 - 5:30 PM, TUESDAY
AWARD LECTURE

Susan T. Weintraub (Univ of Texas HSC-San Antonio), presiding
Exhibit Hall A, Lower Level



Biemann Medal

Yinsheng Wang
University of California, Riverside

5:45 - 7:00 PM, TUESDAY AFTERNOON
WORKSHOPS
Light snacks are provided on level two.

LEVEL ONE ROOMS

- Environmental Applications of FTMS: Earth, Air & Water (organized by the FTMS Interest Group), Room 1
- Jumpstarting Your Career: a Career Development Workshop (organized by the Young Mass Spectrometrists Interest Group), Room 2
- The Galaxy Framework as a Solution for MS-based Informatics, Room 3

LEVEL TWO ROOMS

- LC-MS in the Clinical Lab: How Close is 24/7? (organized by the Clinical Chemistry Interest Group), Room 200 DE
- Normalization Approaches to Imaging Mass Spectral Data (organized by the Imaging MS Interest Group), Room 200 FG
- How to Work with your P.I.s More Effectively (and Without Them Knowing It) (organized by the Analytical Lab Managers Interest Group), Room 200 H
- Current Topics in Metal Ion Chemistry (organized by the Metal Ion Coordination Chemistry Interest Group), Room 200 I
- Ion Mobility MS: New Instrumentation & Enabling Technologies (organized by the Ion Mobility MS Interest Group), Room 205 AB
- Quantitative Intact Proteomics (organized by the Quantitative Intact Proteomics Interest Group), Room 205 CD
- Large Molecule by LC-MS Bioanalytical Method Validation (BMV): Status, Challenges, Solutions, Recommendations (organized by the Regulated Bioanalysis Interest Group), Room 208 AB
- Practical ETD, Room 208 CD

AFTER 8:00 PM
CORPORATE HOSPITALITY SUITES
HILTON MINNEAPOLIS HOTEL

**8:30 – 10:30 AM, WEDNESDAY MORNING
PTMs: ADVANCES IN ISOLATION,
DERIVATIZATION AND SEPARATION**
Laszlo Prokai (University of North Texas), presiding
Exhibit Hall A (lower level)

- WOA am 08:30 **Tyrosine-Selective Phosphopeptide Enrichment by Chemical and Immuno-Affinity Approaches;** Shigeharu Yoshida; Mayu Ogura; Masaki Wakabayashi; Naoyuki Sugiyama; Yasushi Ishihama; *Kyoto University, Kyoto, Japan*
- WOA am 08:50 **A General Strategy for Enrichment, Site-Specific Identification, and Quantification of Multiple Types of Redox Modifications on Protein Thiols;** Jia Guo; Dian Su; Matthew Gaffrey; Yi Qu; Anil Shukla; Ronald Moore; Brian Thrall; Richard Smith; Weijun Qian; *Pacific Northwest National Lab, Richland, WA*
- WOA am 09:10 **Reductive Methylation of Ubl Isopeptides (RUBl): An Elegant Method for the Enhanced Detection of SUMO and Ubiquitin Modified Peptides;** Navin Chicooree^{1,2}; Yvonne Connolly¹; Duncan Smith¹; John Griffiths¹; ¹*Paterson Institute for Cancer Research, Manchester, UK;* ²*School of Chemistry, University of Manchester, Manchester, UK*
- WOA am 09:30 **Improved Enrichment of S-Nitrosylated Peptides using Iodoacetyl Tandem Mass Tag Reagents, Immobilized Anti-TMT Antibody Resin and TMT Elution Buffer;** Ryan Bomgardner¹; Zhe Qu³; Eric Hommema¹; Rosa Viner²; Zezong Gu³; John C. Rogers¹; ¹*ThermoFisher Scientific, Rockford, IL;* ²*Thermo Fisher Scientific, San Jose, CA;* ³*University of Missouri, Columbia, MO*
- WOA am 09:50 **Evaluation of a Novel Tandem Mass Tag for Profiling of Protein Carbonylation;** Somi Afuni¹; Sergei I. Snovida²; Ryan D. Bomgardner²; John C. Rogers²; Timothy J. Griffin¹; ¹*University of Minnesota, Minneapolis, MN;* ²*Thermo Fisher Scientific, Rockford, IL*
- WOA am 10:10 **Serial Enrichment of Post-Translationally Modified Peptides Enables Deep and Quantitative Analysis of the Proteome, Phosphoproteome, Ubiquitinome, and Acetylome;** Jana Qiao; Philipp Mertins; Jinal Patel; Karl Clauser; DR Mani; Michael Burgess; Michael Gillette; Jacob Jaffe; Steven Carr; *Broad Institute, Cambridge, MA*

**8:30 – 10:30 AM, WEDNESDAY MORNING
INFORMATICS: PROTEIN QUANTIFICATION**
Brian Searle (Proteome Software, Inc.), presiding
Room L100 (lower level)

- WOB am 08:30 **Slice: Scalable Data Sharing for Remote Mass Informatics;** Manor Askenazi¹; David Fenyo²; ¹*The Ionomix Initiative, Arlington, MA;* ²*NYU Langone Medical Center, New York City, NY*
- WOB am 08:50 **IqpQuantify : Combining Precursor Intensity with Spectral Counts for Protein and Peptide Quantification;** Yao-Yi Chen¹; Matthew Chambers¹; Amy-Joan Ham²; Ming Li¹; David Tabb¹; ¹*Vanderbilt University Medical School, Nashville, TN;* ²*Belmont University College of Pharmacy, Nashville, TN*
- WOB am 09:10 **Avoiding Arbitrary Parameters in Quantitative Proteomics: Is “Differential” a 1.1-Fold or 1.2-Fold Change?** Oliver Serang; Ertugrul Cansizoglu; Hanno Steen; Judith Steen; *Harvard Medical School/ Boston Children’s Hospital, Boston, MA*

- WOB am 09:30 **Electrospray Current Fluctuations and other Instrumental Response Instabilities –In silico Correction Method Improves Precision of Label-free Proteomics Quantification;** Yaroslav Lyutvinskiy¹; Hongqian Yang¹; Dorothea Rutishauser¹; Roman Zubarev^{1,2}; ¹*Karolinska Institutet, MBB, Stockholm, Sweden;* ²*Science for Life Laboratory, Stockholm, Sweden*
- WOB am 09:50 **Pre- and Postprocessing Steps in Affinity Purification Mass Spectrometry Data – More Reliable Detection of Interaction Candidates;** Martina Fischer¹; Susann Zilkenat²; Samuel Wagner^{2,3}; Bernhard Y Renard¹; ¹*Robert-Koch-Institute, Berlin, Germany;* ²*IMIT, Eberhard Karls University Tübingen, Tübingen, Germany;* ³*German Center for Infection Research (DZIF), Tübingen, Germany*
- WOB am 10:10 **Statistical Selection of Informative Features for Protein Quantification in Data-Independent Spectral Acquisition;** Ching-Yun Chang¹; Nathalie Selevsek²; Ludovic Gillet²; Hannes Roest²; Ruedi Aebersold^{2,3}; Olga Vittek^{1,4}; ¹*Department of Statistics, Purdue University, West Lafayette, IN;* ²*IMSB, ETH, Zürich, Switzerland;* ³*Faculty of Science, University of Zürich, Zürich, Switzerland;* ⁴*Department of Computer Science, Purdue University, West Lafayette, IN*

**8:30 – 10:30 AM, WEDNESDAY MORNING
CARBOHYDRATES: NEW MS APPROACHES**
Yehia Mechref (Texas Tech University), presiding
Ballroom B

- WOC am 08:30 **Obtaining Linkage Information from Linear Oligosaccharides via MSⁿ (n>2) and Z₁ Ions;** Chiharu Konda¹; Brad Bendiak²; Yu Xia¹; ¹*Purdue University, West Lafayette, IN;* ²*University of Colorado Denver, Aurora, CO*
- WOC am 08:50 **Trivalent Metal-Assisted Electron Capture Dissociation and Electron Transfer Dissociation of Underivatized Glycans;** Di Gao; Kristina Hakansson; *University of Michigan, Ann Arbor, MI*
- WOC am 09:10 **Glycan Structural Analysis on the LC Time Scale Employing Electron Activated Dissociation (ExD) Methods;** Cheng Lin; Xiang Yu; Yan Jiang; Yu Huang; Joseph Zaia; Catherine E. Costello; *Boston University School of Medicine, Boston, MA*
- WOC am 09:30 **Semi-Automated Sequencing Of Affinity-Purified Heparan Sulfate Oligosaccharides;** Rongrong Huang; Eduard Condac; Yulun Chiu; Christian Heiss; Mayumi Ishihara; Muchena J. Kailemia; Jon Amster; Parastoo Azadi; Lianchun Wang; Joshua S. Sharp; *University of Georgia, Athens, GA*
- WOC am 09:50 **Use of Field Asymmetrical Ion Mobility Spectrometry (FAIMS) and Tandem Mass Spectrometry for Structural Characterization of Isobaric Mixtures of Glycosaminoglycans;** Muchena Kailemia¹; Yuejie Zhao¹; Isaac Agyekum¹; Andre Venot¹; Melvin Park²; Desmond Kaplan²; Geert-Jan Boons¹; Robert Linhardt³; Jon Amster¹; ¹*University of Georgia, Athens, GA;* ²*Bruker Daltonics, Billerica, MA;* ³*Rensselaer Polytechnic Institute, Troy, NY*
- WOC am 10:10 **Production of a ¹³C-Labeled Internal Standard for Quantitative Glycomics;** Evelyn Rampler¹; Shujuan Tao²; Stephan Hann¹; Friedrich Altmann¹; Ron Orlando²; Gunda Koellensperger¹; ¹*University Boku Vienna, Vienna, Austria;* ²*University of Georgia, Athens, GA*

**8:30 – 10:30 AM, WEDNESDAY MORNING
QUANTITATIVE ANALYSIS BY MS IN DRUG DISCOVERY AND
DEVELOPMENT: NOVEL APPROACHES**

**Jim Shen (Bristol-Myers Squibb), presiding
Ballroom A**

- WOD am 08:30 **A New Twist on an Old Experiment: Leveraging Automation and LC-MS/MS to Understand and Reduce Variability in Plasma Protein Binding;** Lucinda Cohen¹; Haiping Wang¹; Matt Zrada²; Ken Anderson²; Ravi Katwaru¹; Xinchun Tong¹; Bernard Choi¹; Paul Harradine¹; Vince Tong¹; Natasa Pajkovic²; Kathy Cox¹; ¹Merck & Co., Inc., Rahway, NJ; ²Merck & Co., Inc, West Point, PA
- WOD am 08:50 **Using 13C and 15N Isotopomer Metabolic Flux via Glucose and Glutamine to Understand Cancer's Metabolic Dependencies by SRM-LC-MS/MS;** Susanne Breitkopf^{1,2}; Min Yuan¹; Costas Lyssiotis^{1,2}; John M Asara^{1,2}; ¹Beth Israel Deaconess Medical Center, Boston, MA; ²Harvard Medical School, Boston, MA
- WOD am 09:10 **PaperSpray Technology for Quantitative Analysis: Applications in Research and Regulated Bioanalysis;** Jennifer Cunliffe¹; Luis Ramos¹; Ann Brown²; Shawn Harriman²; Michael Hayes¹; Jakal Amin²; Jimmy Flarakos¹; ¹Novartis DMPK, East Hanover, NJ; ²Novartis MAP, Cambridge, MA
- WOD am 09:30 **Strategies for the Quantitation of Nucleotides in Human Plasma using Novel Ion-Pair Hydrophilic Interaction Chromatography Coupled with Tandem Mass Spectrometry;** Guodong Zhang; Annie Walker; Zhaosheng Lin; Xiaogang Han; Matthew Blatnik; Rick Steenwyk; Elizabeth Groeber; Pfizer Inc., Groton, CT
- WOD am 09:50 **Optimization of a High-Throughput Metabolic Soft Spot Assay with Pooled Sample Analysis and Software-Assisted Structure Elucidation;** Anthony Paiva; Cheryl Klakouski; Tatyana Zvyaga; Benjamin Johnson; Jonathan Josephs; W. Griffith Humphreys; Harold Weller; Wilson Shou; Bristol-Myers Squibb Company, Wallingford, CT
- WOD am 10:10 **New Quadratic Calibration Approaches for LC-MS Bioanalysis: Impact of Calibrator Concentrations and Their Distribution on Accuracy of Quadratic Regression;** Aimin Tan; Kayode Awaibe; Fethi Trabelsi; BioPharma Services Inc., Toronto, Canada

**8:30 – 10:30 AM, WEDNESDAY MORNING
INSTRUMENTATION: NEW DEVELOPMENTS IN HIGH
RESOLUTION AND MASS ACCURACY**
**Steve Patrie (UT Southwestern Medical Center), presiding
Auditorium**

- WOE am 08:30 **The Way to Isotopic Resolution of Mega Dalton Protein Mass Spectra for Top-Down Proteomics;** Eugene Nikolaev^{1,2}; ¹Institute for Energy Problems of Chemical Physics, Moscow, Russia; ²Emanuel Institute of Biochemical Physics, Moscow, Russia
- WOE am 08:50 **Accelerating High Resolution Mass Spectrometry by Advanced Signal Processing and Allied Technique Development;** Yury O. Tsybin¹; Tagir Aushev²; Luca Fornelli¹; Kristina Srzentić¹; Konstantin O. Zhurov¹; Ünige A. Laskay¹; Philippe Dugourd³; Jérôme Lemoine³; Anton N. Kozhinov¹; ¹Ecole Polytechnique Federale, Lausanne, Switzerland; ²Institute for Theoretical and Experimental Physics, Moscow, Russia; ³Université Lyon 1, Villeurbanne, France

- WOE am 09:10 **Autophaser GA – Absorption Mode Spectra for All;** David Kilgour; Rebecca Wills; Yulin Qi; Peter O'Connor; Warwick University, Coventry, UK
- WOE am 09:30 **Measurement of Intact Proteins under Non-Denaturing Conditions with nLC-MS Technique on an Orbitrap Instrument;** Olaf Scheibner¹; Michael Trnka²; Shenheng Guan²; Alma Burlingame²; Phillip Robinson³; Roger Kornberg³; Eugen Damoc¹; Eduard Denisov¹; Maciej Bromirski¹; ¹Thermo Fisher Scientific GmbH, Bremen, Germany; ²University of California, San Francisco, CA; ³Stanford University School of Medicine, Stanford, CA
- WOE am 09:50 **27-Plex Protein Quantification using Neutron-Encoded Chemical Tags, Resolution in Excess of One Million, and a New Hybrid Orbitrap Mass Spectrometer;** Alexander S. Hebert¹; Anna E. Merrill¹; Christopher M. Rose¹; Derek J. Bailey¹; Jonathan A. Stefely¹; David J. Pagliarini¹; Jesse Canterbury^{2,3}; Vlad Zabrouskov^{2,3}; Michael Senko^{2,3}; Eduard Denisov^{2,3}; Alexander Makarov^{2,3}; Michael S. Westphall¹; Joshua J. Coon¹; ¹University of Wisconsin, Madison, WI; ²Thermo Fisher Scientific, San Jose, CA; ³Thermo Fisher Scientific, Bremen, Germany
- WOE am 10:10 **High Density, High Resolution MS Scans Dramatically Boost the Number of Precursors Identifiable and Quantifiable at the MS Level;** Annette Michalski; Nagarjuna Nagaraj; Juergen Cox; Matthias Mann; MPI of Biochemistry, Martinsried, Germany

**8:30 – 10:30 AM, WEDNESDAY MORNING
EMERGING ENVIRONMENTAL CONTAMINANTS**
**Kerry Peru (Environment Canada), presiding
Room 101**

- WOF am 08:30 **Organic Components in a Wildfire-Applied Fire Retardant by Positive And Negative Electrospray Ionization High Resolution Mass Spectrometry;** Colleen Rostad¹; Edward Furlong²; ¹USGS, WRD, National Research Program, Denver, CO; ²USGS, NWQL, Methods Research & Development Program, Denver, CO
- WOF am 08:50 **Mass Spectrometry Characterization and Determination of Emerging Disinfection Byproducts in Swimming Pools;** Xing-Fang Li; Wei Wang; Yichao Qian; Jessica Boyd; Rongfu Huang; University of Alberta, Edmonton, Canada
- WOF am 09:10 **Integrating Comprehensive Two-Dimensional Gas Chromatography, (Ultra)High Resolution Mass Spectrometry and Mass Defect Analysis for the Identification of Halogenated Environmental Contaminants;** Karl J Jobs¹; Eric J Reiner¹; Vince Y Taguchi¹; Trudy Watson-Leung¹; Dave Poirier¹; Dave Alonso²; Joe Binkley²; Lorne Fell²; ¹Ontario Ministry of the Environment, Toronto, Canada; ²LECO Corporation, St. Joseph, MI
- WOF am 09:30 **Exact Mass Screening of 1024 Pharmaceuticals in Wastewater Samples using QExactive Mass Spectrometer;** Heinz Singer; Annika Woessner; Christa McArdell; Kathrin Fenner; Eawag - Swiss Federal Institute of Aquatic Science, Duebendorf, Switzerland
- WOF am 09:50 **Large Volume Injection of 900 µL Landfill Leachate Extracts for Fluorochemicals Analysis by Orthogonal Diol/C18 HPLC-MS/MS;** Mckay Allred¹; Johnsie Lang²; Morton Barlaz²; Jennifer Field¹; ¹Oregon State University, Corvallis, OR; ²North Carolina State University, Raleigh, NC

WEDNESDAY MORNING ORAL SESSIONS

WOF am 10:10 **Are the Results of Non-Target Screening for Water Contaminants Very Surprising?** Christian Zwiener; Marco Zedda; Christina Schmalz; *University of Tuebingen, Tuebingen, Germany*

8:30 – 10:30 AM, WEDNESDAY MORNING FUNDAMENTALS: ION SPECTROSCOPY (HONORING ROB DUNBAR'S 70TH BIRTHDAY)

**Peter Armentrout (University of Utah), presiding
Room 102**

WOG am 08:30 **HisGly as a Model for Metal-Ion Binding to Peptides;** Robert C. Dunbar¹; Jos Oomens²; Giel Berden²; Justin Kai-Chi Lau³; Udo H. Verkerk³; Alan C. Hopkinson³; K. W. Michael Siu³; ¹Case Western Reserve Univ, Cleveland, OH; ²Radboud University, Nijmegen, Netherlands; ³York University, Toronto, Canada

WOG am 08:50 **Infrared Spectroscopy of Anionic Polyaromatic Hydrocarbons;** Juehan Gao²; Giel Berden^{1,2}; Jos Oomens^{1,2}; ¹FOM Rijnhuizen, Nieuwegein, Netherlands; ²Radboud University Nijmegen, Nijmegen, Netherlands

WOG am 09:10 **Polycyclic Aromatic Hydrocarbon Fragment Ions Studied with an FTICR Mass Spectrometer Coupled to FELICE;** Annemieke Petrigani^{1,2}; A.F.G. van der Meer¹; Britta Redlich¹; A.G.G.M. Tielens²; Martin Vala⁴; John R. Eyler⁴; Jos Oomens^{1,3}; ¹FOM Rijnhuizen, Nieuwegein, The Netherlands; ²Leiden Observatory, Leiden University, Leiden, The Netherlands; ³IMM, Radboud University, Nijmegen, The Netherlands; ⁴University of Florida, Gainesville, FL

WOG am 09:30 **Cold Ion Spectroscopy for Structural Determination of Peptides and Proteins;** Oleg V. Boyarkine; Natalia S. Nagornova; Thomas R. Rizzo; Vladimir Kopysov; *EPFL, Lausanne, Switzerland*

WOG am 09:50 **IRMPD Spectroscopy: When Does It Reveal What's Present?** Jacob Schmidt; Steven Kass; *University of Minnesota, Minneapolis, MN*

WOG am 10:10 **UV Spectroscopy on a Model Hydrogen Storage Cluster, [Ag₃H₂(Ph₃P)₂CH₂]⁺;** Richard A. J. O'Hair¹; Athanasios Zavras¹; George Khairallah¹; Marion Girod^{2,3}; Rodolphe Antoine^{2,4}; Philippe Dugourd^{2,4}; Luke MacAleese^{2,4}; Marjan Krstić⁵; Vlasta Bonačić-Koutecký^{5,6}; ¹University of Melbourne, Victoria, Australia; ²Université Lyon 1, Lyon, France; ³Institut des Sciences Analytiques, Lyon, France; ⁴Institut Lumière Matière, Lyon, France; ⁵University of Split, Split, Croatia; ⁶Humboldt-Universität Berlin, Institut für Chemie, Berlin, Germany

8:30 – 10:30 AM, WEDNESDAY MORNING H/D EXCHANGE: BIOLOGICAL APPLICATIONS Thomas Jorgensen (Univ of Southern Denmark), presiding Room 103

WOH am 08:30 **The Influence of Adnectin on the Extracellular Domain of Epidermal Growth Factor Receptor as Measured by Hydrogen/Deuterium Exchange Mass Spectrometry;** Roxana E. Iacob¹; Guodong Chen²; Hui Wei²; Jingjie Mo²; Daniel Cohen²; Dianlin Xie²; Zheng Lin²; Paul Morin²; Michael Doyle²; Adrienne A. Tymiak²; John R. Engen¹; ¹Northeastern University, Boston, MA; ²Bristol-Myers Squibb Company, Princeton, NJ

WOH am 08:50 **Effector Binding Causes Major Changes in the Structure and Dynamics of the ClpP Protease Complex: A HDX/MS Investigation;** Modupeola Sowole¹; John Alexopoulos²; Joaquin Ortega²; Lars Konermann¹; ¹University of Western Ontario, London, Canada; ²McMaster University, Hamilton, ON, Canada

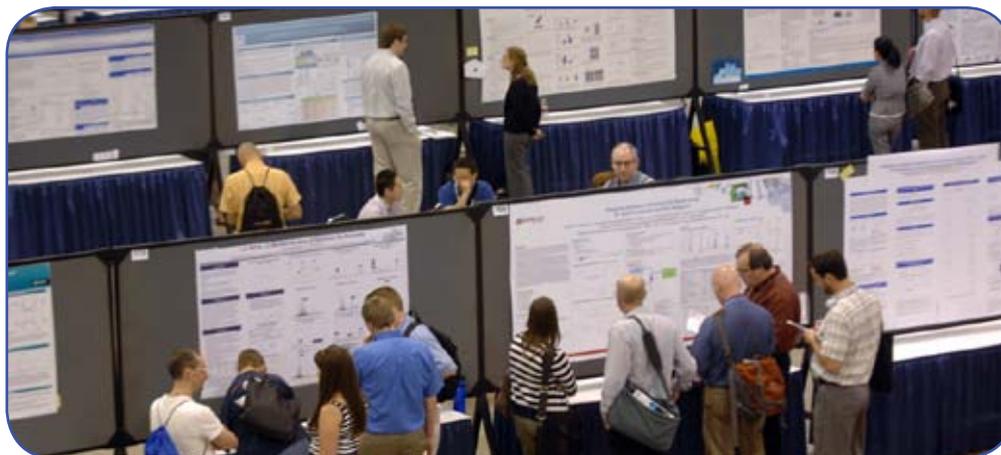
WOH am 09:10 **Epitope-Distal Effects Accompany the Binding of Two Distinct Antibodies to Hepatitis B Virus Capsids;** Jessica Bereszczak¹; Rebecca Rose¹; Esther van Duijn¹; Norman Watts²; Paul Wingfield²; Alasdair Steven²; Albert Heck¹; ¹Biomolecular Mass Spectrometry and Proteomics, Utrecht, The Netherlands; ²National Institutes of Health, Bethesda, MD

WOH am 09:30 **Characterization of Residual Structure in the Native and Amyloidogenic Tau;** Shaolong Zhu; Tamanna Rob; Derek Wilson; *York University, Toronto, Canada*

WOH am 09:50 **Rational Design of Novel Insulin Sensitizers Guided with HDX;** David Marciano; Scott Novick; Bruce Pascal; Michael Chalmers; Theodore Kamenecka; Patrick Griffin; *The Scripps Research Institute, Jupiter, FL*

WOH am 10:10 **Higher-Order Structure Characterization of a Fusion Protein Biopharmaceutical by Hydrogen/Deuterium Exchange Mass Spectrometry;** George M. Bou-Assaf; Steven A. Berkowitz; *Protein Pharmaceutical Development, Biogen Idec, Cambridge, MA*

**10:30 AM - 2:30 PM
WEDNESDAY POSTER SESSION
Exhibit Hall BC
Lunch concessions are open 11:00 am - 2:00 pm**





**2:30 – 4:30 PM, WEDNESDAY AFTERNOON
FORENSIC APPLICATIONS**
Mary Satterfield (NIST), presiding
Exhibit Hall A (lower level)

- WOA pm 2:30 **Development and Validation of a Liquid-Chromatography-High Resolution Mass Spectrometry Method for the Simultaneous Analysis of 28 Synthetic Cathinones in Urine;** Sebastien Anizan; Kayla Ellefsen; Marta Concheiro-Guisan; Marilyn A. Huestis; *Chemistry and Drug Metabolism, NIDA / NIH, Baltimore, MD*
- WOA pm 2:50 **Differentiation of African and Brazilian Mahogany Wood based on the Chemical Profile of Methanolic Extractives by Electrospray Ionization Mass Spectrometry;** Maira Fasciotti¹; Rodrigo Leal¹; Valnei Cunha¹; Romeu Daroda¹; Rosana Alberici^{1,2}; Marcos Eberlin²; *1Inmetro, Duque De Caxias, Brazil; 2University of Campinas, Campinas, Brazil*
- WOA pm 3:10 **Analysis of Propofol (2,6-Diisopropylphenol) and Its Metabolites in One Injection using a Dual Ionization Source;** Adrian Taylor¹; Larry Campbell¹; Carmai Seto¹; Oscar Cabrices²; Takeo Sakuma¹; *1ABI SCIEX, Concord, Canada; 2Gerstel Inc, Linthicum, MD*
- WOA pm 3:30 **Development of Species Specific Dating Technique for Human Bone with Minimal Sample Consumption;** Christopher Rollman; Mehdi Moini; *Smithsonian Institution, Suitland, MD*
- WOA pm 3:50 **Identification of Non-Synonymous Single Nucleotide Polymorphisms (nsSNPs) in Hair Shaft Protein and Utilization to Obtain Measures of Identity;** Tami Leppert¹; Krishna Parsawar¹; Jonathan Hilmer²; Lisa Baird¹; Brandon Hanberg³; Jacquie Howard³; Chad Nelson¹; Brian Bothner²; Mark Leppert¹; Glendon Parker³; *1University of Utah, Salt Lake City, UT; 2Montana State University, Bozeman, MT; 3Utah Valley University, Orem, UT*
- WOA pm 4:10 **LC-MS/MS Analysis of Opioids in Urine: Evaluation of LC-MS/MS Conditions for Interferences Due to Oxycodone Metabolites;** Marc Rumpfer; Lindsay Bazydlo; Bruce Goldberger; Timothy Garrett; *University of Florida, Gainesville, FL*

**2:30 – 4:30 PM, WEDNESDAY AFTERNOON
PRINCIPLES OF PROTEIN IDENTIFICATION AND CHARACTERIZATION**
Neil Kelleher (Northwestern University), presiding
Room L100 (lower level)

- WOB pm 2:30 **The Utility of Prior Information such as GPMdb Frequency and RNAseq Transcript Abundance for Improved Protein Identification in Shotgun Proteomics;** Avinash Shanmugam; Anastasia K. Yocum; Alexey Nesvizhskii; *University of Michigan, Ann Arbor, MI*
- WOB pm 2:50 **CPTAC Proteogenomics : Proteogenomics Analysis of Cancer MS/MS Spectra by Peptide Level Identification of Genomic Mutations Expressed in RNA-Seq Data;** Sunghee Woo; Seong Won Cha; Vineet Bafna; *UCSD, San Diego, CA*
- WOB pm 3:10 **Discovery and Mass Spectrometric Analysis of Novel Splice-Junction Peptides using RNA-Seq;** Gloria Sheynkman; Michael Shortreed; Lloyd Smith; *Univ. of Wisconsin Madison, Madison, WI*
- WOB pm 3:30 **An Unsupervised Machine Learning Algorithm for Positioning Modifications on Phosphopeptides;** Oliver Horlacher; Frederic Nikitin; Frederique Lisacek; Markus Muller; *SIB, Geneva, Switzerland*

WOB pm 3:50 **Using Prior Knowledge to Improve Scoring in High-Throughput Top-Down Proteomics Experiments;** Richard LeDuc; Le-Shin Wu; *Indiana University, Bloomington, IN*

WOB pm 4:10 **Proteogenomics of Immunoglobulins: Applications to the Clinical Laboratory;** Surendra Dasari; Jason Theis; Robert Bergen, III; Diana Gil; David Barnidge; Marina Ramirez-Alvarado; Diane Jelinek; David Murray; Ahmet Dogan; *Mayo Clinic, Rochester, MN*

**2:30 – 4:30 PM, WEDNESDAY AFTERNOON
GAS-PHASE IONS: REACTIONS, DYNAMICS AND THEORY**
Mike Van Stipdonk (Lawrence University), presiding
Ballroom B

- WOC pm 2:30 **Energetics and Dynamics of the Reactions of Thorium Cations with Dihydrogen and Methane;** Richard Cox; Peter B. Armentrout; *University of Utah, Salt Lake City, UT*
- WOC pm 2:50 **Charge Site Mass Spectra: Gaseous Protein Ions Have an Unusual Common Secondary Structure;** Fred W. McLafferty¹; Owen S. Skinner²; Kathrin Breuke³; *1Cornell University, Ithaca, NY; 2Northwestern University, Evanston, IL; 3University of Innsbruck, Innsbruck, Austria*
- WOC pm 3:10 **Model Compound Fragmentation Pathways as an Entry to Structural Analysis of Crude Oil;** Benjamin J. Bythell¹; Yuri Corilo^{1,2}; Vladislav V. Lobodin^{1,2}; Ryan Rodgers P. ^{1,2}; Alan G. Marshall^{1,3}; *1National High Magnetic Field Laboratory, Tallahassee, FL; 2Florida State University Future Fuels Institute, Tallahassee, FL; 3Florida State University, Tallahassee, FL*
- WOC pm 3:30 **A Catalytic Cycle for the Formation of a C-C Bond Catalysed by Bimetallic Ag/Cu;** George N. Khairallah; Halah Al Sharif; Krista Vikse; Richard A. J. O'Hair; *Bio21 Inst, Uni of Melbourne, Melbourne, Australia*
- WOC pm 3:50 **Variable Temperature Ion Trap Mass Spectrometer for the Study of Gas-Phase Reactions;** David Derkits; Jared Lamp; Jasmine Harge; Russell Sneed; Alexander Wiseman; Scott Gronert; *Virginia Commonwealth University, Richmond, VA*
- WOC pm 4:10 **Investigating Electron-Induced Chemiluminescence in Ru³⁺ (bipy)₃ Acetonitrile Clusters;** Maria Demireva; Evan R. Williams; *University of California, Berkeley, CA*

**2:30 – 4:30 PM, WEDNESDAY AFTERNOON
BIOMARKERS OF DRUG RESPONSE, EFFICACY AND TOXICITY: NOVEL MS APPROACHES**
Fanyu Meng (Merck & Co), presiding
Ballroom A

- WOD pm 2:30 **N-terminal Labeling Reveals Circulating Proteomic Signatures of Cell Death Post-Chemotherapy;** Arun Wiita; James Wells; *University of California, San Francisco, CA*
- WOD pm 2:50 **Protein C Inhibitor Proteotypic Peptide Quantitation by LC-Free SISCAPA-MALDI Mass Spectrometry Predicts Recurrence of Prostate Cancer after Radiotherapy;** N. Leigh Anderson¹; Morteza Razavi²; Terry Pearson²; Lisa Johnson³; Julian Lum³; Gary Kruppa⁴; *1SISCAPA Assay Technologies, Washington, DC; 2University of Victoria, Victoria, BC, Canada; 3Deeley Research Ctr, BC Cancer Agency, Victoria, BC, Canada; 4Bruker Daltonics Inc., Billerica, MA*

WEDNESDAY AFTERNOON ORAL SESSIONS

WOD pm 3:10 **Evaluation of a Novel Microfluidic Device for Robust and Ultrasensitive Quantitative Analysis of Biomarkers and Bio-Therapeutics by LC-MS/MS;** Jose Castro-Perez¹; Haihong Zhou¹; Vinit Shah¹; Kevin Bateman¹; David McLaren¹; Anita Lee¹; Stephen Previs¹; Kitshiri Herath¹; James Murphy²; Paul Rainville²; Alan Millar²; Angela Doneanu²; Michele Cleary¹; Thomas Roddy¹; ¹Merck, Kenilworth, NJ; ²Waters Corp, Milford, MA

WOD pm 3:30 **Quantifying Proteoforms using High-Throughput Top-Down Proteomics for Cell-Based Biomarker Discovery;** John P. Savaryn¹; Adam D. Catherman¹; Archer D. Smith IV¹; Ryan T. Fellers¹; Richard D. LeDuc²; Paul M. Thomas¹; Neil L. Kelleher¹; ¹Northwestern University, Evanston, IL; ²Indiana University, Bloomington, IN

WOD pm 3:50 **Proteomic Analysis Reveals Differences between Xenograft Models of Triple-Negative Breast Cancer Associated with Therapy Response;** Nadine Mascini¹; Gert Eijkel¹; Petra ter Brugge²; Jelle Wesseling²; Jos Jonkers²; Ron Heeren¹; ¹FOM Institute AMOLF, Amsterdam, The Netherlands; ²The Netherlands Cancer Institute, Amsterdam, The Netherlands

WOD pm 4:10 **Development of Urinary Biomarkers to Monitor Oligomer Treatment in Duchenne Muscular Dystrophy;** Aiping Zhang; Kitipong Jaesoontrachoon; Kathryn White; Sree Rayavarapu; Kristy J Brown; Patricia Ray; Kanneboyina Nagaraju; John N. van den Anker; Eric P Hoffman; Yetrib Hathout; *children's National Medical center, Washington, DC*

2:30 – 4:30 PM, WEDNESDAY AFTERNOON INSTRUMENTATION: NEW DEVELOPMENTS IN IONIZATION AND SAMPLING

**Richard Vachet (University of Massachusetts), presiding
Auditorium**

WOE pm 2:30 **A Novel ConDUCT Interface for Transmitting ~100% Ions from an ESI Source into a Mass Spectrometer;** Andrew N. Krutchinsky; Julio C. Padovan; Herbert Cohen; Brian T. Chait; *Rockefeller University, New York, NY*

WOE pm 2:50 **A New Ionization Method for Volatile and Nonvolatile Compounds Requiring only Vacuum and Matrix Assistance;** Sarah Trimpin; *Wayne State University, Detroit, MI*

WOE pm 3:10 **Nanoliter Segmented-Flow Sampling Mass Spectrometry: Introducing On-line Compartmentalization while Avoiding Sample Dilution;** Michael Volny¹; Bejan Hakimi¹; Joelle Rolfs¹; Petr Frycak²; Thomas Schneider¹; Gloria Yen¹; Dingsheng Liu¹; Daniel Chiu¹; Frantisek Turecek¹; ¹University of Washington, Seattle, WA; ²Palacky University, Olomouc, Czech Republic

WOE pm 3:30 **Coupling Gel Electrophoresis to Mass Spectrometry by Electrostatic Spray Ionization;** Elena Tobolkina¹; Liang Qiao¹; Liu Baohong²; Hubert Girault¹; ¹École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; ²Institute of Biomedical Sciences, Fudan University, Shanghai, China

WOE pm 3:50 **Large Surface Area Analysis by Spray Desorption Collection Coupled to Paper Spray Mass Spectrometry;** Andre Venter; Gregg Hasman; Kevin Douglass; *Western Michigan University, Kalamazoo, MI*

WOE pm 4:10 **Off-line Capillary Electrophoresis Mass Spectrometry Using Patterned Deposition Nanostructure Assisted Laser Desorption Ionization;** Jon Beusse; Kermit K. Murray; *Louisiana State University, Baton Rouge, LA*

2:30 – 4:30 PM, WEDNESDAY AFTERNOON ECOLOGICAL AND HUMAN HEALTH ENVIRONMENTAL CHEMISTRY AND TOXICOLOGY **Paul Chiarelli (Loyola University), presiding Room 101**

WOF pm 2:30 **Real-Time, Geospatially-Resolved Atmospheric Contaminant Monitoring by Membrane Introduction Tandem Mass Spectrometry (MIMS-MS/MS) Near Oil and Gas Operations in Alberta, Canada;** Ryan J. Bell⁴; Nicholas G. Davey^{1,4}; Morten Martinsen^{2,4}; Alexander J. Thompson⁴; Isobel J. Simpson³; Donald R. Blake³; Erik T. Krogh^{1,4}; Christopher G. Gill^{1,4}; ¹University of Victoria, Victoria, BC, Canada; ²NTNU, Trondheim, Norway; ³University of California, Irvine, CA; ⁴AERL, Vancouver Island University, Nanaimo, BC, Canada

WOF pm 2:50 **LC -Q-TOF-MS and LC -HR-TOF-MS Methods for the Determination of Metabolites of Polycyclic Aromatic Hydrocarbons in Urine: A Comparison;** Jutta Lintelmann¹; Evelyn Huebner¹; Juergen Wendt²; Ralf Zimmermann¹; ¹Helmholtz Zentrum Muenchen, Neuherberg, Germany; ²LECO European LSCA Centre, Moenchengladbach, Germany

WOF pm 3:10 **Simultaneous Determination of Polybrominated Diphenyl Ethers (BDEs) and Polychlorinated Biphenyls (PCBs) in Plasma by GC Triple Quadrupole Mass Spectrometer;** Yan-Ping Lin¹; Birgit Puschner¹; Isaac N. Pessah¹; Keyu Zhou²; Gwen Lim²; Helen Sun²; Kefei Wang²; ¹University of California, Davis, CA; ²Bruker, Chemical and Applied Market (CAM) Division, Fremont, CA

WOF pm 3:30 **Investigation of Human Body Adaptation to the High Temperature and High CO₂ Level by MS Analysis of Exhaled Breath Condensate;** Alexey Kononikhin^{1,2}; Anna Ryabokon²; Igor Popov^{2,5}; Nataliia Starodubtseva^{1,3}; Viktoria Kurova²; Evgeny Kukaev^{2,5}; Maria Indeykina^{1,2}; Alexander Spassky¹; Stanislav Pekov¹; Sergey Varfolomeev²; Irina Larina⁴; Eugene Nikolaev^{1,2}; ¹Institute for Energy Problems of Chemical Physics, Moscow, Russia; ²Emanuel Institute of Biochemical Physics, Moscow, Russia; ³Research Center for Obstetrics, Gynecology, Moscow, Russia; ⁴Institute for Biomedical Problems, Moscow, Russia; ⁵Moscow Institute of Physics and Technology, Moscow, Russia

WOF pm 3:50 **A New Method for the Analysis of Cyanotoxins using Laser Diode Thermal Desorption-Atmospheric Pressure Chemical Ionization-Tandem Mass Spectrometry (LDTD-APCI-MS/MS);** Audrey Roy-Lachapelle; Pascal Lemoine; Sébastien Sauvé; *Université de Montréal, Montréal, Canada*

WOF pm 4:10 **Quantitative Determination and Simultaneous Confirmation by UPLC-MS/MS of Methylhippuric Acids in the Urine of Workers Exposed to Xylenes;** Sebastien Gagne; *IRSST, Montreal, Canada*

2:30 – 4:30 PM, WEDNESDAY AFTERNOON
GLYCOPROTEINS AND GLYCANS: NEW MS APPROACHES
 Carthene Bazemore-Walker (Brown University), presiding
 Room 102

- WOG pm 2:30 **Site-Specific Glycan-Peptide Analysis for Determination of N-Glycoproteome Heterogeneity**; Benjamin Parker¹; Morten Thaysen-Andersen²; Nestor Solis¹; Nichollas Scott^{1,3}; Martin Larsen⁴; Mark Graham⁵; Nicolle Packer²; Stuart Cordwell¹; ¹The University of Sydney, Sydney, Australia; ²Macquarie University, Sydney, Australia; ³University of British Columbia, Vancouver, Canada; ⁴The University of Southern Denmark, Odense, Denmark; ⁵Children's Medical Research Institute, Sydney, Australia
- WOG pm 2:50 **Insights on the Glycopeptides and Glycosylation Site Mapping of the Atypical Glycans of the Methanogen Archaeon *Methanosarcina mazei***; Deborah R. Leon¹; Xiang Yu¹; Cheng Lin¹; Nancy Leymari¹; Rachel R. Ogorzalek Loo²; Joseph A. Loo³; Robert P. Gunsalus⁴; Catherine E. Costello¹; ¹Boston University School of Medicine, Boston, MA; ²Dept of Biological Chemistry UCLA, Los Angeles, CA; ³Dept of Chem and Biochem UCLA, Los Angeles, CA; ⁴Microbiol, Immunol and Molec Genetics Dept UCLA, Los Angeles, CA
- WOG pm 3:10 **Low-Flow Sheathless Capillary Electrophoresis - Mass Spectrometry for Sensitive High-Resolution Glycoform Profiling of Intact Pharmaceutical Proteins**; Rob Haselberg¹; Gerhardus J. de Jong²; Govert W. Somsen¹; ¹AIMMS Division of BioMolecular Analysis, Amsterdam, the Netherlands; ²Biomolecular Analysis, Utrecht, the Netherlands
- WOG pm 3:30 **In Depth Characterization of N-Linked Oligosaccharides using Fluoride-Mediated Negative Ion Microfluidic Chip LC-MS**; Jonathan Bones^{1,2}; Wenqin Ni¹; Victoria Berger¹; Barry Karger¹; ¹Northeastern University, Boston, MA; ²National Institute for Bioprocessing Research, Dublin, Ireland
- WOG pm 3:50 **Selected Reaction Monitoring to Differentiate and Relatively Quantitate Isomers of Sulfated Core 1 O-Glycans from Salivary MUC7 in Rheumatoid Arthritis**; Sarah Flowers¹; Liaqat Ali¹; Catherine Lane²; Niclas Karlsson¹; ¹Gothenburg University, Gothenburg, Sweden; ²AB Sciex, Warrington, UK
- WOG pm 4:10 **Computational Approach for Identifying Sulfation Pattern of Heparan Sulfate using High Resolution Tandem Mass Spectrometry Data**; Han Hu; Yu Huang; Yu Xia; Joseph Zaia; Boston University, Boston, MA

2:30 – 4:30 PM, WEDNESDAY AFTERNOON
H/D EXCHANGE: NEW DEVELOPMENTS IN TECHNOLOGY
 David Weis (University of Kansas), presiding
 Room 103

- WOH pm 2:30 **Electrochemical Reduction of Disulphide Bonds for Use in Protein Hydrogen/Deuterium Exchange Monitored by Mass Spectrometry**; Simon Mysling; Thomas J. D. Jorgensen; BMB, University of Southern Denmark, Odense, Denmark
- WOH pm 2:50 **Improvement of Peptic Peptide Identification for Amide H/D Exchange using High Mass Accuracy Combined with a Statistical Approach**; Jianqing Wu¹; Guillaume van der Rest²; ¹Ecole Polytechnique, Palaiseau, France; ²Université Paris-Sud, Orsay, France
- WOH pm 3:10 **Nepenthesin-I – Recombinant Carnivorous Plant Protease as a Tool for Hydrogen / Deuterium Exchange Mass Spectrometry**; Alan Kadek^{1,2}; Hynek Mrazek^{1,2}; Vyacheslav Tretyachenko²; Martial Rey³; David Schriemer³; Petr Halada¹; Petr Man^{1,2}; ¹Institute of Microbiology ASCR, Prague, Czech Republic; ²Charles University, Prague, Czech Republic; ³University of Calgary, Calgary, Canada
- WOH pm 3:30 **Microfluidics-Enabled, Sub-Second Hydrogen/Deuterium Exchange Pulse Labeling Reveals Allosteric 'Hotspots' in Enzymes**; Derek Wilson; Tamanna Rob; Preet Gill; Dasantila Golemi-Kotra; York University, Toronto, Canada
- WOH pm 3:50 **Using Isotopic Fine Structure to Resolve Individual Hydrogen/Deuterium Exchanges**; Qian Liu¹; Michael Easterling²; Jeffrey Agar¹; ¹Brandeis University, Waltham, MA; ²Bruker Daltonics Inc., Billerica, MA
- WOH pm 4:10 **Information Independent Acquisition of MS/MS Data for High Efficiency HDX-MS Experiments**; Vladimir Sarpe; David Schriemer; University of Calgary, Calgary, Canada

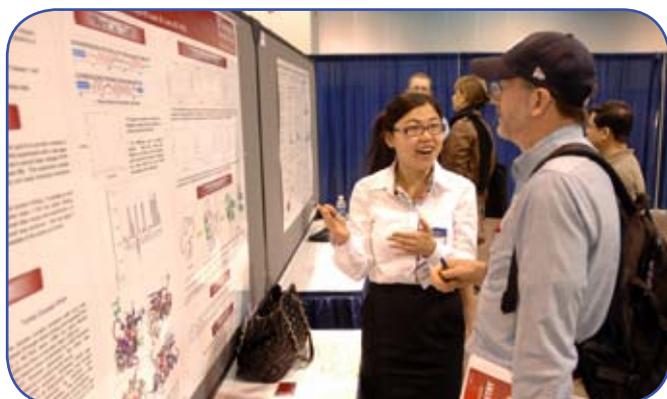
4:45 - 5:30 PM, WEDNESDAY AFTERNOON
ASMS MEETING
 Susan T. Weintraub, presiding
 Ballroom A

Don't miss awards, Board reports and more.

5:45 - 7:00 PM, WEDNESDAY AFTERNOON
WORKSHOPS
 Light snacks are provided on level two.

LEVEL ONE ROOMS

- Fundamentals in LC-MS Troubleshooting (organized by LC/MS & Related Topics Interest Group), Room 1
- H/D Exchange and Covalent Labeling (organized by H/D Exchange & Covalent Labeling Interest Group), Room 2
- LC-MS of Glycans and Glycopeptides: Advantages and Challenges, Room 3



WEDNESDAY AFTERNOON ORAL SESSIONS

Wednesday Workshops continued

LEVEL TWO ROOMS

- Fuel Analysis: Surveying Research Methods and their Application in Industrial Settings (organized by Energy, Petroleum & Biofuels Interest Group), Room 200 DE
- Emerging Contaminants in Environmental Research: Hydraulic Fracturing Fluids and Shale Gas Produced Waters - Advances, Challenges and Opportunities using mass spectrometry (organized by Environmental Applications Interest Group), Room 200 FG
- The Advancement of Polymer Mass Spectrometry (organized by Polymeric Materials Interest Group), Room 200 H
- Challenges and New Directions in Plant Proteomics, Room 200 I
- CHORUS – A Community Solution for the Storage, Visualization, and Sharing of Mass Spectrometry Data on the Cloud, Room 200 J

- Ion Structures and Energetics, and Ion-Molecule Reaction Kinetics in the Gas Phase, in honor of Peter B. Armentrout's 60th birthday (organized by Fundamentals Interest Group), Room 205 AB
- Proteins and Peptides as Pharmaceutical Agents (organized by Pharmaceuticals Interest Group), Room 205 CD
- Lipid Mass Spectrometry & Lipidomics, Room 208 AB
- Mass Spectrometry Applications in Art, Cultural Heritage, and Natural History, Room 208 CD

AFTER 8:00 PM
CORPORATE HOSPITALITY SUITES
HILTON MINNEAPOLIS HOTEL

THURSDAY MORNING ORAL SESSIONS

8:30 – 10:30 AM, THURSDAY MORNING

AMBIENT IONIZATION: INSTRUMENTATION AND APPLICATIONS Justin Wiseman (Prosolia, Inc.), presiding Exhibit Hall A (lower level)

ThOA am 08:30 **Progress toward Universal Ionization by Combining Different Ambient Ionization Methods**; Robert B. Cody; John Dane; JEOL USA, Inc., Peabody, MA

ThOA am 08:50 **Development of a Ruggedized AI-MS with Remote Sampling for Explosives Trace Detection**; Mitch Wells; Mike Stump; Bruce Solomon; Mark Gregory; Dennis Barket; FLIR Mass Spectrometry, West Lafayette, IN

ThOA am 09:10 **Microscopy Guided Atmospheric Ionization *in situ* Top-Down Protein Mass Spectrometry**; Cheng-Chih Hsu¹; Tiffany Poon²; Eugene C. Lin¹; Nick White²; Marito Hayashi²; Indroneal Banerjee³; Ju Chen³; Samuel L. Pfaff²; Eduardo R. Macagno⁴; Pieter C. Dorrestein^{1,5}; ¹Department of Chemistry and Biochemistry, UCSD, La Jolla, CA; ²Salk Institute, La Jolla, CA; ³Department of Medicine, UCSD, La Jolla, CA; ⁴Division of Biological Sciences, UCSD, La Jolla, CA; ⁵Skaggs School of Pharmacy, UCSD, La Jolla, CA

ThOA am 09:30 **Embryonic Metabolic Status Evaluated BY Combining DESI-HRMS Positive and Negative Ion Mode Mass Spectral Data by Data Fusion Strategy**; Valentina Pirro¹; Christina R. Ferreira²; Paolo Oliveri³; Andres F. Gonzales-Serrano⁴; Livia S. Eberlin²; Julia Heinzmann⁴; Andrea Lucas-Hahn⁴; Heiner Niemann⁴; Robert G. Cooks²; ¹Università degli Studi di Torino, Torino, ITALY; ²Department of Chemistry, Purdue University, West Lafayette, Indiana; ³Department of Pharmacy, University of Genova, Genova, Italy; ⁴Department of Biotechnology, Friedrich-Loeffler-In, Neustadt, Germany

ThOA am 09:50 **Combining Atomic Force Microscopy and Thermal Desorption-Based Surface Sampling/Ionization Mass Spectrometry for Submicrometer Scale Multimodal Chemical Imaging**; Olga S. Qvichinnikova¹; Kevin Kjoller²; Gary J. Van Berkel¹; ¹Oak Ridge National Laboratory, Oak Ridge, TN; ²Anasys Instruments, Santa Barbara, CA

ThOA am 10:10 **Rapid Evaporative Ionization Mass Spectrometry – Mechanism and Applications**; Dániel Szalay¹; Lajos Gödörházy¹; Tamás Karancsi¹; Andor Rozsnyai¹; Ottmar Golf²; Karl-Christian Schäfer²; Steven Pringle³; Mike Morris³; Zoltán Takáts²; ¹Medimass Ltd., Budapest, Hungary; ²Imperial College London, London, UK; ³Waters Corporation, Manchester, UK

8:30 – 10:30 AM, THURSDAY MORNING METABOLOMICS

Lloyd Sumner (Samuel Roberts Noble Fndn), presiding Room L100 (lower level)

ThOB am 08:30 **Multivariate and Network Tools for Analysis and Visualization of Metabolomic Data**; Dmitry Grapov^{1,2}; Oliver Fiehn^{1,2}; ¹West Coast Metabolomics Center, Davis, CA; ²University of California, Davis, CA

ThOB am 08:50 **A Novel Approach for Processing LC-Ion Mobility-MS Metabolomics Data**; Giorgis Isaac²; Martin Palmer³; Mark Bennett¹; James Langridge³; John P. Shockcor²; Andy Borthwick¹; ¹Nonlinear Dynamics, Newcastle, upon Tyne, UK; ²Waters Corporation, Milford, MA; ³Waters Corporation, Manchester, UK

ThOB am 09:10 **High(er) Throughput Metabolite Annotation in LC/MS Metabolomics**; Steffen Neumann¹; Michael Gerlich¹; Carsten Kuhl¹; Andrea Thum²; Christoph Böttcher¹; ¹Leibniz Institute of Plant Biochemistry, Halle, Germany; ²Martin Luther Universität, Halle, Germany

ThOB am 09:30 **RAMClust: An Unsupervised Feature Clustering Method for Non-Targeted Metabolomics Datasets**; Corey D. Broeckling; Fayyaz A. Afsar; Asa Ben-Hur; Jessica E. Prenni; Colorado State University, Fort Collins, CO

ThOB am 09:50 **MRMPROBS: Data Assessment and Metabolite Identification Tool for Large-scale MRM-based Widely Targeted Metabolomics**; Tsugawa Hiroshi¹; Arita Masanori¹; Kanazawa Mitsuhiro³; Ogiwara Atsushi³; Bamba Takeshi²; Fukusaki Eiichiro²; ¹RIKEN, Yokohama, Japan; ²Osaka University, Suita, Japan; ³Reifycs, Inc., Minato-ku, Japan

ThOB am 10:10 **Untargeted Metabolomics: From Statistical Objects to the Efficient Identification of “Known Unknowns”**; Robert Mistrík; Juraj Lutisan; *HighChem, Bratislava, Slovakia*

**8:30 – 10:30 AM, THURSDAY MORNING
REGULATED BIOANALYSIS AND DIAGNOSTICS USING HIGH
RESOLUTION LC/MS**

**David Burinsky (Alcon Laboratories), presiding
Ballroom B**

ThOC am 08:30 **Balancing Sensitivity Gains and Method Simplification: Investigating HR/AM and a new Nanospray Source for a Challenging Bioanalytical Method**; Min Meng³; Hongxia Wang¹; Kate Comstock¹; Spencer Carter²; Patrick Bennett¹; ¹*Thermo Fisher Scientific, San Jose, CA*; ²*WIL Research, Ashland, OH*; ³*Tandem Labs, Salt Lake City, UT*

ThOC am 08:50 **Monitoring Phosphodiesterase-4 Inhibitors using LC-MS/MS in Sports Drug Testing**; Mario Thevis¹; Oliver Krug²; Wilhelm Schänzer¹; ¹*German Sport University, Cologne, Germany*; ²*Europ. Monitoring Center f. Emerging Doping Agents, Cologne/Bonn, Germany*

ThOC am 09:10 **A Single Multi-Attribute Method for Quality Control and Release Testing of Therapeutic Biomolecules**; Rich Rogers¹; Brittney Livingston¹; Jenn Kerr¹; Nancy Nightlinger¹; Becky Scott¹; Sihong Deng¹; Brittany Affholter¹; David Bassett¹; Jim Bailey¹; Steve Cockrill¹; Quanzhou Luo¹; Oleg Borisov¹; Bob Bailey¹; Scott Peterman²; Amol Prakash²; Hongxia Wang²; Kevin Wheeler²; Patrick Bennett²; Alain Balland¹; ¹*Amgen, Seattle, WA*; ²*ThermoFisher, San Jose, CA*

ThOC am 09:30 **Determination of Colistin Pharmacokinetics in Human Plasma and Bronchoalveolar Lavage by a Novel UPLC-ESI QTOF MS/MS Methodology**; Demetris Anagnostopoulos¹; Evangelos Gikas^{1,2}; Konstantinos Papanikolaou⁴; Panagiotis Haritidis²; Athanassios Skoutelis³; George Daikos⁴; Anthony Tsarbopoulos^{1,5}; ¹*The Goulandris Natural History Museum, Kifissia, Greece*; ²*University of Athens, Pharmacy Department, Athens, Greece*; ³*Evangelismos Hospital, Dpt. of Internal Medicine, Athens, Greece*; ⁴*University of Athens Medical School, Internal Med., Athens, Greece*; ⁵*University of Athens Medical School, Pharmacology, Athens, Greece*

ThOC am 09:50 **Validation of a Glycan Biomarker Set for the Detection of Ovarian Cancer using Mass Spectrometry**; L. Renee Ruhaak¹; Sandra Taylor¹; Cynthia Williams¹; UyenThao Nguyen¹; Lauren Dimapasoc¹; Sureyya Ozcan¹; Carol Stroble^{1,2}; Suzanne Miyamoto²; Kyoungmi Kim¹; Gary Leiserowitz²; Carlito B. Lebrilla¹; ¹*University of California, Davis, CA*; ²*UC Davis Comprehensive Cancer Center, Sacramento, CA*

ThOC am 10:10 **Quantification of Purine Biomarkers by UPLC-MS/MS for Clinical Diagnostic of Rare Kidney Stones and Kidney Failure**; Margrét Thorsteinsdóttir^{1,2}; Finnur Freyr Eiriksson^{1,2}; Vidar O Edvardsson^{1,3}; Runolfur Pálsson^{1,3}; ¹*University of Iceland, Reykjavik, Iceland*; ²*ArcticMass, Reykjavik, Iceland*; ³*Landspítali University Hospital, Reykjavik, Iceland*

**8:30 – 10:30 AM, THURSDAY MORNING
DISEASE BIOMARKERS AND PATHWAYS**
**Carol Nilsson (UTMB), presiding
Ballroom A**

ThOD am 08:30 **Deciphering Breast Cancer Proteogenomics using Bioinformatics Methods**; Kelly V. Ruggles¹; Zuojian Tang¹; Manor Askenazi²; Olexandra Ovsy¹; Christopher Maher³; Li Ding³; Stuart Brown¹; Steven Shen¹; Meera Prasad¹; Jeremy Hoog³; Shunqiang Li³; Robert T. Kitchens³; Charles M. Perou⁴; Sherri R. Davies³; Matthew J. Ellis³; R. Reid Townsend³; David Fenyo¹; ¹*NYU Langone Medical Center, New York, NY*; ²*The Ionomix Initiative, Arlington, MA*; ³*Washington University, St. Louis, MO*; ⁴*University of North Carolina, Chapel Hill, NC*

ThOD am 08:50 **Proteomic Profiling of Breast Cancer Cell Line Secretome for Basal-type Specific Tumor Biomarker Discovery using Skyline MS1 Filtering**; Anna M. Zawadzka; Birgit Schilling; Michael P. Cusack; Christopher Benz; Bradford W. Gibson; *Buck Institute for Research on Aging, Novato, CA*

ThOD am 09:10 **Comparative Proteome Analysis Reveals an 11-Protein Signature that Predicts Clinical Outcome in Triple Negative Breast Cancer**; Ning Qing Liu¹; Tommaso De Marchi¹; Annemieke M. Timmermans¹; Christoph Stingl¹; Anita M.A.C. Trapman-Jansen¹; Renée Foekens¹; Maxime P. Look¹; Marcel Smid¹; Carolien H.M. van Beurden¹; René B.H. Braakman¹; Paul N. Span²; Fred C.G.J. Sweep²; Barbro K. Linderholm³; Anita Mangia⁴; Angelo Paradiso⁴; Luc Y. Dirix⁵; Steven J. Van Laere⁵; Julie Benedicte Brask⁶; Vera Timmermans-Wielenga⁶; Theo M. Luiders¹; John W.M. Martens¹; John A. Foekens¹; Arzu Umar¹; ¹*Erasmus University Medical Center, Rotterdam, Netherlands*; ²*University Nijmegen Medical Centre, Nijmegen, Netherlands*; ³*Karolinska Institute, Stockholm, Sweden*; ⁴*National Cancer Centre Giovanni Paolo II, Bari, Italy*; ⁵*GZA hospitals St-Augustinus, Antwerp, Belgium*; ⁶*Copenhagen University Hospital, Copenhagen, Denmark*

ThOD am 09:30 **Targeting the Multi-Hit Mechanism of IgA Nephropathy through Systematic Serum Analysis of Circulating Components and Upstream Effector's**; Jennifer Cushing¹; Audra Hargett¹; Stacy Hall¹; Blake P. Moore¹; Greg Bowersock¹; Monica W. Stinnett¹; Kazuo Takahashi^{1,2}; Hitoshi Suzuki¹; Tyler J. Stewart¹; LeeAnn J. Boerma¹; Scott Peterman³; Amol Prakesh³; Milan Raska¹; Jiri Mestecky¹; Bruce A. Julian¹; Jan Novak¹; Matthew B. Renfrow¹; ¹*University of Alabama at Birmingham, Birmingham, AL*; ²*Fujita Health University School of Medicine, Toyoake, Japan*; ³*ThermoFisher Scientific, San Jose, CA*

ThOD am 09:50 **Cell Membrane Glycan Profiling Differentiates Cancer Cell Origin and Molecular Subtype**; Serenus Hua¹; Lauren Dimapasoc²; Bum Jin Kim¹; Seung Hyup Jeong¹; Jae Han Kim¹; Carlito Lebrilla²; Hyun Joo An¹; ¹*GRASST, Chungnam National University, Daejeon, South Korea*; ²*University of California, Davis, CA*

ThOD am 10:10 **Elucidating Pathways Associated with Sudden Infant Death Syndrome (SIDS) using Quantitative Proteomics to Analyze Various Regions Isolated from Autopsied Brainstems**; Kevin G. Broadbelt¹

THURSDAY MORNING ORAL SESSIONS

²; Claire F. Magiotto²; Catherine A. Hassett²; Jan Muntel^{1,2}; Elisabeth A. Haas³; Henry F. Krous³; Hannah C. Kinney²; Hanno Steen^{1,2}; ¹*Proteomics Center, Boston Children's Hospital, Boston, MA*; ²*Department of Pathology, Boston Children's Hospital, Boston, MA*; ³*Rady Children's Hospital San Diego and UCSD, San Diego School of Medicine, La Jolla, CA*

8:30 – 10:30 AM, THURSDAY MORNING SPACE SCIENCE, ASTROBIOLOGY, AND ATMOSPHERIC CHEMISTRY

Veronica Bierbaum (University of Colorado), presiding
Auditorium

ThOE am 08:30 **Micro-AirCore: Spatial Mapping of Atmospheric Species**; Kristin Favela¹; Pieter Tans²; Thomas Jaeckle¹; William Williamson¹; ¹*Southwest Research Institute, San Antonio, TX*; ²*National Oceanic and Atmospheric Administration, Boulder, CO*

ThOE am 08:50 **Development of a Dual Ion Source Linear Ion Trap Mass Spectrometer for *in situ* Detection of Organics on Mars**; Ryan M. Danell¹; Veronica Pinnick²; Friso Van Amerom³; Ricardo Arevalo²; Xiang Li²; William Brinckerhoff²; Paul Mahaffy²; ¹*Danell Consulting, Inc., Winterville, NC*; ²*NASA Goddard Space Flight Center, Greenbelt, MD*; ³*SRI International, St Petersburg, FL*

ThOE am 09:10 **Cluster Ion Imaging of the "Paris" Meteorite**; Manale Noun^{1,2}; Bilal Nsouli²; Donia Baklouti³; Rosario Brunetto³; Frédéric Jamme⁴; Christophe Sandt⁴; Paul Dumas⁴; Louis Hendecourt³; Serge Della-Negra¹; ¹*Institut de Physique Nucleaire d'Orsay, Orsay Cedex, FRANCE*; ²*Lebanese Atomic Energy Commission, CNRSL, Beirut, Lebanon*; ³*Institut d'Astrophysique Spatiale, CNRS, UMR-8617, Orsay, France*; ⁴*Synchrotron SOLEIL, Gif-sur-Yvette-France, Orsay, France*

ThOE am 09:30 **Mass Spectrometric-based Investigations of Polymerized Biomolecules Synthesized in Miller's Unreported Cyanamide Spark Discharge Experiment**; Eric Parker¹; Manshui Zhou¹; Aaron Burton²; Daniel Glavin²; Jason Dworkin²; Facundo Fernández¹; Jeffrey Bada³; ¹*Georgia Institute of Technology, Atlanta, U.S.A.*; ²*NASA Goddard Space Flight Center, Greenbelt, MD*; ³*Scripps Institution of Oceanography, La Jolla, CA*

ThOE am 09:50 **Structural Determination of Titan's Tholins Components by Tandem FTMS, by Standard Comparison and Action Spectroscopy**; Roland Thissen¹; Arpad Somogyi²; Véronique Vuitton¹; Laurène Flandinet¹; Anne Millet³; Carlos Perez del Valle³; Istvan Komaromi⁴; ¹*IPAG, Grenoble, France*; ²*University of Arizona, Tucson, AZ*; ³*Département de Chimie Moléculaire, UJF, Grenoble, France*; ⁴*University of Debrecen, Debrecen, Hungary*

ThOE am 10:10 **Polycyclic Aromatic Hydrocarbon Evolution in a Nitrogen Environment Driven by Collisional Activation, Cold Plasma Discharge, or UV Radiation: A Tholin Study**; Anyin Li¹; Fred Jjunju²; R. Graham Cooks¹; ¹*Purdue University, West Lafayette, IN*; ²*King Abdullah University of Science and Technology, CEMSE KAUST, Thuwah, KSA*

8:30 – 10:30 AM, THURSDAY MORNING IMAGING MS: PHARMACEUTICAL APPLICATIONS Walter Korfmacher (Genzyme), presiding Room 101

ThOF am 08:30 **Mass Spectrometry Imaging for Pharmaceutical R&D Employing Cassette Drugs Dosing for Higher Throughput High Resolution Pharmacokinetic and Biodistribution Analysis**; Richard Goodwin¹; John Swales¹; Michael Rooney²; C. Logan Mackay³; Per Andren⁴; Peter Webborn¹; ¹*AstraZeneca, UK, Macclesfield, UK*; ²*AstraZeneca, USA, Waltham, MA*; ³*University of Edinburgh, Edinburgh, UK*; ⁴*Uppsala University, Uppsala, Sweden*

ThOF am 08:50 **Label-Free Mass Spectrometry Imaging of Drug and Metabolites in Target Tissue**; Angela Wehr; Lin Xu; Chandra Prakash; *Biogen Idec, Cambridge, MA*

ThOF am 09:10 **Drug and Metabolism Studies using Infrared Matrix-Assisted Laser Desorption Electrospray Ionization Mass Spectrometry Imaging (IR-MALDESI MSI) Coupled to FT-ICR MS**; Jeremy A. Barry¹; Reid Groseclose²; Guillaume Robichaud¹; David Wagner²; Stephen Castellino²; David C. Muddiman¹; ¹*North Carolina State University, Raleigh, NC*; ²*GlaxoSmithKline, Research Triangle Park, NC*

ThOF am 09:30 **Muscarinic Receptor Antagonist Target Disposition in Lung Disease Utilizing 10- μ m Spatial Resolution of AP SMALDI Tissue Imaging**; Akos Vegvari¹; Kerstin Strupat³; Magnus Dahlbäck²; Thomas Fehniger¹; György Marko-Varga¹; ¹*Lund University, Lund, Sweden*; ²*AstraZeneca R&D, Mölndal, Sweden*; ³*Thermo Fisher Scientific (Bremen) GmbH, Bremen, Germany*

ThOF am 09:50 **MALDI-MS Imaging and Quantitation of Primary Amine Neurotransmitters Dopamine, GABA and Glutamate Directly in Brain Tissue Sections**; Mohammadreza Shariatgorji¹; Anna Nilsson¹; Richard Goodwin¹; Xiaoqun Zhang²; Nicoletta Schintu²; Per Svenningsson²; Per E. Andren¹; ¹*Uppsala University, Uppsala, Sweden*; ²*Karolinska Institutet, Stockholm, Sweden*

ThOF am 10:10 **Evaluation of Quantitative MSI Approaches Applied to Small and Large Molecules Analysis in tissue**; Gregory Hamm; Guillaume Hochart; Fabien Pamelard; raphael legouffe; David Bonnel; Jonathan Stauber; *ImaBiotech, MS Imaging Department, Lille, France*

8:30 – 10:30 AM, THURSDAY MORNING ENERGY, PETROLEUM, AND BIOFUELS: ADVANCES IN MS DESIGN AND INFORMATICS

Steven Kass (University of Minnesota), presiding
Room 102

ThOG am 08:30 **Ultra-Fast, High Mass-Resolution Multi-Reflection-Time-of-Flight-Mass Spectrometer as Detector for One-Dimensional and Comprehensive Two-Dimensional Gas Chromatography: Characterization of Highly Complex Petrochemical Mixtures**; Ralf Zimmermann^{1,2}; Thomas Gröger¹; Jürgen Wendt³; ¹*JMSC, CMA Helmholtz Zentrum Muenchen, Neuherberg, Germany*; ²*JMSC, Analytical Chemistry, University of Rostock, Rostock, Germany*; ³*LECO European LSCA Centre, Moenchengladbach, Germany*

- ThOG am 08:50 **Validation of High Resolution Time-of-Flight Petroleomics: Linearity, Repeatability, and Accuracy of Heteroatomic Species Measurements in Crude Petroleum;** Clécio F. Klitzke¹; Kevin Siek²; Julie A.B. Hernández³; Rubens Maciel-Filho³; Marcos N. Eberlin¹; Joe Binkley²; Jeffrey S. Patrick²; Wibke Peters⁴; ¹UNICAMP. Institute of Chemistry, Campinas, Brazil; ²LECO Corporation, St. Joseph, MI; ³UNICAMP. Chemical Engineering Faculty, Campinas, Brazil; ⁴LECO Instrumente GmbH, Mönchengladbach, Germany
- ThOG am 09:10 **A New Apparatus for Study of Pressure-Dependent Laminar Premixed Flames with VUV Photoionization Mass Spectrometry;** Zhongyue Zhou; Yu Wang; Xiaofeng Tang; Wuhua Wu; Fei Qi; *University of Science and Technology of China, Hefei, China*
- ThOG am 09:30 **Analysis of Hydrocarbon Based Oil from Hydrothermal Treatment of Algal Biomass by Complementary 2D GC and ESI-FTICR-MS;** Wassim Obeid; Patrick Hatcher; *Old Dominion University, Norfolk, VA*
- ThOG am 09:50 **Climate Change Effects on Biomass Emissions and Biofuels;** Simin Maleknia¹; Andreas Klingberg²; Juergen Odermatt²; ¹University of New South Wales, Sydney, Australia; ²Institute for Wood Chemistry, Hamburg, Germany
- ThOG am 10:10 **Characterization of Organosolv Switchgrass by High Performance Liquid Chromatography/High Resolution Multiple Stage Tandem Mass Spectrometry Using Hydroxide-Doped Electrospray Ionization;** Tiffany Jarrell¹; Christopher Marcum¹; Benjamin Owen¹; Joseph Bozell²; Hilikka Kenttämää¹; ¹Purdue University, Lafayette, IN; ²University of Tennessee, Knoxville, TN

8:30 – 10:30 AM, THURSDAY MORNING
EPIGENETIC MODIFICATIONS AND MECHANISMS
 Ben Garcia (University of Pennsylvania), presiding
 Room 103

- ThOH am 08:30 **Mass Spectrometry Based Quantification of Epigenetic DNA Modifications *in vivo*;** Delshanee Kotandeniya; Brock Matter; Jungmin Song; Xuemin Qian; Fekadu Kassie; Natalia Tretyakova; *University of Minnesota, Minneapolis, MN*
- ThOH am 08:50 **Toward Solving the Histone Code: A Novel Method to Identify Histone PTM Crosstalk using Quantitative Mass Spectrometry;** Yael David¹; Anna Arnaudo²; Tom Muir¹; ¹Princeton University, Princeton, NJ; ²University of Pennsylvania, Philadelphia, PA
- ThOH am 09:10 **RapidFire MS/MS Enables Both Rapid Evaluation of Multiple Histone Methyltransferases and Label-Free High Throughput Screening of Targeted Compound Libraries;** Patrick Bingham; Cody Krivacic; Dawn Nowlin; Karen Maegley; *Pfizer, San Diego, CA*
- ThOH am 09:30 **The Functional Interactome Landscape of the Human Histone Deacetylase Family: A Proteomics-Bioinformatics Approach for Profiling Relative Interaction Stabilities;** Preeti Joshi¹; Todd Greco¹; Amanda Guise¹; Yang Luo¹; Fang Yu¹; Alexey Nesvizhskii²; Ileana M. Cristea¹; ¹Princeton University, Princeton, NJ; ²University of Michigan Medical School, Ann Arbor, MI
- ThOH am 09:50 **Comprehensive Maps of Ribonucleotide Modifications as Possible Indicators of Cell Identity, Epigenetic, and Metabolic State;** Rebecca E. Rose; Ryan Quinn; D. Fabris; *The RNA Institute, University at Albany, Albany, NY*
- ThOH am 10:10 **MS-based Measurement and Modeling of Histone Methylation Kinetics (M4K) in Multiple Myeloma Cells Carrying Methyltransferase Mutations;** Yupeng Zheng¹; Nir Yungster¹; Relja Popovic²; Teresa Ezponda-Itoiz²; Paul Thomas¹; Jonathan Licht²; William Kath¹; Neil Kelleher^{1,2}; ¹Northwestern University, Evanston, IL; ²Feinberg School of Medicine, Northwestern Univ, Chicago, IL



10:30 AM - 2:30 PM
THURSDAY POSTER SESSION
 Exhibit Hall BC
 Lunch concessions are open 11:00 am - 2:00 pm



THURSDAY AFTERNOON ORAL SESSIONS

2:30 – 4:30 PM, THURSDAY AFTERNOON AMBIENT AND ATMOSPHERIC PRESSURE IONIZATION: FUNDAMENTALS

Gary Van Berkel (Oak Ridge National Laboratory), presiding
Exhibit Hall A

- ThOA pm 2:30 **Dissociative Electron Transfer Desorption: A Non-Thermal Desorption Mechanism in Plasma-Based Ambient Ionization;** Joshua Wiley; Jacob Shelley; Jobin Cyriac; Graham Cooks; *Purdue University, West Lafayette, IN*
- ThOA pm 2:50 **A New Ambient Ionization Method for Ionization of Volatile and Nonvolatile Compounds;** Shubhashis Chakrabarty; Vincent S. Pagnotti; Charles N. McEwen; *University of the Sciences, Philadelphia, PA*
- ThOA pm 3:10 **Visualization of Mass Transfer in the Flowing Atmospheric-Pressure Afterglow Source for Ambient Desorption/Ionization Mass Spectrometry;** Kevin Pfeuffer; Steven Ray; Gary Hieftje; *Indiana University, Bloomington, IN*
- ThOA pm 3:30 **Sorting Surface Affinity of Analytes in Droplets by Pulsed Nanospray Ionization;** Carina Minardi; Haopeng Wang; Kaveh Jorabchi; *Georgetown Univ., Washington, DC*
- ThOA pm 3:50 **Elucidation of Reagent Species and Mechanisms in the Direct Sampling Analysis (DSA) Source;** Sharanya Reddy; Thomas White; George Perkins; Craig Whitehouse; *PerkinElmer, Shelton, CT*
- ThOA pm 4:10 **Development of Atmospheric Pressure Laser Ionization Method using a Novel 6 μm-Band Mid-Infrared Tunable Laser and Solvent as Matrix;** Ryuji Hiraguchi; Hisanao Hazama; Kunio Awazu; *Osaka University, Suita, Japan*

2:30 – 4:30 PM, THURSDAY AFTERNOON PROTEOMICS: INFECTIONS DISEASES Mark E. Bier (Carnegie Mellon University), presiding Room L100

- ThOB pm 2:30 **Neutron-Encoded (NeuCode) Mass Signatures for the Absolute Quantification of Vesicular Stomatitis Virus Proteins during Infection;** Gregory K. Potts; Emily A. Voigt; John Yin; Joshua J. Coon; *University of Wisconsin, Madison, WI*
- ThOB pm 2:50 **Probing the Hijacking of the Dynamic Epigenome during Viral Infection;** Benjamin Garcia¹; Peter DiMaggio²; Christine O'Connor⁴; Tom Shenk³; ¹University of Pennsylvania, Philadelphia, PA; ²Imperial College, London, UK; ³Princeton University, Princeton, NJ; ⁴Cleveland Clinic, Cleveland, OH
- ThOB pm 3:10 **Defining the HIV-1 Interactome using Insertional Mutagenesis Tagging and I-DIRT;** Yang Luo²; Erica Jacobs¹; Todd Greco³; Sarah Keegan⁴; David Fenyö⁴; Michael Rout¹; Ileana Cristea³; Mark Muesing²; Brian Chait¹; ¹Rockefeller University, New York, NY; ²Aaron Diamond Aids Research Center, New York, NY; ³Princeton University, Princeton, NJ; ⁴New York University, New York, NY
- ThOB pm 3:30 **Combining Fragmentation Data with an Interactive de novo Sequencing Program to Characterize Circulating Antibodies against Malaria;** Jessica Chapman¹; Wilfred Tang²; Yong Kil²; Chris Becker²; Marshall Bern²; David Fenyö¹; Matthias Muellenbeck³; Hedda Wardemann³; Beatrix Ueberheide¹; ¹New York University Langone Medical

Center, New York, NY; ²Protein Metrics, San Carlos, CA; ³Max Planck Institute for Infection Biology, Berlin, Germany

- ThOB pm 3:50 **Exploring *Neisseria meningitidis* Virulence with Top-Down Mass Spectrometry;** Joseph Gault¹; Christian Malosse⁴; Marie-Cécile Ploy⁵; Catherine E. Costello²; Guillaume Duménil³; Julia Chamot-Rooke⁴; ¹Institut Pasteur, Paris, France; ²Boston University School of Medicine, Boston, MA; ³Hôpital Européen G. Pompidou, INSERM, Paris, France; ⁴Institut Pasteur, CNRS, Paris, France; ⁵CHU Limoges, INSERM, Limoges, France
- ThOB pm 4:10 **A Systems Biology Approach for the Discovery of Drug and/or Vaccine Targets in *Plasmodium falciparum* using Irradiated Long-Lived Merozoites;** Krishan Kumar¹; Prakash Srinivasan²; Michael J. Nold³; Dan Sturdevant⁴; J. Kathleen Moch⁵; Karine Reiter¹; Steve F. Porcella⁴; Scott Geromanos³; Julian C. Rayner⁶; J. David Haynes⁵; David L. Narum¹; ¹LMIV, NIAID, NIH, Rockville, MD; ²LMVR, NIAID, NIH, Rockville, MD; ³Waters Corporation, Milford, MA; ⁴RTB, NIAID, NIH, Hamilton, MT; ⁵Walter Reed Army Institute of Research, Silver Spring, MD; ⁶Wellcome Trust Sanger Institute, Hinxton, Cambridge, UK

2:30 – 4:30 PM, THURSDAY AFTERNOON LIPIDS AND PROFILING David Goodlett (University of Maryland), presiding Ballroom B

- ThOC pm 2:30 **Novel Application of Reversed-Phase UHPLC–QTOFMS for Comprehensive Analysis of Plasma Lipids;** Tomas Cajka; William Wikoff; Carlos Leon; Brian DeFelice; Dmitry Grapov; Oliver Fiehn; *University of California, Davis, CA*
- ThOC pm 2:50 **Lipidomic Profiling of Commensal Microbe *Bacteroides Fragilis* And Identification of Immunomodulatory Sphingolipids;** Sungwan Oh; Dingding An; Fikri Avci; Dennis Kasper; *Harvard Medical School, Boston, MA*
- ThOC pm 3:10 **High-Throughput Lipid Profiling System for Dried Plasma Spots using Online-Supercritical Fluid Extraction-Supercritical Fluid Chromatography/ Mass Spectrometry;** Takeshi Bamba; Takato Uchikata; Atsuki Matsubara; Eiichiro Fukusaki; *Dept. Biotech., Grad. Sch. Eng., Osaka Univ., Suita, Japan*
- ThOC pm 3:30 **Gas-Phase Transformation of Phosphatidylcholine Cations to Structurally Informative Anions via Ion/Ion Chemistry;** John Stutzman¹; Stephen Blanksby²; Scott McLuckey¹; ¹Purdue University, West Lafayette, IN; ²University of Wollongong, Wollongong, Australia
- ThOC pm 3:50 **Long-Term Performance and Stability of Shotgun Lipidomic Analysis of Human Plasma Samples;** Laura Heiskanen; Kirill Tarasov; Hung Xuan Ta; Tuulia Sylvänne; Helena Simolin; Dimple Kauhanen; Kim Ekroos; *Zora Biosciences Oy, Espoo, Finland*
- ThOC pm 4:10 **Nanomanipulation-Coupled to Mass Spectrometry for Direct Organelle Analysis to Explore Lipid Localization Chemistry within Single Cells;** Kristina Clemons¹; Sheida Torabi²; Huanbiao Mo²; Guido Verbeck¹; ¹Univ. of North Texas, Denton, TX; ²Texas Women's University, Denton, TX

**2:30 – 4:30 PM, THURSDAY AFTERNOON
BIOMARKERS IN DRUG DISCOVERY AND DEVELOPMENT**
Chandra Prakash (Biogen Idec), presiding
Ballroom A

- ThOD pm 2:30 **Challenges and Considerations for Multi-component LCMS Biomarker Assays: Lysophosphatidic Acids as Biomarkers;** Petia Shipkova; Joelle Onorato; Michael Furlong; Anne Minnich; *Bristol Myers Squibb, Princeton, NJ*
- ThOD pm 2:50 **LC-MS Strategies for Separation and Detection of Endogenous Organic Acids and Polar Metabolites in Pharmaceutical R&D;** David Pirman; Matthew Blatnik; *Pfizer, Groton, CT*
- ThOD pm 3:10 **The “Off Targets” of Angiotensin Converting Enzyme – A Peptidomic Approach;** Teresa B. Hong¹; Gabriel B Gugu¹; Tea Janjulia²; Kenneth E. Bernstein²; Markus Kalkum¹; ¹*City of Hope, Duarte, CA*; ²*Cedars-Sinai Medical Center, Los Angeles, CA*
- ThOD pm 3:30 **LC/SRM Reveals Amyloid-Beta Isoforms’ Metabolic Differences and Diurnal Fluctuations in Alzheimer’s Disease;** Kwasi Mawuenyega; Vitaliy Ovod; Tom Kasten; Yafei Huang; Wendy Sigurdson; Randall Bateman; *Washington University School of Medicine, Saint Louis, MO*
- ThOD pm 3:50 **Using Mass Spectrometry to Identify a Novel Protein Responsible for Adrenal Amyloidosis;** Stephanie M. Cologna; Mitra L. Rauschecker; Peter S. Backlund; Robert D. Shamburek; James E. Balow; Alfred L. Yergey; Constantine A. Stratakis; Smita B. Abraham; *National Institutes of Health, Bethesda, MD*
- ThOD pm 4:10 **Development and Qualification of a Multiplexed Selected Reaction Monitoring-Mass Spectrometry Based Assay for Evaluation of Candidate Alzheimer’s Disease Progression Markers;** Daniel S. Spellman¹; Weixun Wang¹; Katie Southwick²; Rachel Korn¹; Ronald A. Miller¹; Mary J. Savage¹; Daniel J. Holder¹; Nathan A. Yates³; Ronald C. Hendrickson⁴; Bonnie J. Howell¹; ¹*Merck and Co., Inc., West Point, PA*; ²*Thermo Fisher Scientific, San Jose, CA*; ³*University of Pittsburgh, Pittsburgh, PA*; ⁴*Memorial Sloan-Kettering Cancer Center, New York, NY*

**2:30 – 4:30 PM, THURSDAY AFTERNOON
“PLANT” OMICS**
Michelle Cilia (US Department of Agriculture), presiding
Auditorium

- ThOE pm 2:30 **An Overview of Label-Free Quantitative Shotgun Proteomics in Rice and Grapevines;** Paul A. Haynes¹; Karlie Neilson¹; Mehdi Mirzaei¹; Iniga George¹; Shila Shabhzian¹; C. Gayani Gammulla¹; Steve Van Sluyter¹; Brian Atwell¹; G. Hosseini Salekdeh²; Anne Fennell³; Grant Cramer⁴; ¹*Macquarie University, North Ryde, Sydney, Australia*; ²*Agricultural Biotechnology Institute of Iran, Tehran, Iran*; ³*South Dakota State University, Brookings, SD*; ⁴*University of Nevada, Reno, NV*
- ThOE pm 2:50 **Integrating the Malting Barley Metabolome, Phenome and Genome using a Novel Non-Targeted UPLC-MS Metabolomics Workflow;** Adam Heuberger¹; Corey Broeckling¹; Kaylyn Kirkpatrick¹; Gary Hanning²; Jessica Prenni¹; ¹*Colorado State University, Fort Collins, CO*; ²*Anheuser-Busch, Inc., St. Louis, MO*

- ThOE pm 3:10 **Improving the Identification Rate of Data Independent Label-Free Quantitative Analysis: A Proteomics Case Study on Apple Fruit;** Kim Buts¹; Sebastien Carpentier^{2,3}; Servaas Michielssens⁴; Eisuke Hayakawa⁵; Maarten Hertog¹; Bart Nicolai¹; ¹*BIOSYST-MeBioS, KU Leuven, Heverlee, Belgium*; ²*SYBIOMA, KU Leuven, Leuven, Belgium*; ³*BIOSYST-Crop biotechnics, KU Leuven, Heverlee, Belgium*; ⁴*Quantum and Physical Chemistry Section, KU Leuven, Heverlee, Belgium*; ⁵*Research Group of Functional Genomics & Proteomics, Leuven, Belgium*
- ThOE pm 3:30 **A Novel GC/quadrupole-Orbitrap for Untargeted Metabolomics and Combined Multi-Omics Analysis of Symbiosis in *Medicago Truncatula*;** Allison J. Balloon¹; Amelia C. Peterson²; Jens Griep-Raming²; Christopher M. Rose¹; Benjamin Minkoff¹; Muthusubramanian Venkateshwarar¹; Jeremy Volkening¹; Derek J. Bailey¹; Paul A. Grimsrud¹; Junko Maeda¹; Michael S. Westphall¹; Michael R. Sussman¹; Jean-Michel Ané¹; Joshua J. Coon¹; ¹*The University of Wisconsin, Madison, WI*; ²*Thermo Fisher Scientific, Bremen, Germany*
- ThOE pm 3:50 **Dissect Snf1-Related Protein Kinases (SnRKs) Signaling Network in the Abscisic Acid (ABA) Pathway-based on Kinase Assay Linked Phosphoproteomics;** Liang Xue¹; Pengcheng Wang²; Jian-kang Zhu²; W. Andy Tao¹; ¹*Biochemistry, Purdue University, West Lafayette, IN*; ²*Horticulture & Landscape Architecture, Purdue Univ, West Lafayette, IN*
- ThOE pm 4:10 **Using Formaldehyde Crosslinking and Label-Free LC/MS/MS Quantification to Develop an LRR RLK Interactome in *Arabidopsis thaliana*;** Tara Nash; Kevin Blackburn; Steven Clouse; Michael B. Goshe; *North Carolina State University, Raleigh, NC*

**2:30 – 4:30 PM, THURSDAY AFTERNOON
POLYMER-AND PACKAGING-RELATED CONTAMINANTS AND DEGRADANTS IN FOOD, DRUGS, AND CONSUMER PRODUCTS**
David Stranz (Sierra Analytics, Inc.) and Luke Ackerman (FDA Center for Food Safety), presiding
Room 101

- ThOF pm 2:30 **Migration and Identification of Leachables from Drug Product Container Closure Systems; Case Studies;** Alan Hendrick; James Mclean; Thomas Feinberg; *Catalent Pharma Solutions, Morrisville, NC*
- ThOF pm 2:50 **Analysis of Thermoplastic Copolymers by Mild Thermal Degradation Coupled to Ion Mobility Mass Spectrometry;** Nadrah Alawani; Chrysta Wedemiotis; *The University of Akron, Akron, OH*
- ThOF pm 3:10 **Transformation Products of Packaging Additives as Leachables in Ophthalmic Drug Products;** Christopher Houston; *Bausch & Lomb, Rochester, NY*
- ThOF pm 3:30 **Leachable and Extractable Analysis of IV Bag by HR-LCMS, GCMS, and ICPMS ,** Kate Comstock; Ekong Bassey; John Schmelzel; *Thermo Fisher Scientific, San Jose, CA*
- ThOF pm 3:50 **Determination of Ultra Low Level Leachable Components from Permanent Implantable Medical Devices, Using Stir Bar Sorptive Extraction and GC-MS/MS Detection;** Gyorgy Vas; Barbara Armstrong; Lori Alquier; *Johnson and Johnson Company, Raritan, NJ*

THURSDAY AFTERNOON ORAL SESSIONS

ThOF pm 4:10 **The Composition of d- α -Tocopheryl Polythylene Glycol Succinate: A Different View from FTICR Tandem MS;** [Juan Wei](#)¹; Anthony Bristow²; Eileen McBride²; Peter O'Connor¹; ¹*University of Warwick, Coventry, UK*; ²*AstraZeneca UK Limited, London, UK*

2:30 – 4:30 PM, THURSDAY AFTERNOON ENERGY, PETROLEUM, AND BIOFUELS: ADVANCES IN SAMPLE PREPARATION AND MS INTERFACE DESIGN
Michael McGinley (Phenomenex), presiding
Room 102

ThOG pm 2:30 **Novel Analytical Methods for the On-Line Analysis of the Primary Products of Fast Pyrolysis of Cellulose and their Manipulation;** [Matthew Hurt](#); John Degenstein; Piotr Gamecki; David Borton; Nelson Vinueza; Rakesh Agrawal; Nicholas Delgass; Fabio Ribeiro; Hiikka Kenttamaa; *Purdue University, West Lafayette, IN*

ThOG pm 2:50 **Pyrolysis and Reactive Pyrolysis GCMS Investigation of Intractable Deposits and Spent Catalysts;** Michael T. Cheng; *Chevron Research, Richmond, CA*

ThOG pm 3:10 **A High Resolution Mass Spectrometry Platform for Studying Kinetics of Biomass Pyrolysis: Single Particle Pyrolysis Utilizing μ Py-APCI-TOF;** [Erica Smith](#); Carolyn Hutchinson; D. Paul Cole; Young-Jin Lee; *Chemistry Department, Iowa State University, Ames, IA*

ThOG pm 3:30 **Chemical Characterization and Molecular Weight Distribution from Distillation Products of Colombian Crude Oils by MALDI TOF-TOF;** Enrique Mejía Ospino¹; Rafael Cabanzo¹; [Diana Catalina Palacio Lozano](#)¹; Jorge Armando Orrego²; Neisy Calderon¹; ¹*Universidad Industrial de Santander, Bucaramanga, Colombia*; ²*Ecopetrol, Bucaramanga, Colombia*

ThOG pm 3:50 **Structural Diversity of Petroporphyrins Isolated from Natural Petroleum Seeps and Weathered Oil by FT-ICR MS;** [Amy McKenna](#)¹; Christoph Aeppli²; David Valentine³; Huan Chen¹; Ryan Rodgers¹; Robert Nelson²; David Podgorski¹; Karin Lemkau²; Christopher Reddy²; Steven Rowland¹; Winston Robbins¹; Alan Marshall¹; Nathan Kaiser¹; ¹*Natl High Magnetic Field Laboratory, Tallahassee, FL*; ²*Woods Hole Oceanographic Institute, Woods Hole, MA*; ³*University of California, Santa Barbara, CA*

ThOG pm 4:10 **Studying Crude Oil Samples with Normal-Phase HPLC Coupled to Atmospheric Pressure Laser Ionization FT-ICR MS: Selective Analysis of Nitrogen Compounds;** [Wolfgang Schrader](#)¹; Sami Lababidi¹; Saroj Panda¹; Jan T. Andersson²; ¹*Max-Planck Inst für Kohlenforschung, Mülheim / Ruhr, Germany*; ²*University Münster, Münster, Germany*

2:30 – 4:30 PM, THURSDAY AFTERNOON HISTORY: CELEBRATION OF 100TH ANNIVERSARY OF MASS SPECTROMETRY
Mike Grayson, presiding
Room 103

ThOH pm 2:30 **Mass Spectrometry in Russia: From Static Instruments to Electrospray;** Lidia Gall; *Institute of Analytical Instrumentation, Saint Petersburg, Russia*

ThOH pm 2:50 **More than 100 years of Mass Spectrometry – Developments in Germany;** Simone Koenig; *University of Muenster, Muenster, Germany*

ThOH pm 4:10 **The More than Sixty-Year History of Mass Spectrometry in Japan;** Yoshinao Wada; *Osaka MCHRI / Osaka University, Osaka, Japan*

ThOH pm 4:30 **J.J. Thomson, Kenneth Bainbridge, and Special Relativity;** Robert K. Boyd; *National Research Council, Vancouver, Canada*

ThOH pm 4:50 **Promoters as Catalysts of the Advance of Mass Spectrometry;** Keith Nier

ThOH pm 5:10 **The Crucial Roles of Mass Spectrometry in the Manhattan Project;** Keith Nier¹; A. Karl Yergey²; [Alfred L. Yergey](#)³; ¹*Independent, Madison, NJ*; ²*Educator, Hagerstown, MD*; ³*NIH, Bethesda, MD*

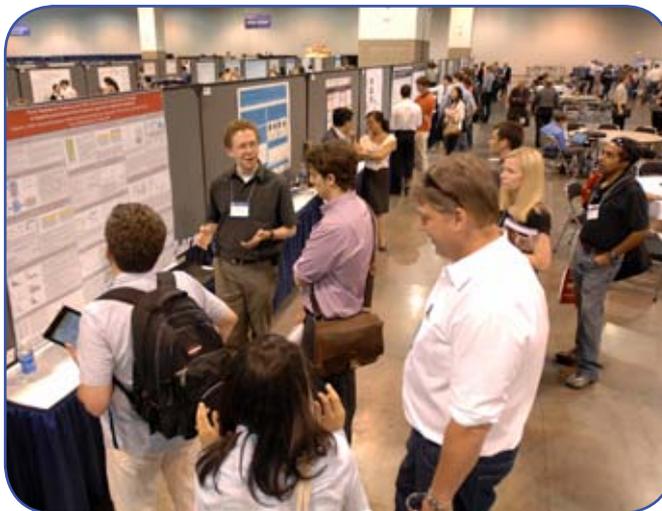
4:45 - 5:30 PM, THURSDAY PLENARY LECTURE
Jenny Brodbelt (University of Texas), presiding
Exhibit Hall A, Lower Level



Discovery of the Elusive Higgs Boson

Peter Onyisi
University of Texas at Austin

5:45 - 9:00 PM, THURSDAY AFTERNOON TIME TO CELEBRATE CLOSING GALA (ticket required) FOOD, CASH BAR, FUN AND GAMES
Exhibit Hall D



7:30 - 8:00 am	Set up all Monday posters	Instrumentation: New Developments in Mass Analyzers.....	294-329
10:30 am - 1:00 pm	Odd-numbered posters present	Ambient Ionization: Instrumentation	330-356
12:00 - 2:30 pm	Even-numbered posters present	Informatics: General	357-373
7:30 - 8:00 pm	Remove all Monday posters	Informatics: Workflow and Data Management.....	374-386
Small Molecules: Quantitative Analysis I.....	001-030	Informatics: Crosslinking and Structure Analysis.....	387-392
Drug Metabolism: High Throughput Analysis,	031-040	Crosslinking	393-412
Metabolomics: Identification of Unknown Metabolites.....	041-059	H/D Exchange: Protein Structure/Function.....	413-440
Metabolomics: Untargeted Metabolite Profiling (Methods).....	060-080	Proteins: General.....	441-462
Metabolomics: Sample Preparation.....	081-084	New Advances in Quantitative Proteomics.....	463-493
LC-MS: Chromatography.....	085-130	Protein Therapeutics: Quantitative Analysis	494-521
LC-MS: Sample Preparation (Small Molecules).....	131-150	Biomarker Quantitation: Proteins and Peptides.....	522-549
MALDI Sample Preparation.....	151-167	Biomarker Discovery: Cancer	550-567
Diagnostic Clinical Chemistry: Peptides/Proteins.....	168-182	Immunology	568-575
Imaging MS: Disease Markers	183-206	Molecular Systems Biology and Disease	576-603
Lipids General	207-220	Forensics	604-628
Lipids: Identification and Structural Analysis	221-232	Environmental Analysis: General I.....	629-652
Nucleic Acids: General	233-250	Plant"omics".....	653-671
Nucleic Acids: RNA.....	251-262	Agriculture	672-682
Instrumentation: New Developments in Ionization and		Natural Products.....	683-714
Sampling	263-293	Astrobiology & Atmospheric Chemistry	715-720
		Polymers.....	721-749

These posters will be displayed Monday through Thursday

- Museum **From Radio Tube Cathodes to Cells in Mitosis: The Evolution of Secondary Ion Mass Spectrometry (SIMS) Instrumentation and Applications;** P. Jane Gale¹; Bryan L. Bentz²; ¹Gale-Bentz Consulting, Southborough, MA; ²Waters Corporation, Milford, MA
- Special **2013 Ron Hites Award Recipient: First Combination of an Inductively Coupled Plasma Ion Source with Distance-of-Flight Mass Spectrometry (ICP-DOFMS);** Alexander Gundlach-Graham¹; Elise A. Dennis¹; Steven J. Ray¹; Christie G. Enke²; Charles J. Barinaga³; David Koppenaal³; Gary Hieftje¹; ¹Indiana University, Bloomington, IN; ²Department of Chemistry, University of New Mexico, Albuquerque, NM; ³Pacific Northwest National Laboratory, Richland, WA
- Special **Ability of the Glycoproteomics Community to Profile N-glycosylation of Prostate Specific Antigen by Mass Spectrometry: An ABRF 2013 Interlaboratory Study;** Nancy Leymarie¹; Paula Griffin¹; Chuanhua Xing¹; Karen Jonscher²; Daniel Kolarich³; Ron Orlando⁴; Mark Mccomb¹; Joseph Zaia¹; ¹CBMS, Boston University School of Medicine, Boston, MA; ²Dept of Anesthesiology University of Colorado, Denver Aurora, CO; ³Max Planck Institute of Colloids and Interfaces, Berlin, Germany; ⁴CCRC, University of Georgia, Athens, GA

Small Molecules: Quantitative Analysis I, 001 - 030

- MP 001 **Lithium Adduct as Precursor Ion for Sensitive and Rapid Quantification of 20 (S)-protopanaxadiol in Rat Plasma by LC-MS/MS;** Yuanwu Bao¹; Pingming Tang²; ¹Sundia MediTech Company Ltd., Shanghai, China; ²Suzhou Kangrun Pharmaceutical Testing Service, Inc, Suzhou, China
- MP 002 **An Isomeric Impurity Caused Bioanalytical Data Discrepancy between +ESI and -ESI LC-MS/MS Quantification of a Drug Discovery Compound;** Guifen Xu; Tom Huang; Thuy Tran; Qiuping Ye; Lixia Jin; Timothy Carlson; *Amgen, South San Francisco, CA*
- MP 003 **Development of a Method for Evaluation of Mass Spectrometer Performance in Real Time;** Terry Olney; Huy Nguyen; Oleg Silivra; *Thermo Fisher Scientific, San Jose, CA*

- MP 004 **A Quantitative Inspection of ESI Glucuronide Degradation;** Jeffrey R. Enders; Cade Park; Ayodele Morris; Gregory McIntire; *Ameritox, Ltd., Greensboro, NC*
- MP 005 **Oxidation of Analytes during Positive Ion Electrospray Mass Spectrometric Analysis;** Luis Sojo; Navjot Chahal; *Xenon Pharmaceutical, Burnaby, Canada*
- MP 006 **Using Synthetic Sample Matrices to Optimize Ion Source Parameters and Evaluate Nozzle Geometry for Improved Quantitative Analysis of Small Molecules;** Craig Love; Alex Mordehai; *Agilent Technologies, Inc, Santa Clara, CA*
- MP 007 **Mass Spectrometric Analysis of Retinoid Binding Protein Receptor Substrate Specificity;** Riki Kawaguchi¹; Ming Zhong²; Hui Sun²; ¹UCLA Physiology, Los Angeles, CA; ²Howard Hughes Medical Institute, UCLA, Los Angeles, CA
- MP 008 **Impact of Immunosuppressant Interactions in LC-MS/MS Analysis;** Josh Cooper; Beth Marek; Isil Dilek; Uma Sreenivasan; *Cerilliant, Round Rock, TX*
- MP 009 **Secondary Crosstalk Case Report for Amprenavir and Darunavir in the LC-MS/MS Quantification Method of 15 Anti-retroviral Drugs Measured Simultaneously;** Denis Thibeault; Rose Djiana; David Blank; *Royal-Victoria Hospital, Montreal, Canada*
- MP 010 **Novel High-Throughput Bioanalysis for Basic Drug Candidates Formulated in PEG;** Ling Xu; Shaoxia Yu; Jing-Tao Wu; *Millenniu30 Pharmaceutical, Cambridge, MA*
- MP 011 **Development and Validation of Methods for Chemotherapy Drugs on the New Prelude SPLC™ LC-MS/MS System;** Kerry Hassell; Dayana Argoti; Sarah Fair; Joseph Herman; *ThermoFisher Scientific, Franklin, MA*
- MP 012 **Validated Ultra-trace Quantification Method for Estrogens in Human Cerebrospinal Fluid using Bulk Derivatization and Restricted Access Media with LC-MS/MS;** Hui Fan¹; Barbora Papoušková²; Jane Wigginton³; Karel Lemr²; Kevin Schug¹; ¹University of Texas Arlington, Arlington, TX; ²Palacký University, Olomouc, Czech Republic; ³University of Texas Southwestern Medical School, Dallas, TX
- MP 013 **Expanding the Linear Dynamic Range for Quantitative Liquid chromatography-High Resolution Mass Spectrometry Utilizing Naturalisotopologue Signals;** Hanghui Liu¹; Bert Chi¹; Lily Lam¹; Lin Yan¹; Purnendu Dasgupta²; ¹Senomyx, San Diego, CA; ²Dept of Chem & Biochem, UT Arlington, Arlington, TX

- MP 014 **Investigation on Internal Standard Response Variability during LCMSMS Analysis of Fesoterodine**; Nicolas Jean; Marie-Claude Théberge; Sylvain Lachance; Nadine Boudreau; Sofi Gagnon-Carignan; Ann Lévesque; *PharmaNet Canada, Québec, Canada*
- MP 015 **Deception in the Deuteriums: Errors Associated with Deuterated Internal Standards in LC-MS/MS Bioanalysis**; Brian Rappold; Audrey Harvey; Matthew Salske; Patrick Bell; Jennifer Andre; Michele Glinn; *Essential Testing, Collinsville, IL*
- MP 016 **Improved Assay Selectivity for the Determination of Hydroxymidazolam in Capillary Microsampling Extracts using LC-MS³ on a Hybrid Linear Ion Trap**; Jeffrey Plomley; Mohamed Makhlofi; Alexandre Pimenov; *Charles River Laboratories, Senneville, Canada*
- MP 017 **Development and Validation of LC/MS/MS Method with Extra Small Injection Volume for Quantitative Determination of Alprazolam in Human Plasma**; Zhaoqi Zhan¹; Jie Xing¹; Gabriel Onn Kit Loh²; Kok Khian Peh²; ¹Shimadzu (Asia Pacific) Pte Ltd, Singapore, Singapore; ²School of Pharmaceutical Sciences, Universiti Sain, Malaysia, Minden, Penang, Malaysia
- MP 018 **Determination of Diuretics in urine Using Multi-Walled Carbon Nanotubes Dispersive Solid Phase Extraction Combined with Liquid Chromatography-Tandem Mass Spectrometry**; Tse-Tsung Ho; Chung-Yu Chen; Maw-Rong Lee; *National Chung-Hsing University, Taichung, TAIWAN*
- MP 019 **Turbolonspray vs. APCI for the Determination of Furosemide in Human Plasma by LCMSMS**; Jason Bilodeau; Marie-Claude Théberge; Nadine Boudreau; Ann Lévesque; *PharmaNet Canada, Quebec, Canada*
- MP 020 **Importance of Assessing Whole Blood Stability during Validation of Serum and Plasma LCMSMS Methods**; Sylvain Lachance; Nadine Boudreau; Sofi Gagnon-Carignan; Ann Lévesque; *PharmaNet Canada, Quebec, Canada*
- MP 021 **Interferences from Borosilicate Laboratory Material: Investigation and Application to LC-MS/MS Bioanalysis of Valproic Acid**; Pierre-Yves Caron; Nathalie Pelletier; Nadine Boudreau; Ann Lévesque; *PharmaNet Canada, Quebec, Canada*
- MP 022 **Ultra Low Limit of Detection of Mometasone Furoate in Human Plasma by UPLC-MS/MS**; Pierre-Yves Caron; Nicolas Jean; Marie-Claude Théberge; Nadine Boudreau; Ann Lévesque; *PharmaNet Canada, Quebec, Canada*
- MP 023 **Investigation of Long-Term Stability of Rabeprazole Thioether Metabolite and Its Impact on Rabeprazole Quantitation**; Sébastien Gagné; François Viel; Nadine Boudreau; Ann Lévesque; *PharmaNet Canada, Quebec, Canada*
- MP 024 **Hemolysis and Matrix Effect Issues during Method Development of Promethazine in Human Plasma**; Eric Morin; Nathalie Pelletier; Sylvain Lachance; Nadine Boudreau; Ann Lévesque; *PharmaNet Canada, Quebec, Canada*
- MP 025 **Comparison of LDTD-MSMS and LCMSMS for the Determination of Testosterone in Human Serum**; Sylvain Lachance¹; Nadine Boudreau¹; Ann Lévesque¹; Serge Auger²; Pierre Picard²; ¹PharmaNet Canada, Quebec, Canada; ²Phytronix Technologies, Québec, Canada
- MP 026 **Low Detection Limit and Stability Issues during Method Development of Apomorphine in Human Plasma**; Guy Havar; Marie-Claude Théberge; Nadine Boudreau; Ann Lévesque; *PharmaNet Canada, Québec, Canada*
- MP 027 **Analysis of Ocular Tissues: Investigation of Potential Matrix Effects**; Vikki Tsefrikas; Dylan Bennett; Kyle Goodsell; Allysen Meymaris; *Agilux Laboratories, Worcester, MA*
- MP 028 **Effect of Special Population Matrices on Quantitation of Drugs with Wide Range of Plasma Protein Binding Levels Using LC-MS/MS Method**; Dongmei Zhou; David Wilson; Mai Nguyen; Erin Harmon; Kyle Nishikawa; Li-Tain Yeh; *Ardea Biosciences, San Diego, CA*
- MP 029 **Ion Suppression in Rat Brain Due to Phospholipids and Its Impact on Sensitivity and Electrospray Response Function for Small Molecules**; Navjot Chahal; Luis Sojo; *Xenon Pharmaceuticals, Burnaby, Canada*
- MP 030 **Improving the Sensitivity, Precision and Accuracy of PGIs Analysis by LC-MS**; Peng Wang; Alwyn Forbes; Najun Wu; *Celgene Corporation, Summit, NJ*
- Drug Metabolism: High Throughput Analysis, 031 - 040**
- MP 031 **Computer Assisted Metabolite Identification, Application in Cytochrome Reaction Phenotyping**; Esrá Nurten Cece¹; Kristen Eickhoff²; Andreas Brink²; Ismael Zamora³; Axel Paehler²; ¹Pompeu Fabra University, Barcelona, Spain; ²F. Hoffmann-La Roche Ltd, Basel, Switzerland; ³Molecular Discovery, London, UK
- MP 032 **Combining *in vitro* Intrinsic Clearance and Metabolic Soft Spot Identification in Early Drug Discovery**; Marina Slavsky¹; Keeley Murphy²; Ismael Zamora³; Thomas O'Shea¹; Maria Fitzgerald¹; ¹DMPK, Sanofi, Waltham, MA; ²Thermo Fisher Scientific, San Jose, CA; ³Lead Molecular Design, Barcelona, Spain
- MP 033 **Integrating Qualitative and Quantitative Measures across HRMS and Qtrap MS Platforms in Early Stage Metabolic Stability Screening in Drug Discovery**; Jianhua Liu¹; Veronica A. Zelesky¹; Anthony J. Romanelli²; Loren Y. Olson²; John S. Janiszewski¹; ¹Pfizer, Inc, Groton, CT; ²AB Sciex, Framingham, MA
- MP 034 **Differential Mobility Spectrometry as a Measure of Physicochemical Properties Related to *in vitro* Absorption (Permeability, Solubility and Lipophilicity)**; John Janiszewski¹; Yves LeBlanc²; Bradley Schneider²; Tom Covey²; George Chang¹; Charles Rotter¹; Manthena Varma¹; Troutman Matthew¹; ¹Pfizer Inc., Groton, CT; ²AB Sciex, Concord, Ontario, Canada
- MP 035 **Microsampling Method Using 1 µL of Human Blood to Determine Pharmacokinetic Parameters of Dextrophan Using LDTD-MS/MS**; Jean Lacoursiere; Annick Dion; Serge Auger; Pierre Picard; *Phytronix Technologies, Quebec City, Canada*
- MP 036 **A High-Throughput, Accurate-Mass Approach for Plasma Protein Binding Analysis Using SPE/TOF-MS**; Kari Schlicht; Vaughn Miller; William LaMarr; Can Ozbal; *Agilent Technologies, Wakefield, MA*
- MP 037 **Determination of a DGAT1 Inhibitor in Human Plasma Using microLC-MS/MS: Comparison of microLC vs. Conventional LC Methods for Bioanalysis**; Tapan Majumdar; Shari Wu; Adam Bentley; Jimmy Flarakos; *Novartis Pharmaceuticals Corporation, East Hanover, NJ*
- MP 038 **Reducing Gradient Cycle Time for Increased Throughput Using Dual-Stream LC/MS/MS Bioanalysis**; Mary Piotrowski¹; Carrie Funk¹; John Janiszewski¹; Hui Zhang¹; Brendon Kapinos¹; Anthony Romanelli²; ¹Pfizer, Groton, CT; ²AB Sciex, Framingham, MA
- MP 039 **Optimizing High-Throughput LC/MS/MS "trap-and-elute" Bioanalysis in Drug Discovery**; Brendon Kapinos¹; John Janiszewski¹; Mary Piotrowski¹; Hui Zhang¹; Carrie Funk¹; Wayne Lootsma²; Will Schramm²; ¹Pfizer, Groton, CT; ²Sound Analytics, Niantic, CT
- MP 040 **Development of High Speed CYP Cocktail Inhibition Assay Using UHPLC-MS/MS**; Ichiro Hirano; Miho Kawashima; Natsuyo Asano; Kiyomi Arakawa; Yoshihiro Hayakawa; *Shimadzu Corporation, Kyoto, Japan*

Metabolomics: Identification of Unknown Metabolites, 041-059

- MP 041 **Improved Unknown Metabolite Identification by Combining Smart Isotope Tags and Ratio Analysis MS and NMR Heterospectroscopy**; G. A. Nagana Gowda¹; Haiwei Gu¹; Fariba Tayyari²; Daniel Raftery^{1,3}; ¹University of Washington, Seattle, WA; ²Purdue University, West Lafayette, IN; ³Fred Hutchinson Cancer Research Center, Seattle, WA
- MP 042 **Metab-ID: An Automated Tool for Metabolite Identification from MS1 Data**; T. Mamie Lih¹; Ke-Shiuan Lynn¹; Hui-Yin Chang¹; Mei-Ling Cheng²; Ming-Shi Shiao²; Wen-Harn Pan^{3,4}; Ting-Yi Sung¹; Wen-Lian Hsu¹; ¹Institute of Information Science, Academia Sinica, Taipei, Taiwan; ²Chang Gung University, Taoyuan, Taiwan; ³National Health Research Institutes, Miaoli, Taiwan; ⁴Institute of Biomedical Sciences, Academia Sinica, Taipei, Taiwan
- MP 043 **Annotation and Identification of Fragmentation of Known Metabolites and Elucidation of Possible Known Unknowns with Fragmentation Analysis**; Hongping Dai; Annie Evans; Corey DeHaven; *Metabolon, Durham, NC*
- MP 044 **Automated Compound Identification Using Product Ion Scanning with Accurate Mass Measurement and Compound Database Searching for Non-Targeted Metabolomics**; Tairo Ogura^{1,2}; Faith Hays³; Takeshi Bamba¹; Eiichiro Fukusaki¹; ¹Graduate School of Engineering, Osaka University, Osaka, Japan; ²Shimadzu corporation, Kyoto, Japan; ³Shimadzu Scientific Instruments, Columbia, MD
- MP 045 **A Platform to Identify Endogenous Metabolites Using a Novel High Performance Orbitrap and the m/zCloud Library**; Junhua Wang¹; David Peake¹; Robert Mistrik²; Yingying Huang¹; ¹Thermo Fisher Scientific Inc, San Jose, CA; ²HighChem, Ltd., Bratislava, Slovakia
- MP 046 **Utilization of Metabolic Network Information for Improved Metabolite Identification by LC-MS**; Bin Zhou; Habtom Resson; *Georgetown University, Washington, DC*
- MP 047 **Testing the Limits of a New, Extremely Accurate HPLC Retention Prediction Methodology (www.retentionprediction.org)**; Allison Haaning; Jonathan Schellenberg; Paul Boswell; *University of Minnesota, Saint Paul, MN*
- MP 048 **The Ideal Stationary Phase for an HPLC Retention Database**; Joseph Manulik; Paul Boswell; *University of Minnesota, St. Paul, MN*
- MP 049 **An Inter-Laboratory Study on a New, Extremely Accurate Retention Prediction Methodology for GC-MS (www.retentionprediction.org)**; Brian Barnes¹; Michael Wilson¹; Panhia Yang¹; Mark Viitha²; Amanda Tawfall⁶; Lloyd Sumner⁶; Adam Heuberger³; Corey Broeckling³; Jessica Prenni³; Henry Corcoran⁴; Gregory Janis⁴; Shilpi Chopra⁵; Nicholas Snow⁵; Paul Boswell¹; ¹University of Minnesota, St. Paul, MN; ²Drake University, Des Moines, IA; ³Colorado State University, Fort Collins, CO; ⁴Medtox Scientific, Inc., St. Paul, MN; ⁵Seton Hall University, South Orange, NJ; ⁶Samuel Roberts Noble Foundation, Ardmore, OK
- MP 050 **'Sequencing' the First Plant Metabolome, and the Systematic Annotation of the Metabolic Composition of the Model Legume *Medicago truncatula***; Lloyd Sumner¹; Zhentian Lei¹; Dennis Fine¹; Daniel Wherritt¹; David Huhman¹; Kota Kera²; Hidezuki Suzuki²; Kazuki Saito³; ¹The Samuel Roberts Noble Foundation, Ardmore, OK; ²Kazusa DNA Research Institute, Chiba, Japan; ³RIKEN Plant Science Center, Yokohama, Japan
- MP 051 **FT-ICR Based "Ultrafast Statistical Profiling": Myxobacterial Secondary Metabolite Profiling for Quickly Pinpointing and Identifying Marker Compounds**; Aiko Barsch¹; Matthias Witt¹; Christopher Thompson²; Daniel Krug³; Thomas Hoffmann³; Rolf Mueller³; ¹Bruker Daltonik GmbH, Bremen, Germany; ²Bruker Daltonik Inc., Billerica, MA; ³Helmholtz Institute for Pharmaceutical Research, Saarbruecken, Germany
- MP 052 **Defensive Chemistry: MS-based Characterization of Sesquiterpene Lactone - and Hydroxybenzeneacetic Acid-Derived Defensive Metabolites of *Taraxacum officinale* Root Latex**; Sven Heiling¹; Meret Huber¹; Andrea Kiehne²; Christian Paetz¹; Michael Reichelt¹; Sandy Yates³; Aiko Barsch²; Matthias Erb¹; Jonathan Gershenzon¹; Ian T. Baldwin¹; ¹Max Planck Institute for Chemical Ecology, Jena, Germany; ²Bruker Daltonik GmbH, Bremen, Germany; ³Bruker Daltonics, Fremont, CA
- MP 053 **LC-MS/MS-based Structural Analysis of Novel Enniatins Produced by Canadian Strains of *Fusarium avenaceum* in Liquid Culture**; Azeret Zuniga^{1,2}; Whyann Bosnich¹; Kanak Bala¹; Linda Harris¹; Steve Gleddie¹; Zoltan Mester²; ¹Agriculture and Agri-Food Canada, Ottawa, Canada; ²National Research Council, Ottawa, Canada
- MP 054 **Online Study on Metabolites Profiles of Sixteen Clausenamide Enantiomers *in vitro* by Liquid Chromatography/Quadrupole Ion Trap/Time-of-Flight Mass Spectrometry**; Ma Chao^{1,2}; Feng Ru¹; Wang Yan¹; Qiu xiongxiong²; ¹Chinese Academy of Medical Sciences, Beijing, China; ²Shimadzu Global COE, Shimadzu (China) Co., Ltd., Beijing, China
- MP 055 **Profiling Biosynthetic Intermediates from *Camptotheca acuminata* Using Liquid Chromatography, Multiplexed Collision-Induced-Dissociation and Time-of-Flight Mass Spectrometry**; Sujana Pradhan; A. Daniel Jones; *Michigan State University, East Lansing, MI*
- MP 056 **Evidence for Glucuronide and Glutathione Conjugation of Glyceollins in Rats by On-Line Liquid Chromatography-Electrospray Ionization Tandem Mass Spectrometry**; Syeda S. Quadri¹; Robert E. Stratford²; Richard B. Cole^{1,3}; ¹Dept. of Chemistry, Univ. Of New Orleans, New Orleans, LA; ²College of Pharmacy, Xavier Univ., New Orleans, LA; ³Univ. P. et M. Curie (Paris 6), Paris Cedex 05, France
- MP 057 **The *in vitro* Study of the Metabolism of 3, 4-Methylenedioxymethamphetamine (MDMA) in Human Hepatocytes**; Chengan Du; *Hampton University, Hampton, VA*
- MP 058 **Metabolomics Approach to Determine *A. flavus* Cluster 27 Polyketide Synthase Metabolites: Evaluation of UHPLC-Orbitrap MS and micro-LC-tripleTOF**; José Diana Di Mavungu¹; Svetlana V. Malysheva¹; Natalia Aroyo-Manzanares²; Jeffrey W. Cary³; Kenneth C. Ehrlich³; Julie Vanden Bussche¹; Lynn Vanhaecke¹; Deepak Bhatnagar³; Sarah De Saeger¹; ¹Ghent University, Ghent, Belgium; ²University of Granada, Granada, Spain; ³U.S. Department of Agriculture, New Orleans, LA
- MP 059 **NanoLC-MS/MS Metabolomics of Urinary Biomolecules Following Intake of Grape Seed Extract in a Rodent Model of Menopause**; John Cutts; Landon Wilson; Scott Sweeney; D. Ray Moore; Jeevan Prasain; Stephen Barnes; Helen Kim; *University of Alabama at Birmingham, Birmingham, AL*

Metabolomics: Untargeted Metabolite Profiling (Methods), 060-080

- MP 060 **Quality Control and Data Extraction Validation for High-Resolution Metabolomics**; Vilinh Tran¹; Karan Uppal¹; Milam Brantley²; Arshed Quyyumi¹; Greg Gibson³; Dean Jones¹; ¹Emory University, Atlanta, GA; ²Vanderbilt University, Nashville, TN; ³Georgia Institute of Technology, Atlanta, GA

- MP 061 **Global Characterization of SRM 1950 (Metabolites in Human Plasma) Using Liquid Chromatography-Mass Spectrometry;** Kelly H. Telu; William E. Wallace III; Stephen E. Stein; Yamil Simón-Manso; *NIST, Gaithersburg, MD*
- MP 062 **Sheathless Capillary Electrophoresis Mass Spectrometry: Investigation Using High Resolution Accurate Mass MS for Metabolome Analysis;** Junhua Wang¹; John Hudson²; Maria Prieto Conaway¹; David Peake¹; Yingying Huang¹; Andreas Huhmer¹; ¹*Thermo Fisher Scientific Inc, San Jose, CA*; ²*Beckman Coulter, Inc., Brea, CA*
- MP 063 **Combination of Double Isotopic Labeling and High Resolution Mass Spectrometry: A Novel Method for Untargeted Fungal Metabolic Profiling;** Patricia M. Cano^{1,2}; Emilien L. Jamin^{1,2}; Souria Tadriss^{1,2}; Pascal Bourdaudhui^{1,2}; Michel Péan^{3,4}; Laurent Debrauwer^{1,2}; Isabelle P. Oswald^{1,2}; Marcel Delaforge⁵; Olivier Puel^{1,2}; ¹*INRA, Toxalim, Research Center in Food Toxicology, Toulouse, France*; ²*Université de Toulouse, INP, Toxalim, Toulouse, France*; ³*CEA, DSV, IBEB & CNRS Bio. Vég. et Microbio. Envir, Saint-Paul-les-Durance, France*; ⁴*Aix-Marseille Université, Saint-Paul-les-Durance, France*; ⁵*CEA Saclay, iBiTec-S, SB2SM and URA CNRS 8221, Gif sur Yvette, France*
- MP 064 **Evaluation of Different Dansylation Reaction Conditions for Isotope Labeling of Metabolites in Metabolome Profiling of Biological Samples;** Jared Curle; Liang Li; *University of Alberta - Department of Chemistry, Edmonton, Canada*
- MP 065 **Variety and Specificity of Granules in a Cell, Detected by Live Single-Cell Mass Spectrometry;** Yuki Yamamoto²; Tsuyoshi Esaki¹; Hajime Mizuno¹; Sachiko Date¹; Naohiro Tsuyama²; Tsutomu Masujima¹; ¹*Quantitative Biology Center (QBiC), Riken, Suita, Japan*; ²*Hiroshima University, Hiroshima, Japan*
- MP 066 **Isotope Labeling Liquid Chromatography-Mass Spectrometry in Metabolite Biomarker Discovery for Mild Cognitive Impairment Disease;** Tran Tran; Roger A. Dixon; Liang Li; *University of Alberta, Edmonton, Canada*
- MP 067 **xMSanalyzer: Automated Pipeline for Improved Feature Detection and Downstream Analysis of Large-Scale, Non-Targeted Metabolomics Data;** Karan Uppal^{1,2}; Dean Jones¹; ¹*Emory University, Atlanta, GA*; ²*Georgia Institute of Technology, Atlanta, GA*
- MP 068 **An Improved Isotopic Labeling Protocol for LC-MS Metabolomic Profiling of Carboxylic Acids in Biofluids and Cell Extracts;** Jun Peng; Liang Li; *University of Alberta, Edmonton, Canada*
- MP 069 **Understanding the Biology of Higher Organisms through GoogleMAPS-type Visualization of Specialized Metabolites Found to be Associated with Microbial Communities;** Pieter Dorrestein; Christopher Rath; Vanessa Phelan; Guo Yurong; Jeramie Watrous; Mingxun Wang; Robbie Quinn; Yan Wei Lim; Kathleen Dorrestein; Nuno Bandeira; Theodore Alexandrov; *University of California, San Diego, Skaggs school, La Jolla, CA*
- MP 070 **Novel Software Solutions for Liquid Chromatography-High Resolution MS (LC-HRMS) Metabolite Profiling of Legumes under Drought and Fungal Infection Conditions;** Michael Dickinson¹; Martin Wells²; Mark Harrison¹; Rosario Romero¹; Adrian Charlton¹; Jackson Pope²; ¹*The Food and Environment Research Agency, York, UK*; ²*Nonlinear Dynamics, Newcastle upon Tyne, UK*
- MP 071 **Unexpected Complexity of In-Source Fragmentation: The Utility of Spectral Searching for Compound Annotation in Non-Targeted Metabolite Profiling Studies;** Corey Broeckling; Jessica Prenni; *Colorado State University, Fort Collins, CO*
- MP 072 **Metabolite Profiling and Metabolic Fingerprinting of Arabidopsis Mutants Using Atmospheric Pressure GC-MS^E Approach and Multivariate Statistical Analysis;** Carolina Salazar; Nobuhiro Suzuki; Ron Mittler; Vladimir Shulaev; *University of North Texas, Denton, TX*
- MP 073 **Improved Methodology for Metabolomics Data Acquisition Workflow: Utilization of Electron Impact and Chemical Ionization High Resolution Time-Of-Flight Mass Spectrometry;** David Alonso; Joe Binkley; John Heim; *Leco Corporation, St. Joseph, MI*
- MP 074 **Rapid Clinical Biofluid Profiling with Rapid Evaporative Ionisation Mass Spectrometry;** Kate Leary; Sabine Guenther; Zoltán Takáts; *Imperial College London, London, UK*
- MP 075 **Comprehensive Liquid Chromatography Coupled to High Resolution Mass Spectrometry Methods for the Global Metabolic Profiling of Human Serum;** Samia Boudah^{1,2}; Sandrine Aros-Calt^{1,3}; Marie-Françoise Olivier¹; François Fenaille¹; Christophe Junot¹; ¹*LEMM-CEA-Saclay, Gif-Sur-Yvette, France*; ²*GlaxoSmithKline - Centre de recherche F.Hyafil, Villebon-sur-Yvette, France*; ³*bioMérieux S.A, Chemin de l'Orme, Marcy l'Etoile, France*
- MP 076 **An Efficient Automated Dual pH Dual Polarity HILIC Based LC-MS Approach to the Analysis of the Metabolome;** James Cox; *University of Utah, Salt Lake City, UT*
- MP 077 **LC-HRMS Based Stable Isotopic Labeling-Assisted Metabolomics: Using MetExtract Software for the Global Characterization of the Plant Pathogenic Fungus *Fusarium graminearum*;** Christoph Büschl; Bernhard Kluger; Gerlinde Wiesenberger; Stefan Bödi; Romana Stücker; Joseph Strauss; Gerhard Adam; Rainer Schuhmacher; *University of Natural Resources and Life Sciences, Tulln, Austria*
- MP 078 **Utilization of GC-TOFMS for Metabolomics Using a Standardized Global Approach from Sample Preparation to Data Interpretation;** John R. Heim; Joe Binkley; David Alonso; *LECO Corporation, St. Joseph, MI*
- MP 079 **Isotopic Ratio Outlier Analysis (IROA) of Genetically Engineered *Myxococcus xanthus* Strains Using Ultra High Resolution Mass Spectrometry;** Daniel Krug¹; Aiko Barsch²; Rolf Müller¹; Chris Beecher³; Felice de Jong³; ¹*Helmholtz-Institute for Pharmaceutical Research, Saarbrücken, Germany*; ²*Bruker Daltonik GmbH, Bremen, Germany*; ³*NextGen Metabolomics Inc, Ann Arbor, Michigan*
- MP 080 **MsCompare: An Untargeted GC/MS Metabolomics Platform for Quality Control and Accurate Deconvolution;** Claartje Van Der Kroft; *MsMetrix, Maarssen, Netherlands*

Metabolomics: Sample Preparation, 081-084

- MP 081 **Development of Isotope Labeling LC-MS for Metabolic Profiling of Bacterial Cells and Its Application for Bacterial Differentiation;** Yiman Wu; Liang Li; *University of Alberta, Edmonton, Canada*
- MP 082 **Effective Extraction Method and Stable-Isotope Dansylation Labeling Combined with RPLC-FTMS for the Analysis of Arabidopsis Thaliana Metabolome;** Chiao-Li Tseng; Michael Deyholos; Liang Li; *University of Alberta, Edmonton, Canada*
- MP 083 **Development of a Dilute-and-Shoot LC/MS/MS Method with 21 Opiates in Urine;** Simon Sheng; Kate Evans; Francois Espourteille; *Thermo, San Jose, CA*
- MP 084 **Metabolomics of *Elaeis guineensis* Leaves: From Optimization of the Sample Preparation Steps to Untargeted Metabolite Profiling Analysis;** Luiz Henrique Vargas²; José Antônio Ribeiro¹; Daniel Sifuentes¹;

Anselmo E. de Oliveira³; Manoel T. Souza Júnior¹; Clenilson Rodrigues¹; Patrícia Verardi Abdelnur¹; ¹Embrapa Agroenergy, Brasília, Brazil; ²Federal University of Lavras, Lavras, Brazil; ³Federal University of Goiás, Goiânia, Brazil

LC-MS: Chromatography, 085-130

- MP 085 **Development of a HILIC-MS/MS Method for Quantification of Decitabine in Human Plasma by Using Lithium Adducts**; Wenyi Hua; Michael Lesslie; Brian T. Hoffman; Daniel Mulvana; *Advion Bioanalytical Labs, a Quintiles Company, Ithaca, NY*
- MP 086 **LC-MS Separation Tuning for Polar Hydrophilic Metabolites on Complementary Zwitterionic HILIC Columns**; Tobias Jonsson¹; Wen Jiang¹; Anders Nordstrom²; Petrus Hemstrom¹; Patrik Appelblad¹; ¹Merck SeQuant AB, Umeå, Sweden; ²Umea University, Umea, Sweden
- MP 087 **Separation Efficiency and Selectivity of Ultra Performance Columns for Hydrophilic Interaction Liquid Chromatography (HILIC)**; Wen Jiang; Lena Westin; Tobias Jonsson; *Merck SeQuant AB, Umeå, Sweden*
- MP 088 **Ibuprofen Chiral Resolution Improvement by Water/Acetonitrile Endotherm from LC-Pump Mixer**; Pierre-Yves Caron; Guy Havard; Nathalie Pelletier; Nadine Boudreau; Ann Lévesque; *PnarmaNet Canada, Québec, Canada*
- MP 089 **Evaluation of Polar-Embedded ODS Column in Supercritical Fluid Chromatography**; Chiaki Aoyama¹; Takayuki Yamada²; Megumi Ishibashi²; Kensuke Okusa¹; Masakazu Takahashi¹; Masayoshi Ohira¹; Eiichiro Fukusaki²; Takeshi Bamba²; ¹GL Sciences Inc., Iruma, Japan; ²Graduate School of Engineering, Osaka University, Suita, Japan
- MP 090 **Mass-Directed Chiral SFC Separations Versus Asymmetric Synthesis in Drug Discovery**; Kanaka Hettiarachchi; *Theravance, South San Francisco, CA*
- MP 091 **A Multidimensional System for Phosphopeptide Analysis using TiO₂ Enrichment and Ion-Exchange Chromatography with Mass Spectrometry**; Kun Cho; Jisun Yoo; Eunmin Kim; Jong Shin Yoo; *KBSI, Ochang, South Korea*
- MP 092 **Quantitation of Adsorbed Plasma Proteins on Coated and Non-Coated PLGA (poly(lactic-co-glycolic acid)) Nanoparticles by LC-MALDI**; Tobias Schorge; Karim Sempf; Michael Karas; Jörg Kreuter; *Goethe-University Frankfurt, Frankfurt, Germany*
- MP 093 **Increasing Peak Capacities for Peptide Separations Using Long Microcapillary Columns and Sub 2 µm Particles at 30,000+ psi**; Kaitlin Fague; Justin Godinho; Edward Franklin; Jordan Stobaugh; James Jorgenson; *University of North Carolina, Chapel Hill, NC*
- MP 094 **High pH Reversed Phase and Isoelectric Focusing as Pre-fractionation Approaches for Complex Proteome Analysis**; Derek R Stein¹; Xiaojie Hu²; Stuart J McCorrister²; Garrett R Westmacott²; Francis A Plummer^{1, 2}; T Blake Ball^{1, 2}; Michael S Carpenter^{1, 2}; ¹University of Manitoba, Winnipeg, Canada; ²Public Health Agency of Canada, Winnipeg, CA
- MP 095 **Understanding Separation Parameters For Intact Protein LC/MS Analysis Using Wide-Pore Core-Shell Media**; Michael Mcginley; Jeff Layne; Jason Anspach; *Phenomenex, Torrance, CA*
- MP 096 **High Resolution LC-MS Peptide Separations with Formic Acid Mobile Phases Using Charge Surface Modified C18 Columns**; Matthew Lauber; Stephan Koza; Kenneth Fountain; *Waters Corporation, Milford, MA*
- MP 097 **In Depth Characterization of C18 and C18-like Solid Phase Extraction materials, Indented for Sub-Microgram Applications in Proteomic Workflows**; Lasse Falkenby¹; Lena Haubro²; Nicolai Bache²; Martin R Larsen¹; Jens S Andersen¹; ¹University of Southern Denmark, Odense, Denmark; ²Thermo Scientific, Odense, Denmark
- MP 098 **In-house Construction of a UHPLC System in Combination with Ti4+-IMAC aLlows Comprehensive (phospho)Proteomic Profiling**; Alba Cristobal; Marco L. Hennrich; Houjiang Zhou; Albert J.R. Heck; Shabaz Mohammed; *Biomolecular Mass Spectrometry and Proteomics Grou, Utrecht, The Netherlands*
- MP 099 **Bio-Solid Phase Extraction and Information Dependent Tandem Mass Spectrometry for Deconvolution of Complex Mixtures**; Erica Forsberg; John Brennan; *McMaster University, Hamilton, Canada*
- MP 100 **Quantitative Analysis of Cytoplasmic UDP-Peptidoglycan Intermediates in S. aureus Using LC-ESI-MS/MS**; Sudheer Bobba; Harika Vemula; William Gutheil; *University of Missouri- Kansas City, Kansas City, MO*
- MP 101 **Important Method Development Aspects of Restricted Access Media-Based Trap-and-Elute Liquid Chromatography-Mass Spectrometry Method for Determination of Estrogens in Biological Samples**; Barbora Papoušková¹; Hui Fan²; Karel Lemr¹; Kevin Schug²; ¹RCPTM - Palacký University, Olomouc, Czech Republic; ²University of Texas Arlington, Arlington, TX
- MP 102 **Multiteroid Quantification in Bovine Plasma of Dairy Cows by Isotopic Dilution Liquid Chromatography Mass Spectrometry**; Rosineide Costa Simas^{1, 2}; Mirela B Coelho²; Milton Maturana Filho³; Christina R. Ferreira³; Marcos N Eberlin²; Guilherme P Nogueira¹; Ed Hoffman Madureira³; ¹Laboratory of Animal Endocrinology, DAPSA -UNESP-, Araçatuba, Brazil; ²ThoMSon Mass Spectrometry Laboratory - UNICAMP, Campinas, Brazil; ³FZEA-USP, Pirassununga, Brazil
- MP 103 **Quantitation of Capecitabine, 5-Fluorouracil, 5-DFCR, 5-DFCR, Gemcitabine, dFdU Using LC-MS/MS with Mixed Polarity Ion Mode Analysis**; Sarah A. Burns; Patricia Zagst; Wen Wee Ma; Gerald J. Fetterly; *Roswell Park Cancer Institute, Buffalo, NY*
- MP 104 **Mass Spectral Analysis of Bioactive Protein Bowman-Birk Inhibitor (BBI) from Soybean**; Parthasarathi Ghosh; Daniel Staerk; Jennifer Wu; Charles Schasteen; *DuPont Protein Solutions, Solae, St. Louis, MO*
- MP 105 **Exploring Eluent pH for LC-MS Analysis Using a New Extended pH Range Stable C18 Phase: Opiate, Amphetamine and Antibiotic Mixtures**; Alan Mckeown¹; Carl Zimmerman²; ¹Advanced Chromatography Technologies Ltd, Aberdeen, UK; ²MACMOD Analytical Inc., Chadds Ford, PA
- MP 106 **High Throughput UHPLC-MS Peptide Mapping Method for Characterization of Low Abundant Monoclonal Antibody (MAb) Variants**; Lisa Vampola; Melissa Alvarez; Amy Hilderbrand; Marian Eng; Koman Joe; Victor Ling; *Genentech Inc, South San Francisco, CA*
- MP 107 **Efficient Column Cleaning for Poor Chromatography Issue during Pyridoxal-5-Phosphate Bioanalysis by LCMSMS**; Marc Fournier; Marie-Josée Marcoux; Nadine Boudreau; *PharmaNet Canada, Quebec, Canada*
- MP 108 **A Novel Microflow-UHPLC MS/MS to Improve Sensitivity and Throughput for Identification of 1α,25(OH)₂-Vitamin D₂ and D₃ in Human Serum**; Khaled Mrizig¹; Remco Van Soest¹; Tina Settineri¹; Babu Purkayastha²; Subhakar Dey²; ¹Eksigent, Division of AB SCIEX, Dublin, CA; ²AB SCIEX, Framingham, MA

MONDAY POSTERS

- MP 109 **Ultra High Throughput Analysis of Immunosuppressants in Whole Blood by Microflow LC-MS/MS;** Daniel Blake; Daniel Leigh; Jason Causon; *AB SCIEX, Warrington, UK*
- MP 110 **Examination of the Sugar Analysis Using HPLC Method Scouting System Coupled to Single Quadrupole Mass Spectrometer;** Steve Wishnies¹; Miho Kawashima²; Tadahiro Takahashi³; Hidetoshi Terada²; Yusuke Inohana²; Kiyomi Arakawa²; Yoshihiro Hayakawa²; ¹*Shimadzu Scientific Instruments, Inc., Columbia, MD*; ²*Shimadzu Corporation, Kyoto, Japan*; ³*Shimadzu Analytical and Measurement Center, Inc., Kyoto, Japan*
- MP 111 **Maximizing Efficiency for UHPLC-LCMSMS Method Development in Clinical Drug Monitoring;** Sven Vedder¹; Anja Grüning¹; Klaus Bollig²; Brigitte Richrath²; Robert Ludwig¹; ¹*Shimadzu Europe GmbH, Duisburg, Germany*; ²*Shimadzu Germany GmbH, Duisburg, Germany*
- MP 112 **Characterization of Products Formed by Forced Degradation of Amlodipine Besylate Using LC/MS/MS;** Shailesh Damale¹; Shruti Raju¹; Deepti Bhandarkar¹; Rashi Kochhar¹; Shaileendra Rane¹; Ajit Datar¹; Pratap Rasam¹; Jitendra Kelkar¹; Divya Saxena²; ¹*Shimadzu Analytical (India) Pvt. Ltd., Andheri (E), Mumbai, Maharashtra, India*; ²*G.N.I.R.D., G.N. Khalsa College, Matunga, Mumbai, Maharashtra, India*
- MP 113 **Validation of the Simultaneous Analysis of Heroin Addiction Treatment Compounds Using LC/MS/MS with a New Prelude SPLC™ System;** Joseph Herman; Sarah Fair; Dayana Argoti; Kerry Hassell; *ThermoFisher Scientific, Franklin, MA*
- MP 114 **Determination of highly Polar, Active Nucleoside Triphosphate (INX-09114) in Biological Matrices Using a Multi-Mode HPLC Approach Coupled with Mass Spectrometry;** Ang Liu; Nga Kit Eliza Fung; Anne-Francoise Aubry; Jian Wang; *Bristol-Myers Squibb, Princeton, NJ*
- MP 115 **ESI Behaviour of Chloramphenicol, Thiamphenicol and Florfenicol in Methanol Solution for LC-MS and Implications on Their Detectability in Complex Matrices;** Prince Kolanyane; Ishmael Masesane; Kwenga Sichilongo; *University of Botswana, Gaborone, Botswana*
- MP 116 **Considerations in Combining Mass Spectral Data with Orthogonal Detector Information in LC/MS;** Thomas E. Wheat; Aparna Chavali; Patricia McConville; *Waters, Milford, MA*
- MP 117 **Capabilities and limitations of Fast Online Comprehensive Two-Dimensional Liquid Chromatography;** Imad Haidar Ahmad; Brian Barnes; Robert Allen; Marcelo Filgueira; Peter Carr; *University of Minnesota, Minneapolis, MN*
- MP 118 **How to Accurately Measure Your HPLC Gradient with a Mass Spectrometer (www.measureyourgradient.org);** Megan H. Magee; Brian B. Barnes; Joseph Manulik; Paul G. Boswell; *University of Minnesota, St. Paul, MN*
- MP 119 **Automated 2D UHPLC/MS Workflow on an EASY-nLC 1000;** Fabio Marino¹; Alba Cristobal¹; Peter A. Nielsen²; Nicolai Bache²; Albert J.R. Heck¹; Shabaz Mohammed¹; ¹*Biomolecular Mass Spectrometry and Proteomics Group, Utrecht, The Netherlands*; ²*Thermo Fisher Scientific, Odense, Denmark*
- MP 120 **Performance Evaluation of a Flexible, Easy-to-Use Packed-Tip Column Device for Nanospray Enabled LC-MS;** Helena Svobodova; Amanda Berg; Ben Ngo; Gary Valaskovic; *New Objective, Inc., Woburn, MA*
- MP 121 **High Performance Liquid Chromatography – High Performance Ion Mobility Spectrometry: An Ideal Tool for 2D Separation of Isomers;** Ching Wu; Anthony Midey; Carol Moraff; Jianglin Wu; Robert Jackson; *Excellims Corporation, Acton, MA*
- MP 122 **Were you Fooled by Photodiode Array Detector?** Suping Zheng; *PPD, Inc., Middleton, WI*
- MP 123 **Micro Flow Applications with Your Existing UHPLC Hardware - A Practical Approach with Mass Spectrometric Detection;** Jinyuan Wang; Jonathan Beck; Charles Yang; Guifeng Jiang; *Thermo Fisher Scientific, San Jose, CA*
- MP 124 **Considerations in Developing a Prototype Microfluidic Trapping Column to Improve Mass and Volume Capacity in an Integrated LC/MS System;** Jay S. Johnson; James Murphy; Angela Doneanu; Bob Jencks; Robert Collamati; *Waters Corporation, Milford, MA*
- MP 125 **On-line Chip-based Strategy for 2D Fractionation – Comparing Peptides Found between 1D and 2D Proteomic Analysis;** Xiang Zhu¹; Christie Hunter²; Jenny Albanese²; Remco van Soest¹; ¹*Eksigent, part of AB SCIEX, Dublin, CA*; ²*AB SCIEX, Foster City, CA*
- MP 126 **Optimized Non-Linear Gradient Functions for Liquid Chromatography in Shotgun Proteomics;** Luminita Moruz¹; Peter Pichler^{2,3}; Karl Mechtler^{2,4}; Lukas Käll⁵; ¹*Stockholm University, Stockholm, Sweden*; ²*Research Institute of Molecular Pathology, Vienna, Austria*; ³*Christian Doppler Laboratory for Proteome Analysis, Vienna, Austria*; ⁴*Institute of Molecular Biotechnology, Vienna, Austria*; ⁵*Royal Institute of Technology - KTH, Stockholm, Sweden*
- MP 127 **Separation of Proteins with Wide Variety of Hydrophobicity Using a Reversed Phase 300Å Pore Size Short Alkyl Chain Column;** Justin Steve; Atis Chakrabarti; *Tosoh Bioscience LLC, King Of Prussia, PA*
- MP 128 **Intact Protein LC-MS, How to Overcome the Challenges?** Evert-Jan Sneekes^{1,2,3}; Laurent Rieux^{1,2,3}; Mauro De Pra^{1,2,3}; Christian Ravensborg^{1,2,3}; Dafydd Milton^{1,2,3}; Remco Swart^{1,2,3}; ¹*Thermo Fisher Scientific, Amsterdam, Netherlands*; ²*Thermo Fisher Scientific, Odense, Denmark*; ³*Thermo Fisher Scientific, Runcorn, UK*
- MP 129 **2-Dimensional Separations: Which Dimension Plays the Most Important Role in Protein Identification Efficiency?** Darryl Johnson¹; Barry Boyes^{1,2}; Ron Orlando¹; ¹*Complex Carbohydrate Research Center, UGA, Athens, GA*; ²*Advanced Materials Technology, Wilmington, DE*
- MP 130 **Development of Four Ultra-High Sensitivity LC-MS/MS Methods for Determination of Four New Compounds in Plasma in Support of Microdosing Studies;** Yu-Luan Chen¹; Jingduan Chi²; Zong-Ping Zhang²; Estela Skende¹; Gary Maier¹; ¹*Sunovion, Inc., Marlborough, MA*; ²*PPD, Middleton, WI*

LC-MS: Sample Preparation (Small Molecules), 131 - 150

- MP 131 **Enhanced Resolution and Matrix Interference Reduction for the Analysis of Vitamin D Metabolites;** Craig Aurand; Dave Bell; Hugh Cramer; *Sigma Aldrich, Bellefonte, PA*
- MP 132 **Optimized Automatic Sample Preparation of Biological Fluids for Downstream LC-MS Analysis;** Christine Lehmann¹; Robert Wohleb²; Roland Geyer²; Michal Svoboda¹; ¹*Application Specialist, Maennedorf, Switzerland*; ²*Innovation Manager, Maennedorf, Switzerland*
- MP 133 **Determination of Sulfonamide Residues in Whole Milk Using a Novel Lipid-Stripping Filtration Cartridge and LC/MS/MS;** Irina Dioumaeva; *Agilent Technologies, Inc., Lake Forest, CA*
- MP 134 **An Evaluation of the Effectiveness of a Phospholipid Removal Sorbent on LC/MS/MS Sensitivity, Method Reproducibility, and LC Column Longevity;** Jeff

- Layne; Erica Pike; Stuart Kushon; Shahana Huq; Michael McGinley; *Phenomenex, Torrance, CA*
- MP 135 **Parallel Processing of Metabolites in Complex Biological Fluids by Cation/Anion Exchange Solid Phase Extraction on a Single 96 Well Plate;** Frank Kero¹; Victor Vandell¹; Elena Gairloch¹; Lee Williams²; Adam Senior²; Rhys Jones²; Helen Lodder²; Geoff Davies²; Alan Eddington²; Claire Desbrow²; Gavin Jones²; Steve Jordan²; ¹*Biotage, Charlotte, NC*; ²*Biotage GB, Cardiff, UK*
- MP 136 **Effective Strategies for Streamlining SPE Processing Using Novel 96-well Plate Based Components Prior to LC-MS/MS Analysis;** Geoff Davies¹; Lee Williams¹; Adam Senior¹; Helen Lodder¹; Kerry Stephens¹; Rhys Jones¹; Steve Jordan¹; Gavin Jones¹; Claire Desbrow¹; Victor Vandell²; Frank Kero²; ¹*Biotage GB Limited, Cardiff, UK*; ²*Biotage, Charlotte, NC*
- MP 137 **At-line Approach to Direct Solid Phase Extraction - Mass Spectrometry;** Esme Candish¹; Emily F. Hilder¹; Robert A. Shellie¹; Andrew Gooley²; Peter A. Dawes²; Hans-Jürgen Wirth²; ¹*ACROSS, School of Chemistry, University of Tasmania, Hobart, Australia*; ²*SGE Analytical Science, Ringwood, Australia*
- MP 138 **Comparison of Protein Precipitation Techniques for HPLC-MS/MS Assay of Vancomycin in Serum;** Dodge Baluya; Arnold Louie; George Drusano; *Institute for Therapeutic Innovation, UF, Orlando, FL*
- MP 139 **Determination of Underivatized Amino Acids in Certified Yeast by microwave Vapor Acid Hydrolysis and UPLC QTOF MS;** Lilach Aviram; Margaret McCooney; Zoltan Mester; *NRC, Ottawa, Canada*
- MP 140 **Optimisation, Refinement and Utility of Plasma Micro-Sampling Device for Use in Rodent Pharmacokinetic and Toxicokinetic Studies;** Philip Dennif¹; Chester Bowen²; Wesley Dopson¹; Shazia Rehman¹; Jim Kenney³; Joe Siple³; ¹*GlaxoSmithKline R&D Ltd, Ware, UK*; ²*GlaxoSmithKline R&D USA, Upper Merion, PA*; ³*Drummond Scientific, Broomall, PA*
- MP 141 **Analysis of Phthalate Metabolites in Urine and Serum Using Automated On Line Sample Preparation Technique;** Matthew Berube; *Thermo Fisher Scientific, Franklin, MA*
- MP 142 **Quantification of 2-Mercaptoethanol in Bulk Drug Substance by LC-MS/MS;** Yifan Shi¹; Yinghe Li¹; Meng Fang¹; William Wagner²; Aston Liu²; Sandro Nalli²; ¹*Alliance Pharma, Malvern, PA*; ²*GlaxoSmithKline, King of Prussia, PA*
- MP 143 **Fast and Highly Sensitive Determination of Oseltamivir and Oseltamivir Carboxylate in Blood Samples by UPLC-ESI-MS/MS;** Lucie Loukotkova; Kellie Woodling; Goncalo Gamboa da Costa; *NCTR, US FDA, Jefferson, AR*
- MP 144 **Detection of Nerve Agents Treatment Drugs: Atropine, Obidoxime, HI-6 and 2-PAM – Sensitive and Fast Analytical Approach Using ESI-LC-MS/MS (MRM);** Thong Hiang Yeo; *DSO National Laboratories, Singapore, Singapore*
- MP 145 **Extraction of Drugs in Plasma by Automated Liquid-Liquid Extraction for Downstream Analysis;** Syed Salman Lateef; Sundaram Palaniswamy; Suresh Babu CV; Vinayak AK; *Agilent Technologies, Bangalore, INDIA*
- MP 146 **LC-MS/MS Method Development for the Quantification of Adenosine Levels as Biomarker of Inhibition of ENT1;** Andre Iffland; Abhishek R. Kulkarni; Vincenzo Pucci; *Merck INC., Boston, MA*
- MP 147 **Evaluation of Factors that Affect the Sensitivity of Sulfonamides in Electrospray Ionization Mass Spectroscopy;** Kwenga Sichilongo; *University of Botswana, Gaborone, Botswana*
- MP 148 **Determination of 11 Glucocorticoids in Cosmetic Samples by An Automated SPE Workstation and HPLC-ESI-MS/MS;** Jinran Zhang; Xudong Zhu; Guotao Lu; Jerry Wang; *Bonna-Agela Technologies, Tianjin, China*
- MP 149 **Screening of Seven Antibiotic Groups in Milk Samples Using Automated On-line Sample Preparation in Combination with UHPLC-High Resolution Time-of-Flight MS;** Murat Celik¹; Hasan Ozgen¹; Jürgen Wendt²; Wibke Peters²; Jutta Lintelmann³; ¹*ZIVAK Technologies, Kocaeli, Turkey*; ²*LECO European LSCA Centre, Moenchengladbach, Germany*; ³*Helmholtz Zentrum München, Neuherberg, Germany*
- MP 150 **Automated Analysis of 25-hydroxyvitamin D2 and D3 with APCI-LC-MS/MS Coupled with ZIVAK ONH Automated Sample Preparation System;** Murat Celik; Hasan Ozgen; *ZIVAK Technologies, Kocaeli, Turkey*

MALDI Sample Preparation, 151 - 167

- MP 151 **Evaluation of Immuno-Enrichment for MALDI-TOF MS Quantitative Analysis of Proteins in Biological Specimens;** Simona Colantonio¹; Christopher A. Wolforth¹; Andrew G. Stephen¹; Richard G. Saul^{1,2}; Gordon R. Whiteley¹; ¹*SAIC-Frederick Inc./FNL, Frederick, MD*; ²*Axo Diagnostics, Gaithersburg, MD*
- MP 152 **Novel Method for Transcription Factor Identification: Promoter-MALDI-MS/MS;** Linda Nagore; YanWen Zhou; Harry Jarrett; *UT San Antonio, San Antonio, TX*
- MP 153 **Investigation of Microwave-assisted Disulfide Bond Reduction by MALDI-TOF MS;** Hyunjung Seo^{1,2}; Bong Kyo Seo^{1,2}; Yongha In^{1,2}; Kyu Hwan Park^{1,2}; Yangsun Kim^{1,2}; ¹*Hudson Surface Technology, Fort Lee, NJ*; ²*Applied Surface Technology, Suwon, Korea*
- MP 154 **Enhanced Reproducibility in the MALDI-TOF Mass Spectrometry Analysis of Serum N-glycans;** Youngha In; Sun Young Ahn; Seonghee Song; Chang Won Park; Yangsun Kim; *HST, Fort Lee, NJ*
- MP 155 **Quantitative Analysis of Sialylated Glycans by MALDI-TOF MS Using Matrix micro-Spotted Plate;** Yongha In^{1,2}; Sun Young Ahn^{1,2}; Bong Kyo Seo^{1,2}; Kyu Hwan Park^{1,2}; Yangsum Kim^{1,2}; ¹*Hudson Surface Technology, Fort Lee, NJ*; ²*Applied Surface Technology, Suwon, Korea*
- MP 156 **Preparation and Application of Monolithic Columns with Immobilized Antibodies for Affinity Chromatography Coupled to MS Detection of Neuropeptides;** Shan Jiang; Zichuan Zhang; Lingjun Li; *UW-Madison, Madison, WI*
- MP 157 **Effect of Sample Composition and Preparation Method on the Initial Velocity of Ions in MALDI TOFMS using a Gridless Instrument;** Brian Malys; April Holcomb; Kevin Owens; *Drexel University, Philadelphia, PA*
- MP 158 **Investigation and Optimization of Oligonucleotide Sample Preparation for MALDI-TOF Analysis Using 3-hydroxypicolinic Acid (3-HPA);** Stephen J. Hattan; Kenneth Parker; Marvin Vestal; *SimulTof Systems, Sudbury, MA*
- MP 159 **Comparing DDP (dried droplet preparation) and GSP (graphite supported preparation) Using Complex Peptide Mixture from Elastase Digests in MALDI-MS;** Jan Gorka; David Fabacher; Marion Rohmer; Michael Karas; *Goethe University, Frankfurt, Germany*
- MP 160 **Alkylated Trihydroxyacetophenone as a Novel MALDI Matrix for Hydrophobic Peptides;** Yuko Fukuyama¹; Chihiro Nakajima¹; Keiko Furuichi²; Kenichi Taniguchi¹; Shin-ichirou Kawabata¹; Shunsuke Izumi²; Koichi Tanaka¹; ¹*Shimadzu Corporation, Kyoto, Japan*; ²*Hiroshima University, Higashi-Hiroshima, Japan*

- MP 161 **Novel Effect of Fullerene as an Additive in IR-MALDI MS;** Sadanori Sekiya; Kei Kodera; Kaori Kinoshita; Kosuke Hosoi; Shinichi Iwamoto; Koichi Tanaka; *Shimadzu Corporation, Kyoto, Japan*
- MP 162 **A Graphene Based Soft Material Platform for Facile “One-Step” Glycan Enrichment and Derivatization for MALDI-TOF-MS Analysis;** Haihong Bai¹; Wanjun Zhang²; WeiJie Qin²; Xiaohong Qian²; ¹*Beijing Institute of Technology, Beijing, China*; ²*BPRC, Beijing, China*
- MP 163 **Polymer & Matrix Thermal Treatments Using Microfabricated Calorimetry Devices for Control And Monitoring of Crystallization and Morphology for Polymer MALDI/MS;** Curtis Mowry¹; Amy Allen¹; Matthew Moorman¹; Adam Pimentel²; Elizabeth Schares¹; Brittany Hanlon¹; ¹*Sandia National Laboratories, Albuquerque, NM*; ²*LMATA Government Services, Albuquerque, NM*
- MP 164 **Phenylenevinylene Derivatives as UV-MALDI Matrices;** Laura J. Castellanos-García¹; Hernando Rosales¹; Cesar A. Sierra-Avila²; Cristian Blanco-Tirado¹; Marianny Y. Combariza¹; ¹*Escuela de Química, Univ Industrial de Santander, Bucaramanga, Colombia*; ²*Departamento de Química, Univ Nacional de Colombia, Bogotá, Colombia*
- MP 165 **Quantitative Analysis of Microcystins by MALDI-TOF-MS;** Humberto Milagre; Beatriz Sandonato; *UNESP, Rio Claro, Brazil*
- MP 166 **Boron Released from Borosilicate Glass Forms Unusual *in situ* Derivatives in MALDI-MS;** Takashi Nishikaze; Shin-ichirou Kawabata; Koichi Tanaka; *Shimadzu Corporation, Kyoto, Japan*
- MP 167 **Investigation of the Effect of Halide Salts on Analyte Signal Intensity in the MALDI Experiment;** April Holcomb¹; Jennifer Dally²; Jonathan Haulenbeek¹; Francisco Guevara¹; Catherine Bentzley²; Kevin G. Owens¹; ¹*Drexel University, Philadelphia, PA*; ²*University of the Sciences, Philadelphia, PA*
- Diagnostic Clinical Chemistry: Peptides/Proteins, 168 - 182**
- MP 168 **The 2012-2013 ABRF Proteomics Research Group Study: Assessing Longitudinal Variability in Routine Peptide LC-MS/MS Analysis;** Maureen Bunker¹; Tracy Andacht²; Keiryn Bennett³; Cory Bystrom⁴; Matthew Chambers⁵; Larry Dangott⁶; Felix Elortza⁷; John Leszyk⁸; Henrik Molina⁹; Robert Moritz¹⁰; Brett Phinney¹¹; David Tabb⁵; J. Will Thompson¹²; Xia Wang¹³; Jason Williams¹⁴; ¹*BRITE, North Carolina Central University, Durham, NC*; ²*Centers for Disease Control and Prevention, Atlanta, GA*; ³*CeMM Research Center for Molecular Medicine, Vienna, Austria*; ⁴*Cleveland HeartLab, Inc., Akron, OH*; ⁵*Vanderbilt University, Nashville, TN*; ⁶*Texas A&M University, College Station, TX*; ⁷*Centro de Investigacion Cooperativa en Biociencias, Bilbao, Spain*; ⁸*University of Massachusetts, Shrewsbury, MA*; ⁹*The Rockefeller University, New York, NY*; ¹⁰*Institute for Systems Biology, Seattle, WA*; ¹¹*University of California, Davis, CA*; ¹²*Duke University, Durham, NC*; ¹³*University of Cincinnati, Cincinnati, OH*; ¹⁴*National Institute of Environmental Health Science, Research Triangle Park, NC*
- MP 169 **Development of a Clinical cMet SRM Assay and Assessment of Assay Precision in Archival Formalin Fixed Paraffin Embedded (FFPE) sections;** Wei-Li Liao¹; Sheeno Thyparambil¹; Kathleen Bengali¹; Jamar Uzzell¹; Marlene Darfler¹; David Krizman¹; Daniel Catenacci²; Jon Burrows¹; Todd Hembrough¹; ¹*OncoPlex Diagnostics, Rockville, MD*; ²*Department of Medicine, University of Chicago, Chicago, IL*
- MP 170 **Development of a Mass Spectrometry Based Approach for the Diagnosis of Hemoglobinopathies;** James Scrivens¹; Krisztina Radi¹; Baharak Vafadar-Isfahani¹; Julia Smith²; Jane Newbold³; Nicholas Jackson³; ¹*Univ of Warwick, Coventry, UK*; ²*Bruker UK, Coventry, UK*; ³*Coventry and Warwickshire Hospital, Coventry, UK*
- MP 171 **A novel Mass Spectrometry-Based Assay for the Accurate Measurement of Thyroglobulin from Patient Samples Containing Antithyroglobulin Autoantibodies;** Yanni Zhang; Nigel J. Clarke; Richard E. Reitz; *Quest Diagnostics, San Juan Capistrano, CA*
- MP 172 **Development of a Clinical Gastroesophageal Carcinoma Multiplexed SRM Assay and Assessment of Assay Performance in Patient Tissues;** Sheeno Thyparambil¹; Wei-Li Liao¹; Jamar Uzzell¹; Kathleen Bengali¹; Marlene Darfler¹; David Krizman¹; Daniel Catenacci²; Jon Burrows¹; Todd Hembrough¹; ¹*OncoPlex Diagnostics, Rockville, Maryland*; ²*University of Chicago, Chicago, Illinois*
- MP 173 **Quantitative Determination of Tamm-Horsfall Glycoprotein (THP, Uromodulin) in Urine Samples Using LC-MS/MS Analysis;** Nick Voskoboev; Olga Bondar, PhD; John Lieske, M.D; *Mayo Clinic, Rochester, MN*
- MP 174 **A New Approach to Lipoprotein Fingerprinting Using the Mass Spectrometry of Proteins Associated with High Density Lipoprotein (HDL) Nanoparticles;** Ronald D. Macfarlane; *Texas A & M University, College Station, TX*
- MP 175 **Diagnosing Monoclonal Gammopathies Using Top-Down Analysis of Immunoglobulin Light Chains in Serum and Urine by LC-ESI-QTOF Mass Spectrometry;** David Barnidge¹; Chad Botz¹; Surendra Dasari²; Melissa Snyder¹; Jerry Katzmann¹; David Murray¹; ¹*Mayo Clinic/DLMP, Rochester, MN*; ²*Mayo Clinic/Health Sciences Research, Rochester, MN*
- MP 176 **Analysis of Disease-Related Hemoglobin Modifications by Top-Down Mass Spectrometry;** Didia Coelho Graça¹; Adelina Acosta Martin^{1,2}; Lorella Clerici²; Yury O. Tsybin³; Ralf Hartmer⁴; Markus Meyer⁴; Kaveh Samii²; Denis Hochstrasser^{1,2}; Pierre Lescuyer^{1,2}; Alexander Scherl¹; ¹*University of Geneva, Geneva, Switzerland*; ²*Geneva University Hospitals, Geneva, Switzerland*; ³*Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland*; ⁴*Bruker Daltonics, Bremen, Germany*
- MP 177 **Quantitation of Insulin Grow Factors, IGF1 and IGF2 in Human Serum Using UHPLC-TOF;** Sharanya Reddy; Andrew Tyler; George Perkins; *PerkinElmer, Shelton, CT*
- MP 178 **Quantification of Serum C-peptide by Isotope-Dilution Mass Spectrometry Using Immobilized Antibody and N-terminal Modification by Isotope-Dilution Mass Spectrometry;** Tomoya Kinumi; Ryoko Mizuno; Akiko Takatsu; *Bio-Medical Std Section, NMIJ AIST, Tsukuba, Ibaraki, Japan*
- MP 179 **Simultaneous Transferrin and Apolipoprotein CIII Glycoforms Analysis by Online Immuno-Affinity Chromatography Electrospray Ionization Mass Spectrometry;** Coleman Turgeon¹; Francesco Porta²; Mark Magera¹; Kristen Liedtke¹; Dimitar Gavrilov¹; Devin Oglesbee¹; Silvia Tortorelli¹; Piero Rinaldo¹; Dietrich Matern¹; Kimiyo Raymond¹; ¹*Mayo Clinic, Rochester, MN*; ²*Department of Pediatrics, University of Torino, Torino, Italy*
- MP 180 **Developing an iMALDI MS Assay for the Clinical Determination of Plasma Renin Activity;** Alexander Camenzind¹; J Grace van der Gugten²; Daniel Holmes³; Christoph Borchers^{1,4}; ¹*University of Victoria-Genome BC Proteomics Centre, Victoria, Canada*; ²*St. Paul's Hospital, Vancouver, Canada*; ³*University of British Columbia, St Paul's Hospital, Vancouver, Canada*; ⁴*Dept of Biochemistry and Microbiology, U Victoria, Victoria, Canada*

- MP 181 **Extending the Information Content of the MALDI Analysis of Biological Fluids (Deep MALDI);** Mark W. Duncan^{1,2}; Senait Asmellash²; Jenna Allen²; Maxim Tsybin²; Joanna Roder²; Heinrich Roder²; ¹Univ. Colorado, School of Medicine, Aurora, CO; ²Biodesix Inc., Boulder, CO
- MP 182 **Applications of Mass Tags for Diagnostic Microchips;** Martina Lorey¹; Ville Jokinen²; Belinda Adler³; Hong Yan³; Rabah Soliymani¹; Simon Ekström³; Thomas Laurell³; Marc Baumann¹; ¹University of Helsinki, Helsinki, Finland; ²Aalto University, Espoo, Finland; ³Lund University, Lund, Sweden
- Imaging MS: Disease Markers, 183 - 206**
- MP 183 **Vitamin D Induced Regulation of Lipids in a Mouse Model of Breast Cancer Using Imaging MS and Gene Array Analysis;** Ami Grunbaum¹; Pierre Chaurand²; Richard Kremer¹; ¹McGill University Health Centre, Montreal, Canada; ²University of Montreal, Montreal, Canada
- MP 184 **Time-of-Flight Secondary Ion Mass Spectrometry (TOF-SIMS) Imaging Reveals Cholesterol Overload in the Cerebral Cortex of Alzheimer Disease Patients;** Alain Brunelle¹; Adina N Lazar^{2,3}; Claudia Bich¹; Maï Panchal^{2,3}; Nicolas Desbenoit¹; Vanessa W. Petit⁴; David Touboul¹; Catherine Marquer^{2,3}; Olivier Laprèvéte⁵; Charles Duyckaerts^{2,3}; ¹CNRS, Institut de Chimie des Substances Naturelles, Gif-sur-Yvette, France; ²Hôpital de la Salpêtrière, AP-HP, Paris, France; ³Centre de Recherche de l'ICM, Paris, France; ⁴LRTS, IRCM, DSV, CEA, Fontenay-aux-Roses, France; ⁵Université Paris-Descartes, Paris, France
- MP 185 **Profiling and Imaging MS of the Post-Injection b-Amyloid Mobility in Mouse Brain Tissues Sections;** Aurelien Thomas¹; Nathan Heath Patterson¹; Stéphane Epelbaum²; Pascale Laco³; Benoît Delatour²; Pierre Chaurand¹; ¹University of Montreal, Montreal, Canada; ²Inserm/CNRS/UPMC, Hôpital de la Pitié-Salpêtrière, Paris, France; ³Cognitive Neurology and Alzheimer's Disease Center, Chicago, IL
- MP 186 **Imaging Mass Spectrometry Helps Predict Healing Course in Acute Wound Healing;** Domenico Taverna^{1,3}; Jeffrey M. Spraggins^{2,3}; Joshua J. Nicklay³; Lillian B. Nanney⁴; Alonda C. Pollins⁴; Giovanni Sindona¹; Richard M. Caprioli^{2,3}; ¹Universita' della Calabria, Dept. of Chemistry, Arcavacata Di Rende, CS, Italy; ²Vanderbilt University, Dept. of Biochemistry, Nashville, TN; ³Vanderbilt University, Mass Spec. Research Center, Nashville, TN; ⁴Vanderbilt University, Dept. of Plastic Surgery, Nashville, TN
- MP 187 **Imaging Mass Spectrometry of Normal and PKD Mouse Kidney Tissues Using MALDI-MS;** Rachel Marvin; Yang Xu; Maki Takahashi; Leif Hanson; Surya Nauli; Dragan Isailovic; *University of Toledo, Toledo, Ohio*
- MP 188 **Matrix-assisted Laser Desorption Ionization Imaging Mass Spectrometry (MALDI-IMS) of Aging in Rat Skeletal Muscle;** Laetitia Theron¹; Daniel Bechet¹; Didier Viala¹; Jeremy Pinguet²; Christophe Chambon¹; ¹INRA, Theix, France; ²CHU, Clermont-Ferrand, France
- MP 189 **Mass Spectrometric Imaging of Myelin Basic Protein and Its Breakdown Products in Traumatic Brain Injury;** Manasi Mangaonkar; Kevin Wang; Richard Yost; David Powell; *University of Florida, Gainesville, FL*
- MP 190 **Multimodality Imaging Mass Spectrometry for Co-localization of Trace Metals and Proteins in Abscesses in Murine Tissue from *Staphylococcus aureus* Infection;** Jessica L. Moore; Yaofang Zhang; Thomas E. Kehl-fie; Joshua J. Nicklay; Eric P. Skaar; Richard M. Caprioli; *Vanderbilt University, Nashville, TN*
- MP 191 **Analysis of Bacterial Biofilms Using MALDI Imaging Mass Spectrometry: Protein Spatial Distribution within Uropathogenic *E. coli* Biofilms;** Kyle A. Floyd; Jessica L. Moore; Carrie L. Shaffer; Maria Hadjifrangiskou; Richard M. Caprioli; *Vanderbilt University, Nashville, TN*
- MP 192 **Identifying Lipid, Glycan and Protein Correlates of Vitamin D3 Supplemented Prostate Tissues Using MALDI-MS Imaging;** Sebastiano Gattoni-Celli; Ellen Jones; Drew Schoenling; Stephen Savage; Richard Drake; *Medical University of South Carolina, Charleston, SC*
- MP 193 **Imaging Mass Spectrometry (IMS) Approach for the Assessment of Meniscus Degeneration;** Jörg Kriegsmann^{1,2}; Rita Casadonte¹; Friederike Zweynert²; Vanessa Schommer²; Jenny Petzold³; Axel W. Baltzer³; Markus Granrath³; Jens Fuchser⁴; Sören Deininger⁴; Mike Otto^{1,2}; ¹Proteopath GbR, Trier, Germany; ²Institute for Molecular Pathology, Trier, Germany; ³Center for Molecular Orthopedics, Düsseldorf, Germany; ⁴Bruker Daltonik GmbH, Bremen, Germany
- MP 194 **Typing of Renal Amyloidosis in Formalin-Fixed Paraffin-Embedded (FFPE) Biopsy Specimens by MALDI Imaging Mass Spectrometry (IMS);** Rita Casadonte¹; Jens Fuchser²; Sören Deininger²; Kerstin Amann³; Mike Otto^{1,4}; Jörg Kriegsmann^{1,4}; ¹Proteopath GbR, Trier, Germany; ²Bruker Daltonik GmbH, Bremen, Germany; ³University Erlangen-Nürnberg, Erlangen, Germany; ⁴Histology, Cytology and Molecular Diagnostics, Trier, Germany
- MP 195 **Discovery and Localization of Modified Lipids in Kidneys of Diabetic Mouse Model using Mass Difference Scanning and Imaging Mass Spectrometry;** Kerri Grove; Raf Van de Plas; Jeffery Spraggins; Paul Voziyan; Raymond Harris; Billy Hudson; Richard Caprioli; *Vanderbilt University, Nashville, TN*
- MP 196 **Identification of Potential Biomarkers of Atherosclerotic Plaque Vulnerability by Imaging Mass Spectrometry;** Patricia Schneider Yogi¹; Gabriela Venturini¹; Karina Helena Morais Cardozo²; Pamela Araújo Malagrino¹; Valdemir Melechco Carvalho²; Paulo Sampaio Gutierrez¹; José Eduardo Krieger¹; Alexandre da Costa Pereira¹; ¹Heart Institute (InCor) - Medical School, USP, Sao Paulo, Brazil; ²Fleury Group, Sao Paulo, Brazil
- MP 197 **Matrix Assisted Laser Desorption Ionization Imaging Mass Spectrometry Reveals a Different Molecular Composition in Human Healthy and Osteoarthritic Synovial Membrane;** Berta Cillero Pastor¹; Gert B. Eijkel¹; Francisco J. Blanco²; Ron M.A. Heeren¹; ¹FOM Institute AMOLF, Amsterdam, The Netherlands; ²INIBIC-CH Universitario A Coruña, A Coruña, Spain
- MP 198 **Towards Lipidomics of Low-Abundant Species for Exploring Biological Relevance Guided by High-Resolution Mass Spectrometry Imaging;** Cimino Jonathan^{1,2}; Calligaris David²; Far Johann²; Debois Delphine²; Blacher Silvia¹; Sounni Nor Eddine¹; Noel Agnès¹; De Pauw Edwin²; ¹Laboratory of Tumor and Development Biology, GIGA, Belgium, Liege; ²Mass Spectrometry Laboratory, GIGA-R, Belgium, Liege
- MP 199 **Integrating Multivariate Data Analysis and +/- Mode MALDI Imaging MS for Interrogating Animal Models of Myocardial Infarction;** Robert Menger¹; Andras Kiss²; Raquel Hendershot¹; Brad Wacker³; Gert Eijkel²; Ron Heeren²; David Ford³; Richard Yost¹; ¹University of Florida, Gainesville, FL; ²FOM Institute AMOLF, Amsterdam, The Netherlands; ³Saint Louis University, St. Louis, MO
- MP 200 **MALDI Imaging and FTICR MS Mapping of Lipids Alterations in Spinal Cord Injury;** Huilin Liu¹; Karin B. Nilsson^{1,2}; Huan He^{3,4}; Alexander Shavkunov¹; Young S. Gwak²; Shayne N. Hassler²; Kathia M. Johnson²; Norelle

- C. Wildburger¹; Nicolas L. Young^{3,4}; Alan G. Marshall^{3,4}; Claire E. Hulsebosch²; Carol L. Nilsson¹; ¹*Department of Pharmacology & Toxicology, UTMB, Galveston, TX*; ²*Neuroscience and Cell Biology, UTMB, Galveston, TX*; ³*Ion Cyclotron Resonance Program, NHMFL, Tallahassee, FL*; ⁴*Department of Chemistry and Biochemistry, FSU, Tallahassee, FL*
- MP 201 **Imaging and Profiling of Lipids in Human Tumors;** Roberto Fernández¹; Antonio Veloso¹; Silvia Terés²; Monica Higuera²; Daniel H Lopez²; Francisca Guardiola²; Xavier Busquets²; Pablo V. Escribá²; Gwendolyn Barceló-Coblijn²; Jose A. Fernández¹; ¹*University of Basque Country (UPV/EHU), Leioa, Spain*; ²*University of the Balearic Islands, Palma, Spain*
- MP 202 **Identification Of Cancer Markers by Mass Spectrometry Imaging of Tissue Micro Arrays;** Marcus Wurlitzer¹; Carina Borkowski²; Sinje Odinga Odinga²; Malte Buchholz Buchholz²; Christina Koop²; Maryam Omid¹; Olga Kraus¹; Michael Becker⁵; Matthias Witt⁵; Dennis Trede⁴; Maria Trusch⁶; Sarah Minner Minner²; Thorsten Schlomm³; Ronald Simon²; Guido Sauter²; Hartmut Schlüter¹; ¹*UKE - Mass Spec Proteomics, Hamburg, Germany*; ²*UKE - Institute of Pathology, Hamburg, Germany*; ³*UKE - Martini-Clinic, Hamburg, Germany*; ⁴*Steinbeis Innovation Center SCILS, Bremen, Germany*; ⁵*Brucker Daltonik, Bremen, Germany*; ⁶*University of Hamburg - Inst. of Organic Chemistry, Hamburg, Germany*
- MP 203 **Spatially Dependant Lipidomic Changes Associated with Non-alcoholic Fatty Liver Disease (NAFLD) Visualized by MALDI IMS;** Nick Bond¹; Yajing Chu²; Scarlet Brockmoeller²; Julian Griffin^{1,2}; Albert Koulman¹; ¹*HNR MRC, Cambridge, England*; ²*Dept. Biochemistry and CSBC, Uni. of Cambridge, Cambridge, England*
- MP 204 **A Novel Combined DESI MSI/MAS NMR Approach to the Diagnosis and Characterization of Breast Cancer Tissue;** Sabine Guenther¹; Stefan Antonowicz; Rathi Ramakrishnan; Kirill A Veselkov; Laura Muirhead; Robert D Goldin; Zoltan Takats; *Imperial College London, London, UK*
- MP 205 **DESI-MS Imaging of Lipids and Metabolites in Cancers Activated by the MYC and RAS Oncogenes;** Livia S. Eberlin¹; Emelyn H. Shroff; Jialing Zhang; David I. Bellovin; Robert Tibshirani; Dean W. Felsher; Richard N. Zare; *Stanford University, Stanford, CA*
- MP 206 **Biomarker Discovery and Validation: Coupling MALDI Imaging to Proteomic Expression and Metabolite Quantitation to Characterize Radiation-Induced Tissue Damage;** Jace W. Jones¹; Alison J. Scott¹; Young Ah Goo¹; Artur Plett²; Christie M. Orschell²; David R. Goodlett¹; Robert K. Ernst¹; Maureen A. Kane¹; ¹*University of Maryland, Baltimore, MD*; ²*Indiana University, School of Medicine, Indianapolis, IN*
- Lipids General, 207 - 220**
- MP 207 **Inter and Intra-Molecular Gas Phase Photo-Induced Cross Linking of Triacylglycerol Lipid Ions;** Shuai Nie; *Michigan State University, East Lansing, MI*
- MP 208 **Statistical Analysis of MALDI-ToF Mass Spectra from Different Blood Components;** Rory T. Steven; Alan M. Race; Andrew D. Palmer; Joscelyn Sarsby; Rian L. Griffiths; Ata Kaban; G. Ed. Rainger; Josephine Bunch; *University of Birmingham, Birmingham, UK*
- MP 209 **MALDI-MS Imaging of Cardiolipins in Rat Organ Sections;** Hay-Yan J. Wang¹; Hsuan-Wen Wu¹; Ping-Ju Tsai²; Cheng Bin Liu^{1,3}; ¹*National Sun Yat-Sen University, Kaohsiung, Taiwan*; ²*Yuan's General Hospital, Kaohsiung, Taiwan*; ³*Veterans General Hospital-Kaohsiung, Kaohsiung, Taiwan*
- MP 210 **A Simple MALDI MS-based Method to Detect Plasmalogens in Complex Lipid Mixtures - The Use of 2,4-Dinitrophenylhydrazine as Reactive Matrix;** Beate Fuchs; Juergen Schiller; *University of Leipzig, Leipzig, Germany*
- MP 211 **Ultra-Performance Liquid Chromatography-Tandem Mass Spectrometry Method for Lipid Profiling of Diabetic Rats Treated with Hepatoselective Glucokinase Activators;** Nicholas B. Vera; *Pfizer, Cambridge, MA*
- MP 212 **Imaging Lipidomics by Microextraction Shotgun MS and nano-LCMS of Brain Tissue Sections ;** Reinaldo Almeida; Zane Berzina Berzina; Hans Kristian Hannibal-Bach; Christer Ejsing; *University of Southern Denmark, Odense, Denmark*
- MP 213 **Sphingolipid Profiling of Adipose Tissue: Specific Overexpression of Ceramidase Improves Whole Body Glucose and Lipid Metabolism;** William L. Holland^{1,2}; Yukiko Miyauchi^{1,2}; Ruth Gordillo^{1,2}; Philipp E. Scherer^{1,2}; ¹*UTSouthwestern Medical Center, Dallas, TX*; ²*Touchstone Diabetes Center, Dallas, TX*
- MP 214 **Lipids Analysis by 2 Dimensional LC Coupled to Triple Quadrupole Mass Spectrometer;** Liling Fang¹; Taku Tsukamoto²; Jing Dong²; Keiko Yamabe²; Takashi Suzuki²; Yoshihiro Hayakawa²; ¹*Shimadzu Scientific Instruments, Inc., Columbia, MD*; ²*Shimadzu Corporation, Kyoto, Japan*
- MP 215 **High Throughput Data Independent Approach for Qualitative and Quantitative Lipidomic Analysis;** Xu Wang¹; Michael Kiebish²; Brigitte Simons¹; John McNamara¹; Christie Hunter¹; ¹*AB SCIEX, Framingham, MA*; ²*Berg Diagnostics, Natick, MA*
- MP 216 **Targeted Lipidomics Identifies Interaction of Sphingolipid Metabolism and Fatty Acid Elongation In The Development of Diabetic Retinopathy;** Todd A. Lydic; Matthew Faber; Svetlana Bozack; Louis Glazer; Susanne Mohr; Julia V. Busik; Gavin E. Reid; *Michigan State University, East Lansing, MI*
- MP 217 **Robust Lipid Fragmentation Modeling to Identify Global Lipid Changes during Epithelial-Mesenchymal Transition (EMT);** Brendan Coutu; Kristin Alexander; Marc Hansen; John Prince; *Brigham Young University, Provo, UT*
- MP 218 **Metabolism and Protein Adduction of a Cyclooxygenase-2/15-prostaglandin Dehydrogenase Derived Product from Arachidonic Acid;** Nathaniel W. Snyder; Alejandro D. Arroyo; Xiaojing Liu; Suhong Zhang; Ian A. Blair; *University of Pennsylvania, Philadelphia, PA*
- MP 219 **Profiling of Triacylglycerides Present in Edible Oils Consumed in India Using LC/MS/MS;** Deepti Bhandarkar; Shruti Raju; Shailesh Damale; Shailendra Rane; Rashi Kochhar; Ajit Datar; Pratap Rasam; Jitendra Kelkar; *Shimadzu Analytical (India) Pvt. Ltd., Andheri (E), Mumbai, Maharashtra, India*
- MP 220 **Optimization of Supercritical Fluid Chromatography Coupled to Mass Spectrometry for Lipid Analysis;** Marie Méjean; Alain Brunelle; David Touboul; *ICSN, CNRS, Gif-sur-Yvette, France*
- Lipids: Identification and Structural Analysis, 221 - 232**
- MP 221 **Surface Oxidation under Ambient Air - A Fast and Economical Method to Identify Double Bond Positions in Unsaturated Lipids;** Hyejung Park¹; Ying Zhou¹; Philseok Kim²; Yan Jiang¹; Catherine Costello¹; ¹*Boston University School of Medicine, Boston, MA*; ²*Harvard University, Cambridge, MA*
- MP 222 **One-step Reversed Phase Liquid Chromatography Coupled to ESI Mass Spectrometry for Separation, Detection of Polar Lipids Associated with Prion Proteins;** Ying Zhou¹; Holger Wille³; Hyejung Park¹; Julian

- ollesch²; Catherine E Costello¹; ¹Boston University School of Medicine, Boston, MA; ²Ruhr-Universitaet Bochum, Bochum, Germany; ³University of Alberta, Edmonton, Alberta, Canada
- MP 223 **Enabled by Speed of Analysis: Multidimensional LC-MS-Based Lipidomics**; Susanne Brodesser¹; Axel Besa²; ¹CECAD Lipidomics Facility, Cologne, Germany; ²AB SCIEX Europe, Darmstadt, Germany
- MP 224 **New Retroactive Approach for Global Lipidomics Analysis by Data Independent Acquisition**; Kazutaka Ikeda; Sanae Yamanaka; Masaru Tomita; Tomoyoshi Soga; Keio University, Tsuruoka, Japan
- MP 225 **Ultra-High Resolution Analysis of Triacylglycerol in Seed Oils Using a High-Performance Orbitrap Hybrid and Automated Data Processing Software**; Jeffrey Gilbert¹; Debbie Schwedler¹; Scott Greenwalt¹; Brita McNew¹; Daniel Gachotte¹; Mary Evenson¹; Yasuto Yokoi²; Tim Stratton³; David Peake³; ¹Dow AgroSciences, Indianapolis, IN; ²Mitsui Knowledge Industry, Tokyo, Japan; ³Thermo Fisher Scientific, San Jose, CA
- MP 226 **Analysis of Isoleuglandin/Isoketal Lysine Adducts Using a Traveling Wave Ion Mobility Time-of-Flight Mass Spectrometer**; Lin Huang; Jaewoo Choi; Samantha Wickramasekara; Claudia Maier; Oregon State University, Corvallis, OR
- MP 227 **Identification and Characterization of Endogenous and Novel Cardiolipins in Human Serum**; Elizabeth W. Kahuno; Feng-Ying C. Lin; Alfred L. Yergey; Peter S. Backlund; NICHD, NIH, Bethesda, MD
- MP 228 **A Shotgun Lipidomics Approach Coupled with Charge Switch Derivatization Applied to Identification and Quantitation of Fatty Acid Double Bond Isomers**; Kui Yang; Beverly Gibson Dilthey; Richard W. Gross; Washington University School of Medicine, St. Louis, MO
- MP 229 **Rapid Characterization of Phospholipid Isomeric Mixtures from Sample Arrays and Tissue Sections By Sequential Collision-Induced Dissociation and Ozone-Induced Dissociation**; Rachel L. Kozłowski; Todd W. Mitchell; Stephen J. Blanksby; University of Wollongong, Wollongong, Australia
- MP 230 **Analysis of Phosphocholines Using Metastable Atom Activated Dissociation Mass Spectrometry (MAD-MS) and Collision Induced Dissociation (CID)**; Robert E. Deimler¹; Madlen Sander²; William D. Hoffmann¹; Glen P. Jackson¹; ¹West Virginia University, Morgantown, WV; ²Leipzig University, Leipzig, Germany
- MP 231 **High Resolution 193 nm UVPD-MS for the Top-down Structural Characterization of Lipid A and Lipopolysaccharides**; John O'Brien; Brittany Needham; Jeremy Henderson; M. Stephen Trent; Jennifer Brodbelt; University of Texas, Austin, TX
- MP 232 **Characterization and localization of d18:2 Sphingadienine Based Sulfatides in Rat Cerebellum Using 2D Offline LC-HRMS and MALDI Imaging**; Benoit Colsch¹; Samia Boudah^{1,3}; Christophe Junot¹; Amina S. Woods²; ¹CEA, DSV/iBiTec-S/SPI/LEMM, Gif sur Yvette, France; ²NIDA/NIH, Baltimore, MD; ³GlaxoSmithKline, Centre de recherche F. Hyafil, Villebon-sur-Yvette, France
- Nucleic Acids: General, 233 - 250**
- MP 233 **Biomolecule-Ligand Noncovalent Complexes: Mass Spectrometry as a Key to Interpret Solution Fluorescence Data**; Daisuke Miyoshi²; Adrien Marchand³; Valerie Gabelica^{1,3}; ¹University of Liège, Liège, Belgium; ²FIBER & FIRST, Konan University, Kobe, Japan; ³University of Bordeaux, Pessac, France
- MP 234 **A Mass Spectrometry-based Method for the Identification of Novel G-Quadruplex-binding Proteins**; Preston Williams; Xiaoli Dong; Yinsheng Wang; University of California, Riverside, CA
- MP 235 **Disclosure High Affinity Binding Ligands to Human Telomeric RNA G-quadruplexes by Electrospray Ionization Mass Spectrometry**; Jiang Zhou; Xiaojie Cui; Qiang Zhang; Gu Yuan; College of Chemistry, Peking University, Beijing, China
- MP 236 **Probing Aptamer-Ligand Interactions Using Soft Ionization Mass Spectrometry Methods**; Basri Gulbakan; Fan Chen; Konstantin Barylyuk; Renato Zenobi; ETH Zurich, Zurich, CH
- MP 237 **Rapid and High-Confidence Sequence Confirmation of Modified Oligonucleotides Using High Resolution Mass Spectrometry**; Sudong Kong¹; Jianlan Yu²; Wenhai Jin²; Ji Luo²; Yongming Xie²; ¹Suzhou Ribo Life Science Co.,Ltd, Suzhou, Jiangsu Province, China; ²Asia Pacific Application Support Center, AB SCIEX, Shanghai, China
- MP 238 **HPLC-ESI⁺-MS/MS Analysis of DNA Adducts of Phosphoramidate Mustard, Metabolite of Cyclophosphamide, in Human Peripheral Blood Lymphocytes and HapMap Cells**; Teshome Gherezghiher; Kinjal Sanghavi; L'Aurette Johnson; Jatinder Lamba; Jacobson Pamala; Natalia Tretyakova; University of Minnesota, Minneapolis, MN
- MP 239 **Active Turnover of DNA Methylation and Hydroxymethylation Measured by LC-ESI-MS/MS-MRM**; Thuc Le; Guoping Fan; Kym Faull; UCLA, Los Angeles, CA
- MP 240 **Quantification of 8,5'-cyclopurine-2'-deoxynucleosides Induced by Fenton-like Reagents**; Candace Guerrero; Yinsheng Wang; UC Riverside, Riverside, CA
- MP 241 **Replication Studies of Ethylated Thymidine Adducts *in vitro* and *in vivo***; Nisana Andersen; Pengcheng Wang; Qianqian Zhai; Yinsheng Wang; UC Riverside, Riverside, CA
- MP 242 **Quantitative Analysis of Tet-induced Oxidation Products of 5-Methylcytosine in Human Cells and Mammalian Tissues**; Yinsheng Wang; Shuo Liu; University of California, Riverside, CA
- MP 243 **Quantification of 1,3-Butadiene-Induced DNA Adducts in Human Blood Using Liquid Chromatography- High Resolution Tandem Mass Spectrometry (LC-HRMS/MS-SRM)**; Dewakar Sangaraju¹; Peter Villalta¹; Melissa Goggin²; Maria Agunsoye¹; Colin Campbell¹; Natalia Tretyakova¹; ¹University of Minnesota, Minneapolis, MN; ²MEDTOX Scientific, Minneapolis, MN
- MP 244 **Isolation and Analysis of Oligonucleotide Metabolites from Various Tissues by LC/MS**; Jason Anspach¹; Michael McGinley¹; Jeff Layne¹; Mark Hall²; ¹Phenomenex, Torrance, CA; ²Novatia LLC, Monmouth Junction, NJ
- MP 245 **Quantitative Analysis of Phosphorothioate Oligonucleotide in Human Plasma Using LC-MS/MS with On-Line Extraction**; Laixin Wang; Sherry Liu; Qiuying Zhu; Scott Reuschel; Min Meng; Tandem Labs, Salt Lake City, UT
- MP 246 **LC-MS/MS Structural Characterization of the Impurities in Synthetic Phosphorothioate Oligonucleotides: Current Challenges and Future Solutions**; Lianming Wu; GlaxoSmithKline, King Of Prussia, PA
- MP 247 **Suppression of Photo-Dissociation of Black Hole Quencher labels of PCR Probes during MALDI MS Analysis**; Igor Smirnov; Galina Pozmogova; Institute of Physico-Chemical Medicine, Moscow, Russian Federation

- MP 248 **Advantages and Disadvantages Between Two Approaches to Quantitate Oligonucleotides in Various Matrices with Liquid Chromatographic Mass Spectrometer;** Jiongwei Pan; Jeffrey Selenka; Steven Becht; *PPD, Middleton, WI*
- MP 249 **OMA and OPA – A Software Tool for Mass Spectra Analysis of Natural and Modified Nucleic Acids;** Silvan R. Stucki¹; Adrien Nyakas¹; Lorenz C. Blum²; Jean-Louis Reymond¹; Stefan Schürch¹; ¹*University of Bern, Bern, Switzerland*; ²*ETH Zürich, Zürich, Switzerland*
- MP 250 **GenoMass: An Automated Tool for the Computational Interpretation of the LC-MS/MS Data of Modified Oligonucleotides to Perform Online Sequencing;** Vaneet K Sharma¹; Joshua Klaene¹; Qing Liao²; James Glick¹; Paul Vouros¹; ¹*Northeastern University, Barnett Institute, Boston, MA*; ²*Shenitech LLC, Acton, MA*
- Nucleic Acids: RNA, 251 - 262**
- MP 251 **High Throughput Analysis of LC-MS Datasets from Isotopically Labeled RNA;** Siwei Li; Patrick Limbach; *University of Cincinnati, Cincinnati, OH*
- MP 252 **Identifying the Anticodons of *Thermus thermophilus* tRNAs Asn, Asp, His, and Tyr Using LC-MS/MS;** Robert Ross; Patrick Limbach; *University of Cincinnati, Cincinnati, OH*
- MP 253 **Mass Spectral Analysis of Modified Nucleosides and Nucleoside Monophosphates;** Kirk Gaston; Patrick Limbach; *University of Cincinnati, Cincinnati, OH*
- MP 254 **Method for Pseudouridine Detection and Quantification in RNA by Chemical Derivatization and Tandem Mass Spectrometry;** Balasubrahmanyam Addepalli; Patrick Limbach; *University of Cincinnati, Cincinnati, OH*
- MP 255 **A Study to Sequence and Characterise Isobaric RNAs Using Tandem Mass Spectrometry and Ion Mobility Spectrometry-Mass Spectrometry;** Henry Fisher¹; Marco Smith²; Alison E Ashcroft¹; ¹*Faculty of Biological Sciences, University of Leeds, Leeds, UK*; ²*GlaxoSmithKline, Stevenage, UK*
- MP 256 **Direct Identification and Characterization of microRNAs by Liquid Chromatography – High-Resolution Tandem Mass Spectrometry and Database Searching;** Hiroshi Nakayama^{1,2}; Yoshio Yamauchi^{2,3}; Masato Taoka³; Yuko Nobe²; Toshiaki Isobe^{2,3}; ¹*RIKEN Advanced Science Institute, Saitama, Japan*; ²*CREST, JST, Saitama, Japan*; ³*Tokyo Metropolitan University, Tokyo, Japan*
- MP 257 **Liquid Chromatography-Mass Spectrometry-Based Characterization of Pseudouridine in Non-Coding RNAs at Single Nucleotide Resolution;** Masato Taoka¹; Yuko Nobe¹; Aiko Takeuchi¹; Hiroshi Nakayama^{2,3}; Yoshio Yamauchi¹; Toshiaki Isobe^{1,3}; ¹*Department of Chemistry, Tokyo Metropolitan Univ., Tokyo, Japan*; ²*RIKEN Advanced Science Institute, Wako, Japan*; ³*CREST, JST, Tokyo, Japan*
- MP 258 **Determination of the Metabolic Stability of siRNA Using LC-MS;** A. Cary McGinnis; Michael Bartlett; *University of Georgia, Athens, GA*
- MP 259 **Development of a LC-MS/MS Method for Detection and Quantitation of siRNA as Therapeutic Candidates in Rat and Monkey Plasma;** Suzie Yeh; Rena Zhang; Mark Cancilla; BaoJen Shyong; Edward Carlini; *Merck & Co., Inc., West Point, PA*
- MP 260 **Detecting Nucleoside Post Enzymatic Cleavage Modifications in RNA Using Fast Precursor Scanning and Fast Polarity Switching Triple Quadrupole Mass Spectrometry;** Susan Leonard¹; Jonathan Ho²; Peter Ratsep²; Nicholas Cobb¹; ¹*Shimadzu Scientific Inst, Marlborough, MA*; ²*Shimadzu Scientific Instruments, Somers, NJ*
- MP 261 **Advancing the Development of RNA Therapeutics with Innovative Mass Spectrometry Based Assays;** BaoJen Shyong; Christopher Kochansky; Tracy Young; Suzie Yeh; Rena Zhang; Charles Thompson; Mark Cancilla; *Merck, West Point, PA*
- MP 262 **LC-MS Methods for Identification and Quantitation of microRNA;** Majlinda Kullolli; Sharon Pitteri; *Stanford University, Palo Alto, CA*
- Instrumentation: New Developments in Ionization and Sampling, 263 - 293**
- MP 263 **The Capillary Gap Sampler: a New Microfluidic Platform Directly Coupled to ESI-MS for Fast Analysis of Low Sample Amounts;** Volker Neu¹; Roger Steiner²; Stephan Müller²; Christof Fattinger²; Renato Zenobi¹; ¹*ETH Zurich, Zurich, CH*; ²*F. Hoffmann-La Roche AG, Discovery Technologies, Basel, CH*
- MP 264 **A Comparative Forensic Study Comparing the Newly Discovered Electrospray Inlet Ionization with Electrospray Ionization;** Lyla Hassan; Dr. Charles McEwen; *University of the Sciences, Philadelphia, PA*
- MP 265 **Electro-Thermal Vaporizer (ETV) Direct Analysis in Real Time-Mass Spectrometry (DART-MS) For Sensitive and High Throughput Water Contaminant Analysis;** Prabha Dwivedi¹; Daniel Gazda²; William Wallace²; Thomas Limer²; Ariel Macatangay³; Facundo Fernandez¹; ¹*Georgia Inst. of Technology, Atlanta, GA*; ²*NASA-JSC/SK4/Wyle Sc., Tech., and Eng. Group, Houston, TX*; ³*NASA-JSC/SF4, Houston, TX*
- MP 266 **Improved LC-DART-MS Interface for Reaction Monitoring and Impurity Analysis in non-ESI-Friendly Solvents;** Adam Kaylor¹; Prabha Dwivedi¹; Guilong Cheng²; Facundo Fernandez¹; ¹*Georgia Institute of Technology, Atlanta, GA*; ²*Pfizer Analytical R&D, Pharmaceutical Science, Groton, CT*
- MP 267 **Effective Ion Transmission Scheme for Ambient Plasma-based Discharge Sources Coupled with Drift Tube Ion Mobility Spectrometry;** Joel Keelor; Prabha Dwivedi; Facundo Fernandez; *Georgia Institute of Technology, Atlanta, GA*
- MP 268 **A Novel Radiofrequency Ionization Method for the Analysis of Wide Classes of Volatile Organic Compounds;** Touradj Solouki; Behrooz Zekavat; Abayomi Olaitan; *Baylor University, Waco, TX*
- MP 269 **Analysis of Volatile Organic Compounds in Gasoline Samples Using Radio-Frequency Ionization/Mass Spectrometry;** Behrooz Zekavat; Abayomi Olaitan; Touradj Solouki; *Baylor University, Waco, TX*
- MP 270 **Characterisation and Performance of a Glow Discharge as a Source of Electrons for a Portable Mass Spectrometer;** Achouak Chalkha¹; Aurika Janulyte¹; Yves Zerega¹; Boris Brkić²; Steve Taylor²; Jacques Andre¹; ¹*Aix-Marseille Université, Marseille, France*; ²*Dpt Elec Eng & Electronics University of Liverpool, Liverpool, UK*
- MP 271 **Cool Down, Relax, Enjoy the Ride. An Ion Energy Study for a Funnel Interface of a Triple Quad;** Felician Muntean; Maurizio Splendore; Desmond Kaplan; Stephen Zanon; Steve Schachterle; Roy Moeller; *Bruker Daltonics, Fremont, CA*
- MP 272 **Towards Nanoscale Spatially Resolved Surface Enhanced Laser Desorption/Ablation Chemical Profiling via Mass Spectrometry;** Deepak Bhandari; Ivan Kravchenko; Olga Ovchinnikova; Gary Van Berkel; *Oak Ridge National Laboratory, Oak Ridge, TN*

- MP 273 **The Use of Theta Glass Capillaries for Wire-in-a-Capillary Nano-Electrospray Mass Spectrometry to Facilitate In-Line Solution Mixing;** Christine Fisher; Anastasia Kharlamova; Scott McLuckey; *Purdue University, West Lafayette, IN*
- MP 274 **A Novel Corona Discharge Source with Liquid Point Electrode;** Sonja Klee; Marco Thinius; Valerie Derpmann; Walter Wißdorf; Sebastian Klopotoski; Klaus J. Brockmann; Thorsten Benter; *University of Wuppertal, Wuppertal, Germany*
- MP 275 **GC Performance of a Novel Capillary Atmospheric Pressure Chemical Ionization (cAPCI) Source;** Sonja Klee; Dennis Klink; Marco Thinius; Yessica Brachthäuser; Thorsten Benter; *University of Wuppertal, Wuppertal, Germany*
- MP 276 **Spark Discharge VUV Lamps for Atmospheric Pressure Ionization – Mass Spectrometric Investigations of the Plasma Chemistry;** Hendrik Kersten; Ian Barnes; Sebastian Klopotoski; Thorsten Benter; *University of Wuppertal, Wuppertal, Germany*
- MP 277 **Progress in the Development of Capillary Atmospheric Pressure Electron Capture Ionization (cAPECI);** Valerie Derpmann; David Müller; Thorsten Benter; *University of Wuppertal, Wuppertal, Germany*
- MP 278 **Charging Effects in Ion Transfer Capillaries: An In-Depth Study;** David Müller; Valerie Derpmann; Thorsten Benter; *University of Wuppertal, Wuppertal, Germany*
- MP 279 **SimBlend - an Open Source Visualization Tool Chain for SIMION;** Dominik Sand; Klaus J. Brockmann; Walter Wißdorf; Thorsten Benter; *University of Wuppertal, Wuppertal, Germany*
- MP 280 **Field Driven Chemical Effects in API: Numerical Modeling of the Ion Temperature at Atmospheric and Intermediate Pressure with SIMION-RS;** Walter Wißdorf¹; Yessica Brachthäuser¹; Christine Polaczek¹; Philipp Cochems²; Stefan Zimmermann²; Thorsten Benter¹; ¹*University of Wuppertal, Wuppertal, Germany*; ²*Leibniz University Hannover, Hannover, Germany*
- MP 281 **Visualization and Optimization of the Fluid Dynamics in High-Flow Atmospheric Pressure Ion Sources, Using the Background Oriented Schlieren Method (BOS);** Sebastian Klopotoski; Alexander Haack; Thorsten Benter; *University of Wuppertal, Wuppertal, Germany*
- MP 282 **An API MS for Mechanistic Studies of Ion-Clusters Formation in the Gas Phase;** Sascha Albrecht²; Fred Stroh²; Jochen Barthel²; Armin Afchine²; Sonja Klee¹; Thorsten Benter¹; ¹*University of Wuppertal, Wuppertal, Germany*; ²*Research Center Jülich, Jülich, Germany*
- MP 283 **Development of an Ion Funnel Based on Printed Circuit Technology for Ion Transfer and Ion Manipulation Purposes;** Albrecht Brockhaus; Sonja Klee; Walter Wißdorf; Klaus J. Brockmann; Thorsten Benter; Albrecht Glasmachers; *University of Wuppertal, Wuppertal, Germany*
- MP 284 **Progress in the Development of Capillary Atmospheric Pressure Ionization Methods (cAPI);** Sonja Klee; Valerie Derpmann; Hendrik Kersten; Walter Wißdorf; David Müller; Yessica Brachthäuser; Sebastian Klopotoski; Klaus Brockmann; Thorsten Benter; *University of Wuppertal, Wuppertal, Germany*
- MP 285 **Development of a Dielectric Barrier Discharge Ionization Source for Vapors Analysis;** Trent Hammer; Dr Rob O'Brien; *UBC Okanagan, Kelowna, Canada*
- MP 286 **Performance Determination of a Novel Liquid Calibration Unit Utilizing Proton-Transfer-Reaction Mass Spectrometry (PTR-MS);** Lukas Fischer¹; Jens Herbig¹; Alfons Jordan²; Lukas Märk²; Andreas Klinger¹; Klaus Winkler¹; Rene Gutmann¹; Armin Hansel^{1,3}; Tilmann D. Märk^{2,3}; ¹*IONIMED Analytik, Innsbruck, Austria*; ²*IONICON Analytik, Innsbruck, Austria*; ³*University of Innsbruck, Innsbruck, Austria*
- MP 287 **Exploring the Capabilities and Specificities of CESI-MS for Bottom-Up Proteomics and Peptide Mapping of Proteins through a Comparison to NanoLC;** Jean-Marc Busnel¹; Dona Neloni Wijeratne¹; Anna Lou¹; Chitra Ratnayake¹; Sean Seymour²; Christie Hunter²; ¹*Beckman Coulter, Brea, CA*; ²*AB Sciex, Foster City, CA*
- MP 288 **Detection of a Low-Volatility Analyte Vapor Permeating a Polymer Membrane;** Bruce Salter¹; Derek Lovingood³; Jeffery Owens²; ¹*Universal Technology Corporation, Tyndall AFB, FL*; ²*Air Force Research Laboratory, Tyndall AFB, FL*; ³*Oak Ridge Institute for Science and Education, Oak Ridge, TN*
- MP 289 **The Design and Characterization of a Novel Ultra-low Flow Nanoelectrospray Device for Metabolite Quantitation;** Benjamin Ngo¹; Shaoxia Yu²; Ling Xu²; Swapan Chowdhury²; Jing-Tao Wu²; Mike S. Lee³; Gary Valaskovic¹; ¹*New Objective, Inc., Woburn, MA*; ²*Millennium Pharmaceuticals, Cambridge, MA*; ³*Milestone Development Services, Newton, PA*
- MP 290 **Characterization of a Low-Power, Pressure-Tolerant Microionizer;** Craig Cavanaugh¹; Kenion Blakeman¹; Tina Stacy¹; Derek Wolfe¹; Stanley Pau²; J Michael Ramsey¹; ¹*UNC - Chapel Hill, Durham, NC*; ²*University of Arizona, Tucson, AR*
- MP 291 **Microfluidic Chip for the Separation and Identification of Proteins Using Dynamic Isoelectric Focusing Coupled to MALDI Mass Spectrometry (DIEF-MALDI-MS);** Srikanth Akinapalli; Shannon Wilson; Luke Tolley; Gary R. Kinsel; *Southern Illinois University Carbondale, Carbondale, IL*
- MP 292 **The Development of Matrix Assisted Ionization Vacuum (MAIV) Mass Spectrometry (MS) for the Characterization of Fragile Ganglioside Lipids;** Steven Lingenfelter¹; Daniel Green¹; James Wager-Miller²; Ken Mackie²; Sarah Trimpin¹; ¹*Wayne State University, Washington, MI*; ²*Indiana University, Bloomington, IN*
- MP 293 **Characterization of a Low Pressure Nano-electrospray Source for High Ion Current Applications;** Christopher Taormina; Randall Pedder; *Ardara Technologies, Ardara, PA*

Instrumentation: New Developments in Mass Analyzers, 294 - 329

- MP 294 **Multiple Mass Analysis Using an Ion Trap Array (ITA) Mass Analyzer;** Yu Xiao; Chuan-Fan Ding; *Fudan University, Shanghai, China*
- MP 295 **Theoretical Modeling of Space Charge Effects in Quadrupole Ion Traps;** Dan Guo¹; Yuzhuo Wang¹; Hua Zhang²; Xiaohua Zhang²; Xiang Fang³; Wei Xu¹; ¹*Beijing Institute of Technology, Beijing, China*; ²*Beijing Purkinje General Instrument Co.,Ltd, Beijing, China*; ³*National Institute of Metrology, Beijing, China*
- MP 296 **The Coupling Effects of Hexapole and Octopole Fields in Quadrupole Ion Traps;** Yuzhuo Wang¹; Zejian Huang²; You Jiang²; XingChuang Xiong²; Xiang Fang²; Wei Xu¹; ¹*Beijing Institute of Technology, Beijing, China*; ²*National Institute of Metrology, Beijing, China*
- MP 297 **Design and Performance of a Prototype Miniature Triple Quadrupole Mass Spectrometer;** Steven Wright¹; Andrew Malcolm¹; Christopher Wright¹; Shane O' Prey¹; Neil Dash¹; Edward Crichton¹; Richard Moseley¹; Wojciech Zaczek¹; Richard Syms²; Peter Edwards¹; ¹*Microsaic Systems plc, Woking, UK*; ²*Imperial College, London, UK*

- MP 298 **Development of a Frequency-Scanned Quadrupole Mass Filter for Large Ions;** Deven Shinholt; Staci Anthony; Martin Jarrold; *IU Chemistry Dept., Bloomington, IN*
- MP 299 **Increasing the Drive Frequency of a Microscale Cylindrical Ion Trap for Improved High Pressure Performance;** Kenion Blakeman; J. Michael Ramsey; *University of North Carolina, Chapel Hill, NC*
- MP 300 **Effects of Elevated Pressure on the Secular Frequencies of Ions in a Cylindrical Ion Trap;** Andrew Hampton; Kenion Blakeman; Bruno Couplier; Derek Wolfe; J. Michael Ramsey; *UNC - Chapel Hill, Chapel Hill, NC*
- MP 301 **GPU Accelerated High Pressure Simulation Investigations in Miniature Ion Traps;** Bruno Couplier; Sorin Mitran; J. Michael Ramsey; *UNC Chapel Hill, Chapel Hill, NC*
- MP 302 **Characterization of a Novel Ion Trap Geometry for Higher Capacity Trapping in Microscale Mass Spectrometry;** Kevin Schultze; J. Michael Ramsey; *University of North Carolina at Chapel Hill, Chapel Hill, NC*
- MP 303 **Miniature Cylindrical Ion Trap Geometry Optimization and Parameter Scaling;** Dmitriy Chernookiy; Bruno Couplier; J. Michael Ramsey; *University of North Carolina, Chapel Hill, Chapel Hill, NC*
- MP 304 **Broadband MS/MS for Fast and Sensitive Targeted Monitoring of Multiple Compounds in Ion Trap MS;** Alexander Misharin; Konstantin Novoselov; Victor Laiko; Vladimir M. Doroshenko; *MassTech, Columbia, MD*
- MP 305 **Performance of the Ceramic-Based Rectilinear Ion Trap (cRIT) with Field-Adjusting Electrode (FAE);** Fuxing Xu; Liang Wang; Chuan-Fan Ding; *Fudan University, Shanghai, China*
- MP 306 **Dual-Polarity Ion Trap Mass Spectrometry: Simultaneous Manipulation and Mass Analysis of Positive and Negative Ions;** Muxi He¹; Lili Wei¹; You Jiang²; Xingchuan Xiong²; Zejian Huang²; Xiang Fang²; Wei Xu¹; ¹*Beijing Institute of Technology, Haidian District, China*; ²*National Institute of Metrology, Beijing, China*
- MP 307 **Utilizing a Collision Cell with Axial Field for Achieving Ultra High Speed SRM in a Triple Stage Quadrupole Mass Spectrometer;** Oleg Silivra; Harald Oser; Terry Olney; *Thermo Fisher Scientific, San Jose, CA*
- MP 308 **Design of a Prototype Digital Ion Trap for High Resolution Ion Trap Mass Analysis;** Di Wang¹; Theresa Evans-Nguyen²; Friso Amerom³; ¹*Johns Hopkins University, Baltimore, MD*; ²*Draper Laboratory, Tampa, FL*; ³*Mini-Mass Consulting, St. Pete Beach, FL*
- MP 309 **Automatic Isotope Ratio Optimization on High-Field Orbitrap Mass Analyzers;** Jesse D. Canterbury¹; Philip Remes¹; Michael W. Senko¹; Eduard Denisov²; Alexander Makarov²; ¹*Thermo Fisher Scientific, San Jose, CA*; ²*Thermo Fisher Scientific GmbH, Bremen, Germany*
- MP 310 **Multi-electrode Electrostatic Trap with Quadro-Logarithmic Potential Distribution: Computer Modeling of Instrument Performance;** Gleb Vladimirov¹; Eugene Nikolaev^{2,3}; ¹*Institute for Energy Problems of Chemical Physics, Moscow, Russia*; ²*Emanuel Institute of Biochemical Physics, Moscow, Russia*; ³*Orekhovich Institute of Biomedical Chemistry, Moscow, Russia*
- MP 311 **Extending the Upper Mass Limit of Orbitrap Mass Spectrometry;** Philip D. Compton¹; Eugen Damoc²; Eduard Denisov²; Alexander Makarov²; Neil L. Kelleher¹; ¹*Northwestern University, Evanston, IL*; ²*Thermo Fisher Scientific, Bremen, Germany*
- MP 312 **Development of a Novel Harmonic Oscillator Ion Trap Mass Spectrometer Based on a Multi-Potential Ion Guide (MPIG);** Curtiss Hanson; *University of Northern Iowa, Cedar Falls, IA*
- MP 313 **Improving the Accuracy and Limits of Detection for Charge Detection Mass Spectrometry;** Nathan C. Contino; Elizabeth E. Pierson; David Z. Keifer; Martin F. Jarrold; *Indiana University, Bloomington, IN*
- MP 314 **Charge Sensitive Superconducting Nano-Strip Ion Detector for Time-Of-Flight Mass Spectrometry;** Nobuyuki Zen¹; Shigetomo Shiki¹; Koji Suzuki¹; Masahiro Ukibe¹; Masaki Koike¹; Roberto Cristiano²; Masataka Ohkubo¹; ¹*AIST, Tsukuba, Japan*; ²*CNR, Napoli, Italy*
- MP 315 **Sensitivity Improvement of MCP-based Ion Detectors for Mass Spectrometry;** Etsuo Iizuka; Toshiyuki Uchiyama; Masahiro Hayashi; *Hamamatsu Photonics KK., Iwata-City, Shizuoka-Pref., Japan*
- MP 316 **Ion Mobility Measurements within Fourier Transform Ion Cyclotron Resonance Cells and Orbitraps;** Yi Xin¹; Yu Chen¹; Xiang Fang²; Wei Xu¹; ¹*Beijing Institute of Technology, Beijing, China*; ²*National Institute of Metrology, Beijing, China*
- MP 317 **Performance of Popular ICR Cell Geometries: A Simulated Expansion-Based Approach;** Andriy Kharchenko^{1,2}; Joshua Driver¹; Ron Heeren²; Eugene Nikolaev³; Jon Amster¹; ¹*University of Georgia, Athens, GA*; ²*FOM Institute for Atomic and Molecular Physics, Amsterdam, Netherlands*; ³*Institute for Energy Problems of Chemical Physics, Moscow, Russia*
- MP 318 **Improving Radial and Axial Uniformity of the Excitation Electric Field in a Closed Dynamically Harmonized FT-ICR Cell;** Tong Chen¹; Nathan Kaiser²; Steve Beu³; Gregory Blakney²; Christopher Hendrickson²; Alan Marshall^{1,2}; ¹*Florida State University, Tallahassee, FL*; ²*National High Magnetic Field Laboratory, Tallahassee, FL*; ³*S.C. Beu Consulting, Austin, TX*
- MP 319 **Electrostatic Gimbal for Correction of Errors in Time-of-Flight Mass Spectrometers;** John B. Hoyes; Andrew Whatley; David Langridge; Anthony Gilbert; *Waters, Manchester, UK*
- MP 320 **Design and Making of a Micro Time-Of-Flight Mass Spectrometer Based on MEMS Technologies;** Xavier Machuron-Mandard; Charles-Marie Tassetti; Romain Mahieu; Frederic Progent; Olivier Peyssonneaux; Laurent Duraffourg; Jean-Sébastien Danel; *Atomic Energy Commission, Arpajon Cedex, France*
- MP 321 **Incorporation of a Radiofrequency Ion Funnel in Proton Transfer Reaction - Time Of Flight - Mass Spectrometry;** Shane Barber¹; Robert S Blake¹; Iain R White¹; Paul S Monks¹; Fraser Reich²; Steve Mullock²; Andrew M Ellis¹; ¹*University of Leicester, Leicester, UK*; ²*Kore Technology Limited, Cambridgeshire, UK*
- MP 322 **Multi-Turn Time-of-Flight Mass Analyzers with Rotational Symmetry and Open Trajectories;** Vyacheslav Shchepunov; Roger Giles; *Shimadzu Research Laboratory (Europe) Ltd., Manchester, UK*
- MP 323 **Advancements in Multi Reflecting High Resolution TOF Mass Analyzers with Folded Flight Path;** Viatcheslav Artaev¹; Mikhail Yavor²; Timofey Pomozev²; Anatoly Verenchikov³; ¹*LECO Corporation, St. Joseph, MI*; ²*Institute for Analytical Instrumentation RAS, St. Petersburg, Russia*; ³*MSC-CG, Bar, Montenegro*
- MP 324 **Multiple-Reflection Time-of-Flight Mass Spectrometers for the Research With Exotic Nuclei and for Analytical Mass Spectrometry;** Wolfgang Plass^{1,2}; Timo Dickel^{1,2}; Jens Ebert¹; Johannes Lang¹; Samuel Ayet²; Emma Haettner¹; Hans Geissel^{1,2}; Christian Jesch¹; Wayne Lippert¹; Martin Petrick¹; Christoph Scheidenberger^{1,2}; Mikhail Yavor³; ¹*Justus-Liebig-Universität Gießen, Gießen, Germany*; ²*GSI Helmholtzzentrum für*

- Schwerionenforschung, Darmstadt, Germany; ³Institute for Analytical Instrumentation, RAS, St. Petersburg, Russia
- MP 325 **Optimization of Analytical Performances of Synchronized Dual-Polarity MALDI-TOF Mass Spectrometer for Fundamental Analysis;** Hsun Lee; Chih-Hao Hsiao; Yi-Sheng Wang; *GRC, Academia Sinica, Taipei, Taiwan*
- MP 326 **MS with 3D-reflective IO Subsystem;** Yerbol Sapargaliyev; Igor Spivak-Lavrov; Aldan Sapargaliyev; *REB, Almaty, Kazakhstan*
- MP 327 **Development of a Portable Mass Spectrometer for Operation at 1 Torr;** Feng Jin¹; William D. Hoffmann¹; Guido F. Verbeck²; Glen P. Jackson¹; ¹West Virginia University, Morgantown, WV; ²Department of Chemistry, University of North Texas, Denton, TX
- MP 328 **The New Vienna parallel DMA – An Ion Mobility Analyzer System for High Molecular Mass Ions/Particles with Improved Resolution;** Peter Kallinger¹; Victor Weiss²; Günter Allmaier²; Wladyslaw Szymanski¹; ¹University of Vienna, Vienna, Austria; ²Vienna University of Technology, Vienna, Austria
- MP 329 **Simulation of a Novel Two-Dimensional Mass Separation Method Based on CCD Imaging of Spiral Ion Patterns;** Jens Langejuergen; Christian R. Raddatz; Stefan Zimmermann; *Leibniz University Hannover, Hannover, Germany*
- Ambient Ionization: Instrumentation, 330 - 356**
- MP 330 **Development and Performance Characterization of a Personal Mass Spectrometry System;** Linfan Li¹; Yue Ren¹; Tsung-Chi Chen¹; Ziqing Lin¹; R. Graham Cooks²; Zheng Ouyang¹; ¹Biomedical Engineering, Purdue University, West Lafayette, IN; ²Department of Chemistry, Purdue University, West Lafayette, IN
- MP 331 **A Miniature Mass Spectrometer for *in-situ* and Real-time Chemical Analysis;** Paul I. Hendricks¹; Jacob T. Shelley^{1,2}; Jon K. Dalgleish¹; Jason S. Duncan³; Matt T. McNicholas⁴; Linfan Li⁵; Tsung-Chi Chen⁵; Zheng Ouyang^{3,5}; R. Graham Cooks^{1,3}; ¹Dept. Chemistry Purdue University, West Lafayette, IN; ²University of Muenster, Muenster, Germany; ³Center for Analytical Instrument Development, West Lafayette, IN; ⁴Department of Electrical and Computer Engineering, West Lafayette, IN; ⁵Weldon School of Biomedical Engineering, West Lafayette, IN
- MP 332 **Electrospray/Plasma Ionization Mass Spectrometry for Simultaneously Characterizing Polar and Nonpolar Compounds;** Sy-Chyi Cheng; Jentaie Shiea; *National Sun Yat-Sen Univ., Kaohsiung, Taiwan*
- MP 333 **Detecting Polar and Nonpolar Compounds by Impacting Sample Surfaces with Reactive Species from Both ESI and Plasma-APCI;** Siou-Sian Jhang; Sy-Chyi Cheng; Jentaie Shiea; *National Sun Yat-Sen Univ., Kaohsiung, Taiwan*
- MP 334 **Laser Desorption Combined with Electrospray/Plasma Ionization Mass Spectrometry for the Analysis of Polymers and Proteins;** Siou-Sian Jhang; Sy-Chyi Cheng; Jentaie Shiea; *National Sun Yat-Sen Univ., Kaohsiung, Taiwan*
- MP 335 **Electrospray Ionization Mass Spectrometry Combined with High-Flow Fast Gas Chromatography for Characterizing Mixtures of Organic Compounds;** Chu-Nian Cheng; Jentaie Shiea; *National Sun Yat-Sen Univ., Kaohsiung, Taiwan*
- MP 336 **Increasing Efficiency of Surface Acoustic Wave Nebulization with an Ion Funnel;** Mikhail Belov⁴; Yue Huang¹; Lucas Monkonnen¹; Scott Heron^{1,2}; J. Scott Edgar³; Sung Hwan Yoon^{1,2}; David R. Goodlett^{1,2}; ¹University of Washington, Seattle, WA; ²University of Maryland, Baltimore, MD; ³Deurion LLC, Seattle, WA; ⁴Spectrograph LLC, Richland, WA
- MP 337 **Simply Applying Heat and/or Vacuum for Ionization of Small and Large Nonvolatile Molecules for Use in MS and Its Applications;** Beixi Wang; Sarah Trimpin; *Wayne State University, Detroit, MI*
- MP 338 **Open Probe Supersonic Fast GC-MS – Real Time Analysis with Separation;** Alexander Fialkov; Aviv Amirav; Uri Keshet; Mati Morag; Eli Flaxer; Tal Alon; *Tel-Aviv University, Tel-Aviv, Israel*
- MP 339 **Development of Sheath-Flow Probe Electrospray Ionization (SF-PESI);** Kenzo Hiraoka¹; Md. Obaidur Rahman¹; Mridul Kanti Mandal¹; Yasuo Shida¹; Lee Chuin Chen¹; Satoshi Ninomiya¹; Hiroshi Nonami²; ¹University of Yamanashi, Kofu, Japan; ²Ehime University, Matsuyama, Japan
- MP 340 **Fully Automated Liquid Microjunction Surface Sampling-HPLC-MS/MS Analysis of Drugs and Metabolites in Whole-Body Thin Tissue Sections;** Vilmos Kertesz¹; Gary J. Van Berkel¹; Paul Moench²; Alexandre Catoire²; Adam Bentley²; Jimmy Flarakos²; ¹Oak Ridge National Laboratory, Oak Ridge, TN; ²Novartis Institutes for BioMedical Research, East Hanover, NJ
- MP 341 **Continuous Flow Liquid Microjunction Surface Sampling Probe Connected On-line with HPLC/MS for Spatially Resolved Analysis of Small Molecules and Proteins;** Gary J. Van Berkel; Vilmos Kertesz; *Oak Ridge National Laboratory, Oak Ridge, TN*
- MP 342 **Implementation of Ambient Ionization Sources on a Low Cost GC/MSD and Assessment of Its Performance;** Joseph Tice¹; Michael Festa¹; Taylor Feraco¹; Brian D. Musselman¹; Randy Pedder²; John Mazock²; ¹IonSense, Inc., Saugus, MA; ²Ardara Technologies, Ardara, PA
- MP 343 **Ultra-fast Analysis of Synthetic Organic Compounds Using APGC without the CI;** Peter Stokes; David Parker; Jackie Mosely; *University of Durham, Durham, UK*
- MP 344 **Low Temperature Plasma Ionization Mass Spectrometry for Real-Time Analysis of Size-Selected Organic Aerosol Particles;** Sandra Spencer; Gary Glish; *Univ. of North Carolina at Chapel Hill, Chapel Hill, NC*
- MP 345 **Towards Micro Plasma Devices for Use in Ambient Mass Spectrometry and 2D Chemical Imaging;** Andrew Bowfield; *University of Liverpool, Liverpool, UK*
- MP 346 **A Compact, Robust and Light Weight Surface Ionization Source;** Vladimir Romanov; Jan Hendrikse; *Smiths Detection, Mississauga, Canada*
- MP 347 **Ultra-low Detection Limits for Trace Gas Analysis Using a Tunable Non-radioactive Electron Emitter in APCI-MS;** Jens Langejuergen; Stefan Zimmermann; *Leibniz University Hannover, Hannover, Germany*
- MP 348 **Direct, Real-Time Vapor Detection of Low Volatility Explosives;** Robert Ewing; David Atkinson; Brian H. Clowers; *Pacific Northwest National Laboratory, Richland, WA*
- MP 349 **Development of a Piezoelectric Inkjet Dopant Introduction Device for Atmospheric Pressure Photoionization and Its Performance in Analysis Polycyclic Aromatic Hydrocarbons;** Ma'an Amad; Salim Sioud; Erqiang Li; Sigurdur Thoroddsen; *King Abdullah University of Science and Technology, Thuwal, Saudi Arabia*
- MP 350 **Detection of Naturally Occurring Flame Ions Using a High-Temperature Atmospheric Pressure Interface;** Thomas Bierkandt¹; Erdal Akyildiz¹; Tina Kasper¹; Stefan Kaesdorf²; Ioannis Orfanopoulos³; Dimitris Papanastasiou³; ¹University of Duisburg-Essen, Duisburg, Germany; ²Kaesdorf, Munich, Germany; ³Fasmatech, Athens, Greece

- MP 351 **Development of a New DIP-APCI Ion Source;** Sonja Krieger; Oliver J. Schmitz; *University of Duisburg-Essen, Essen, Germany*
- MP 352 **Atmospheric Pressure Laser Evaporation Ionization of Levitated Droplets;** Jens Riedel; Arne Stindt; Ulrich Panne; *BAM Federal Institute for Materials, Berlin, Germany*
- MP 353 **Analysis of Biomolecules by Atmospheric Pressure Visible-Wavelength MALDI-ion trap-MS in Transmission Geometry;** Raymond West; Eric Findsen; Dragan Isailovic; *University of Toledo, Toledo, OH*
- MP 354 **Enhanced Direct Analysis of Biomedical Samples by Laser Ablation Electrospray Ionization with Ion Mobility Separation and Mass Spectrometry;** Bindesh Shrestha; Akos Vertes; *George Washington University, Washington, DC*
- MP 355 **Laser Ablation Electrospray Ionization Mass Spectrometry of Plant Cells in Transmission Geometry;** Rachelle Jacobson; Bindesh Shrestha; Akos Vertes; *George Washington University, Washington, DC*
- MP 356 **Peptides and Proteins Signal Enhancement in Electrospray-Assisted Laser Desorption/Ionization Mass Spectrometry by Black Oxide (Fe₃O₄) Coated Target;** Alexey Kononikhin^{1,3}; Min-Zong Huang²; Igor Popov^{3,4}; Alexey Boldyrev⁴; Evgeny Kukaev^{3,4}; Alexander Spassky¹; Ilya Leipunsky¹; Jentaie Shiea²; Eugene Nikolaev^{1,3}; ¹*Institute for Energy Problems of Chemical Physics, Moscow, Russia*; ²*National Sun Yat-Sen University, Kaohsiung, Taiwan*; ³*Emanuel Institute of Biochemical Physics, Moscow, Russia*; ⁴*Moscow Institute of Physics and Technology, Moscow, Russia*
- Informatics: General, 357 - 373**
- MP 357 **GOAT: A Simple MS/MS Gradient Optimization and Analysis Tool;** David Trudgian¹; Roman Fischer²; Xiaofeng Guo¹; Hamid Mirzaei¹; ¹*UT Southwestern Medical Center, Dallas, TX*; ²*University of Oxford, Oxford, UK*
- MP 358 **New Plug-ins for Freely Available Mass++ Software to Identify Biomolecules;** Kentaro Morimoto¹; Takashi Nishikaze¹; Satoshi Tanaka¹; Masaki Murase¹; Shin-ichi Utsunomiya¹; Shigeki Kajihara¹; Tsuyoshi Tabata²; Ken Aoshima²; Yoshiya Oda²; Koichi Tanaka¹; ¹*Shimadzu Corporation, Kyoto, Japan*; ²*Eisai Product Creation Systems, Eisai Corp., Tsukuba, Japan*
- MP 359 **Novel Preprocessing Method to Align Retention Time of LC-MALDI and New Implemented Functions in Mass++ for Differential Analysis;** Yuichiro Fujita¹; Natsumi Funakoshi¹; Yoshihiro Yamada¹; Satoshi Tanaka¹; Shin-ichirou Kawabata¹; Shinichi Iwamoto¹; Shinichi Utsunomiya¹; Shigeki Kajihara¹; Tsuyoshi Tabata²; Ken Aoshima²; Yoshiya Oda²; Koichi Tanaka¹; ¹*Shimadzu Corporation, Kyoto, Japan*; ²*Eisai Product Creation Systems Eisai Co., Ltd, Tsukuba, Japan*
- MP 360 **Mass++: A Platform for Mass Spectrometry to Construct Suitable Software to Achieve User's Own Purposes;** Shin-ichi Utsunomiya¹; Satoshi Tanaka¹; Masaki Murase¹; Shigeki Kajihara¹; Tsuyoshi Tabata²; Ken Aoshima²; Yoshiya Oda²; Koichi Tanaka¹; ¹*Shimadzu Corporation, Kyoto, Japan*; ²*Eisai Product Creation Systems, Eisai Corp., Tsukuba, Japan*
- MP 361 **A Software Solution for Rapid Characterization of Biologics;** Xu Guo¹; Robert Deutschman²; Byung-Hee Shin³; Eric Johansen²; ¹*AB SCIEX, Canada, Concord, ON*; ²*AB SCIEX, USA, Foster City, CA*; ³*AB SCIEX, South Korea, Seoul, South Korea*
- MP 362 **Building Proteomic Application Platforms for Cloud Computing Environments with CloudBioLinux;** John Chilton¹; Roman Zenka²; Pratik Jagtap¹; Benjamin Lynch¹; Robert (Bob) Bergen²; Timothy Griffin³; ¹*University of Minnesota Supercomputing Institute, Minneapolis, MN*; ²*Mayo Clinic, Rochester, MN*; ³*University of Minnesota, Minneapolis, MN*
- MP 363 **Proteomics Pipeline Tracer Bullets;** Roman Zenka; Surendra Dasari; Carrie J. Heppelmann; Kenneth L. Johnson; H. Robert Bergen, III; *Mayo Clinic, Rochester, MN*
- MP 364 **Definitions of Terms Relating To Mass Spectrometry;** Kermit K. Murray¹; Robert K. Boyd²; Marcos N. Eberlin³; G. John Langley⁴; Liang Li⁵; Yasuhide Naito⁶; ¹*Louisiana State University, Baton Rouge, LA*; ²*National Research Council, Ottawa, Canada*; ³*Thomson Lab Unicamp, Campinas, Brazil*; ⁴*University of Southampton, Southampton, UK*; ⁵*University of Alberta, Edmonton, Canada*; ⁶*GPI, Hamamatsu, Japan*
- MP 365 **A Flexible Platform for Automating Mass Spectrometry Data Processing for Biotherapeutic Characterization;** Joe Shambaugh¹; Alessio Ceroni¹; Jessica Qi¹; Jens Hoefkens¹; Steven Pomerantz²; ¹*Genedata Inc, Lexington, MA*; ²*Janssen Research and Development, Radnor, PA*
- MP 366 **Sample Reproducibility and Statistical Significance in a Nascent Microbial Community Proteomics Experiment;** Erik Hendrickson; Tony Wang; Murray Hackett; *University of Washington, Seattle, WA*
- MP 367 **Gene-based Protein Identification;** Honglan Li¹; Seungjin Na²; Eunok Paek²; ¹*Soongsil University, Seoul, South Korea*; ²*Hanyang University, Seoul, South Korea*
- MP 368 **Web Services for the Online NIST Libraries of Peptide Tandem Mass Spectra;** Niksa Blonder¹; Manor Askenazi²; Dmitrii Tchekhovskoi¹; Yuri Mirokhin¹; Paul Rudnick¹; Stephen Stein¹; ¹*NIST, Gaithersburg, MD*; ²*The Ionomic Initiative, Arlington, MA*
- MP 369 **BRAIN 2.0: Time and Memory Quasi-Constant Algorithm for Calculating the Isotopic Distribution;** Piotr Dittwald¹; Dirk Valkenborg^{2,3}; ¹*University of Warsaw, Warszawa, Poland*; ²*VITO, Mol, Belgium*; ³*I-Biostat, Hasselt University, Diepenbeek, Belgium*
- MP 370 **Galaxy-P: Transforming MS-based Proteomic Informatics via Innovative Workflow Development, Dissemination, Standardization and Transparency;** Timothy Griffin¹; John Chilton²; James Johnson²; Ebbing de Jong¹; Getiria Onsongo²; Pratik Jagtap²; ¹*University of Minnesota, Minneapolis, MN*; ²*University of Minnesota Supercomputing Institute, Minneapolis, MN*
- MP 371 **Statistical Model for Alignment of Open Platform Proteomics Data - Incorporating Ion Mobility Separation and Product Ions;** Ashlee Benjamin; Will Thompson; Erik Soderblom; M Arthur Moseley; Joseph Lucas; *Duke University, Durham, NC*
- MP 372 **Molecular Isotopic Distribution Analysis (MIDAs) with Adjustable Mass Accuracy;** Gelio Alves; Aleksey Ogurtsov; Yi-Kuo Yu; *National Center for Biotechnology Information, NLM, Bethesda, MD*
- MP 373 **Trans-Proteomic Pipeline Tools for the Analysis of MS/MS Proteomics Data in Conjunction with Matching RNA-seq Data;** Eric W. Deutsch; Zhi Sun; Luis Mendoza; David Shteynberg; Joseph Slagel; Michael Hoopmann; Terry Farrah; Robert L. Moritz; *Institute for Systems Biology, Seattle, WA*
- Informatics: Workflow and Data Management, 374 - 386**
- MP 374 **Proteogenomics for the ENCODE Project: Investigating Genome-Wide Translation;** John Wrobel^{1,2}; Harsha P. Gunawardena¹; Jainab Khatun²; Brian Risk²; Yanbao Yu¹; Morgan C. Giddings²; Xian Chan¹; ¹*University of North Carolina at Chapel Hill, Chapel Hill, NC*; ²*Boise State University, Boise, ID*

- MP 375 **Peptide Tracker: A Software Tool for the Management of Peptides Used in MRM Based Assays;** Derek Smith¹; Andrew Chambers¹; Andrew Percy¹; Dominik Domanski¹; Christoph Borchers^{1,2}; ¹University of Victoria Genome-BC Proteomics Centre, Victoria, BC Canada; ²Dept of Biochemistry and Microbiology, U Victoria, Victoria, Canada
- MP 376 **User Friendly MS Analysis by Taking the Galaxy Environment to the Cloud;** Jorrit Boeke^{1,2}; Janne Lehtiö^{1,2}; Lukas Käll^{1,3}; ¹Science for Life Laboratory, Solna, Sweden; ²Karolinska Institutet, Stockholm, Sweden; ³KTH Royal Institute of Technology, Stockholm, Sweden
- MP 377 **Customized Real-Time Control of Benchtop Orbitrap MS;** Andreas Kuehn¹; Florian Grosse-Coosmann¹; Thomas Rietpietsch¹; Jan-Peter Hauschild¹; Katja Tham¹; Tim Stratton²; Derek Bailey¹; Robert Malek¹; Markus Kellmann¹; Christoph Henrich¹; Oliver Lange¹; Andreas Wieghaus¹; Stevan Horning¹; Alexander Makarov¹; ¹Thermo Fisher Scientific (Bremen), Bremen, Germany; ²Thermo Fisher Scientific (San Jose), San Jose, CA
- MP 378 **Reproducible Proteomic Workflows Using Extensions to the Galaxy Framework;** James Johnson; John Chilton; Pratik Jagtap; Ben Lynch; Tim Griffin; University of Minnesota, Minneapolis, MN
- MP 379 **A Novel Two-Pass Feature Extraction Workflow for the Statistical Profiling of Mass Spectrometric Data;** Norton Kitagawa¹; Abhijit Rane²; Steven M. Fischer¹; Joe Roark¹; Maithilee Samant¹; Theodore Sana¹; ¹Agilent Technologies, Inc., Santa Clara, CA; ²Persistent Systems, Ltd., Pune, India
- MP 380 **MASSIVE: Mass Spectrometry Interactive Virtual Environment for Data Sharing in Proteomics;** Jeremy Carver; Ian Kaufman; Claudiu Farcas; Vineet Bafna; Nuno Bandeira; UCSD, La Jolla, CA
- MP 381 **Metabolomics Data Analysis Framework – Database and Web Portal for Curation and Analysis of Mass-Spectrometry Based Metabolomics Data;** Alexander Raskind; Anupama Janga; University of Michigan, Ann Arbor, MI
- MP 382 **Sharing Targeted Proteomics Assays Using Skyline and Panorama;** Vagisha Sharma¹; Josh Eckels²; Brendan MacLean¹; Shannon A. Joyner³; Jacob D. Jaffe⁴; Michael J. MacCoss¹; ¹University of Washington, Seattle, WA; ²LabKey Corp., Seattle, WA; ³Carnegie Mellon University, Pittsburgh, PA; ⁴The Broad Institute, Cambridge, MA
- MP 383 **ProteomicsDB: A Protein Centric Database and Repository for LC-MS/MS Data Sets;** Mathias Wilhelm¹; Judith Schlegl²; Amin Moghaddas Gholami¹; Hannes Hahne¹; Joos-Hendrik Boese²; Marcus Lieberenz²; Mikhail Savitski³; Yuval Morad²; Lars Butzmann²; Emanuel Ziegler²; Anton Niadzelka²; Eyk Kny²; Helmut Cossmann²; Siegfried Gessulat²; Marcus Bantscheff³; Anja Gerstmair²; Franz Faerber²; Bernhard Kuster¹; ¹Technical University Munich, Freising, Germany; ²SAP AG Germany, Walldorf, Germany; ³Cellzome, Heidelberg, Germany
- MP 384 **A Common Analysis Pipeline for Interpretation of Data from the Clinical Proteomics Tumor Analysis Consortium (CPTAC);** Paul Rudnick¹; Niksa Blonder¹; Nathan Edwards²; Yuri Mirokhin¹; Dmitrii Tchekovskoi¹; Xinjin Yan¹; Stephen Stein¹; ¹NIST, Gaithersburg, MD; ²Georgetown University, Washington, DC
- MP 385 **Solving the Bioinformatics Bottlenecks of Massive Storage & Data Distribution, Huge Computational Needs, and Flexible and Fast Reporting;** Gautam Saxena¹; Christine Jellinek³; Vidya Venkat³; Rafael Dugarte¹; Scott Kuzdzal²; Jennifer Van Eyk³; ¹Integrated Analysis, Bethesda, MD; ²Shimadzu Scientific, Columbia, MD; ³Johns Hopkins Medical School, Baltimore, MD
- MP 386 **A Workflow for Novel Image-Based Differential Analysis of LC/MS Experiments;** Hanqing Liao¹; Emmanouil Moschidis¹; Isabel Riba-Garcia¹; Richard Unwin¹; Warwick Dunn²; Jeffrey Morris³; Jim Graham¹; Andrew Dowsey¹; ¹University of Manchester, Manchester, UK; ²University of Birmingham, Birmingham, UK; ³UT MD Anderson Cancer Center, Houston, TX
- Informatics: Crosslinking and Structure Analysis, 387 - 392**
- MP 387 **Analyses of Yeast mRNPs by the Use of the Photo-Reactive Nucleobase 4-thio-uracil and Mass Spectrometry;** Uzma Zaman¹; Kum-Loong Boon¹; Katharina Kramer¹; Timo Sachsenberg²; Oliver Kohlbacher²; Reinhard Lührmann¹; Henning Urlaub¹; ¹Max Planck Institute for Biophysical chemistry, Goettingen, Germany; ²University of Tuebingen, Tuebingen, Germany
- MP 388 **Development of a Bioinformatics Toolbox to Support Protein Cross-Linking Mass Spectrometry Analyses;** Mathieu Courcelles; Mike Tyers; IRIC/Université de Montréal, Montréal, Canada
- MP 389 **IMS, HCD, and ETD for Improved Chemical Cross-linking Mass Spectrometry;** Eric Merkley¹; Erin Baker¹; Kevin Crowell¹; Daniel Orton¹; Thomas Taverner²; Charles Ansong¹; Yehia Ibrahim¹; Meagan Burnet¹; John Cort¹; Gordon Anderson¹; Richard Smith¹; Arnab Mukherjee³; Kyle Miner³; Ambika Bhagi³; Yi Lu³; Joshua Adkins¹; ¹Pacific Northwest National Laboratory, Richland, WA; ²Mango Solutions, Chippenham, UK; ³University of Illinois Urbana-Champaign, Urbana, IL
- MP 390 **ICC-CLASS Software for Automated Data Analysis of LC-MS MS/MS Crosslinking Data;** Evgeniy Petrotchenko¹; Christoph Borchers^{1,2}; ¹University of Victoria-Genome BC Proteomics Centre, Victoria, Canada; ²Dept of Biochemistry and Microbiology, U Victoria, Victoria, Canada
- MP 391 **MS-based Characterization of Endogenous Protein Complexes and Interactomes Using Global Glutaraldehyde Stabilization in the Cellular Milieu;** Roman Subbotin; Júlio Padovan; Brian Chait; The Rockefeller University, New York, NY
- MP 392 **Tissue Transglutaminase is a Negative Regulator of Monomeric Lactritin Bioactivity and Lactritin Crosslink Sites Identification by Mass Spectrometry;** Kari Green¹; Liwen Zhang¹; Gordon Laurie²; ¹The Ohio State University, Columbus, OH; ²University of Virginia, Charlottesville, VA
- Crosslinking, 393 - 412**
- MP 393 **The Effect of Chemical Cross-Linking on Protein Structure and Function;** Daniel Rozbesky^{1,2}; Josef Chmelik¹; Zdenek Kukacka^{1,2}; Petr Man^{1,2}; Petr Novak^{1,2}; ¹Institute of Microbiology, Prague, Czech Republic; ²Charles University, Prague, Czech Republic
- MP 394 **Structure Characterization: Chemical Cross-Linking Combined with Mass Spectrometry, Dealing with Impure Protein Sample;** Li Peng¹; Morten Rasmussen¹; Gunnar Houen²; Peter Højrup¹; ¹The University of Southern Denmark, Odense, Denmark; ²Statens Serum Institut, Copenhagen, Denmark
- MP 395 **Charge State Profiles and CID versus ETD Fragmentation Features of Lys-Lys Cross-Linked Peptides Using Diimidoester-Based Cross-Linkers;** Hector Koolen; Alexandre Gomes; Fabio Gozzo; UNICAMP, Campinas, Brazil
- MP 396 **Expanding the Nuclease Toolkit for Middle-Down Characterization of Chemically Modified or Crosslinked RNA;** Matteo Scalabrin; Papa Nii Asare-Okai; Sugyan

- Dixit; John Mangrum; Will McIntyre; Rebecca Rose; Maria Basanta Sanchez; Daniele Fabris; *University at Albany, The RNA Institute, Albany, NY*
- MP 397 **A Novel Protein Cross-linker for Mass Spec Analysis: >95% Enrichment of Cross-linked Peptides in a "Minimalist Style";** Dan Tan¹; Qiang Li¹; Xiangke Li¹; Sheng-Bo Fan²; Kun Zhang²; Hao Chi²; Li Tao¹; Bing Yang¹; Yue-He Ding¹; Pan Zhang¹; Xiaohui Liu³; Si-Min He²; Meng-Qiu Dong¹; Xiaoguang Lei^{1,3}; ¹*National Institute of Biological Sciences, Beijing, China*; ²*ICT, Chinese Academy of Sciences, Beijing, China*; ³*Tianjin University, Tianjin, China*
- MP 398 **Extending the Cross-Linking/MS Strategy: Investigation of Nidogen-1 Complexes by Incorporated Photo-Amino Acids and Photo-Cross-Linking;** Philip Lössl¹; Knut Kölbl¹; Dirk Tänzler¹; Christian Ihling¹; Manuel Keller²; Frank Zaucke²; Jens Meiler³; Andrea Sinz¹; ¹*Martin Luther University Halle, Halle, Germany*; ²*Medical Faculty, University of Cologne, Cologne, Germany*; ³*Vanderbilt University, Nashville, TN*
- MP 399 **Integrative Approach (Chemical Cross-linking and Hydrogen Deuterium Exchange) Reveals Differences between Crystal and Solution Structure of FimX-PilZ Complex;** Mariana Fioramonte¹; Cristiane R. Guzzo²; Shaker Chuck Farah²; Fabio C. Gozzo¹; ¹*University of Campinas, Campinas, Brazil*; ²*University of São Paulo, São Paulo, Brazil*
- MP 400 **Impact of Crosslinker Chemistry on Peptide Fragmentation Spectra of Crosslinked Peptides;** Randy J. Arnold; Suraj Saraswat; Chao Ji; Haixu Tang; Predrag Radivojac; James P. Reilly; *Indiana University, Bloomington, IN*
- MP 401 **Structural Models of Lymphocyte Receptor NKR-P1C Revealed by Mass Spectrometry and Molecular Modeling;** Daniel Rozbesky^{1,2}; Petr Man^{1,2}; Zdenek Kukacka^{1,2}; Zofie Sovova^{3,4}; Rudiger Ettrich^{3,4}; Julien Marcoux⁵; Carol V. Robinson⁵; Petr Novak^{1,2}; ¹*Institute of Microbiology, Prague, Czech Republic*; ²*Faculty of Sciences, Charles University, Prague, Czech Republic*; ³*Institute of Nanobiology and Structural Biology, Nove Hradky, Czech Republic*; ⁴*Faculty of Sciences, University of South Bohemia, Nove Hradky, Czech Republic*; ⁵*Department of Chemistry, University of Oxford, Oxford, UK*
- MP 402 **Gas-Phase Intra- and Inter-Molecular Cross-Linking of Protein and Protein Complexes via Ion/Ion Reactions;** Ian Webb; Yang Gao; Scott McLuckey; *Purdue University, Lafayette, IN*
- MP 403 **Negative Ion Chemical Cross-linking Coupled With Ion Mobility Mass Spectrometry for Improved Structural Analysis of Protein Assemblies;** Antonio Calabrese; Deanna Carmen; Denise Tran; Danielle Williams; Yanqin Liu; Tara Pukala; *University of Adelaide, Adelaide, Australia*
- MP 404 **Development of Stable Isotope-Labeled CID-cleavable Cross-linkers for Structural Characterization of Protein Complexes;** Clinton Yu; Wynne Kandur; Athit Kao; Scott Rychnovsky; Lan Huang; *University of California, Irvine, CA*
- MP 405 **Zero-Length Crosslinking of Protein Heterodimers Using ¹⁵N- Metabolically Labeled Monomers;** Karl Makepeace¹; Evgeniy Petrotchenko¹; James Bardwell²; Shu Quan²; Christoph Borchers^{1,3}; ¹*University of Victoria-Genome BC Proteomics Centre, Victoria, Canada*; ²*Dept of Mol., Cell., and Dev. Biology, U Michigan, Ann Arbor, MI*; ³*Dept of Biochemistry and Microbiology, U Victoria, Victoria, Canada*
- MP 406 **Novel isotopically-Coded Photoreactive Heterobifunctional Short-Range Crosslinkers for Studying Protein Structure;** Karl Makepeace¹; Nicholas Brodie¹; Evgeniy Petrotchenko¹; Christoph Borchers^{1,2}; ¹*University of Victoria-Genome BC Proteomics Centre, Victoria, Canada*; ²*Dept of Biochemistry and Microbiology, U Victoria, Victoria, Canada*
- MP 407 **Mapping Cross-Links Introduced by bis(succinimidyl)-3-azidomethyl Glutarate in Complex Protein Samples;** Hansuk Buncherd; Behrad Ghavim; Winfried Roseboom; Leo J. de Koning; Chris G. de Koster; Luitzen de Jong; *University of Amsterdam, Amsterdam, Netherlands*
- MP 408 **Crosslinking Study of the Malaria Pathogen Surface Protein Complex Pf12-Pf41;** Michelle Tonkin¹; Karl Makepeace²; Jason Serpa²; Evgeniy Petrotchenko²; Martin Boulanger¹; Carol Parker²; Christoph Borchers^{1,2}; ¹*Dept of Biochemistry and Microbiology, U Victoria, Victoria, Canada*; ²*University of Victoria-Genome BC Proteomics Centre, Victoria, Canada*
- MP 409 **Evaluating the Potential of an MS/MS-Cleavable Cross-Linker for 3D-Structure Analysis of Protein Complexes;** Jens Pettelkau¹; Romy Fritzsche¹; Christian H. Ihling¹; Mathias Müller³; Mathias Schäfer²; Andrea Sinz¹; ¹*Martin-Luther-Universität Halle-Wittenberg, Halle, Germany*; ²*Universität zu Köln, Köln, Germany*; ³*ThermoFisher Scientific, Bremen, Germany*
- MP 410 **Quantitative Proteomics of the Prokaryotic Immune Defense System Including the Analysis of protein-RNA Interactions within the CRISPR/Cas System;** Kundan Sharma¹; Britta Stoll²; Anita Marchfelder²; Hagen Richter³; Lennart Randau³; Henning Urlaub^{1,4}; ¹*Max-Planck-Institut für Biophysikalische Chemie, Göttingen, Germany*; ²*Universität Ulm, Ulm, Germany*; ³*Max-Planck-Institut für terrestrische Mikrobiologie, Marburg, Germany*; ⁴*Universitätsmedizin Göttingen, Göttingen, Germany*
- MP 411 **Probing the Human 26S Proteasome Structure by In vivo Cross-linking and Mass Spectrometry;** Athit Kao¹; Xiaorong Wang¹; Yingying Yang¹; Anthony Burke²; Scott Rychnovsky²; Pierre Baldi^{3,4}; Lan Huang¹; ¹*Dept. Phys. & Biophys., University of California, Irvine, CA*; ²*Dept. of Chemistry, University of California, Irvine, CA*; ³*Dept. of Comp. Sci., University of California, Irvine, CA*; ⁴*Inst. for Genom. and Bioinf., Univ. of California, Irvine, CA*
- MP 412 **Investigating the Binding Site of the Psb28 Protein in Cyanobacterial Photosystem II Using Cross-Linking, GEE Labeling, and LC-MS/MS;** Daniel A. Weisz; Hao Zhang; Haijun Liu; Michael L. Gross; Himadri B. Pakrasi; *Washington University in St. Louis, St. Louis, MO*
- H/D Exchange: Protein Structure/Function, 413 - 440**
- MP 413 **Hydrogen/Deuterium Exchange Mass Spectrometry Reveals the Binding Interfaces Between Proliferating Cell Nuclear Antigen (PCNA) and SPIP;** Richard Yu-Cheng Huang^{1,2}; Zhuo Li²; Zvi Kelman^{1,2}; Jeffrey Hudgens^{1,2}; ¹*NIST, Gaithersburg, MD*; ²*BBR, Rockville, MD*
- MP 414 **Structural Changes of HIV-1 Nef upon Lipid Membrane Association;** Gregory Pirrone¹; Michael S. Kent²; Xiaomeng Shi¹; John R. Engen¹; ¹*Northeastern University, Boston, MA*; ²*Sandia National Laboratories, Albuquerque, NM*
- MP 415 **H/DX Mass Spectrometry Studies for the Stability of WT Apolipoprotein E and its Interaction with Amyloid-β 1-42;** Hanliu Wang; Kanchan Garai; Carl Frieden; Michael Gross; *Washington University in St. Louis, St. Louis, MO*
- MP 416 **Characterize the Local Conformational Effects of Chemical Degradation in Recombinant rhDNase by Hydrogen/Deuterium Exchange Mass spectrometry;** Jian Cao; Jin Li; Justin Jeong; Viswanatham Katta; Jennifer Zhang; *Protein Analytical Chemistry, Genentech Inc., South San Francisco, CA*

- MP 417 **Mechanism of Calmodulin-Induced Activation of Calcineurin Revealed Using Hydrogen/Deuterium Exchange Mass Spectrometry**; Mohammed Al-Naqshabandi; David Weis; *University of Kansas, Lawrence, U.S.*
- MP 418 **Structural Study of Redox Sensitive Protein, Nm23 by HDX**; Jae Jin Lee; Jaeho Jeong; In-Kang song; Jin-Hwan Cho; Kong-Joo Lee; *College of Pharmacy, Ewha Womans Univ., Seoul, South Korea*
- MP 419 **HXMS Investigation of Activation Segment Dynamics in the Tec-family Tyrosine Kinase Btk**; Thomas E. Wales¹; Raji E. Joseph²; Amy H. Andreotti²; John R. Engen¹; ¹*Northeastern University, Boston, MA*; ²*Iowa State University, Ames, IA*
- MP 420 **Assessment of Protein Structural Differences by Hydrogen/Deuterium Exchange Mass Spectrometry**; Kai Zhang; Jon Fitchett; Bryan E. Jones; *Lilly Biotechnology Center, San Diego, CA*
- MP 421 **Locating Zn-bound Histidines in Metalloproteins Using Hydrogen-Deuterium Exchange Mass Spectrometry**; Jia Dong; Nicholas Borotto; Richard Vachet; *University of Massachusetts Amherst, Amherst, MA*
- MP 422 **LysRS Novel Function with Phosphorylated Thr52 Revealed by H/D Exchange FT-ICR Mass Spectrometry**; Qian Zhang¹; Pengfei Fang²; Min Guo²; Nicolas Young³; Alan Marshall^{1,3}; ¹*Department of Chemistry and Biochemistry, FSU, Tallahassee, FL*; ²*The Scripps Research Institute, Scripps Florida, Jupiter, FL*; ³*Ion Cyclotron Resonance Program, NHMFL, Tallahassee, FL*
- MP 423 **Single Residue Level Hydrogen/Deuterium Exchange Kinetics Studied by Top-Down Mass Spectrometry to Probe Protein Solution Structure**; Yining Huang; Don Rempel; Weidong Cui; Michael Gross; *Washington University, St. Louis, MO*
- MP 424 **Higher-Order Structural Characterization of Post-Translationally Modified Proteins by Top-Down HDX-MS with Electron Capture Dissociation**; Jingxi Pan¹; Christoph Borchers^{1,2}; ¹*University of Victoria-Genome BC Proteomics Centre, Victoria, Canada*; ²*Dept of Biochemistry and Microbiology, U Victoria, Victoria, Canada*
- MP 425 **Structural Analysis of human RXR Homotetramer by use of Hydrogen Deuterium Mass Spectrometry**; Jennifer Cushing; Emily Cowart; LeeAnn Boerma; Gang Xia; Donald D. Muccio; Matthew B. Renfrow; *University of Alabama at Birmingham, Birmingham, AL*
- MP 426 **Analysis of Huntington's Disease Related Protein Aggregates by HDX-ETD-MS**; James Arndt; Justin Legleiter; Kathleen Burke; Stephen Valentine; *West Virginia University, Morgantown, WV*
- MP 427 **H/DX and Mass Spectrometry Reveal the pH Dependence Conformational Changes of Diphtheria Toxin T Domain**; Jing Li¹; Mykola Rodnin²; Alexey Ladokhin²; Michael Gross¹; ¹*Washington University in St. Louis, St. Louis, MO*; ²*University of Kansas Medical Center, Kansas city, KS*
- MP 428 **Exploring the Effects of ATP Binding on the ϵ Subunit of Bacterial F_1F_0 -ATPase Using Hydrogen-Deuterium Exchange Mass Spectrometry**; Antony D. Rodriguez; Stanley D. Dunn; Lars Konermann; *The University of Western Ontario, London, Canada*
- MP 429 **Antibody-Antigen Interactions Investigated by Hydrogen/Deuterium exchange Mass Spectrometry**; Başak Kükrer; Cristina Puchades Garcia; Otto Diefenbach; Eveline Sneekes-Vriese; Adrian Apetri; *Crucell Vaccine Institute, Leiden, Netherlands*
- MP 430 **Hydrogen/Deuterium Exchange Coupled with Mass Spectrometry to Measure the Affect of Transition Metals on β -2 Microglobulin**; Nicholas Borotto; Jia Dong; Richard W. Vachet; *University of Massachusetts, Amherst, MA*
- MP 431 **Microfluidic H/DX MS Analysis of Recombinant Glycoproteins**; Gregory O. Staples¹; Craig D. Wenger¹; Reid A. Brennen¹; Yunan Miao³; Terry D. Lee³; Debbie Ritchey¹; Arpad Horvath¹; Hongfeng Yin¹; Kevin Killeen¹; Julie Cichelli²; ¹*Agilent Laboratories, Santa Clara, CA*; ²*Agilent Technologies, Little Falls, DE*; ³*City of Hope, Duarte, CA*
- MP 432 **Probing Human FXR LBD – Prenylflavonoid Interactions by Hydrogen/Deuterium Exchange Mass Spectrometry**; Liping Yang; David Broderick; Yuan Jiang; Yan Campbell; Adrian Gombart; Jan Stevens; Victor Hsu; Claudia Maier; *Oregon State University, Corvallis, OR*
- MP 433 **NEDD8ylation Induced Conformational Changes in Cullin Scaffold Protein Studied by Hydrogen Deuterium Exchange Mass Spectrometry**; Sasidhar N Nirudodhi¹; Yuan Jiang³; Haibin Mao²; Ning Zheng²; Claudia S. Maier¹; ¹*Dept. of Chemistry, Oregon State University, Corvallis, OR*; ²*Dept. of Pharmacology, University of Washington, Seattle, WA*; ³*Dept. of Statistics, Oregon State University, Corvallis, OR*
- MP 434 **Investigating Catalysis-Linked Dynamics in Yeast Alcohol Dehydrogenase by Measuring Kinetic Isotope Effects Using Time-Resolved ESI-MS with H/D Exchange**; Peter Liuni; Derek Wilson; *York University Department of Chemistry, Toronto, Canada*
- MP 435 **Studies of Changes in STAT3 Dynamics upon Interaction with Novel Small Molecule Dimerization Inhibitors by TRESI-MS/HDX**; Diana Resetca; Derek Wilson; *York University, Toronto, Canada*
- MP 436 **Hydrogen/Deuterium Exchange Reveals the Conformational Changes of Human α 1-Acid Glycoprotein upon Glycosylation**; Richard Yu-Cheng Huang^{1,2}; Jeffrey Hudgens^{1,2}; ¹*NIST, Gaithersburg, MD*; ²*IBBR, Rockville, MD*
- MP 437 **Probing Protein Conformation of Cellobiose Dehydrogenase by Hydrogen/Deuterium Exchange Mass Spectrometry**; Petr Halada¹; Alan Kadek^{1,2}; Petr Novak^{1,2}; Roland Ludwig³; Petr Man^{1,2}; ¹*Institute of Microbiology of ASCR, v.v.i., Prague, Czech Republic*; ²*Department of Biochemistry, Charles University, Prague, Czech Republic*; ³*Food Biotechnology Laboratory, BOKU University, Vienna, Austria*
- MP 438 **Probing Conformational Changes in Amyloid Beta Aggregation by Pulsed Hydrogen/Deuterium Exchange Mass Spectrometry**; Ying Zhang¹; Don Rempel¹; Jun Zhang²; Anuj Sharma¹; Liviu Mirica¹; Michael Gross¹; ¹*Washington University in St. Louis, St. Louis, MO*; ²*Department of Drug Product Development, Amgen Inc., Seattle, WA*
- MP 439 **Study of Protein Folding/Unfolding Structure Mechanism of Staphylococcal Nuclease Wild Type and Its Mutant V66W by PEPS-HDX-ESI-MS**; Rohana Liyanage; Derek Derek Pyland; Jennifer Gidden; Wesley Stites; Jackson Jackson O. Lay Jr; *University of Arkansas, Fayetteville, AR*
- MP 440 **Probing Conformational Dynamics of Estrogen Receptor α (ER α) Co-Activator PGC-1 by H/D Exchange Coupled with FT-ICR MS**; Yeqing Tao¹; Sepideh Khorasanizadeh²; Qian Zhang¹; Nicolas Young³; Fraydoon Rastinejad²; Alan Marshall^{1,3}; ¹*Florida State University, Tallahassee, FL*; ²*Sanford Burnham Medical Research Institute, Orlando, FL*; ³*National High Magnetic Field Laboratory, Tallahassee, FL*

Proteins: General, 441 - 462

- MP 441 **Characterization of Novel Polyketide Synthase Activity by the Measurement of Intact Protein and Proteolytic Products at Amino Acid Level Resolution;** Michaela M. Hinks; Shan M. Randall; Irina Koryakina; Gavin J. Williams; David C. Muddiman; *North Carolina State University, Raleigh, NC*
- MP 442 **Limited Proteolytic Cleavage - Mass Spectrometry Driven Epitope Mapping of IL13ra2;** Maria Christina Malinao; Rebecca Carroll; Claudia Guevara; James Song; David Tae; Vladimir Kery; *Agensys, Inc., Santa Monica, CA*
- MP 443 **Epitope Structure and Binding Affinity of Single Chain Llama anti- β -amyloid Antibodies Revealed by Proteolytic Excision Affinity-Mass Spectrometry;** Paraschiv Gabriela Ioana¹; Cecile Vincke²; Paulina Czaplowska³; Marilena Manea¹; Serge Muyldermans²; Michael Przybylski¹; ¹*University of Konstanz, Konstanz, Germany*; ²*Vrije Universiteit Brussel, Brussel, Belgium*; ³*University of Gdańsk, Gdańsk, Poland*
- MP 444 **M+320 Da Ions in the Electrospray Ionization (ESI) Mass Spectra Of Proteins: Double Glycation or Something Completely Different?** Georg Drabner; Isabel Hermann; Verena Niggeloh; *Roche Diagnostics GmbH, Penzberg, Germany*
- MP 445 **Mapping the Binding Sites of New Photoactivatable Anticancer Complexes to Proteins via FT-ICR MS;** Christopher Wootton; Ilaria Finazzi; Mark Barrow; Peter B. O'Connor; Peter J. Sadler; *University of Warwick, Coventry, UK*
- MP 446 **Proteomic Identification of the BACE1 Cleavage Sites;** Nicole Heinks; Erik Carlson; Joseph Johnson; *University of Minnesota, Duluth, Duluth, MN*
- MP 447 **Protein Quantitation in Industrial Fermentation;** Barbara S. Larsen; Timothy Snow; Andrew Eliot; *The DuPont Company, Wilmington, DE*
- MP 448 **Degradation Processes of Archaeological Silk Proteins to Remind in Mass Spectrometry;** Kazuki Kawahara¹; Mayumi Yamada²; Fumio Okada³; Miho Muguruma¹; Atsuko Miyaji¹; Yoshiki Matsuo¹; Takashi Nakazawa¹; ¹*Nara Women's University, Nara, Japan*; ²*Biosys Technologies, Inc., Tokyo, Japan*; ³*Kyoto University of Art and Design, Kyoto, Japan*
- MP 449 **Stress Response in *Daphnia pulex*;** Aaron Steevens¹; Roland Vergilino¹; Melania Cristescu²; Panayiotis Vacratsis¹; ¹*University of Windsor, Windsor, Canada*; ²*McGill University, Montreal, Canada*
- MP 450 **Intact Protein Supercharging and Characterization;** Ravi Kumar Krovvidi¹; Arunkumar Padmanaban¹; Vadiraja Bhat²; ¹*Agilent Tech, Bangalore, India*; ²*Agilent, Little Falls*
- MP 451 **Rapid Mass Spectrometric Analysis of Disulfide-Containing Proteins Following Online Digestion, Online Electrolytic Reduction and DESI Analysis;** Qiuling Zheng¹; Hao Zhang²; Hao Chen¹; ¹*Ohio University, Athens, OH*; ²*Washington University, St. Louis, MO*
- MP 452 **Investigating Redox Regulation in the Apoptotic Pathway using High Resolution Mass Spectrometry;** Sophie Thurlow¹; David Clarke¹; Jenna Scotcher²; Colin Campbell¹; C. Logan Mackay¹; Patrick Langridge-Smith¹; ¹*Edinburgh University, Edinburgh, UK*; ²*NHMFL, Florida State University, Tallahassee, FL*
- MP 453 **Characterization of Redox-Labile Disulfide Bonds in Protein Using Differential Alkylation with O16/O18 Labeled Iodoacetic Acid;** Shunhai Wang; Igor Kaltashov; *University of Massachusetts, Amherst, MA*
- MP 454 **Online Electrochemical Reduction of the Disulfide Bond(s) in Oxytocin and Hepcidin Results in Different CID and ETD Fragmentation Spectra;** Martin A. Giera¹; Simone Nicolardi¹; Pieter Kooijman¹; Agnieszka Kraj²; Jean-Pierre Chervet²; André M. Deelder¹; Yuri E.M. van der Burg¹; ¹*Leiden University Medical Center, Leiden, Netherlands*; ²*Antec, Zoeterwoude, Netherlands*
- MP 455 **An Enrichment Approach Using a Highly Selective Aptamer Modified PS-DVB Microbeads for Subpicomole Level Lysozyme Detection by Mass Spectrometry;** Ülkü Güler; Ömür Çelikbıçak; Bekir Salih; *Hacettepe University, Department of Chemistry, Ankara, Turkey*
- MP 456 **Identification of Gamma Carboxylation of Human Gas6 by Tandem Mass Spectrometry;** Li Zhang¹; Kevin Xiao²; Faye Fang¹; ¹*R&D Systems Inc, Minneapolis, MN*; ²*Dept of Medicine, Duke University Medical Center, Durham, NC*
- MP 457 **Evaluation of Expressed Sequence Tags for the Identification of *Taenia solium* Metacestode Excretion/Secretion Proteins;** Björn Victor¹; Pierre Dorny¹; Kirezi Kanobana¹; Katja Polman¹; Johan Lindh^{2,3}; André M. Deelder⁴; Magnus Palmblad⁴; Sarah Gabriël¹; ¹*Institute of Tropical Medicine, Antwerpen, Belgium*; ²*Karolinska Institutet, Stockholm, Sweden*; ³*Swedish Institute for Communicable Disease Control, Solna, Sweden*; ⁴*Leiden University Medical Center, Leiden, The Netherlands*
- MP 458 **Enhancing Peptide Identification by Combining an Efficient Protein Extraction Procedure with Dynamic Inclusion/Exclusion Lists in Data-Dependent LC-MS/MS Acquisition Mode;** Ying Zhang¹; Dario Bottinelli¹; Aivett Bilbao^{1,2}; Bandar Alghanem¹; Frédéric Nikitin²; Markus Müller²; Frédérique Lisacek²; Jeremy Luban³; Caterina Strambio De Castillia³; Emmanuel Varesio¹; Gérard Hopfgartner¹; ¹*University of Geneva, Geneva, Switzerland*; ²*Swiss Institute of Bioinformatics, Geneva, Switzerland*; ³*University of Massachusetts, Worcester, MA*
- MP 459 **"MELD": A Bottom-Up Method to Fully de novo Sequence Purified Proteins;** Gabriel Mazzucchelli¹; Tyler Zimmerman²; Marie-Alice Meuwis¹; Nicolas Smargiasso¹; Edwin De Pauw¹; ¹*Univeristy of Liege, MS Lab - GIGA, Liege, Belgium*; ²*National Institute of Standards and Technology, Gaithersburg, MD*
- MP 460 **Optimization of a Broad Specificity Protease for Routine Bottom-Up Protein and Post-Translational Modification Identification;** Mike Naldrett; Ellen Marsh; Sophie Alvarez; *Donald Danforth Plant Science Center, St Louis, MO*
- MP 461 **Extent of Urea-Induced Protein Carbamylation during Sample Preparation;** Laxmikanth Kollipara; René Zahedi; *Leibniz-Institut für Analytische Wissenschaften, Dortmund, Germany*
- MP 462 **High-throughput Scheduled MRM for Multiplexed Quantitation of Chemical Probe Labeled Enzymes in Human Cells;** Song Li¹; Pamela Diego¹; Santosh Keshipeddy¹; Bekim Bajrami¹; Vahid Farrokhi¹; Adam McShane¹; Ying Wai Lam²; Bin Deng²; Reza Nematii¹; Amy Howell¹; Xudong Yao¹; ¹*University of Connecticut, Storrs, CT*; ²*University of Vermont, Burlington, VT*

New Advances in Quantitative Proteomics, 463 - 493

- MP 463 **Improving SWATH by Overlapped Windows;** David Cox; Sandra Chu; Stephen Tate; Ron Bonner; *AB SCIEX, Concord, Canada*
- MP 464 **Improved Peptide Fractionation Efficiency in Ion-Mobility Based Data-Indendent Acquisition Enables the Identification of >4400 Proteins Using an Optimized 1D-nanoUPLC-IMS-MS^E Workflow;** Ute Distler; Jörg

- Kuharev; Stefan Tenzer; *UMC of the Johannes Gutenberg University Mainz, Mainz, Germany*
- MP 465 **The Iterative Data Analysis towards the Unfractionated SWATH Data through Expansion of Ion Library**; Shenyang Zhang^{1,2}; Bo Wen¹; Shaohang Xu¹; Baojin Zhou¹; Zhen Chen²; Quanhui Wang^{1,2}; Xiaomin Lou²; Haidan Sun²; Liang Lin¹; Siqi Liu^{1,2}; ¹*BGI-Shenzhen, Shenzhen, China*; ²*Beijing Institute of Genomics, CAS, Beijing, China*
- MP 466 **Exploring Transition from SWATH Acquisition to MRM Analysis for Quantitative Proteomics**; Sahana Mollah; Christie Hunter; *AB SCIEX, Foster City, CA*
- MP 467 **Using Fractionation and Labeling with Data Independent Acquisition**; Sean L. Seymour; Christie L. Hunter; *AB SCIEX, Foster City, CA*
- MP 468 **Can We Use Conserved Domains to Reveal Unique Protein Functions Present in Hydrothermal Vent Plume Microbial Communities?** Brook Nunn¹; Timothy Mattes²; Sonia Ting¹; Giora Proskurovski¹; Michael MacCoss¹; Deborah Kelley¹; David Goodlett³; Robert Morris¹; ¹*University of Washington, Seattle, WA*; ²*University of Iowa, Iowa City, IA*; ³*University of Maryland, Baltimore, MD*
- MP 469 **Developing Peptide Library for SWATH™ Based Proteomic Profiling**; Melinda Wojtkiewicz; Jessica Winkler; Jayme Wiederin; Lance Villeneuve; Kelly Stauch; Howard S. Fox; Pawel Ciborowski; *University of Nebraska Medical Center, Omaha, NE*
- MP 470 **Understanding the Role of Proteolytic Digestion on Discovery – and Targeted-Proteome Measurements Using LC-MS/MS**; Philip Loziuk; *North Carolina State University, Raleigh, NC*
- MP 471 **Combining Pulsed-SILAC Labeling and Click-Chemistry to Probe Rapid Proteome and Secretome Dynamics – Application to Macrophage Activation**; Katrin Eichelbaum; Jeroen Krijgsveld; *EMBL Heidelberg, Heidelberg, Germany*
- MP 472 **Quantitative Degradomics Using an Isotope Labeled Mass Tag**; Kazutaka Shimbo^{1,2}; Sami Mahrus²; Robert Chalkley²; James Wells²; ¹*Ajinomoto CO., INC, Kawasaki-Shi, Japan*; ²*University of California, San Francisco, CA*
- MP 473 **Proteomic Analysis Identifies Differentially Expressed Proteins after Red Propolis Extract Treatment in Hep-2 Cells**; Mariana Roesch-Ely¹; Sidnei Moura¹; Caroline Olivieri da Silva Frozza¹; Tanara da Silva Ribeiro¹; Paulo Marcos Pinto²; Francine Ferreira Padilha³; João Antonio Pêgas Henriques¹; ¹*University of Caxias do Sul, Caxias do Sul, Brazil*; ²*Federal University of Pampa, São Gabriel, Brazil*; ³*Tiradentes University, Aracaju, Brazil*
- MP 474 **Quantitative Analysis of the C2C12 and Mouse Skeletal Muscle Proteomes Using a Multiplexing Strategy**; Michelle Henderson; John Chilton; Getiria Onsongo; Pratik Jagtap; Edgar Arriaga; *U of M, Minneapolis, MN*
- MP 475 **Coping with the Trade-Off between Comprehensive Identification and Accurate Quantitation Using Stable Isotope Dimethyl Labeling**; Masaki Wakabayashi; Naoyuki Sugiyama; Yasushi Ishihama; *Kyoto University, Kyoto, Japan*
- MP 476 **High Throughput Quantitative p-SILAC in Niche Model Organisms**; Mario Looso¹; Christian Michel¹; Marc Bruckskotten¹; Jens Preussner¹; Panagiotis Tsonis²; Marcus Krueger¹; Thomas Braun¹; ¹*Max-Planck-Institute for Heart and Lung Research, Bad Nauheim, Germany*; ²*TREND, University of Dayton, Dayton, OH*
- MP 477 **Depolarization Dependent Spatial Localization of Proteins in Nerve Terminals**; María Ibáñez-Vea; Sanah Shah; Alistair Edwards; Lene Jakobsen; Martin R. Larsen; *University of Southern Denmark, Odense, Denmark*
- MP 478 **Identification of Targets of c-Src Tyrosine Kinase by Chemical Complementation and Phosphoproteomics. Exploring the Mechanism of Activation of Rap1GEF (C3G)**; Isabel Martinez Ferrando¹; Raghothama Chaerkady¹; Jun Zhong¹; Henrik Molina²; Harrys Jacobs¹; Katie Herbst-Robinson³; Beverley Dancy¹; Vikram Katju⁴; Ron Bose⁵; Jin Zhang¹; Akhilesh Pandey¹; Cole Philip¹; ¹*Johns Hopkins School of Medicine, Baltimore, MD*; ²*Rockefeller University, New York City, US*; ³*University of Pennsylvania, Philadelphia, US*; ⁴*M.D. Anderson Cancer Center, University of Texas, Houston, US*; ⁵*Washington University School of Medicine, Saint Louis, US*
- MP 479 **Quantitative Proteomic and Proteogenomic Comparison of hESC and Neurons**; Harsha P. Gunawardena¹; John Wrobel¹; Jainab Khatun²; Brian Risk²; Morgan C. Giddings²; Xian Chen¹; ¹*University of North Carolina at Chapel Hill, Chapel Hill, NC*; ²*Boise State University, Boise, ID*
- MP 480 **Identification and Validation of PRP4 Kinase Substrates with Integrated Proteomics Approaches**; Qiang Gao; Nayantara Kothari; Zhuyan Guo; Huang Shih-Min A; Hong Cheng; Bailin Zhang; *Sanofi Oncology, Cambridge, MA*
- MP 481 **Synthesis of d-Labeled and Unlabeled Ethyl Succinic Anhydride and Application to Quantitative Analysis of Peptides by Isotope Differential Mass Spectrometry**; Satomi Niwayama; Masoud Zabet-Moghaddam; Aarif Shaikh; *Texas Tech University, Lubbock, TX*
- MP 482 **Application of CESI-MS on SILAC-based Quantitative Proteomics**; Herbert H. Lindner¹; Klaus Faserl¹; Leopold Kremser¹; Martin Mueller²; David Teis²; Bettina Sarg¹; ¹*Biocenter, Division of Clinical Biochemistry, Innsbruck, Austria*; ²*Biocenter, Division of Cell Biology, Innsbruck, Austria*
- MP 483 **In-Source Fragmentation and the Sources of Partially Tryptic Peptides in Shotgun Proteomics**; Jong-Seo Kim^{1,2}; Matthew E. Monroe¹; David G. Camp II¹; Richard D. Smith¹; Wei-Jun Qian¹; ¹*Pacific Northwest National Lab, Richland, WA*; ²*Institute for Basic Science, Seoul National Univ., Seoul, Korea*
- MP 484 **Faster Protein Identification with Surface Acoustic Wave Nebulization in Place of Infusion-based ESI**; Sung Hwan Yoon^{1,2}; Young Ah Goo^{1,2}; Michael Wilson^{1,2}; Yue Huang¹; J. Scott Edgar³; Scott Heron^{1,2}; David R. Goodlett^{1,2}; ¹*University of Washington, Seattle, WA*; ²*University of Maryland, Baltimore, MD*; ³*Deurion LLC, Seattle, WA*
- MP 485 **193 nm Ultraviolet Photodissociation for High Throughput Middle-Down Proteomics**; Joe R. Cannon; Jennifer S. Brodbelt; *Univ. of Texas at Austin, Austin, TX*
- MP 486 **Increased Peptide and Protein Identification Rate for Proteomics Samples by Controlling Peptide Charge States Generated by Captive Spray**; Stephanie Kaspar; Stuart Pengelley; Thorsten Ledertheil; Ralf Hartmer; Wolfgang Jabs; Carsten Baessmann; *Bruker Daltonik, Bremen, Germany*
- MP 487 **Characterization and Optimization of a High Field Orbitrap for Proteome Analysis**; Fiona Pachi; Bernhard Kuster; *Technical University Munich, Freising, Germany*
- MP 488 **Deep Proteome Mapping of HeLa and U2OS Human Cancer Cell Lines**; Cristian Ruse¹; Samantha Peacock¹; Vadiraja B Bhat²; ¹*Cold Spring Harbor Laboratory, Cold Spring Harbor, NY*; ²*Agilent Technologies, Wilmington, DE*
- MP 489 **Travelling Wave Ion Mobility Assisted Duty Cycle Enhancements for Targeted and Non-Targeted Proteomics Experiments**; Christopher J Hughes; Johannes PC Vissers; James Langridge; *Waters, Manchester, UK*

- MP 490 **Large Scale Targeted Protein Quantification Using HR/AM Selected Ion Monitoring with MS/MS Confirmation on A Novel Hybrid, Q-OT-qIT Mass Spectrometer;** Reiko Kiyonami¹; Michael Senko¹; Vlad Zabrouskov¹; Jarrett Egertson²; Sonia Ting²; Michael MacCoss²; Andreas Hühmer¹; ¹ThermoFisher Scientific, San Jose, CA; ²University of Washington, Seattle, WA
- MP 491 **Characterization of Proteomics Performance of a Novel Collision Cell for Ultrahigh Resolution Time of Flight Mass Spectrometers (UHR-TOF);** Markus Lubeck; Ralf Hartmer; Oliver Raether; Carsten Baessmann; *Bruker Daltonik GmbH, Bremen, Germany*
- MP 492 **Protein Separation and Identification Using Capillary Isoelectric Focusing (cIEF) Coupled to Mass Spectrometry;** Sunil Adav; Siu-Kwan Sze; *Nanyang Technological University, Singapore, SG*
- MP 493 **Reproducibility of SWATH™ MS Analysis and Implications for System Biology Studies;** Yang Kang; Stephen Tate; Christie Hunter; Suyu Liu; Ron Bonner; *AB Sciex, Concord, Canada*
- Protein Therapeutics: Quantitative Analysis, 494 - 521**
- MP 494 **Intact 20kDa Extracellular Domain of APO2L/TRAIL Bioanalysis by HRMS: A Potential Cancer Therapeutic Protein;** Jean-Nicholas Mess; Fabio Garofolo; *Algorithme Pharma Inc., Laval, Quebec, Canada*
- MP 495 **Iodine-129 Microdosing for Protein and Peptide Drug Development;** Robert-Jan Lamers¹; José Maria López-Gutiérrez²; Jose Manuel Gómez-Guzmán²; Peter Boshuis³; ¹Abundanz B.V., Woerden, The Netherlands; ²Universidad de Sevilla, CNA, Sevilla, Spain; ³Ducares, Utrecht, The Netherlands
- MP 496 **Quantitative Analysis of Blood Coagulation Factor VIII Therapeutics in Plasma Using UPLC/MS;** Hiroya Miura¹; Taiji Kawase²; Kenji Hirose²; ¹Japanese Blood Products Organization, Tokyo, Japan; ²Nihon Waters K.K., Tokyo, Japan
- MP 497 **Mass Spectrometry-Based Protein Quantification for Improved Definition of Therapeutic Targets;** Juergen Kast¹; Martin Barnes¹; Robert Boyd¹; Jason Allen¹; Amanda Anderson¹; Jim Ackroyd¹; Ludmila Bozhenok¹; Lindsey Hudson¹; Xiaohong Yu¹; Jonathan Terrett²; Christian Rohlf¹; ¹Oxford BioTherapeutics Ltd, Milton Park, Abingdon, UK; ²Oxford BioTherapeutics Inc, San Jose, CA
- MP 498 **NTCB Cleavage of Proteins: First Application for Protein Therapeutics Quantitative Analysis in Mass Spectrometry;** Barbara Marsiglia; Luca Genovesi; Marina Feroggio; Luca Barbero; *Merck Serono, Collierezzo Giacosa, Italy*
- MP 499 **On the Feasibility of Using Non-Ferrous Metals as Tracers of Transferrin-Based Therapeutics in Clinical Samples;** Hanwei Zhao; Shunhai Wang; Cedric E. Bobst; Igor A. Kaltashov; *University of Massachusetts, Amherst, MA*
- MP 500 **Development of a Quantitative Mass Spectrometric Method to Measure the Protein Components in Virus Like Particles Used for Vaccination;** Michael D. Ward¹; Ernst E. Brueggemann¹; Lisa H. Cazares²; Sina Bavari¹; ¹USAMRIID, Ft. Detrick, MD; ²Geneva Foundation/USAMRIID, Frederick, MD
- MP 501 **Development and Application of a Comprehensive Isotope-labeled Peptide Library to Quantify the Twelve Signal Transduction Pathways of Carcinogenesis;** Lisa A Vasicek¹; Kelly A. Conrads¹; Yutaka Shoji²; Brian L. Hood¹; Amol Prakash³; Scott Peterman³; Joel Louette³; Chad A. Hamilton^{1,4}; G. Larry Maxwell^{1,5}; John I. Risinger²; Thomas P. Conrads¹; ¹Women's Integrated Research Center at Inova Health, Annandale, VA; ²Michigan State University, Grand Rapids, MI; ³ThermoFisher Scientific, Inc., BRIMS, Cambridge, MA; ⁴Walter Reed National Military Medical Center, Bethesda, MD; ⁵INOVA Fairfax Hospital, Falls Church, VA
- MP 502 **Identification and Quantification of Low Abundant Proteins in Biotherapeutics by a Sensitive and Universal LC-High Resolution MS Based Assay;** Hongxia (Jessica) Wang; Zhiqi Hao; Yi Zhang; David Horn; Patrick Bennett; *Thermo Fisher Scientific, San Jose, CA*
- MP 503 **Integrated Targeted Quantitation Method for Insulin and Its Therapeutic Analogs;** Eric E. Niederkofler¹; Tara Schroeder²; Dobrin Nedelkov¹; Urban A. Kiernan¹; David A. Phillips¹; Kemmons A. Tubbs¹; Scott Peterman³; Bryan Krastins³; Amol Prakash³; Mary Lopez³; ¹Tempe Thermo Fisher Scientific, Tempe, AZ; ²Thermo Fisher Scientific, Somerset, NJ; ³BRIMS Thermo Fisher Scientific, Boston, MA
- MP 504 **Quantitation of a Therapeutic Protein in Rat Plasma by a Validated UPLC/MS/MS and Its Application to a GLP Toxicokinetic Study;** Bailuo Ren; Yan Mao; David Roos; John Yu; Jeffrey Duggan; *Boehringer Ingelheim Pharma, Ridgefield, CT*
- MP 505 **Development and Validation of an Assay for Quantitation of a Therapeutic Protein in Human Urine Using an LC/MS/MS Method;** David Roos; John Yu; Jeffrey Duggan; Lin-Zhi Chen; Elsy Philip; *Boehringer Ingelheim, Ridgefield, CT*
- MP 506 **LC/MS/MS Assays for Biotherapeutic Protein Quantitation in Biological Matrixes – Regulatory Considerations, Validation Procedures and Results;** David Roos; John Yu; Jeffrey Duggan; Lin-Zhi Chen; Shirin Pagels; *Boehringer Ingelheim, Ridgefield, CT*
- MP 507 **Quantification of Human mAbs in Mouse Tissues Using Generic Immunocapture and LC-MS/MS;** Bogdan Slecza¹; John T. Mehl¹; Katherine Lewis²; Robin Moore¹; Ragini Vuppugalla¹; Celia D'Arieno¹; Tim Olah¹; ¹Bristol-Myers Squibb, Princeton, NJ; ²Bristol-Myers Squibb (Zymogenetics), Seattle, WA
- MP 508 **SPE Cleanup of Background Peptides for the LC-MS/MS Bioanalysis of a Monoclonal Antibody in Monkey Serum;** Long Yuan; Qin Ji; Anne-Françoise Aubry; *Bristol-Myers Squibb, Princeton, NJ*
- MP 509 **High-sensitivity Quantitative Analysis of Therapeutic Monoclonal Antibodies in Human Serum Using Q Exactive Selected Ion Monitoring NanoLC-MS;** Haibo Qiu¹; Hongxia Wang²; Patrick Bennett²; Ning Li¹; ¹Regeneron Pharmaceuticals, Tarrytown, NY; ²Thermo Fisher Scientific, San Jose, CA
- MP 510 **Strategies for Calibration and Signature Peptide Selection are Critical for Accurate Absolute Quantification of Therapeutic Monoclonal Antibodies in Pharmaceutical Matrices;** Ming Zhang; Haoying Yu; Eslam Nouri-Nigjeh; Jun Qu; *University at Buffalo, Buffalo, NY*
- MP 511 **Comparison of Methods for Quantitating Tryptic Digests of Monoclonal Antibodies using Q-TOF and QQQ Mass Spectrometry;** Caroline S. Chu; Alex Zhu; Ning Tang; *Agilent Technologies, Santa Clara, CA*
- MP 512 **Determination of Contaminant Bacterial Host Cell Proteins in Recombinant Proteins Expressed in E. coli by LC-QQQ;** Oscar Potter; Yanan Yang; Hongfeng Yin; Kevin Killeen; *Agilent Technologies, Santa Clara, CA*
- MP 513 **Quantification of Large Peptides in Human Serum Using High Resolution Dual Ion Funnel LC-QTOF;** Anne E Blackwel; Rory Doyle; Alex Zhu; Vadiraja B. Bhat; *Agilent*

- Technologies, Wilmington, DE*
- MP 514 **Quantitative Analysis of a Therapeutic Monoclonal Antibody in Human Plasma by Accelerated Trypsin Digestion and LC-MS/MS;** Jianshuang Wang; Fumin Li; Douglas Fast; *Covance, Madison, WI*
- MP 515 **Low ng/ml Bioanalysis of Monoclonal Antibody Therapeutics Using nano-UPLC Coupled to HRMS;** William Douglas Van Dongen; Frédérique Van Holthoorn; Richard Bas; Anne Kleinnijenhuis; *TNO Triskelion, Zeist, Netherlands*
- MP 516 **Simultaneous Quantitative Peptide Mapping and Host Cell Protein Detection in an IgG1 Monoclonal Antibody Preparation using Data-Independent Acquisition;** Eric Johansen; Kelli Jonakin; Christie Hunter; *AB SCIEX, Foster City, CA*
- MP 517 **Accurate Quantitation of Deamidated Peptides by Spectral Accuracy;** Darryl Davis¹; Ming Gu²; ¹Johnson and Johnson, Radnor, PA; ²Cerno Bioscience, Norwalk, CT
- MP 518 **Simultaneous Quantitation of a Monoclonal Antibody and Two Proteins in Human Plasma by High Resolution and Accurate Mass Measurements;** Paul-Gerhard Lassahn¹; Kai Scheffler²; Myriam Demant³; Nathanael Delmotte¹; Winfried Wagner-Redeker¹; Guenter Boehm⁴; ¹Swiss BioAnalytics AG, Basel, CH; ²Thermo Fisher Scientific, Dreieich, Germany; ³ThermoFisher Scientific, Reinach, CH; ⁴CTC Analytics AG, Zwingen, CH
- MP 519 **Quantification of Biotherapeutics in DMPK Studies Using Accurate Mass MS/MS;** Joanne Mather¹; Robert S. Plumb²; Gordon Fujimoto¹; Jonathan R. Kheller³; Matthew E. Szapacs³; Christopher Evans³; ¹Waters Corporation, Milford, MA; ²Imperial College, London, UK; ³GSK, King of Prussia, PA
- MP 520 **Development of an Immunoprecipitation and LC-MS/MS Based Method for Quantifying the 105 kDa Recombinant Protein SXN101959 in Plasma;** Steve Pleasance¹; Richard Kay¹; David Griffiths¹; Aimee Cossins²; Andrew Splevins²; Alberto Martinez²; Helen Ludlow²; ¹Quotient Bioresearch Ltd, Fordham, England; ²Syntaxin Ltd, Abingdon, England
- MP 521 **Improved Identification and Quantitation of Host Cell Proteins in Protein Therapeutics using 2D-LC and Ion Mobility;** Martha Stapels; Catalin Doneanu; Keith Fadgen; *Waters Corporation, Milford, MA*
- Biomarker Quantitation: Proteins and Peptides, 522 - 549**
- MP 522 **Targeted Proteomics Workflow for Biomarker Analysis by Nano LCMS;** Jorge Smith¹; Jeremy Post¹; Rachel Lieberman¹; Nataliya Bulayeva²; Kevin Rosenblatt²; Ben Figard¹; ¹Shimadzu Scientific Inst., Houston, TX; ²UT-Health Science Center at Houston, Houston, TX
- MP 523 **Targeted Quantification of Proteins at Sub-nanogram/mL Levels in Human Plasma by MRM-MS without the Need for Fractionation;** Michael Burgess; Hasmik Keshishian; D.R. Mani; Michael Gillette; Steven Carr; *Broad Institute, Cambridge, MA*
- MP 524 **Analysis of Serum Myostatin and Its Inhibitors N-terminal Pro-protein, GASP-1 and FLRG Simultaneously in Human Serum by LC-MS/MS;** Patrick Vanderboom; Olga Bondar; Linda Benson; Nathan LeBrasseur; Sundeep Khosla; Robert Bergen; *Mayo Clinic, Rochester, MN*
- MP 525 **Immunoaffinity Enrichment and Quantification of Serum Proteins Using Stable Isotope Labeled Proteins as Internal Standards;** Kevin Ray; Jim J. Walters; Melissa R. Radabaugh; *Sigma-Aldrich, St. Louis, MO*
- MP 526 **Characterization of Heavy Recombinant Proteins for Use as Internal Standards in Quantitative MS Workflows;** Gordon R. Nicol; Pegah Jalili; Mark Angeles; David Rhee; Kevin Ray; *Sigma, St Louis, MO*
- MP 527 **MRMcubed (MRM3) Optimization for Direct Quantification of Low Abundance Protein in Biological Fluids : Application to Plasma Biomarkers;** Jeremy Jeudy; Arnaud Salvador; Romain Simon; Aurore Jaffuel; Catherine Fonbonne; Jerome Lemoine; *Institut des Sciences Analytiques, Villeurbanne, France*
- MP 528 **Development and Validation of a Sensitive LC/MS/MS Assay for Fibrinogen Peptide A Quantitation in Human Plasma Using Nano-flow LC with Trizaic Tile;** Mingxiang Lin; Michael Lassman; Russell Weiner; Omar Laterza; *Merck Research Laboratories, Rahway, NJ*
- MP 529 **Quantification of Fibrin D-dimer by Peptide Immunoaffinity Enrichment and Tandem Mass Spectrometry;** Weixun Wang¹; Bernard Choi¹; Nykia Walker¹; Li-ji Zhu¹; Weizhen Wu¹; Ge Lan¹; David E. Gutstein¹; Nathan A. Yates²; Ronald C. Hendrickson³; Martin L. Ogletree¹; Michele Cleary¹; Gregory J. Opitck¹; Zhu Chen¹; Lucinda H. Cohen¹; ¹Merck Research Labs, Rahway, NJ; ²University of Pittsburgh, Pittsburgh, PA; ³Memorial Sloan-Kettering Cancer Center, New York, NY
- MP 530 **Pyroglutamyl apelin-13 Identified as the Major Apelin Isoform in Human Plasma;** Eugene Y. Zhen; Richard E. Higgs; Jesus A. Gutierrez; *Eli Lilly & Company, Indianapolis, IN*
- MP 531 **Ultra-sensitive Immunoaffinity-UPLC/MS/MS Quantitation of Oxytocin in Rat Plasma;** Sarah Osgood; Angela Doran; Kari Fonseca; Thomas McDonald; Yanhua Zhang; Hongying Gao; *Pfizer, Groton, CT*
- MP 532 **Ultrasensitive Quantification Assay for Oxytocin in Human Plasma Using a LC/MS Microfluidic Platform;** Catalin Doneanu; Paul Rainville; *Waters Corporation, Milford, MA*
- MP 533 **High Sensitivity and Simultaneous Quantitation Method for Arginine Vasopressin and Desmopressin in Human Plasma Determined by LC-MS/MS/MS;** Yasuko Tsukazaki¹; Naoto Senda¹; Shigeru Yamada³; Kinya Kubo²; Yasuhiro Kazuki²; Mitsuo Oshimura²; ¹Mitsubishi Chemical Medience Co., Tsukuba, Ibaraki, Japan; ²Chromosome Engineering Research Center, Tottori University, Yonago, Tottori, Japan; ³K.K.AB SCIEX, Shinagawa, Tokyo, Japan
- MP 534 **Surrogate Matrix and Surrogate Analyte Approaches for the Quantitation Amyloid β Peptide Biomarkers in Human Cerebrospinal Fluid via LC-MS/MS;** William R. Mylott; Junlong Shao; Moucun Yuan; Bruce Hidy; Rand Jenkins; *PPD, Richmond, VA*
- MP 535 **Mass Spectrometry Quantification of Amyloid Precursor Protein Isoforms to Study Alzheimer's disease by QconCAT Strategy;** Junjun Chen; Illarion V. Turko; *IBBR, Rockville, MD*
- MP 536 **MRM-based Multiplexed Quantification of Progranulin and Granulin Peptides in Mouse Serum;** Toshiya Matsubara^{1,2}; Tairo Ogura¹; Ichiro Hirano¹; Susumu Seino²; ¹Shimadzu Corporation, Kyoto, Japan; ²Kobe University Graduate School of Medicine, Kobe, Japan
- MP 537 **Development of a Sensitive LC-MS/MS Assay for Quantitative Analysis of Hepcidin-25 in Human Urine;** Chaoran Ron Huang; Tao Ye; Liyu Yang; *Biogen Idec, Cambridge, MA*
- MP 538 **Mass Spectrometry-Based Approach for Absolute Quantitative Characterization and Validation of Neuronal-Glial Injury Biomarkers in Tissue and Biofluids;** Ahmed Moghieb; Nancy Denslow; Richard Yost; Kevin Wang; *University of Florida, Gainesville, FL*

- MP 539 **Quantitative Mass Spectrometry for Proteomic Screening of Potential Biomarkers in Alzheimer's Disease**; Sravani Musunuri; Kim Kultima; Martin Ingelsson; Lars Lannfelt; Jonas Bergquist; Magnus Wetterhall; Ganna Shevchenko; *Uppsala University, Uppsala, Sweden*
- MP 540 **Targeted Quantification of Low-Abundance TMPRSS2:ERG Fusion Proteins in Prostate Cancer Using a Highly Sensitive PRISM-SRM approach**; Jintang He¹; Xuefei Sun¹; Tujin Shi¹; Athena A. Schepmoes¹; Thomas L. Fillmore¹; Vladislav A. Petyuk¹; Fang Xie¹; Rui Zhao¹; Marina A. Gritsenko¹; Feng Yang¹; Naoki Kitabayashi²; Sung-Suk Chae²; Mark A. Rubin²; Javed Siddiqui²; John T. Wei³; Arul M. Chinnaiyan³; Wei-Jun Qian¹; Richard D. Smith¹; Jacob Kagan⁴; Sudhir Srivastava⁴; Tao Liu¹; Karin D. Rodland¹; David G. Camp, II¹; ¹*Pacific Northwest National Laboratory, Richland, WA*; ²*Weill Cornell Medical College, New York, NY*; ³*University of Michigan, Ann Arbor, MI*; ⁴*National Cancer Institute, Rockville, MD*
- MP 541 **Prioritization of Plasma-Based Predictive Markers for Chemotherapy in Lung Cancer Using Fractionation and Targeted Mass Spectrometry**; Haizhen Zhang¹; Jeffrey Whiteaker¹; Chenwei Lin¹; Pin Yan¹; Yeoun Jin Kim²; Helen Ross³; Tony Tegeler⁴; Cheryl Selinsky⁴; Konstantinos Petritis⁴; Guy Berchem²; Bruno Domon²; Amanda Paulovich¹; ¹*Fred Hutchinson Cancer Research Center, Seattle, WA*; ²*Luxembourg Clinical Proteomics Center, Luxembourg, Luxembourg*; ³*Mayo Clinic, Scottsdale, AZ*; ⁴*Translational Genomics Research Institute, Phoenix, AZ*
- MP 542 **Targeted Quantification of Low-Abundance Cancer-Related AGR2 Proteins in Clinical Prostate Cancer Specimens Using an Antibody-Free PRISM-SRM Assay**; Tujin Shi¹; Yuqian Gao¹; Dian Su¹; Sue-Ing Quek²; Carrie Nicora¹; Thomas L. Fillmore³; Athena A. Schepmoes¹; Rui Zhao³; Ronald J. Moore¹; Keqi Tang¹; Karin D. Rodland¹; Tao Liu¹; Richard D. Smith¹; David G. Camp¹; Alvin Y. Liu²; Wei-Jun Qian¹; ¹*PNNL, Richland, WA*; ²*Department of Urology, University of Washington, Seattle, WA*; ³*Environmental Molecular Sciences Laboratory, PNNL, Richland, WA*
- MP 543 **MRM Analysis of Breast Adenocarcinomas Induced to Epithelial to Mesenchymal Transition**; Daniele Albuquerque¹; Camila Palma¹; Fernanda Melo²; Mariana Pinto²; Carolina Thome²; Gabriela Canchaya¹; Vera Epifanio¹; Dimas Covas^{1,2}; Vitor Faça¹; ¹*Fac. Medicina de Ribeirão Preto - Univ. São Paulo, Ribeirão Preto-SP, Brazil*; ²*Fund. Hemocentro de Ribeirão Preto - Univ. São Paulo, Ribeirão Preto-SP, Brazil*
- MP 544 **Verification Study of breast Cancer Biomarker Candidates in Plasma Using Highly Multiplexed Peptide immuno-MRM-MS**; Regine M. Schoenher¹; Thomas YK. Lau²; Michael A. Gillette²; Jeffrey R. Whiteaker¹; Eric Kuhn²; Lola Fagbami²; Jennifer Ross²; ChenWei Lin¹; Pei Wang¹; Francisco J. Esteva³; Steven A. Carr²; Amanda G. Paulovich¹; ¹*Fred Hutchinson Cancer Research Center, Seattle, WA*; ²*Broad Institute, Cambridge, MA*; ³*The University of Texas MD Anderson Cancer Center, Houston, TX*
- MP 545 **Applicability of Label-Free Selected Reaction Monitoring for the Analysis of S100 Proteins in Cancer**; Juan Martinez-Aguilar¹; Mark P. Molloy^{1,2}; ¹*Macquarie University, Sydney, Australia*; ²*Australian Proteome Analysis Facility, Sydney, Australia*
- MP 546 **Urinary Exosomes; A Source Of Biomarkers And Novel Diagnostics For Polycystic Kidney Disease**; Christopher Ward; Kenneth Johnson; Marie Hogan; Roman Zenka; Cristine Charlesworth; H. Robert Bergen, III; *Mayo Clinic, Rochester, MN*
- MP 547 **Development of an UPLC-MRM Quantitation Method to Monitor Pgp Expression Levels**; Zhenlian Ke; Jocelyn Yabut; Rena Zhang; Weixun Wang; Kevin Bateman; Bonnie Howell; Christopher Gibson; Daniel Spellman; *PPDM, Merck Research Laboratories, West Point, PA*
- MP 548 **Comprehensive MS-based Quantification of Anthrax Toxins Following Exposure to *Bacillus anthracis***; Adrian R Woolfitt¹; Anne E Boyer¹; Maribel Gallegos-Candela¹; Judith Heitz²; Renato C Lins²; Katie Isbell¹; Maria I Solano¹; John R Barr¹; ¹*CDC, Atlanta, GA*; ²*Battelle Institute, Atlanta, GA*
- MP 549 **Successful Implementation of Multiple Reaction Monitoring for the Validation of Tuberculosis Biomarkers**; Nicole Kruh-Garcia¹; Gustavo Diaz¹; Luke Davis²; Jolynn Trout¹; Angelo Izzo¹; Karen Dobos¹; ¹*Colorado State University, Fort Collins, CO*; ²*UCSF Pulmonary & Critical Care Medicine, San Francisco, CA*

Biomarker Discovery: Cancer, 550 - 567

- MP 550 **Identification of Proteins Associated with Activation of Metastasis after Removal of Primary Tumor Using Murine Ehrlich Carcinoma**; Victoria Shender¹; Rustam Ziganshin¹; Fedor Donenko²; Georgij Arapidi¹; Sergey Kovalchuk¹; Vadim Govorun¹; ¹*Institute of Bioorganic Chemistry, RAS, Moscow, Russian Federation*; ²*N.N. Blokhin Russian Cancer Research Center, Moscow, Russian Federation*
- MP 551 **Imaging Mass Spectrometry to Uncover Proteomic Differences in Mantle Cell Lymphoma Subtypes**; Kristina Schwamborn^{1,2}; Martina Rudelius¹; Richard Caprioli²; ¹*Technical University Munich, Munich, Germany*; ²*Department of Biochemistry, Vanderbilt University, Nashville, TN*
- MP 552 **Comparing Lung Protein Expression for Biomarkers within the Disease Phenotypes of COPD and Lung Cancer**; Brian Sandri; Chris Wendt; *University of Minnesota, Minneapolis, MN*
- MP 553 **Proteomic Profiling and Characterization of Human Endometrial Cancer Cell-Derived Extracellular Microvesicles**; Emma Arigi¹; Gloria Polanco¹; Clemente Aguilar-Bonavides¹; Armando Varela-Ramirez¹; Russell Broaddus²; Igor Almeida¹; ¹*University of Texas at El Paso, El Paso, TX*; ²*University of Texas MD Anderson Cancer Center, Houston, TX*
- MP 554 **Identification of SRL Binding Receptors on human Colon Cancer Cells Using Micro-Fluidic Based LC System with an Advanced QTOF MS**; Ravindra Gudihal²; Sachin M. Eligar^{1,3}; Srikanth Barkeer¹; Jonathan M. Rhodes²; Lu-Gang Yu³; Bale M. Swamy^{1,3}; Shashikala R. Inamdar^{1,3}; ¹*Dept of Studies in Biochemistry, Karnatak Univ, Dharwad, India*; ²*Agilent Technologies India Pvt. Ltd, Bangalore, India*; ³*Department of Gastroenterology, Univ of Liverpool, Liverpool, UK*
- MP 555 **Proteomics Study of Synergistic Effects of Combinational Treatment for Pancreatic Cancer**; Jin-Gyun Lee; Kimberly Q. McKinney; Jean-Luc Mougeot; Herbert L. Bonkovsky; Sun-Il Hwang; *Carolinas Healthcare System, Charlotte, NC*
- MP 556 **Gastric Cancer Detection by Serum Glycan Signatures**; Sureyya Ozcan¹; Cara Cooke²; Donald Barkauskas³; Hyun Joo An⁴; Serenus Hua⁴; Cynthia Williams¹; Lauren Dimapasoc¹; L. Renee Ruhaak¹; Jae Han Kim⁴; David Rocke⁵; Javier Torres⁶; Carlito B Lebrilla¹; Jay V Solnick²; ¹*UC Davis Chemistry Department, Davis, CA*; ²*UC Davis, Center for Comparative Medicine, Davis, CA*; ³*University of Southern California, Los Angeles, CA*; ⁴*Chungnam National University, Daejeon, Korea*; ⁵*University of California, Davis, CA*; ⁶*Instituto Mexicano del Seguro Social, Mexico, Mexico*

- MP 557 **Functional Proteomic Analysis of KIAA1199 Overexpression in Breast Cancer;** Hong Peng; Mohammad-Saeid Jami¹; Jinxuan Hou²; Miao Liu¹; Michelle Varney¹; Rakesh Singh¹; Shi-Jian Ding¹; ¹Univ of Nebraska Med Center, Omaha, NE; ²Zhongnan Hospital of Wuhan University, Wuhan, China
- MP 558 **Bladder Cancer Proteome: A Multiplexing Approach Using Online 2D RP-RP Chromatography Coupled with Data Independent Ion Mobility;** Lee A Gethings¹; Zhuowei Wang²; Bo Wen³; Ju Zhang³; Quanhui Wang³; Liang Lin³; Chris Hughes¹; Johannes P.C. Vissers¹; James Langridge¹; Siqi Liu³; ¹Waters Corporation, Manchester, UK; ²Waters (China), Beijing, China; ³BGI, Beijing, China
- MP 559 **The Application of MALDI-TOF MS Plasma Protein Profiling for Discrimination of Patients with Gastric Cancer from Healthy Controls;** Natalia Arnotskaya; Valeriy Shevchenko; Elena Ogorodnikova; Mikhail M Davidov; Maksat Ibraev; Igor Turkin; Mikhail I Davidov; N. N. Blokhin Russian Cancer Research Center, Moscow, Russian Federation
- MP 560 **Identification of Candidate Lung Cancer Biomarkers by Proteomics Analysis of Conditioned Media of Two Lung Cancer Cell Lines;** Valeriy Shevchenko; Sergei Kovalev; Natalia Arnotskaya; Sergei Aushkap; Igor Kudryavtsev; N. N. Blokhin Russian Cancer Research Center, Moscow, Russian Federation
- MP 561 **Discovery of Glycoprotein Biomarkers for Differentiation of Pancreatic Cancer from Several Related Conditions by Lectin Array and Quantitative Mass Spectrometry;** Song Nie¹; Andy Lo¹; Mack T. Ruffin²; Kerby A. Shedden³; David M. Lubman¹; ¹Department of Surgery, University of Michigan, Ann Arbor, MI; ²Epidemiology Department, University of Michigan, Ann Arbor, MI; ³Biostatistics Department, University of Michigan, Ann Arbor, MI
- MP 562 **A Label-Free Shotgun Proteomic Characterization of Multiple Myeloma Derived Extracellular Vesicles;** Sean W. Harshman; Alessandro Canella; Paul D. Ciarlariello; Kitty Agarwal; Tiffany Talabere; Michael E. Paulaitis; Don M. Benson, Jr; Flavia Pichiorri; Michael A. Freitas; *Ohio State University, Columbus, OH*
- MP 563 **GC/MS-based Metabolomic Profiling for Early Diagnosis of Pancreatic Cancer;** Masaru Yoshida; Takashi Kobayashi; Shin Nishiumi; Yoshihiro Izumi; Atsuki Matsubara; Takeshi Azuma; *Kobe University, Kobe, Japan*
- MP 564 **N-linked Glycoproteomic Landscape of Human Lymphoid Cancers;** Venkatesha Basurur; Delphine Rolland; Damian Fermin; Carla McNeil-Schwalm; Kevin Conlon; Thomas Wolfe; Chih-Chiang Tsou; Yoon-Kyung Jeon; Noah Brown; Dafydd Thomas; Nathanael Bailey; Gilbert Omenn; Alexey Nesvizhskii; Megan Lim; Kojo Elenitoba-Johnson; *University of Michigan, Ann Arbor, MI*
- MP 565 **Quantitative Proteomics Reveals Hypoxia Perturbed Pathways and Secretome that Promote Tumour Angiogenesis, Metastasis, and Therapy Resistance;** Siu Kwan Sze; Yan Ren; Bama Dutta; *Nanyang Technological University, Singapore, Singapore*
- MP 566 **Efforts Toward Molecular Classification of Prostate Cancer Tumors via Laser Capture Microdissection Coupled to LC MS/MS;** Michael Bereman; Martine Roudier; Lawrence True; Michael MacCoss; *Univ of Washington, Seattle, WA*
- MP 567 **Decreased Glucose-Regulated Protein 78 in Thioacetamide-Induced Liver Fibrosis Plays Crucially in the Development of Liver Fibrosis: A Proteomic Study;** Jungshan Chang¹; Chun-Chia Cheng²; Fu-Der Mai¹; Chun-Chao Chang³; ¹Taipei Medical University, Taipei City, Taiwan; ²Institute of Nuclear Energy Research, Taoyuan, Taiwan; ³Taipei Medical University Hospital, Taipei, Taiwan
- Immunology, 568 - 575**
- MP 568 **Multiplex Quantitative Proteomics Characterization of the Activation of Human CD4+ T-cells;** Robert Moulder; Tapio Lönnberg; Anne Rokka; Riitta Lahtesmaa; *Turku Centre for Biotechnology, Turku, Finland*
- MP 569 **Mechanistic Insights into E1B 55kDa-mediated Regulation of the Innate Immune Response;** George Hung¹; Jasdave S. Chahal²; Caroline DeHart¹; David H. Perlman³; S. J. Flint¹; ¹Dept. of Molecular Biology, Princeton University, Princeton, NJ; ²Whitehead Institute for Biomedical Research, MIT, Cambridge, MA; ³Proteomics and Mass Spec. Core, Princeton Univ., Princeton, NJ
- MP 570 **Interleukin 6: A Deterrent or an Indicator of Mycobacterium Infection in the Endangered White-Winged Wood Duck;** Anita Iveljic; Pyi Saw; Jody M. Modarelli; *Hiram College, Hiram, OH*
- MP 571 **Characterization of Phagosomal Proteomes in Activated Macrophages;** Manman Guo¹; Marek Gierlinski²; Brian Dill¹; Matthias Trost¹; ¹MRC-University of Dundee, Dundee, UK; ²BCDD-University of Dundee, Dundee, UK
- MP 572 **Identification of Naturally Processed "Self" and HIV Derived MHC Class I Ligands Presented by Healthy and HIV-Infected Cells;** Marijana Rucevic¹; Mariko Shimada¹; Georgio Kourjian¹; Nicole Lai¹; Carl Kadie²; David Heckerman²; Bruce D. Walker^{1,3}; Sylvie LeGall¹; ¹Ragon of MGH, MIT and Harvard, Boston, MA; ²Microsoft Research, Los Angeles, CA; ³Howard Hughes Medical Institute, Chevy Chase, MD
- MP 573 **Impact of Genomic Polymorphisms on the Human MHC Class I Immunoepitome;** Dev Sriranganadane^{1,4}; Diana Paola Granados^{1,5}; Céline Laumont^{1,5}; Tariq Daouda^{1,2}; Olivier Caron-Lizotte¹; Antoine Zieger^{1,2}; Sébastien Lemieux²; Claude Perreault^{1,3}; Pierre Thibault^{1,4}; ¹University of Montreal-IRIC, Montreal, Canada; ²University of Montreal- IRIC Bioinformatics, Montreal, Canada; ³Div. of Hematology Hôpital Maisonneuve-Rosemont, Montreal, Canada; ⁴University of Montreal- Dept of Chemistry, Montreal, Canada; ⁵University of Montreal- Dept of Medicine, Montreal, Canada
- MP 574 **Protein Composition, Stoichiometry, and Mass Estimation of the HHV-6B Z29 Viral Particle Using Label Free Quantitative Proteomics;** Scott A. Shaffer; Aniuska Becerra-Artiles; Karin M. Green; Stephanie A. Maniatis; J. Mauricio Calvo-Calle; Lawrence J. Stern; *University of Massachusetts Medical School, Worcester, MA*
- MP 575 **Optimizing the Multiplexing Strategy for Quantitative Proteomics Analysis of Immune Cell Subsets Using iTRAQ;** Parimal Samir; Kristen Hoek; Leigh Howard; Tara Allos; Xinnan Niu; Clarence Creech; Kathryn Edwards; Andrew Link; *Vanderbilt University School of Medicine, Nashville, TN*
- Molecular Systems Biology and Disease, 576 - 603**
- MP 576 **Breaking the Habit: A Comprehensive, Proteome-Wide Comparison of Chemical and Physical Synchronization of the Mammalian Cell Cycle;** Tony Ly; Angus Lamond; *Wellcome Trust Centre for Gene Regulation and Expr, Dundee, UK*

- MP 577 **Dynamic Changes in Protein and mRNA Expression Drive Functional Reprogramming during Osteoclast Development from Monocyte-Macrophage Lineage Cells;** Eunkyoung An; Manikandan Narayanan; Ronald Germain; Aleksandra Nita-Lazar; *NIH/NIAID/LSB, Bethesda, MD*
- MP 578 **Mass Spectrometric Strategies to Characterize and Understand Complex Microbial Biofilms - Applications to Fuel Degradation and to Biocorrosion;** Jan Sunner; Iwona Beech; Joe Sufliita; *University of Oklahoma, Norman, OK*
- MP 579 **Yeast on a Diet: Dextrose or Lactate, What's Your Favorite Carb?** Alejandro Cohen¹; J. Pedro Fernandez-Murray²; Christopher McMaster²; ¹*Proteomics Facility, Dalhousie University, Halifax, Canada*; ²*Dalhousie University, Halifax, Canada*
- MP 580 **System Wide Analysis of Lysine Acetylation in the Human Pathogen *Mycoplasma pneumoniae*;** Marco Hennrich; Vera van Noort; Peer Bork; Anne-Claude Gavin; *EMBL Heidelberg, Heidelberg, Germany*
- MP 581 **First Draft of the Human Proteome;** Mathias Wilhelm¹; Judith Schlegl²; Amin Moghaddas Gholami¹; Hannes Hahne¹; Joos-Hendrik Boese²; Marcus Lieberenz²; Mikhail Savitski³; Yuval Morad²; Lars Butzmann²; Emanuel Ziegler²; Anton Nizdelka²; Eyk Kny²; Helmut Cossmann²; Siegfried Gessulat²; Marcus Bantscheff³; Anja Gerstmair²; Franz Faerber²; Bernhard Kuster¹; ¹*Technical University Munich, Freising, Germany*; ²*SAP AG, Walldorf, Germany*; ³*Cellzome, Heidelberg, Germany*
- MP 582 **The First Draft of the Human Proteome Enables Systematic Analyses of Protein Expression;** Hannes Hahne¹; Mathias Wilhelm¹; Amin Moghaddas Gholami¹; Judith Schlegl²; Joos-Hendrik Boese²; Marcus Lieberenz²; Mikhail Savitski³; Yuval Morad²; Lars Butzmann²; Emanuel Ziegler²; Anton Nizdelka²; Eyk Kny²; Helmut Cossmann²; Siegfried Gessulat²; Marcus Bantscheff³; Anja Gerstmair²; Franz Faerber²; Bernhard Kuster¹; ¹*Technische Universitaet Muenchen, Freising, Germany*; ²*SAP AG, Walldorf, Germany*; ³*Cellzome, Heidelberg, Germany*
- MP 583 **A Comprehensive Characterization of the Pig Islet Proteome: PTMs, Amino Acid Substitutions and Novel Isoforms;** Ebbing de Jong; Bernhard Hering; Pratik Jagtap; John Chilton; Getiria Onsongo; Timothy Griffin; *University of Minnesota, Minneapolis, MN*
- MP 584 **Analysis of the Impact of a Perturbed Metabolism on Enzymes Controlling Adipocyte Metabolism;** William K. Russell; KyungOh Choi; Arul Jayaraman; *Texas A&M University, College Station, TX*
- MP 585 **Global Proteome Analysis of the NCI-60 Cell Line Panel;** Amin Moghaddas Gholami; Hannes Hahne; Zhixiang Wu; Florian Auer; Chen Meng; Mathias Wilhelm; Bernhard Kuster; *Technical University Munich, Freising, Germany*
- MP 586 **Global and Targeted Proteomics of Nonstandard Amino Acid Incorporation into Proteins and Proteomes;** Hans Rudolf Aerni^{1,2}; Patrick O'Donoghue³; Svetlana Rogulina^{1,2}; Mark Shifman⁴; Jesse Rinehart^{1,2}; ¹*Yale Univ. School of Medicine, New Haven, CT*; ²*Yale Systems Biology Institute, West Haven, CT*; ³*Molecular Biophysics and Biochemistry, New Haven, CT*; ⁴*Keck Biotechnology Resource Laboratory, New Haven, CT*
- MP 587 **System-wide Analysis of Protein Degradation Using Quantitative Proteomics;** Romain Christiano; Xiuling Guo; Tobias C. Walther; *Yale University, New Haven, CT*
- MP 588 **Progress towards Real-Time Cell Secretome Analysis by Mass Spectrometry;** Rafael Montenegro Burke¹; Jeffrey Enders¹; Kevin Seale²; John Wikswo³; John McLean¹; ¹*Department of Chemistry, Vanderbilt University, Nashville, TN*; ²*Dep. Biomedical Engineering, Vanderbilt University, Nashville, TN*; ³*Dept. Physics and Astronomy, Vanderbilt University, Nashville, TN*
- MP 589 **Molecular Characterization of Rough Endoplasmic Reticulum Subproteome in Pancreatic Beta Cells;** Xuequn Chen; Jin-sook Lee; Jingye Fang; *Wayne State University, Detroit, MI*
- MP 590 **The Proteomics of Dietary Restriction: Are Sex-Specific Fitness Effects Mediated by Differential Protein Expression?** Simin Maleknia; Elizabeth Cassidy; Russell Bonduriansky; *University of New South Wales, Sydney, Australia*
- MP 591 **Characterizing the Role of Caspases in Apoptosis Induced by Endoplasmic Reticulum Stress;** Veronica Anania; Han Li; Diana Jeon; Avi Ashkenazi; Jennie Lill; *Genentech, Inc., South San Francisco, CA*
- MP 592 **Effect of Western Diet on Lipoprotein Mediated Atherosclerosis. ²H₂O-metabolic Labeling Based Dynamic Proteomics Approach;** Ling Li¹; Stephen Previs²; Arthur McCullough³; Belinda Willard¹; Takhar Kasumov³; ¹*Department of Core Service, Cleveland Clinic, Cleveland, OH*; ²*Case Western Reserve University, Cleveland, OH*; ³*Department of Hepatology, Cleveland Clinic, Cleveland, OH*
- MP 593 **Identification of HLA-DR Presented Peptides in Synovial Fluid from a Patient with Antibiotic-refractory Lyme Arthritis;** Qi Wang¹; Elise E. Drouin²; Allen C. Steere²; Catherine E. Costello¹; ¹*Boston University, Boston, MA*; ²*Massachusetts General Hospital, Boston, MA*
- MP 594 **Proteomic Investigation of the Tumor Differentiation Factor (TDF)-induced Cell Differentiation;** Armand Ngounou; Izabela Sokolowska; Pinguang Yang; Urmi Roy; Alisa Woods; Costel Darie; *Clarkson University, Potsdam, NY*
- MP 595 **Dissecting Ageing-Related Disease by Studying Protein Changes after Calorie Restriction;** Mark Laranca; Ehsan Pourkarimi; Anton Gartner; Angus Lamond; *University of Dundee, Dundee, UK*
- MP 596 **Global In-Depth Quantitative Proteomic Analysis of HIV Infected Cells Using a Novel Q-OT-qIT Mass Spectrometer;** Shannon Eliuk¹; Jeffrey Johnson²; Leonard Chavez³; Vlad Zabrouskov¹; Christopher Mullen¹; Eric Verdin³; Nevan Krogan²; ¹*Thermo Fisher Scientific, San Jose, CA*; ²*UCSF, San Francisco, CA*; ³*Gladstone Institute, San Francisco, CA*
- MP 597 **Proteomics and Glycomics of Glioma-Derived Stem-Like Cells Correlated to Gene Expression Data and Patient Outcomes;** Carol L. Nilsson¹; Huiling Liu¹; Cheryl F. Lichti¹; Mark R. Emmett¹; Norelle C. Wildburger¹; Alexander S. Shavkunov¹; Huan He³; Alan G. Marshall⁶; Roger A. Kroes⁴; Joseph R. Moskal⁴; Erik P. Sulman²; Frederick F. Lang²; Charles A. Conrad²; ¹*UTMB, Galveston, TX*; ²*The University of Texas M. D. Anderson Cancer Ctr, Houston, TX*; ³*Ion Cyclotron Resonance Program, NRMFL, Tallahassee, FL*; ⁴*Falk Center for Molecular Therapeutics, Evanston, IL*; ⁵*Department of Chemistry & Biochemistry, FSU, Tallahassee, FL*
- MP 598 **Proteomics Based Investigation of Cystic Fibrosis Cell-Line Models - A Step towards Understanding the Disease Process;** Navin Rauniyar; Vijay Gupta; William E. Balch; John R. Yates; *The Scripps Research Institute, La Jolla, CA*
- MP 599 **Multi-omic Analysis of ApoE Isoform Effects in AD-vulnerable Brain Regions;** Tal Nuriel; *Columbia University Medical Center, New York, NY*
- MP 600 **Quantitative Proteome Turnover in *C. elegans*;** Krishna Vukoti; John Feng; Masaru Miyagi; *Case Western Reserve University, Cleveland, OH*

- MP 601 **Analysis of BDNF-triggered Protein Translation Using BONCAT and SILAC;** Guoan Zhang; Heather Bowling; Eric Klann; Moses Chao; Thomas Neubert; *New York University, New York, NY*
- MP 602 **Strategies for Interactome Tracking and Scoring: How ProHits and SAINT Complement Strong Experimental Designs;** Guomin Liu¹; Hyungwon Choi²; Jianping Zhang¹; Zhen-Yuan Lin¹; Brett Larsen¹; Mike Tyers³; Brian Raught⁴; Alexey Nesvizhskii⁵; Anne-Claude Gingras¹; ¹*Samuel Lunenfeld Research Institute, Mount Sinai H, Toronto, Canada*; ²*Saw Swee Hock School of Public Health, National University of Singapore, Singapore*; ³*Université de Montréal, Montréal, Canada*; ⁴*Ontario Cancer Institute, Toronto, Canada*; ⁵*University of Michigan, Ann Arbor, MI*
- MP 603 **Application of Proteomics to the Characterization of Deformation of Nautilus Pompilius Shell in Captivity;** Timothy P. Cleland; Mehdi Moini; *Smithsonian Institution, Suitland, MD*
- Forensics, 604 - 628**
- MP 604 **Primate & Other Species Identification by Proteomic Analysis;** Heyi Yang; Bo Zhou; Mechthild Prinz; Donald Siegel; *Office of Chief Med Exam, New York, NY*
- MP 605 **Effect of Aging and Radiation on Museums' Proteinaceous Specimens at Molecular Levels;** Mehdi Moini; Raquel Fleskes; Christopher Rollman; *Smithsonian Institution, Suitland, MD*
- MP 606 **A Multi-Platform Strategy Applied to the Detection and Characterization of Falsified Artemisinin Combination Therapies;** Prabha Dwivedi¹; Maria Julia Culzoni¹; Mohamed El-Sherbiny²; Obinna Onwujekwe³; Ogochukwu Ezeoke³; Naiela Malik²; Ifeyinwa Fadeyi²; Harparkash Kaur²; Facundo M. Fernández¹; ¹*Georgia Institute of Technology, Atlanta, GA*; ²*London School of Hygiene and Tropical Medicine, London, UK*; ³*College of Medicine, University of Nigeria, Enugu, Nigeria*
- MP 607 **Identification and Attribution Profiling of Chemical Threat Agents Using Liquid Chromatography-Mass Spectrometry Applied to Amanita Toxins in Food;** Daniel Jansson; Sten-Åke Fredriksson; Calle Nilsson; *Swedish Defence Research Agency, Umeå, Sweden*
- MP 608 **Assessment of Decontamination Protocols on the Analysis of Hair by Multi-Modal Mass Spectrometry Imaging;** Bryn Flinders¹; Tiffany Porta²; Emmanuel Varesio²; Gerard Hopfgartner²; Ron M.A. Heeren¹; ¹*FOM Institute AMOLF, Amsterdam, The Netherlands*; ²*University of Geneva, Geneva, Switzerland*
- MP 609 **New Methods and Algorithms Using Aillons-MS/MS Data for the Identification of Isomeric Drugs/Drug-Metabolites in Blood Samples by LC-MS/MS Accurate-Mass-Quadrupole-Time-Of-Flight-Mass-Spectrometry;** Martin Josefsson¹; Bernhard Wuest²; Markus Roman¹; ¹*National Board of Forensic Medicine, Linköping, Sweden*; ²*Agilent Technologies GmBH, Waldbronn, Germany*
- MP 610 **Human Scent Differentiation;** Elizabeth Magnuson; Douglas J. Beussman; *St. Olaf College, Northfield, MN*
- MP 611 **Bulk versus LC-IRMS Amino-Acid-Specific Isotopic Analysis of Human Hair;** Yan An¹; Ayat Bani Rashaid¹; Glen P. Jackson²; ¹*Ohio University, Athens, OH*; ²*West Virginia University, Morgantown, WV*
- MP 612 **Rapid LC-MS/MS Screening Method for Forty-Three Phosphodiesterase Type 5 Inhibitors and Six Flavone Drugs in Counterfeit Samples;** Philippe Lebel; Karen C. Waldron; Alexandra Furtos; *Université de Montréal, Montréal, Canada*
- MP 613 **Detection of Metabolites of Drugs in Wastewater of Lubbock, TX;** David Klein; *Texas Tech University, Lubbock, TX*
- MP 614 **The Detection of Pseudo-Endogenous Androgenic Anabolic Steroids in Sports by Isotope Ratio Mass Spectrometry: A Global Sample Purification Strategy;** Xavier De La Torre; Cristiana Colamonici; Davide Curcio; Francesco Molaioni; Francesco Botrè; *Laboratorio Antidoping FMSI, Rome, Italy*
- MP 615 **An Improved and Accurate Method for the Analysis of Testosterone Related Urinary Metabolites Using Gas Chromatography-Combustion-Isotope Ratio Mass Spectrometry;** Alexandre Ouellet; Nicolas LeBerre; Christiane Ayotte; *INRS-IAF-Doping Control Laboratory, Laval, Canada*
- MP 616 **Identification Tree Based on Fragmentation Rules for Structure Elucidation of Organophosphorus Esters by Electrospray Mass Spectrometry;** Adrián Schwarzenberg¹; Farid Ichou¹; Richard B. Cole¹; Xavier Machuron-Mandard²; Christophe Junot³; Denis Lesage¹; Jean-Claude Tabet¹; ¹*UPMC/IPCM, UMR-CNRS 7201, Paris, France*; ²*CEA, Centre DAM/DIF Ile-de-France, Arpajon, France*; ³*CEA, DSV/IBiTec-S, Saclay, France*
- MP 617 **High Resolution and Accurate Mass Forensic Toxicology Screening in Plasma/Blood Sample Using Q Exactive Mass Spectrometer;** Isabelle Morel²; Sylvie Lepage²; Benedicte Duret¹; ¹*Thermo Fisher, Courtaboeuf, France*; ²*Forensic and Toxicology Laboratory, Rennes, France*
- MP 618 **Identification of Dyes Directly From Textile Fibers Using Infrared Matrix-Assisted Laser Desorption Electrospray Ionization (IR-MALDESI) Coupled to FT-ICR-MS;** Kristin H. Cochran; Jeremy A. Barry; Guillaume Robichaud; David C. Muddiman; *North Carolina State University, Raleigh, NC*
- MP 619 **Differentiation of Cotton Fibers Using Isotope Ratio Mass Spectrometry;** Kristi Gangelhoff; Douglas J. Beussman; *St. Olaf College, Northfield, MN*
- MP 620 **Characterization of the Photodegradation of Crystal Violet by LDI-TOF-MS;** Megan Czerniejewski; Gary Kinsel; *Southern Illinois University, Carbondale, Illinois*
- MP 621 **Utilization of DART Ion Source Coupled with HR/AM Q-Orbitrap MS for Car Paint Component Identification for Traffic Accident Criminal Investigation;** Wei-Shun Lai¹; Tai-Hung Chen²; Hsin-Hung Huang¹; Shu-Hui Lee¹; ¹*Mass Solutions Technology, New Taipei, Taiwan*; ²*Criminal Investigation Brigade, Taipei, Taiwan*
- MP 622 **Using a Portable Mass Spectrometer for Direct Screening of Arson and Clandestine Drug Laboratory Evidence;** Seth E. Hall; Adam E. O'Leary; Kyle E. Vircks; Christopher C. Mulligan; *Illinois State University, Normal, IL*
- MP 623 **Beyond the Ridge Pattern - Multi Informative Analysis of Latent Fingermarks by MALDI Mass Spectrometry;** Robert Bradshaw¹; Leesa Ferguson¹; Rosalind Wolstenholme¹; Malcolm Clench¹; Wei Rao²; Stephen Bleay³; Simona Francese¹; ¹*BMRC, Sheffield, UK*; ²*University of Nottingham, Nottingham, UK*; ³*CAST, Home Office, St Albans, UK*
- MP 624 **Towards a Versatile Mass Spectrometric Platform for Comprehensive Crime Scene Analytics;** Christopher Mulligan; Seth Hall; Adam O'Leary; Kyle Vircks; Jamie Wieland; *Illinois State University, Normal, IL*
- MP 625 **Detection, Quantification and Identification of Dermorphin in Equine Plasma and Urine by LC-MS/MS for Doping Control;** Fuyu Guan^{1, 3}; Cornelius Ubob²; Lawrence Soma^{1, 3}; Mary Robinson^{1, 3}; George Maylin⁴; Xiaoqing Li^{1, 3}; ¹*University of Pennsylvania, West Chester, PA*; ²*Pennsylvania Equine Toxicology and Research Center, West Chester, PA*; ³*University of Pennsylvania, Kennett Square, PA*; ⁴*Morrisville College, Ithaca, NY*

- MP 626 **Detection of Efavoxiral (RSR13) and Its Metabolites in Equine by Liquid Chromatography Tandem Mass Spectrometry;** Rong Yi; Jasmeet Sandhu; Sarah Zhao; Geoffrey Lam; Devan Loganathan; Barbara Morrissey; *MAXXAM Analytics, Burnaby, BC, Canada*
- MP 627 **Development of a Broad Range Screen, Utilising UPLC-MSMS, UPLC-Orbitrap and GC-MSMS for Drug Detection in Equine Hair Samples;** Bob Gray; Jane Bright; Marjaana Viljanto; Suzanne Lister; Steve Maynard; *HFL Sport Science, Fordham, UK*
- MP 628 **Identification and Quantification of an Opioid Peptide (Dermorphin) in Biological Matrix Using Liquid Chromatography Tandem Mass Spectrometry;** Daniel McKemie; Scott Stanley; Heather Knych; *University of California, Davis, CA*
- Environmental Analysis: General I, 629 - 652**
- MP 629 **QTOF Analysis and Sample Profiling for Environmental Applications;** Sylvain Merel; Tarun Anumol; Ai Jia; Shane Snyder; *University of Arizona, Tucson, Az*
- MP 630 **Comparative PCDD/F Analysis with GC-HRMS, GC-HRTOFMS and GCxGC-TOFMS: Discovery of Compounds Not Found in Environmental Analysis Guided by EPA 1613B;** Peter Gorst-Allman¹; David E Alonso²; Jayne de Vos³; Jack Cochran⁴; Eric Reiner⁵; ¹*Leco Africa, Kempton Park, Gauteng, RSA*; ²*LECO Corporation, Saint Joseph, MI*; ³*National Metrology Institute of South Africa, Pretoria, Gauteng, RSA*; ⁴*Restek Corporation, Bellefonte, PA*; ⁵*Ontario Ministry of the Environment, Toronto, Canada*
- MP 631 **Non-Target and Post-Target Analysis of Emerging Halogenated Contaminants in American and European Eels by Gas Chromatography-High Resolution Time-of-Flight MS;** Jonathan Byer¹; Grazina Pacepavicius²; Peter V. Hodson³; Claude Belpaire⁴; David E Alonso¹; Joe Binkley¹; Mehran Alaei²; ¹*LECO Corporation, St. Joseph, MI*; ²*Aquatic Contaminants Research, Environment Canada, Burlington, ON, Canada*; ³*Queen's University, Kingston, ON, Canada*; ⁴*Research Institute for Nature and Forest, Groenendaal-Hoeilaart, Belgium*
- MP 632 **LC/MS/MS with Novel Online SPE Valving Solution for the Analysis of Sub-Parts-Per-Trillion Contaminants in Drinking Water;** Sheher Bano Mohsin; Michael Woodman; *Agilent Technologies, Schaumburg, IL*
- MP 633 **Determination of Sucralose and Acesulfame in Source, Tap and Bottled Waters;** Jessica M. Boyd; Minghuo Wu; Dylan Baustad-Thomas; Steve Hruday; Xing-Fang Li; *University of Alberta, Edmonton, Canada*
- MP 634 **Determination of Odor Compounds in Surface Water by Solid Phase Micro Extraction and Quadrupole Time Of Flight Gas Chromatograph Mass Spectrometer;** Keun-Joo Choi¹; Yeanwoong You²; Seung-ju Yang²; ¹*Seoul Waterworks Research Institute, Seoul, South Korea*; ²*Agilent Technologies Korea, Ltd, Seoul, Korea*
- MP 635 **GCMS Approach towards the Characterization of Metabolites Formed Due to Biodegradation of Nicotine by a New Strain Pseudomonas plecoglossicida TND35;** Gurusamy Raman¹; Mohan Kasi²; Saravanan Subramaniyan²; Venkat Manohar²; Natarajan Sakthivel¹; ¹*Dept. of Biotechnology, Pondicherry University, Puducherry, India*; ²*IICMS, Chennai, India*
- MP 636 **Simultaneous Determination of Bisphenol A, Alkylphenols and Alkylphenol Ethoxylates in NIST SRM 2585 by GC/MS/MS;** Xinghua Fan; Cariton Kubwabo; Fang Wu; *Health Canada, Ottawa, Canada*
- MP 637 **The New Fast Approach for the Determination of Semi Volatile Organic Compounds According to EPA 8270D;** Ilaria Ferrante¹; Daniele Recenti¹; Luigi Motti²; Chiara Abate¹; ¹*DANI, Cologno Monzese, Italy*; ²*DANI SA, Contone, Switzerland*
- MP 638 **EPA 8260: Dynamic Headspace Purge & Trap GC/TOF-MS for VOCs Determination in Environmental Matrices;** Roberta Lariccia¹; Ilaria Ferrante¹; Daniele Recenti¹; Luigi Motti²; ¹*DANI, Cologno Monzese, Italy*; ²*Dani SA, Contone, Switzerland*
- MP 639 **Selective and Sensitive Detection and Quantification of Stockholm Convention POPs, Including Dioxins, Using Atmospheric Pressure Gas Chromatography MS/MS;** Kendon Graham^{1,2}; Jody Dunstan^{1,2}; Michael McCullagh^{1,2}; Ingrid Ericson Jogsten³; Jessica Hagberg³; Bert van Bavel³; ¹*Waters Corporation, Milford, MA*; ²*Waters Corporation, Manchester, UK*; ³*MTM Research Centre, Orebro, Sweden*
- MP 640 **In situ Detection of Ambient Aerosol in Jiangmen, China Using Single Particle Aerosol Mass Spectrometry;** Mei Li¹; Li Zhang¹; Lei Li¹; Zhengxu Huang¹; Wei Gao¹; Ping Cheng¹; Zhen Zhou¹; Zhong Fu²; Huiqing Nian²; ¹*Shanghai University, Shanghai, China*; ²*Guangzhou Hexin Analytical Instrument Company, Guangzhou, China*
- MP 641 **Air Quality Test Using Home-made Portable Membrane Inlet Single Photon Ionization Time-of-flight Mass Spectrometer;** Guobin Tan¹; Wei Gao¹; Zhengxu Huang¹; Mei Li¹; Ping Cheng¹; Zhen Zhou¹; Huiqing Nian²; Zhong Fu²; ¹*Shanghai University, Shanghai, China*; ²*Guangzhou Hexin Analytical Instrument Company, Guangzhou, China*
- MP 642 **Screening of Pesticides in Water Using SPE On Line;** Stefano Lucini; Stefano Zaza; *Shimadzu, Milano, Italy*
- MP 643 **Method Development for Detection of Vinyl Chloride from Water using Solid Phase Micro-extraction (SPME) with Gas Chromatography/Mass Spectrometry (GC/MS);** Rachel Logemann; Christine N. Dalton; *Carson-Newman College, Jefferson City, TN*
- MP 644 **Preliminary Analysis of Athabasca Samples Using Gas Chromatography Atmospheric Pressure Chemical Ionization Fourier Transform Ion Cyclotron Resonance Mass Spectrometry;** Mark Barrow¹; Kerry Peru²; John Headley²; ¹*University of Warwick, Coventry, UK*; ²*Environment Canada, Saskatoon, Canada*
- MP 645 **Use of Non-Targeted Environmetrics and GCxGC-TOF-MS to Assess the Sewage Treatment Plant Removal Efficiency of Emerging Contaminants;** Peter Haglund¹; Ulrika Olofsson¹; Kevin Siek²; David Alonso²; ¹*Umea University, Department of Chemistry, Umea, Sweden*; ²*Leco Corp. Life Science & Chemical Analysis Center, St Joseph, MI*
- MP 646 **An Online VOCs Monitoring System Using Ion Trap Based Gas Chromatography Mass Spectrometry Technology;** Luhong Wen¹; Jiancheng Yu¹; Xiaoxu Li²; ¹*Ningbo University, Ningbo, China*; ²*Suzhou University, Suzhou, China*
- MP 647 **Development of Methods on the Basis of Large-Volume-Injection Solid-Phase Extraction Hyphenated to Tandem Mass Spectrometry for the Determination of Hormones;** Norbert Wenkel²; Thorsten Teutenberg¹; Jochen Türk¹; Christoph Portner¹; Linda Gehrmann¹; Sandy-Dominic Freihoff¹; ¹*IUTA e.V., Duisburg, Germany*; ²*Axel Semrau GmbH & Co. KG, Sprockhövel, Germany*
- MP 648 **FT-ICR MS Analysis of complex Mixtures Produced by Pyrolysis of Plastics;** Justin Elliott¹; Alan T. Taylor¹; David Kilgour²; Meric Gursoy³; Pat Langridge Smith¹; Peter O'Connor²; Ondrej Masek³; Logan Mackay¹; ¹*School of Chemistry, University of Edinburgh, Edinburgh, UK*; ²*Department of Chemistry, University of Warwick, Coventry, UK*; ³*University of Edinburgh, Edinburgh, UK*

- MP 649 **Direct Analysis of Secondary Organic Aerosol Using the Flowing Atmospheric-Pressure Afterglow (FAPA) Ambient Mass Spectrometry source;** [Martin Brüggemann](#); Thorsten Hoffmann; [Johannes Gutenberg University, Mainz, Germany](#)
- MP 650 **Elemental Composition Analysis of Biogenic Secondary Organic Aerosol by FTMS;** [Jae-Eun Park](#)¹; Sun Jong Baek¹; Hyun Sik Kim¹; Jun-Hyun Park²; Woung Woo²; Ho-Jin Lim²; ¹*Korea Basic Science Institute, Ochang-Myun Cheongwon-Gun, South Korea*; ²*Kyungpook National University, Daegu, South Korea*
- MP 651 **Combination of FTMS and DirectProbe(DIP) Analysis of Complex Cigarette Smoke;** [Hu Nan](#)¹; [Pu Hai](#)¹; [Wu Yiqin](#)²; ¹*Brucker China, Beijing, China*; ²*Yunnan Academy of Tobacco Science, Kunming, Yunnan, China*
- MP 652 **Molecular Characterization of Sedimentary Organic Matter in the Estuary-Lagoon System Cananéia-Iguape (Brazil) by Fourier Transform Ion Cyclotron Resonance Mass Spectrometry;** [Giovana Bataglion](#)¹; [Clécio Klitzke](#)¹; [Diego Senatore](#)²; [Roberto Barcellos](#)³; [Rolf Weber](#)²; [Marcos Eberlin](#)¹; ¹*Unicamp, Campinas, Brasil*; ²*USP, São Paulo, Brasil*; ³*UFPE, Recife, Brasil*
- Plant"omics", 653 - 671**
- MP 653 **Mass Spectrometry Analysis of Redox Proteins in Guard Cell Hormone Signaling;** [Mengmeng Zhu](#)¹; [Ning Zhu](#)¹; [Wenyuan Song](#)¹; [Alice Harmon](#)¹; [Sarah Assmann](#)²; [Sixue Chen](#)¹; ¹*University of Florida, Gainesville, FL*; ²*Pennsylvania State University, State College, PA*
- MP 654 **Relative Mass Defect Filtering for Discovery of Conjugated Terpenoid Metabolites from Complex Plant Extracts;** [E.A. Prabodha Ekanayaka](#); [A. Daniel Jones](#); *Michigan State University, East Lansing, MI*
- MP 655 **Unusual Fragmentation Patterns of Ionized Lignin Model Compounds with α-O-4 Linkages in (+)/(-)-ESI/ Tandem Mass Spectrometry;** [Huaming Sheng](#); *Purdue University, West Lafayette, IN*
- MP 656 **Extraction Methodology and Metabolite Analysis by LC-MS of *Eucalyptus grandis*, Resistant and Susceptible to *Puccinia psidii*, Aiming for Identifying Resistance Biomarkers;** [Thais Regiani](#); [Felipe Garbelini Marques](#); [Ilara Gabriela Frasson Budzinski](#); [Fabricio Edgar de Moraes](#); [Carlos Alberto Labate](#); *Max Feffer Laboratory of Plant Genetics, Piracicaba, Brazil*
- MP 657 **Comparative Metabolomic Studies on *Portulaca oleracea* L. Using GC-MS and LC-MS;** [Li-Chun Liu](#); [Qing Wang](#); [Ying Wang](#); [Ming-Quan Guo](#); *Wuhan Botanical Garden, Chinese Academy of Science, Wuhan, China*
- MP 658 **Atmospheric Pressure Photoionization Combined with UV Laser Desorption Mass Spectrometry;** [Katie-Jo Galayda](#); [Tim Anderson](#); [Andrew Korte](#); [Young-Jin Lee](#); [R. S. Houk](#); *Iowa State University, Ames, IA*
- MP 659 **Application of Sub-2µm Particle CO₂-based Chromatography Coupled to Mass Spectrometry for Chemical Profiling of Various Chamomiles;** [Bharathi Avula](#)¹; [Yan-Hong Wang](#)¹; [Michael D Jones](#)²; [Larry Meeker](#)²; [Kate Yu](#)²; [Troy J. Smillie](#)¹; [Ikhlās A. Khan](#)^{1,3}; ¹*University of Mississippi, NCNPR, University, MS*; ²*Waters, Milford, MA*; ³*University of Mississippi, School of Pharmacy, University, MS*
- MP 660 **Detecting Substances in Tea Leaves by Live Single-cell Mass Spectrometry;** [Iwao Sakane](#)¹; [Yuko M Sagesaka](#)¹; [Hajime Mizuno](#)²; [Naohiro Tsuyama](#)²; [Takanori Harada](#)³; [Tsutomu Masujima](#)²; ¹*ITO-EN LTD, Mckinhohara, Japan*; ²*RIKEN Quantitative Biology Center (QBiC), Osaka, Japan*; ³*Hiroshima Univ. Grad. Sch. Biomed. Sci, Hiroshima, Japan*
- MP 661 ***Quercus ilex*: Protein Identification Strategies for an Orphan Tree Species;** [Christof Lenz](#)¹; [Henning Urlaub](#)¹; [Jesús V. Jorrin Novo](#)²; ¹*Max Planck Institute for Biophysical Chemistry, Goettingen, Germany*; ²*University of Córdoba, Córdoba, Spain*
- MP 662 **Characterization of Barley Chloroplast Proteins by Quantitative Proteomics Using Optimized 2D-LC Coupled to an LTQ-Orbitrap Velos Tandem Mass Spectrometer;** [Jørgen Petersen](#)¹; [Richard R. Sprenger](#)¹; [Adelina Rogowska-Wrzesinska](#)¹; [Pai Padas](#)²; [Ken Krogholm](#)²; [Søren Husted](#)²; [Poul Erik Jensen](#)²; [Jan Kofod Schjoerring](#)²; [Ole Nørregaard Jensen](#)¹; ¹*University of Southern Denmark, Odense C, Denmark*; ²*University of Copenhagen, Copenhagen, Denmark*
- MP 663 **Comparative Characterization of Carotenoid Regulatory Network in Melon Using TMT-based Quantitative Proteomics Analysis;** [Yong Yang](#)¹; [Li Li](#)¹; [Yongqiang Wang](#)²; [Theodore.W. Thannhauser](#)¹; ¹*USDA-ARS at Cornell University, Ithaca, NY*; ²*Department of Plant Breeding and Genetics, Cornell, Ithaca, NY*
- MP 664 **An Untargeted, Quantitative Comparison of Early ABA-induced Phosphoproteomic Changes Using Wildtype and Quadruple ABA Receptor Mutant A. *Thaliana* Strains;** [Benjamin Minkoff](#); *University of Wisconsin, Madison, WI*
- MP 665 **Integrating Multiple 'omics' Analysis of Fruit Development in High-Yielding Oil Palm Mesocarp;** [Huey Fang Teh](#); *Sime Darby Technology Centre, Serdang, Malaysia*
- MP 666 **Metabolite Profile of Sugarcane (*Saccharum*Spp) under Water Stress;** [Simone Guidetti-Gonzalez](#); [Ilara Gabriela Frasson Budzinski](#); [Fabricio Edgar de Moraes](#); [Carlos Alberto Labate](#); *ESALQ/USP, Piracicaba, Brazil*
- MP 667 **The Effect of Genetics and Environment on the Metabolome of Commercial Maize Hybrids Using LC/MS: A Multisite Study;** [Vincent Asiago](#); [Chris Vlahakis](#); [Hamid Baniasadi](#); [Jan Hazebroek](#); [Cathy Zhong](#); *DuPont Pioneer, Johnston, IA*
- MP 668 **Characterization of Cytosolic Protein Complexes in Plants Using Multi-Step Chromatographic Separation and Quantitative Mass Spectrometry;** [Uma Aryal](#)¹; [Yi Xiong](#)²; [Eileen Mallery](#)³; [Mark Hall](#)¹; [Jun Xie](#)⁴; [Daisuke Kihara](#)²; [Daniel Szymanski](#)³; ¹*Department of Biochemistry, Purdue University, West Lafayette, IN*; ²*Department of Computer Science, Purdue University, West Lafayette, IN*; ³*Department of Agronomy, Purdue University, West Lafayette, IN*; ⁴*Department of Statistics, Purdue University, West Lafayette, IN*
- MP 669 **Integrating Genomics, Transcriptomics, and Proteomics for the Identification of Protein Sequence Variants in the Genus *Populus*;** [Paul Abraham](#)^{1,2}; [Xiaoqing Wang](#)³; [Priya Ranjan](#)²; [Bing Zhang](#)³; [Gerald Tuskan](#)²; [Robert Hettich](#)²; ¹*University of Tennessee, Knoxville, TN*; ²*Oak Ridge National Laboratory, Oak Ridge, TN*; ³*Vanderbilt University School of Medicine, Nashville, TN*
- MP 670 **Stable Isotope Labeling of *Brachypodium distachyon* with Nitrogen 15 for Quantitative Mass Spectrometry;** [David Shearer](#)¹; [Victor Spicer](#)¹; [Steve Haber](#)²; [Kenneth Standing](#)¹; ¹*University of Manitoba, Winnipeg, Canada*; ²*Agriculture and Agri-Food Canada, Winnipeg, Canada*
- MP 671 **Absolute Quantification of TIR1/AFB Proteins in *Arabidopsis* Using the QconCAT Strategy;** [Kai-Ting Fan](#); [Jerry D. Cohen](#); [William M. Gray](#); [Adrian D. Hegeman](#); *University of Minnesota, Twin Cities, MN*

Agriculture, 672 - 682

- MP 672 **Coupling Genetics and Molecular Biology with Mass Spectrometry Revealed Arboviruses Usurp Similar Transport Pathways in Insect Vectors and Hosts;** Michelle Cilia^{1,2}; Michael Bereman³; Cecilia Tamborindeguy⁴; Qiaoxia Shang^{2,5}; David Igwe^{2,6}; Stacy Deblasio¹; Theodore Thannhauser¹; Stewart Gray¹; Michael MacCoss³; ¹USDA-Agricultural Research Service, Ithaca, NY; ²Plant Pathology, Cornell University, Ithaca, NY; ³Genome Sciences, University of Washington, Seattle, WA; ⁴Entomology, Texas A&M University, College Station, TX; ⁵Beijing University of Agriculture, Beijing, China; ⁶International Institute of Tropical Agriculture, Ibadan, Nigeria
- MP 673 **Coupling a Simple, ELISA-based Co-Immunoprecipitation Technique with Tandem Mass Spectrometry to Characterize a Plant-Virus Interactome;** Stacy Deblasio¹; Michael Bereman²; Jaclyn Mahoney³; Theodore Thannhauser¹; Stewart Gray^{1,3}; Michael MacCoss²; Michelle Cilia^{1,3}; ¹USDA-Agricultural Research Service, Ithaca, NY; ²Genome Sciences, University of Washington, Seattle, WA; ³Plant Pathology, Cornell University, Ithaca, NY
- MP 674 **Quantitation of Antiviral Drugs in Chicken Samples by Ultra-High Performance Liquid Chromatography Tandem Triple Quadrupole Mass Spectrometry with Triggered MRM;** Jianzhong Li; Tao Bo; Cuiling Wu; Wei Chen; Zhixu Zhang; *Agilent Technologies(China), Beijing, China*
- MP 675 **Comparison of Proteomes from Escherichia coli Strains that cause Transient and Persistent Intramammary Infections;** John Lippolis¹; Timothy Reinhardt¹; Randy Sacco¹; Brian Nonnecke¹; Belgin Dogan²; Kenneth Simpson²; Ynte Schukken²; ¹USDA ARS - Nat'l Animal Disease Ctr., Ames, IA; ²Cornell University, College of Veterinary Medicine, Ithaca, NY
- MP 676 **Fragmentation Patterns of Monomeric and Oligomeric Wine Stilbenoids by UHPLC-ESI-QTOF MS;** Ryan Moss¹; Qunyong Mao²; Dennis Taylor^{1,2}; Cédric Saucier^{1,2}; ¹University of British Columbia, Kelowna, Canada; ²University of Adelaide, Adelaide, SA
- MP 677 **Proteomic Analysis of the Effect of Pre-Sound Wave Stimulation on Botrytis cinerea-infected Arabidopsis;** Yeong-Sang Kwon¹; Sung Woo Jeong¹; Hanhong Bae²; Sung Chul Shin¹; Mi-Jeong Jeong³; Soo-Chul Park³; Dong-Won Bae¹; ¹GyeongSang National University, Jinju, South Korea; ²Yeungnam University, Gyeongsan, Korea; ³National Academy of Agricultural Science, Suwon, Korea
- MP 678 **Distribution of Metabolites and Biosynthesis in a Cell of a Plant Tissue Analyzed by Live Single-cell Mass Spectrometry;** Shuichi Mastuda¹; Satomi Hatano-Saga²; Sachiko Date²; Hajime Mizuno²; Naohiro Tsuyama¹; Tsutomu Masujima^{1,2}; ¹Graduate School of Biomedical, Hiroshima University, Hiroshima, Japan; ²Quantitative Biology Center (QBiC), RIKEN, Suita, Japan
- MP 679 **Analysis of Various Deoxynivalenol (DON) LC-MS Methods without Acetate in the Mobile Phase;** Sheldon M. Williams; Yoko S. Johnson; Treeske Ehresmann; Michele M. Swarbrick; *Minnesota Department of Agriculture, St Paul, MN*
- MP 680 **Stable Isotope Tracer Guided LC-MS Metabolomics to Elucidate Biochemical Mechanisms of Temperature Dependent Anthocyanin Degradation in Grapes Cultured in vitro;** Alexander Chassy¹; Christoph Büschel²; Hye-Young Lee¹; Larry Lerno¹; Anita Oberholster¹; Daniela Barile¹; Rainer Schuhmacher²; Andrew Waterhouse¹; ¹University of California, Davis, CA; ²University of Natural Resources and Life Sciences, Vienna, Austria

- MP 681 **Muscle, Marbling, maXis and Mascot - Meat Quality Phenotyping;** Stefan Clerens¹; Santanu Deb-Choudhury¹; Anita Grosvenor¹; Stephen Haines¹; Ancy Thomas¹; Peter Dobbie²; Chris McMahon²; Monica Senna-Salerno²; Gina Nicholas²; Shelley Falconer²; Katja Rosenvold²; ¹AgResearch Lincoln Research Centre, Christchurch, New Zealand; ²AgResearch Ruakura Research Centre, Hamilton, New Zealand
- MP 682 **Quantitative Analysis of the Host-Pathogen Proteomics of Israeli Acute Paralysis Virus (IAPV) Infection in the Honey Bee (Apis mellifera);** Sarah Natrasany¹; Humberto Boncristiani²; Leonard Foster¹; ¹University of British Columbia, Vancouver, Canada; ²University of North Carolina, Greensboro, NC

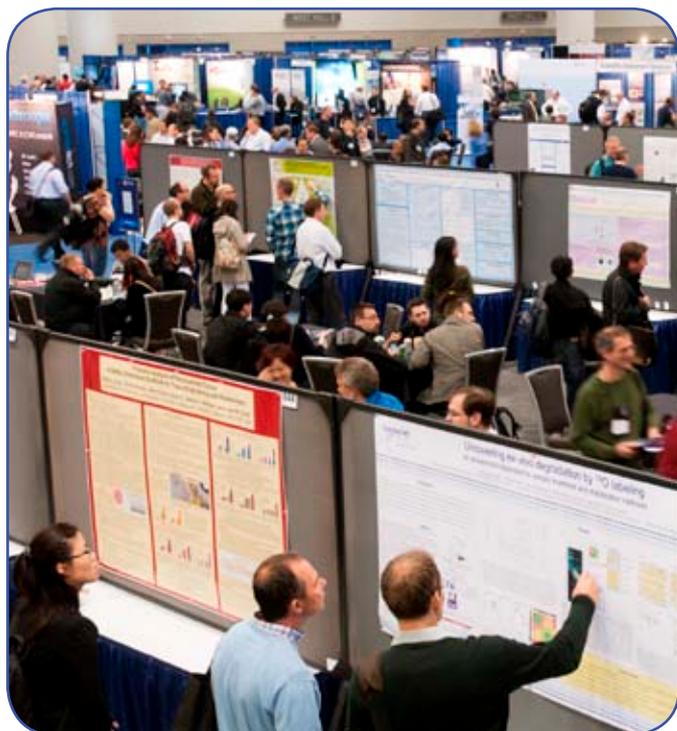
Natural Products, 683 - 714

- MP 683 **LC-MS/MS Study of Indian Ginseng Metabolism;** Manoj Pillai^{1,2}; Takeo Sakuma^{1,2}; Carmai Seto^{1,2}; ¹AB SCIEX, Gurgaon, India; ²AB SCIEX, Concord, Canada
- MP 684 **Unknowns Analysis of Natural Products Using GC/Q-TOF and GC/IonTrap in Positive Electron Impact and Positive Chemical Ionization Modes with MS/MS;** Ron Honnold; Rafael Acosta; *Agilent Technologies, Santa Clara, CA*
- MP 685 **Accurate Mass Retention Time Locked Flavor Database by GC/Q-TOF;** Susan E. Ebeler³; Sean LaFond³; Frank David²; Stephan Baumann¹; Tim Conjelko¹; Sofia Aronova¹; ¹Agilent Technologies, Inc., Santa Clara, CA; ²Research Institute for Chromatography, Kortrijk, Belgium; ³UC Davis Department of Viticulture and Enology, Davis, CA
- MP 686 **Mass Spectrometric Characterization of Pyrrolizidine Alkaloids in Black Cohosh;** Dejan Nikolic; Guannan Li; Tamara Cisowska; Tanja Goedecke; Shaon-Nong Chen; David Lankin; Guido Pauli; Richard van Breemen; *University of Illinois College of Pharmacy, Chicago, IL*
- MP 687 **In-situ Measurement of the Defense Response of the Sea Anemone to Spatial Encroachment Stresses Using On-line LC/MS;** James Buchner; Ross Willoughby; James Buchner Jr; Robert Moskala; *BIOMICom, Inc., Allison Park, PA*
- MP 688 **Optimized Plant Extractions for Phytochemical Library Construction: Evaluating Solvent Systems Using Metabolomics Approaches;** Amanda C. Martin; Alison D. Pawlus; Erin Jewet; Stephen Brockman; Donald L. Wyse; Adrian D. Hegeman; *University of Minnesota, Saint Paul, MN*
- MP 689 **Identification of Antibacterial Component from Extract of Garcinia indica Fruit Rind Using LC/MS/MS;** Shailendra Rane¹; Shailesh Damale¹; Shruti Raju¹; Rashi Kochhar¹; Deepti Bhandarkar¹; Ajit Datar¹; Pratap Rasam¹; Jitendra Kelkar¹; Manasi Kher²; Komal Barbade²; ¹Shimadzu Analytical (India) Pvt. Ltd., Andheri (E), Mumbai, Maharashtra, India; ²G.N.I.R.D., G.N. Khalsa College, Matunga, Mumbai, Maharashtra, India
- MP 690 **Study of Antibacterial Activity of Essential Oil Components Obtained from Pericarp of Zanthoxylum rhetsa (Indian origin) Using HS-GCMS;** Durvish Sawant¹; Dheeraj Handique¹; Ankush Bhone¹; Prashant Hase¹; Sanket Chiplunkar¹; Jitendra Kelkar¹; Ajit Datar¹; Pratap Rasam¹; Nital Patil²; ¹Shimadzu Analytical (India) Pvt. Ltd., Andheri (E), Mumbai, Maharashtra, India; ²G.N.I.R.D., G.N. Khalsa College, Matunga, Mumbai, Maharashtra, India
- MP 691 **Characterization of Flavonoids and Phytoestrogens in an Extract of Pueraria Mirifica by UHPLC-MS-MS;** Jeff Dahl¹; Rocky Graziose²; Youssef W. Mirhom²; Frank S. D'Amelio²; ¹Shimadzu, Columbia, MD; ²Bio-Botanica, Hauppauge, NY

- MP 692 **Alkaloids Characterization of *Tabernaemontana catharinensis* by ESI-Orbitrap**; [Sidnei Moura](#); Flávio Marinho; Carla Nicola; Mariana Roesch-Ely; *Caxias do Sul University, Caxias do Sul, Brazil*
- MP 693 **Fragmentation Study and Comprehensive Profiling of Escin, a Mixture of Triterpene Saponins from *Aesculus Hippocastanum*, by LC-MS/MS**; [Antonio Triolo](#)¹; Elisa Libralesso¹; Serena Staccioli²; Fabiana Tavani²; ¹*Menarini Ricerche Spa, Firenze, ITALY*; ²*A. Menarini Manufacturing Logistics and Services, Firenze, Italy*
- MP 694 **High Resolution UPLC-TOF Mass Spectrometric Characterization of an Herbal Preparation of Senna**; [Tiffany A. Freed](#)¹; Melanie A. Rehder Silinski¹; James C. Blake¹; Megan Grabenauer¹; Reshan A. Fernando¹; Veronica G. Robinson²; Suramya Waidyanatha²; ¹*RTI International, Research Triangle Park, NC*; ²*Division of National Toxicology Program, NIEHS, Research Triangle Park, NC*
- MP 695 **Characterization of Commercially Available Stevia-derived Sweeteners Using Liquid Chromatography-High Resolution Time of Flight Mass Spectrometry and Advanced Data Processing**; [Juergen Wendt](#)¹; Norbert Helle²; Jutta Lintelmann³; Jeffrey S. Patrick⁴; ¹*LECO European LSCA Centre, Moechengladbach, Germany*; ²*TeLA GmbH, Bremerhaven, Germany*; ³*Helmholtz Zentrum München, Neuherberg, Germany*; ⁴*LECO Corporation, Separation Sciences Division, St. Joseph, MI*
- MP 696 **Quality-by-Design UHPLC Method Development with High Resolution MS^E for Biomarker Identification of *Phyllanthus* Species**; [Amadeu Iglesias](#)¹; Ricardo Sprenger²; Fernando de Paula¹; Tiago Campos¹; Michael Murgu¹; Quezia Cass²; ¹*Waters Corporation, Barueri, Brazil*; ²*Universidade Federal de São Carlos - UFSCar, São Carlos, SP, Brazil*
- MP 697 **Structural Elucidation of Iridoids from the Leaves of *Vitex negundo* Linn. by Liquid Chromatography-Tandem Mass Spectrometry**; [Lolita A. Lagurin](#)¹; [Maria Cristina A. Dancel](#)²; Jodie V. Johnson²; Fabian M. Dayrit¹; ¹*Ateneo de Manila University, Quezon, Philippines*; ²*University of Florida, Gainesville, FL*
- MP 698 **Mapping the “Known Metabolome” Using SciFinder Scholar for More Efficient HPLC-PDA-HRMS Dereplication of Crude Plant Extracts**; [Andrew Newsome](#); Elizabeth Martinez; Richard van Breemen; *University of Illinois College of Pharmacy, Chicago, IL*
- MP 699 **Analysis of Red Propolis Samples by UPLC-MS**; [Begoña Gimenez-Cassina](#); Alexandra C.H.F. Sawaya; *BTPB - Institute of Biology - Unicamp, Campinas, Brazil*
- MP 700 **Analysis of Bioactive Loline Alkaloids in *Achnatherum robustum* and *Lolium pratense* by High Resolution Mass Spectrometry**; [Scott Jarmusch](#)¹; Mario Figueroa¹; Brandie Ehrmann¹; Tatsiana Shymanovich¹; Stanley Faeth¹; Jonathan Scheerer²; Nadja Cech¹; ¹*University of North Carolina Greensboro, Greensboro, NC*; ²*College of William and Mary, Williamsburg, VA*
- MP 701 **Rapid Screening of Herbal Extracts by Thin Layer Chromatography-Information Dependent Acquisition-High Resolution Mass Spectrometry (TLC-IDA-HRMS)**; [Jeffrey Morré](#)¹; Jeremiah Kelley¹; Nora Gray²; Amala Soumyanath²; Jan F. Stevens¹; Claudia Maier¹; ¹*Oregon State University, Corvallis, OR*; ²*Oregon Health and Science University, Portland, OR*
- MP 702 **Imaging Metabolite Distributions in *Hypericum* Plants**; [Zhihong Song](#)^{1,2}; Matthew C. Crispin¹; Eve Syркиn Wurtele¹; Andrew R. Korte^{1,2}; Young-Jin Lee^{1,2}; Basil J. Nikolau^{1,2}; ¹*Iowa State University, Ames, IA*; ²*The Ames Laboratory of US DOE, Ames, IA*
- MP 703 **Use of t-BDMS Derivatization for Enhanced Gas Chromatography-Mass Spectrometry Analysis of Hydroxy Terpenes in Essential Oils**; [Deborah Chance](#); Thomas Mawhinney; *University of Missouri, Columbia, MO*
- MP 704 **Determination of Vanillin in Natural Vanilla Bean Extracts from Different Geographic Regions Using LC/TOF**; Avinash Dalmia; [Daniel Pentek](#); Robert Packer; George Perkins; *Perkinelmer, Shelton, CT*
- MP 705 **Differentiation of Positional Carotenoid Glucoside Isomers (Crocins) and Detection of a New Aglycon Moiety in *Crocus Sativus L.***; [Nikolaos Stavros Koulakiotis](#)^{1,2}; Ernst Pittenauer³; Guenter Allmaier³; Anthony Tzarpopoulos^{1,4}; ¹*The Goulandris Natural History Museum, Kifissia, Greece*; ²*University of Patras, Pharmacy Department, Patras, Greece*; ³*Vienna University of Technology, Vienna, Austria*; ⁴*University of Athens Medical School, Pharmacology, Athens, Greece*
- MP 706 **Quantitative Proteomics Analysis for the Effects of Garlic Extracts on Neuroinflammation**; Hui Zhou^{1,3}; Zhe Qu^{1,3}; Dineo L Nkholise^{1,3}; Jilong Li⁴; Jianlin Cheng⁴; C. Michael Greenlie⁵; Valeri V. Mossine²; Thomas Mawhinney²; Paula N Brown⁷; Kevin L. Fritsche⁶; Dennis B. Lubahn²; Grace Y. Sun^{2,3}; [Zezong Gu](#)^{1,3}; ¹*University of Missouri School of Medicine Pathology, Columbia, MO*; ²*Biochemistry, Columbia, Mo*; ³*Center for Translational Neuroscience, University, Columbia, MO*; ⁴*Department of Computer Science, Informatics Insti, Columbia, Mo*; ⁵*Chemistry, Columbia, Mo*; ⁶*Division of Animal Sciences, Columbia, Mo*; ⁷*British Columbia Institute of Technology, Vancouver, BC, Canada*
- MP 707 **Discovering Peptidic Natural Products by Computational Mass Spectrometry and Genome Mining**; [Hosein Mohimani](#)¹; Roland Kersten¹; Wei Ting Liu¹; Mingxun Wang¹; Samuel O. Purvine²; Si Wu²; Heather M. Brewer²; Ljiljana Pasa-Tolic²; Bradley S. Moore¹; Pieter C. Dorrestein¹; Pavel A. Pevzner¹; ¹*University of California, San Diego, La Jolla, CA*; ²*PNNL, Richland, WA*
- MP 708 **Identification of Bioactive Compounds in Gentiana by UHPLC tandem QTOF Mass Spectrometry**; [Wei Du](#); Xiaorong Ran; Tao Bo; Wei Chen; *Agilent Technologies(China) Co. Ltd., Beijing, China*
- MP 709 **Rapid Identification of Major Active Constituents in Traditional Chinese Medicine Using UHPLC/ High Resolution Q-TOF Mass Spectrometry and Database Searching**; [Xiaorong Ran](#); Tao Bo; Wei Chen; Zhixu Zhang; *Agilent Technologies (China), Beijing, China*
- MP 710 **Rapid Accurate Mass Technology for Comparative Metabolism Study of Isoimperatorin and Imperatorin in Liver Microsomes of Five Species**; [Kerong Zhang](#)¹; Xiaomei Zhuang²; Yuhuan Zhong²; Ping Du¹; Jiehui Hu¹; Ting Liu¹; Jingchao Lin¹; Yongming Xie¹; Hua Li²; ¹*AB SCIEX, Beijing, China*; ²*Beijing Institute of Pharmacology and Toxicology, Beijing, China*
- MP 711 **Identification and Confirmation of Ginsenosides in Panax Extract Using a hybrid Triple Quadrupole Linear Ion Trap System**; Dandan Si; Ting Liu; [Jiehui Hu](#); Xiaoyan Xu; Ping Du; Yongming Xie; *AB SCIEX, Shanghai, CN*
- MP 712 **Specific Drug Target Identification with Quantitative Chemical Proteomics**; [Jigang Wang](#)¹; Xing Fei Tan¹; Van Sang Nguyen¹; Peng Yang²; Jing Zhou¹; Mingming Gao³; Zhengjun Li⁴; Teck Kwang Lim¹; Yingke He⁵; Chye Sun Ong⁶; Yifei Lay¹; Jianbin Zhang¹; Guili Zhu⁵; Yu Keung Mok¹; Han-Ming Shen¹; Qingsong Lin¹; ¹*National University of Singapore, Singapore, Singapore*; ²*School of Pharmacy, University of Pittsburgh, Pittsburgh, PA*; ³*University of Maryland, Rockville, MD*; ⁴*NUS Environmental Research Institute, Singapore, Singapore*; ⁵*Duke-NUS Graduate Medical School, Singapore, Singapore*; ⁶*Singapore Polytechnic, Singapore, Singapore*

- MP 713 **Identification of Complex Constituents in Herba Sarcandrae Using High Speed Accurate Mass Technology**; Guoliang Xu¹; Yu Lei²; Ting Liu²; Qiyun Zhang¹; Guangbin Shang¹; Xiaoyan Xu²; Ping Du²; Yongming Xie²; Xilan Tang¹; ¹Jiangxi University of Traditional Chinese Medicine, Nanchang, Jiangxi Province, China; ²AB SCIEX Asia Pacific Application Support Center, Shanghai, China
- MP 714 **Development of Qualitative Method for Marker Compounds of Bang-poong-tong-sung-san by Iontrap Hybrid Time Of Flight (IT-TOF) Mass Spectrometer**; Unyong Kim; Han Young Eom; Joon Hyuk Suh; Sang Beom Han; *Chung Ang Univ., Seoul, South Korea*
- Astrobiology & Atmospheric Chemistry, 715 - 720**
- MP 715 **Astrobiologically-Relevant Ions in the Gas Phase**; Callie Cole¹; Nadine Wehres^{1,2}; Jennifer Reece¹; Nicholas Demarais¹; Theodore Snow^{2,3}; Veronica Bierbaum^{1,2}; ¹University of Colorado at Boulder, Boulder, CO; ²Center for Astrophysics and Space Astronomy, Boulder, CO; ³Department of Astrophysical and Planetary Sciences, Boulder, CO
- MP 716 **Characterization of Heavy Ion Radiation-Induced Changes of Lipid Biochemistry in the Liver by MALDI Imaging Mass Spectrometry**; Alexander S. Shavkunov¹; Huiling Liu¹; Norelle C. Wildburger^{1,2}; Maureen McCarthy^{3,4}; Yongjia Yu^{3,4}; Lauren N. Macias^{3,4}; Astrid D. Corbitt^{3,4}; Daniel Olivares^{3,4}; Robert L. Ullrich^{3,4}; Carol L. Nilsson^{1,4}; ¹Department of Pharmacology and Toxicology, UTMB, Galveston, TX; ²Department of Neuroscience and Cell Biology, UTMB, Galveston, TX; ³Department of Radiation Oncology, UTMB, Galveston, TX; ⁴UTMB Cancer Center, Galveston, TX
- MP 717 **Characterization of Biogenic Secondary Organic Aerosol using Ultrahigh-Resolution FT-ICR Mass Spectrometry**; Lynn Mazzoleni; Yunzhu Zhao; Megan Dalbec; *Michigan Technological University, Houghton, MI*
- MP 718 **In situ Analysis of Mars Analog Samples Containing Perchlorate by the MOMA Linear Ion Trap Mass Spectrometer**; Ricardo Arevalo Jr.¹; Veronica Pinnick²; Xiang Li²; Friso van Amerom³; Ryan Danell⁴; William Brinckerhoff¹; Paul Mahaffy¹; ¹NASA Goddard Space Flight Center, Greenbelt, MD; ²University of Maryland Baltimore County, Baltimore, MD; ³SRI International, Inc., St. Petersburg, FL; ⁴Danell Consulting, Inc., Greenville, NC
- MP 719 **Miniature Two-Step Laser Time-of-Flight Mass Spectrometer for in situ Planetary Missions**; Xiang Li¹; Stephanie Getty²; William Brinckerhoff²; Timothy Cornish³; Scott Ecelberger³; Melissa Floyd²; ¹University of Maryland, Baltimore County, Baltimore, MD; ²NASA Goddard Space Flight Center, Greenbelt, MD; ³C&E Research, Inc., Columbia, MD
- MP 720 **Micro-Ion Trap Mass Spectrometers for (Pre)-Biotic Organic Compound Analysis on Comets**; Friso Van Amerom¹; Ashish Chaudhary¹; Timothy Short¹; Patrick Roman²; William Brinckerhoff²; Daniel Glavin²; Paul Mahaffy²; ¹SRI International, St. Petersburg, Florida; ²NASA Goddard Space Flight Center, Greenbelt, MD
- Polymers, 721 - 749**
- MP 721 **The NIST Synthetic Polymer MALDI Recipes Database: Current Status and Future Prospects**; William E. Wallace; Janiel J. Reed; Charles M. Guttman; *National Institute of Standards & Technology, Gaithersburg, MD*
- MP 722 **In situ Characterisation of Microbicidal Agents within Polymer-Based Surface Coatings by Liquid Extraction Surface Analysis Mass Spectrometry**; Martin R. L. Paine¹; Tran T. Hyunh²; Mike J. Manefield²; Philip J. Barker³; Scott A. Rice²; Stephen J. Blanksby¹; ¹University of Wollongong, Wollongong, Australia; ²University of New South Wales, Sydney, Australia; ³BlueScope Steel Research, Port Kembla, Australia
- MP 723 **Using Ion Mobility for 'Shape-Selective' Characterization of Polymers**; Kirsten Craven¹; Julien De Winter²; Pascal Gerbaux²; ¹Waters, Manchester, UK; ²University of Mons, Mons, Belgium
- MP 724 **Characterization of Oligomeric Polyethylene Monoiodides by MALDI-ToF Mass Spectrometry Following Derivatization**; Roman Borisov; Nikolai Polovkov; Vladimir Zaikin; Alexei Vinogradov; Alexei Ivaniuk; *Topchiev Institute of Petrochemical Synthesis, Moscow, Russian Federation*
- MP 725 **Mass Spectrometry and Tandem Mass Spectrometry Analysis of Alkyl Polyglycoside (APG) Surfactants**; Ahlam Alalwiat; Chrys Wesdemiotis; *The University of Akron, Akron, U.S.A*
- MP 726 **Tandem Mass Spectrometry of Polyethers - Size and Collision Energy Effects**; Nadrah Alawani; Lydia Cool; Chrys Wesdemiotis; *University of Akron, Akron, OH*
- MP 727 **Copolyesters – Influence of End-Capping and Main Chain Sterics on Biodegradation**; Lydia Cool; Chrys Wesdemiotis; *The University of Akron, Akron, OH*
- MP 728 **Multidimensional Mass Spectrometry Studies on Dendritic Calibrants**; Aleer M. Yol¹; Scott M. Grayson²; Chrys Wesdemiotis¹; ¹The University of Akron, Akron, OH; ²Tulane University, New Orleans, LA
- MP 729 **Characterization of Poly(ε-caprolactone)-b-poly(ethylene glycol) Copolymers by Mass Spectrometry Techniques**; Marisa Carchedi^{1,2}; Chrys Wesdemiotis²; Bartolo Gabriele¹; Alessia Fazio¹; Giovanni Sindona¹; ¹University of Calabria, Rende (CS), Italy; ²University of Akron, Akron, OH
- MP 730 **Tandem Mass Spectrometry of Glycopolymers**; Xiumin Liu; Lydia Cool; Chrys Wesdemiotis; *The University of Akron, Akron, OH*
- MP 731 **Quantitative Analysis of Fibre Mixture by Matrix Assisted Laser Desorption/Ionization Coupled Time of Flight Mass Spectrometer (MALDI-TOF MS)**; Ssu-Hsueh Sun; Tsung-Ming Huang; *Bureau of Standards, Metrology and Inspection, Taipei, Taiwan*
- MP 732 **Effectiveness of Tertiary Ionic Liquid Matrix in the MALDI Analysis of PEG Polymers**; Taehee Kim; Jihyeon Lee; Jeongkwon Kim; *Chungnam National University, Daejeon, South Korea*
- MP 733 **High Throughput Characterization of Biopolyol Using DART-MS with Ultra-Fast Polarity Switching**; Christopher Gilles¹; Keiko Matsumoto²; Teruhisa Shiota³; Jun Watanabe²; Mariko Yoshioka⁴; Nobuo Shiraiishi⁵; ¹Shimadzu Scientific Instruments, Inc., Columbia, MD; ²Shimadzu Corporation, Kyoto, Japan; ³AMR, Inc, Tokyo, Japan; ⁴Kyoto University, Kyoto, Japan; ⁵Shiraiishi Biomass Co., Ltd., Kyoto, Japan
- MP 734 **Completely Elucidating Soft Matter: Sequencing Linear Copolymers**; Martin S. Engler¹; Sarah Crotty¹; Christian Pietsch¹; Kerstin Scheubert¹; Ulrich S. Schubert^{1,2}; Sebastian Boecker^{1,2}; ¹Friedrich Schiller University, Jena, Germany; ²Jena Center for Soft Matter, Jena, Germany
- MP 735 **Location of Cations Adducted to PEO-PAMAM Hybrid Molecules: A Combined MS/MS and Ion Mobility Study**; Christophe Chendo; Aura Tintaru; Qi Wang; Ling Peng; Laurence Charles; *Aix-Marseille University, Marseille, FR*

- MP 736 **Advantages of Mass Spectrometric Detection for Polymers Separated by UltraPerformance Convergence Chromatography;** Oliver Burt¹; Baiba Cabovska²; Michael O'Leary²; Peter Hancock¹; ¹Waters Corporation, Manchester, UK; ²Waters, Milford, MA
- MP 737 **MALDI-TOF MS of Hyperbranched Polymers Aided by Liquid Chromatography Separation;** Jessica N. Hoskins¹; Hans R. Kricheldorf²; Steffen M. Weidner¹; Jana Falkenhagen¹; ¹Fed. Institute for Materials Research and Testing, Berlin, Germany; ²Institute for Technical and Macromolecular Chem., Hamburg, Germany
- MP 738 **Analysis of Ethylene Oxide and Propylene Oxide Random Copolymer by Using LC-MALDI-SpiralTOF MS;** Yoshiyuki Itoh¹; Masahiro Hashimoto¹; Bram van der Meer²; Akihiko Kusai¹; ¹JEOL Ltd., Akishima, Japan; ²JEOL (Europe) B.V., Nieuw-Vennep, The Netherlands
- MP 739 **Fragmentation of Deprotonated Polyethylene Glycol;** Daniel Goebbert; Thomas Hester; *The University of Alabama, Tuscaloosa, AL*
- MP 740 **Quantitation of ppm-ppb Level Oligomeric Surfactants for Contact Lens Wear Clinical Studies Using HR/AM-MS and Low Resolution Chromatography;** William Nichols¹; Andrew J. Hoteling²; ¹Mass2Charge Consulting LLC, Newark, NY; ²Bausch+Lomb, Rochester, NY
- MP 741 **Evaluating the Use of Ion Mobility-Mass Spectrometry for Polymer End Group Characterization Using Polydimethyl Siloxane as a Model;** Andrew J. Hoteling¹; Eleanor Riches²; ¹Bausch + Lomb, Rochester, NY; ²Waters Corporation, Manchester, UK
- MP 742 **Characterization of Polymer Extracts by Gas Chromatography–High Resolution Time-Of-Flight Mass Spectrometry with Electron Impact and Chemical Ionization Strategies;** Nick Hall; David Alonso; Joe Binkley; *Leco Corporation, St. Joseph, MI*
- MP 743 **MALDI-ToF MS Analysis for Confirmation of Polymer End Groups;** Brittany Myers; Boyu Zhang; Scott M. Grayson; *Tulane University, New Orleans, LA*
- MP 744 **Versatile Dendritic Calibrants for the Improved Accuracy of Mass Determination for High Molecular Weight Analytes;** Scott M. Grayson; Joseph Giesen; Brittany Myers; *Tulane University, New Orleans, LA*
- MP 745 **An Integrated Systems Approach to Identifying Extractables From Single Use Materials: “Closing the Gap on Total Organic Content (TOC).”;** Catherine E Petersen; Sarah Robinson; Trent Volz; Ray Colton; *Validation Resources, Bend, OR*
- MP 746 **End-Group Cleavage during MALDI of ATRP Made Polystyrene: The Problem is in the Solution;** Laurence Charles; Aura Tintaru; Christophe Chendo; Trang Phan; Marion Rollet; Laurent Giordano; Stéphane Viel; Didier Gigmes; *Aix-Marseille University, Marseille Cedex 20, France*
- MP 747 **Identification of Defective Structures of PAMAM Dendrimer Using Various Separation Methods Coupled with Mass Spectrometry: LC-MS, CE-MS and TLC-MS;** Emma-Dune Leriche¹; Marie Hubert-Roux¹; Martin Grosselet²; Catherine Lange¹; Carlos Afonso¹; Corinne Loutelier-Bourhis¹; ¹Normandie Univ UMR 6014, FR 3038; Univ Rouen; CNRS, Mont-St-Aignan, France; ²University of Southampton, School of chemistry, Southampton, UK
- MP 748 **Identification and Quantitation of Plastics Additives in Medicine and Containers by HR LCMS and Triple Quadrupole GCMS;** Ekong Basse; Kate Comstock; *ThermoFisher Scientific, San Jose, CA*
- MP 749 **Characterization of Trace Organic Impurities in Purified Terephthalic Acid (PTA) by Using UPLC Q-TOF MS for Process Optimization;** Yuhong Zhang¹; Chuan Wang¹; Zhenlei Peng¹; Yidan Guo¹; Kejun Qian²; Xiaomei Huang²; Peter Lee³; ¹SINOPEC SRIPT, Shanghai, China; ²Waters Technologies (Shanghai) Limited, Shanghai, China; ³Waters Cooperation, Milford, MA



7:30-8:00 am Set up all Tuesday posters
 10:30 am-1:00 pm Odd-numbered posters present
 12:00-2:30 pm Even-numbered posters present
 7:30-8:00 pm Remove all Tuesday posters

Ion Activation/Dissociation.....001-020
 Ion/Molecule, Ion/Ion, Ion/Electron Interactions021-048
 Photoionization: Instrumentation & Applications.....049-053
 Instrumentation: New Developments in Ionization
 and Sampling054-087
 Instrumentation: New Concepts088-109
 Peptides: Fragmentation Mechanisms110-123
 Peptides: Ion Activation/Dissociation Strategies.....124-128
 Peptides: Quantitative Analysis I129-163
 Proteins: Conformation Analysis.....164-172
 Protein Covalent Labeling173-193
 Biomolecular Structure194-205
 Intact Proteins: PTM Discovery206-212
 Intact Proteins: Quantitative Analysis213-217
 Intact Proteins: Sequence Analysis218-224
 Protein Therapeutics: Structural Characterization.....225-238
 Informatics: Intact Proteins239-244

Informatics: Systems Biology and Large-Scale Analyses.....245-254
 Biomarker Discovery: Proteins255-275
 Neurodegenerative, Cardiovascular and Infectious Disease.....276-297
 New Technologies in Biomarker Discovery298-305
 Proteomics: Plasma and Tissue306-341
 Epigenetic Modifications/Histones.....342-356
 Metabolomics: General.....357-382
 Metabolomics: Untargeted Metabolite Profiling Applications....383-419
 Drug Metabolism: Quantitative Analysis420-451
 Small Molecules: Quantitative Analysis II,.....452-477
 Lipids: Quantitative Analysis.....478-497
 Informatics: Quantification/Validation498-528
 Toxicology.....529-556
 Diagnostic Clinical Chemistry: Small Molecules I.....557-577
 Environmental Analysis: Pharmaceuticals and Pesticides578-607
 Elemental Analysis608-618
 Ion Mobility Applications619-661
 Ambient Ionization: Applications I.....662-690
 Carbohydrates I691-714
 Glycoproteins I.....715-737
 Food Safety738-772

Ion Activation/Dissociation, 001 – 020

- TP 001 **Investigation into UV Photon Induced Fragmentation in a RF confined Ion Guide using a Vacuum UV Ionisation Lamp;** Martin Green; Keith Richardson; Jeff Brown; Paul Murray, *Waters Corporation, Manchester, United Kingdom*
- TP 002 **UV Photodissociation within an Axially Illuminated Stacked Ring Ion Guide of an Ion Mobility Enabled Q-ToF;** Jeff Brown¹; Mike Morris¹; Kevin Giles¹; Richard Chapman¹; Paul Murray¹; Emmy Hoyes¹; Christopher Jones¹; Jakub Ujma²; Bruno Bellina³; Isabelle Compagnon³; Perdita Barran², ¹*Waters Corporation, Manchester, UK*; ²*The University of Edinburgh, Edinburgh, UK*; ³*CNRS et Université Lyon, Lyon, France*
- TP 003 **Hybrid UVPD Activation of N- and C-Terminal Fixed Charge Peptides;** Dustin Holden; Jennifer Brodbelt; *University of Texas Chemistry, Austin, TX*
- TP 004 **Fragmentation of Fluorescence Dye Labels Activated by Collisions or Photons;** Jonathan Peters; Claus Gemert; Martin Clemen; Tassilo Muskat; Jürgen Grottemeyer; *Inst. f. Phys. Chemie, Christian-Albrechts-Uni, Kiel, Germany*
- TP 005 **Sequential Losses of HONO, CO and HCN from Deprotonated ortho-Nitrobenzenesulfonylglycine (Ns-Gly) Upon ESI(-)MS/MS;** Robert L. White; Tara E. Tovstiga; Elizabeth A.L. Gillis; J. Stuart Grossert; *Dalhousie University, Department of Chemistry, Halifax, Canada*
- TP 006 **Diastereomeric Quantification of O-diglycosyl Flavonoids by a Complex-Free Kinetic Method Using ESI/QToF Mass Spectrometry;** Yong-Ill Lee; Kuangcai Chen; Jae-Min Lim; *Changwon National University, Changwon, Korea*
- TP 007 **Characterization of Temperature-Dependent Peptide Bond Cleavage Using Low- and High-Mass Quantitation Signals from Amine-Reactive N-Acetyl Dipeptide Tags;** Jongcheol Seo; Hye-Joo Yoon; Seung Koo Shin; *Postech, Pohang, South Korea*
- TP 008 **Fragmentation of Trans-Membrane Helices in Gaseous Protein Ions;** Owen Skinner; Adam Catherman; Kenneth Durbin; Bryan Early; Paul Thomas; Neil Kelleher; *Northwestern University, Evanston, IL*
- TP 009 **Metastable Atom-Activated Dissociation of Phosphocoline Lipids in Protonated, Sodiated, and Potassiated Forms;** William D. Hoffmann¹; Robert E. Deimler¹; Madlen Sander²; Glen P. Jackson¹; ¹*West Virginia*

- University, Morgantown, WV*; ²*Leipzig University, Leipzig, Germany*
- TP 010 **Focused Proteomics Through Selective Modification of Tryptophan or Arginine Residues;** Dustin Klein; Sylvester Greer; Jennifer Brodbelt; *University of Texas, Austin, TX*
- TP 011 **Fragmentation of Protonated Nitromethane;** Thomas Hester; Daniel Goebbert; *The University of Alabama, Tuscaloosa, AL*
- TP 012 **Comparison between Surface-Induced Dissociation (SID) and Collision-Induced Dissociation (CID) of Ion-Mobility (IM)-Separated Detergent Clusters;** Yun Zhang; Mowei Zhou; Xin Ma; Vicki H. Wysocki; *The Ohio State University, Columbus, OH*
- TP 013 **Optimization of Surface Induced Dissociation (SID) Effect in Intermediate Vacuum Ion Guides;** Zoltán Takáts²; Tamás Karancsi¹; Dániel Szalay¹; Andor Rozsnyai¹; ¹*Medimass Ltd., Budapest, Hungary*; ²*Imperial College London, London, Egyesült Királyság*
- TP 014 **Dipolar Direct Current Driven Collision Induced Dissociation in Digital Ion Trap;** Liang Wang; Fuxing Xu; Chuan-Fan Ding; *Fudan University, Shanghai, China*
- TP 015 **Hydration Energies of First-Row Transition Metal Dications Determined by Collision Induced Dissociation and Density Functional Theory;** Rebecca Thomas; Theresa Hofstetter; Peter Armentrout; *University of Utah, Salt Lake City, UT*
- TP 016 **Gas-Phase Fragmentation of Cationic Metal Adducts of Oxalate Salts;** Robert Hale; Carl Weisbecker; Chang-Ching Chan; Athula Attygalle; *Stevens Institute of Technology, Hoboken, NJ*
- TP 017 **Structures and Activation Energies for Glycosidic Bond Cleavage of Protonated Nucleosides: A Synergy of Theory and Threshold Collision-Induced Dissociation Experiments;** Mary T. Rodgers; Ranran Wu; *Wayne State University, Detroit, MI*
- TP 018 **Nazarov Cyclization and Six-Membered Cyclization of Chalcones Catalyzed by the Naked Silver Cation in Gas Phase;** Hezhi Sun; Yunfeng Chai; Lin Wang; Yuanjiang Pan; *Zhejiang University, Hangzhou, China*
- TP 019 **Second Generation Electron Transfer Dissociation (ETD) on a Novel Hybrid Instrument with Improved Functionality, Increased Speed, and Robustness of Data;** Christopher Mullen¹; Lee Earley¹; Jean-Jacques Dunyach¹; John E.P. Syka¹; Philip Daniel Compton²; Jeffrey

- Shabanowitz³; Donald F. Hunt³; ¹Thermo Fisher Scientific, San Jose, CA; ²Northwestern University, Evanston, IL; ³University of Virginia, Charlottesville, VA
- TP 020 **Comparison of MALDI-MSD and High-Energy CID Using a Spiral-Trajectory Time-Of-Flight Mass Spectrometer;** Masaaki Ubukata¹; John Dane¹; Robert B. Cody¹; Ayumi Kubo²; ¹JEOL USA, Inc., Peabody, MA; ²JEOL Ltd., Tokyo, Japan
- Ion/Molecule, Ion/Ion, Ion/Electron Interactions, 021 - 048**
- TP 021 **Distinguishing Amorphous and Crystalline Ices by Ultra-Low Energy Collisions of Reactive Ions;** Radha Gobinda Bhuin; Soumabha Bag; T. Pradeep; *Indian Institute of Technology, Madras, Chennai, India*
- TP 022 **Experimental Evidence and Characterization of Cobalt(I) Complexes Relevant in Regioselective Diels-Alder Reactions. A Gas Phase Study;** Lukas Fiebig¹; Julian Kuttner²; Martin C. Schwarzer²; Gerhard Hilt²; Gernot Frenking²; Hans-Günther Schmalz¹; Mathias Schaefer¹; ¹University Cologne, Department of Chemistry, Koeln, Germany; ²Phillips University, Department of Chemistry, Marburg, Germany
- TP 023 **Computational Studies of Ion-neutral Reactions of Astrochemical Relevance: Formation of Hydrogen Peroxide and Amino Acetonitrile;** Zhibo Yang; *University of Oklahoma, Norman, OK*
- TP 024 **Chiral Selectivity of Copper Di-imine Catalysts in the Gas Phase;** Mark Davis; Scott Gronert; *Virginia Commonwealth University, Richmond, VA*
- TP 025 **Synthesis, Characterization, and Reactivity of Gold Carbenes in the Gas Phase;** Christopher Swift; Scott Gronert; *Virginia Commonwealth University, Richmond, VA*
- TP 026 **The Flipper: New MS Technology for the Generation of Highly Charged Anionic Reagents for Gas-Phase Purification;** Rebeca Pinhancos; Catherine E. Vincent; Michael S Westphall; Joshua J. Coon; *University of Wisconsin, Madison, WI*
- TP 027 **Electrochemical-Assistance for Electron Transfer Dissociation Ion Mobility MS of Peptides and Proteins;** Jonathan P. Williams; Christopher Hughes; Jeffery Brown; *Waters, Manchester, UK*
- TP 028 **The Use of Reagent Clusters in Ion/ion Reactions for Multiple Gas-phase Covalent Modifications of Peptides and Proteins;** Boone Prentice; John Stutzman; Scott McLuckey; *Purdue University, West Lafayette, IN*
- TP 029 **Characterization of Gas-Phase Esterification of Various Doubly Deprotonated Analytes;** Joshua D. Gilbert; Boone M. Prentice; John R. Stutzman; Scott A. McLuckey; *Purdue University, West Lafayette, IN*
- TP 030 **Lithium Cation Basicity: Revisiting the High Basicity Range by Experiment and Theory;** Charly Meyeux¹; Peeter Burk¹; Jean-François Gal²; Tõiv Haljasorg¹; Ivari Kaljurand¹; Ivo Leito¹; ¹University of Tartu, Tartu, Estonia; ²University of Nice-Sophia Antipolis(UMR CNRS 7272), Nice, France
- TP 031 **A Custom Mass Spectrometer to Probe Ion-Ion Reaction Products Through Infrared Spectroscopy;** Nathan Roehr; Corey Stedwell; Nick Polfer; Kerim Gulyuz; *University of Florida, Gainesville, FL*
- TP 032 **Gas-Phase Synthesis of Copper Carbene Complexes and Evaluation of Their Structure and Reactivity;** Jamal Aldajaei; *Virginia Commonwealth Uni., Richmond, VA*
- TP 033 **Electron Detachment Dissociation of Anion-Adducted Peptides;** Tao Jiang; Kristina Hakansson; *University of Michigan, Ann Arbor, MI*
- TP 034 **Gas-Phase Chemistry of Polycyclic Aromatic Hydrocarbon Cations and Their Nitrogen Containing Analogues;** Nicholas Demarais; Theodore Snow; Veronica Bierbaum; *U of Colorado, Boulder, CO*
- TP 035 **Gas-Phase Organic Reactions of the Atomic Oxygen Radical Cation;** Charles Nichols¹; Zhibo Yang²; Veronica Bierbaum¹; ¹University of Colorado, Boulder, CO; ²University of Oklahoma, Norman, OK
- TP 036 **Gas-Phase Studies of Radical Migration within Tryptophan-Containing Peptides;** Andrii Piatkivskyi; Victor Ryzhov; *Northern Illinois University, Dekalb, IL*
- TP 037 **A Bracketing Method for Proton Affinity Measurements for Pyridine Radicals and Biradicals;** Guannan Li; Vanessa Gallardo; John Nash; Anyin Li; Hilikka Kenttämaa; *Purdue University, West Lafayette, IN*
- TP 038 **A Comparison of the Reactions of N-Methyl-3-dehydropyridinium Cation with Adenine, Cytosine, Thymine and Uracil in Gas Phase and Aqueous Solution;** Ashley Wittig; Hilikka Kenttämaa; *Purdue University, West Lafayette, IN*
- TP 039 **Steric Effects in the Characterization of Proton Affinities of N,N'-Diamidocarbenes;** Mu Chen²; Christopher Bielawski¹; Jeehiun K. Lee²; ¹The University of Texas at Austin, Austin, TX; ²Rutgers University-New Brunswick-Chemistry, Piscataway, NJ
- TP 040 **Formation of Hydroxymethyl Radicals and Their Reactions with CysteinyI Peptides in NanoESI Plume;** Craig Stinson; Yu Xia; *Purdue University, West Lafayette, IN*
- TP 041 **Characterization of Gas-Phase Ion-Molecule Reagent Complexes In Support of Trace Explosives Detection Using API-MS;** Kerin Gregory; Alla Ostrinskaya; Roderick Kunz; *MIT Lincoln Laboratory, Lexington, MA*
- TP 042 **Ion/Ion Reactions to Extend Peptides in the Gas Phase: A Route to Gas Phase Peptide Synthesis;** William M. McGee; Scott A. McLuckey; *Purdue University, West Lafayette, IN*
- TP 043 **Probing the Reactivity and Radical Nature of Oxidized Transition Metal-Thiolate Complexes by Mass Spectrometry;** Mei Lu¹; Larry Campbell²; Rajat Chauhan³; Craig Grapperhaus³; Hao Chen¹; ¹Ohio University, Athens, OH; ²AB Sciex, Concord, Ontario; ³University of Louisville, Louisville, Kentucky
- TP 044 **High-Temperature Mass Spectrometric Study of the System Csl-Cel;** Dmitry Ivanov; Anatoly Dunaev; Dmitry Sergeev; Lev Kudin; *Ivanovo State University of Chemistry and Technolo, Ivanovo, Russia*
- TP 045 **Analysis Method for Competitive CAD-ETD Gas Phase Reaction with Kinetic Energy Measurement of Ionic and Neutral Fragments;** Masataka Ohkubo¹; Shigetomo Shiki¹; Masahiro Ukibe¹; Shigeo Tomita²; Shigeo Hayakawa³; ¹AIST, RIIF, Tsukuba, Japan; ²University of Tsukuba, Tsukuba, JP; ³Osaka Prefecture University, Osaka, JP
- TP 046 **Oxidation of CO by Molecular Oxygen Catalyzed with Y₃O₆⁻ Cluster Anions;** Yan-Xia Zhao; Zi-Yu Li; Xun-Lei Ding; Sheng-Gui He; *State Key Laboratory for Structural Chemistry of U, Beijing, China*
- TP 047 **Etoricoxib as a Tool for the Detection of Low Levels of Oxygen in Mass Analyzers;** Freneil Jariwala; John Hibbs; Athula Attygalle; *Stevens Institute of Technology, Hoboken, NJ*
- TP 048 **Energy-Resolved Collision-Induced Dissociation Studies of 1,10-Phenanthroline Complexes of the Late First-Row Divalent Transition Metal Cations: Determination of the Binding Energies;** Holliness Nose; Mary Rodgers; *Wayne State University, Detroit, MI*

Photoionization: Instrumentation & Applications, 049 – 053

- TP 049 **Capture of Tunneling Electrons and Dissociation of Organic Molecules Initiated by Unpaired Electrons;** Hongying Zhong; Lulu Huang; *Central China Normal University, Wuhan, China*
- TP 050 **Mass Spectrometry Analysis of Volatile Nitro-Substituted Explosives by Laser Ionization under Ambient Conditions;** Evgeny Kukaev^{1,4}; Alexey Kononikhin^{1,2}; Igor Popov^{1,4}; Konstantin Nagornov^{2,3}; Eugene Nikolaev^{1,2}; ¹*Emanuel Institute of Biochemical Physics, Moscow, Russia*; ²*Institute for Energy Problems of Chemical Physics, Moscow, Russia*; ³*Inst of Radio-engin., Electronics and Automation, Moscow, Russia*; ⁴*Moscow Institute of Physics and Technology, Moscow, Russia*
- TP 051 **Photoionization Mass Spectrometry of Thermolabile Biomolecules at the French National Synchrotron Facility SOLEIL;** David Touboul¹; Marie Méjean¹; François Gaie-Levrel²; Gustavo Garcia Macias³; Laurent Nahon³; Lionel Poisson⁴; Martin Schwell⁵; Majdi Hochlaf⁶; Alexandre Giuliani⁷; Alain Brunelle¹; ¹*CNRS, Institut de Chimie des Substances Naturelles, Gif-Sur-Yvette, France*; ²*National Metrology Institute and Testing, Paris, France*; ³*Synchrotron SOLEIL, DESIRS beamline, Gif-sur-Yvette, France*; ⁴*Laboratoire Francis PERRIN, Gif-sur-Yvette, France*; ⁵*LISA UMR 7583, Créteil, France*; ⁶*Université Paris-Est, MSME, Maren-la-Vallée, France*; ⁷*Synchrotron SOLEIL, DISCO beamline, Gif-sur-Yvette, France*
- TP 052 **The Use of Isoprene as a New Dopant in Negative Ion Atmospheric Pressure Photo Ionization (NI-APPI) Mass Spectrometry;** Faezeh Dousty; Rob O'Brien; *University of British Columbia, Okanagan Campus, Kelowna, Canada*
- TP 053 **Online Quantification of Tobacco by Soft Photo Ionization Time of Flight Mass Spectrometry;** Matthias Bente-Von Frowein; Andreas Walte; Thomas Gröger; Mohammad Reza Saraji-Bozorgzad; *Photonion, Schwerin, Germany*

Instrumentation: New Developments in Ionization and Sampling, 054 – 087

- TP 054 **Study of an ESI Source Which Uses a Vacuum Insulated Tube to Increase Ionization Efficiency and Operates at Subambient Pressure;** Steve Schachterle; Zicheng Yang; Maurizio Splendore; Stephen Zanon; Roy Moeller; Felician Muntean; *Bruker Daltonics, Fremont, CA*
- TP 055 **Evaluation of Amine-Containing Polymer Brushes and Polymer Thin Films for Biomolecular Mixture Fractionation Prior to MALDI MS;** Stephanie Eastwood; Bojan Mitrovic; Venney Wong; Joshua Pogue; Colleen Scott; Gary Kinsel; *Southern Illinois University, Carbondale, IL*
- TP 056 **Flow Characteristics of a Laminar Flow Interface for LC-MS/MS;** Serguei Savtchenko; Charles Joliffe; Heather Gamble; Lisa M. Cousins; Hui Quao; *IONICS Mass Spectrometry Group, Inc., Bolton, Canada*
- TP 057 **Coupling High Performance Ion Mobility Spectrometers to Common Mass Spectrometers;** Robert Jackson; Mark Osgood; Eugenie Hainsworth; Jianglin Wu; Ching Wu; *Stellix Corporation, Acton, MA*
- TP 058 **Static Electricity and Novel Spray Ionization Methods;** Abdil Ozdemir²; Jung-Lee Lin¹; Kent J. Gillig¹; Chung-Hsuan Chen¹; ¹*Genomics Research Center, Academia Sinica, Taipei, Taiwan*; ²*Sakarya University, Adapazari, Turkey*
- TP 059 **Velocity Map Imaging Spectrometer: An Off-the-Shelf System for Gas-Phase Chemistry and Laser Physics Experiments;** Orla Kelly^{1,2}; Panos Kapetanopoulos¹; Michael NR Ashfold²; ¹*Photek Ltd, St Leonards On Sea, UK*; ²*School of Chemistry, University of Bristol, Bristol, UK*

- TP 060 **An UV-AP-MALDI Source and Liquid UV-MALDI Samples Enable the Formation of Multiply Charged Peptides and Proteins and Their High-Sensitivity Analysis;** Rainer Cramer¹; Alex Pirkl²; Franz Hillenkamp²; Klaus Dreisewerd²; ¹*University of Reading, Reading, UK*; ²*University of Muenster, Muenster, Germany*
- TP 061 **Novel Soft Electron Ionisation for Mass Spectrometers;** Nick Bukowski¹; Pierre Schanen²; Gerhard Horner²; ¹*ALMSCO International, Llantrisant, UK*; ²*five technologies GmbH, Munich, Germany*
- TP 062 **Solvent Assisted Inlet Ionization (SAIL): Perspectives on Source Design, Application, and Ionization Mechanism;** Vincent S. Pagnotti; Sarah J. Saylor; Shubhashis Chakrabarty; Charles N. McEwen; *University of the Sciences, Philadelphia, PA*
- TP 063 **Enhancing Ionization Efficiency in ESI by a Novel Nebulizer Design;** Anneli Kruve; Ivo Leito; Rünno Lõhmus; Asko Laaniste; Hanno Evard; Kristo Kleemann; Jaanus Liigand; Vahur Toss; Koit Herodes; Ants Lõhmus; *University of Tartu, Tartu, Estonia*
- TP 064 **Optimization of Surface Acoustic Wave Nebulizer Designs for Proteomics;** Scott Heron^{1,2}; J. Scott Edgar³; Yue Huang¹; Young Ah Goo^{1,2}; Michael Wilson^{1,2}; Sung Hwan Yoon^{1,2}; David R. Goodlett^{1,2}; ¹*University of Washington, Seattle, WA*; ²*University of Maryland, Baltimore, MD*; ³*Deurion LLC, Seattle, WA*
- TP 065 **A Closer Look at the Sensitivity Enhancement Observed with Capillary and Nanoflow UPLC for Both Small and Large Molecules;** James Murphy; Jay Johnson; Paul Rainville; *Waters Corporation, Milford, MA*
- TP 066 **Nanostructure-Initiator Mass Spectrometry: Practical Insights, Fundamental Implications, and Emerging Applications;** Jay Forsythe^{1,2}; Joshua Broussard³; Jennifer Lawrie⁴; Michal Kliman^{1,2}; Yang Jiao⁵; Sharon Weiss^{4,5}; Donna Webb^{3,6}; John McLean^{1,2}; ¹*Dept. of Chemistry and VICB, Vanderbilt Univ., Nashville, TN*; ²*VIBRE, Vanderbilt Univ., Nashville, TN*; ³*Dept. of Biological Sciences, Vanderbilt Univ., Nashville, TN*; ⁴*IGP in Materials Science, Vanderbilt Univ., Nashville, TN*; ⁵*Dept. of EECS, Vanderbilt Univ., Nashville, TN*; ⁶*Dept. of Cancer Biology, Vanderbilt Univ., Nashville, TN*
- TP 067 **Development of a Soft Ionization Discharge Source for Gas Chromatography Used with a High Resolution Time of Flight Mass Spectrometer;** Lloyd Allen¹; Alexander Kolosov²; Viatcheslav Artaev¹; Anatoly Verenchikov²; *LECO Corp., Saint Joseph, MI*; ²*MSC-GC, Bar, Montenegro*
- TP 068 **A Digitized Workflow for Static Nanospray Mass Spectrometry: Combining High Throughput, Efficiency and Ease of Use;** Gary Valaskovic; *New Objective, Inc., Woburn, MA*
- TP 069 **An Elemental Ion Source for LC-MS: Halogen Detection;** Haopeng Wang¹; Kaveh Kahen²; Ninghang Lin¹; Kaveh Jorabchi¹; ¹*Georgetown Univ., Washington, DC*; ²*PerkinElmer Inc., Woodbridge, Canada*
- TP 070 **Internal and External Ionization in a Mobile FTICR-MS;** Clotilde Le Vot¹; Essyllt Louarn¹; Helene Mestdagh¹; Michel Henering¹; Pierre Boissel²; Gérard Mauclair²; Joel Lemaire¹; ¹*LCP CNRS - Université Paris Sud, Orsay, France*; ²*AlyXan, Orsay, France*
- TP 071 **Online High-Capacity Capillary Isoelectric-Point Fractionation Increases the Proteome Coverage of Human Cell Line in Shotgun LC-MS Proteomics Analysis;** Mohammad Pirmoradian Najafabadi; Konstantin Chinging; Juan Astorga-Wells; Harshavardhan Budamgunta; Roman Zubarev; *Karolinska Institute, Solna, Sweden*

- TP 072 **SmartAGC: Precursor Mass and Charge Dependent Automatic Gain Control Improves Efficiency of Protein Identification;** Stefan K Maier^{1,2}; Hannes Hahne¹; Fiona Pachel¹; Bernhard Kuster¹; ¹*Technische Universitaet Muenchen, Freising, Germany*; ²*Helmholtz Zentrum Muenchen, Neuherberg, Germany*
- TP 073 **Analysis of Fuels by Wooden Tip Electrospray Ionization-QToF-MS;** Whitney Smith; Jan Sunner; *Univ. of Oklahoma, Norman, OK*
- TP 074 **Understanding the Effects of the Earth's Magnetic Field on Mobile Mass Spectrometry: Simulation, Experimentation and Solutions;** Ryan J. Bell⁵; Nicholas G. Davey^{1,5}; Morten Martinsen^{2,5}; Christian Collin-Hansen³; R. Timothy Short⁴; Erik T. Krogh^{1,5}; Christopher G. Gill^{1,5}; ¹*University of Victoria, Victoria, BC, Canada*; ²*NTNU, Trondheim, Norway*; ³*Statoil ASA, Trondheim, Norway*; ⁴*SRI International, St. Petersburg, FL*; ⁵*AERL, Vancouver Island University, Nanaimo, BC, Canada*
- TP 075 **Improvements to Understanding and Implementation of Raster Laser-Induced Acoustic Desorption for Mass Spectrometric Analysis of Petroleum;** Alex Dow; *Purdue University, West Lafayette, IN*
- TP 076 **Laser LESA: Fully Automated Laser Ablation Sample Transfer to Solution for NanoESI Mass Spectrometry;** Matthias Lorenz; Olga S. Ovchinnikova; Gary J. Van Berkel; *Oak Ridge National Laboratory, Oak Ridge, TN*
- TP 077 **Improved Identification of Low Abundance Precursors by Applying an Injection Waveform Utilizing Multiple Frequency Notches;** Brian K. Erickson; Graeme McAlister; Ramin Rad; Wilhelm Haas; Steven P. Gygi; *Harvard Medical School, Boston, MA*
- TP 078 **Fabrication of Dense Polymer Nozzle Array on Microstructured Fibers for Multi-Electrospray Ionization;** Yueqiao Fu¹; Graham Gibson¹; Richard Oleschuk¹; Tom Covey²; Bradley Schneider²; ¹*Queen's University, Kingston, ON, Canada*; ²*AB Sciex, Concord, ON, Canada*
- TP 079 **Direct Detection of Nonvolatile Compounds Using Synchronized Discharge Ionization with Handheld Mass Spectrometer;** Xiao Wang; Tsung-Chi Chen; Zheng Ouyang; *Purdue University, West Lafayette, IN*
- TP 080 **Quantitative Ambient Analysis Using Simple Extraction Spray;** Yue Ren; Jiangjiang Liu; Linfan Li; Morgan N. McLuckey; Zheng Ouyang; *Biomedical Engineering, Purdue University, West Lafayette, IN*
- TP 081 **Miniature Condensed Phase Membrane Introduction Mass Spectrometry (CP-MIMS) Probes for the Direct Measurement of Pharmaceuticals and Contaminants in Complex Samples;** Kyle D. Duncan^{1,2}; Erik T. Krogh^{1,2}; Christopher G. Gill^{1,2}; ¹*University of Victoria, Victoria, BC, Canada*; ²*AERL, Vancouver Island University, Nanaimo, BC, Canada*
- TP 082 **Low Flow Characterization of a Novel Multi-Channeled Nanoelectrospray Emitter and Pneumatic Flow Focusing Interface;** Lili Mats¹; David Simon¹; Hui Qiao²; Frenny Ruparelia²; Richard Oleschuk¹; Lisa M. Cousins²; ¹*Queens University, Kingston, ON, Canada*; ²*IONICS Mass Spectrometry, Bolton, ON, Canada*
- TP 083 **Bringing Mass Spectrometry to the Production Floor: Separating Samples without the Need for Gas Chromatography;** Warren Mino; Michael Spencer; Lorenz Gardner; Abrar Riaz; James Wylde; David Rafferty; *1st Detect, Houston, TX*
- TP 084 **Use of Stokes Number for Ion Movement in Gas with DC and RF Electric Fields: Theory, Simulation, and Experiment;** Nicolay Gall^{1,2}; Alexander Berdnikov²; Mikhail Lapushkin¹; Natalia Fomina¹; Sergey Masukevich²; ¹*Ioffe Physico-technical institute of Russian Acade, St.Petersburg, Russia*; ²*Institute for Analytical Instrumentation of RAS, R, St.Petersburg, Russia*
- TP 085 **Plasma Induced Secondary Emission Ionization (PISI) Source for Atmospheric Pressure Ion Mobility Spectrometry;** Prabha Dwivedi; Joel Keelor; Facundo Fernandez; *Georgia Inst. of Technology, Atlanta, GA*
- TP 086 **Construction of an Interventional Mass Spectrometer for Intracavitary Tissue Identification;** Cristina Guallar-Hoyas¹; Laura Muirhead¹; Lajos Gödörházy²; Dániel Szalay²; Tamás Krancsi²; Steven Pringle³; Mike Morris³; Zoltán Takáts¹; ¹*Imperial College, London, UK*; ²*Medimass, Budapest, Hungary*; ³*Waters Corporation, Manchester, UK*
- TP 087 **Development of Laser Ablation and Droplet Capture (LADC) for *in vivo* Mass Spectrometry;** Benoit Fatou; Isabelle Fournier; Michael Ziskind; Maxence Wisztorski; Cristian Focsa; Michel Salzet; *University Lille 1, Villeneuve D'ascq, France*
- Instrumentation: New Concepts, 088 – 109**
- TP 088 **Screening of Illicit Drugs in Urine by Using a Portable Mass Spectrometer;** Masuyuki Sugiyama¹; Shun Kumano¹; Masuyoshi Yamada¹; Hidetoshi Morokuma²; Kazushige Nishimura¹; Yuichiro Hashimoto¹; Hiroyuki Inoue³; ¹*Hitachi, Ltd., Tokyo, Japan*; ²*Hitachi High-Technologies Corp., Hitachinaka, Japan*; ³*National Research Institute of Police Science, Kashiwa, Japan*
- TP 089 **Cold Electron Ionization Source for a Portable Ion Trap Mass Spectrometer;** Seung Yong Kim; Mo Yang; Hyun Sik Kim; *Korea Basic Science Institute, Ochang-Eup Cheongwon-Gun, South Korea*
- TP 090 **Optimizing the Performance of a Miniaturized Linear Ion Trap: Adjusting RF and SWIFT Auxiliary Waveform Parameters;** Friso H.W. Van Amerom¹; Veronica Pinnick²; Xiang Li²; Ricardo Arevalo²; Rayn Danell³; Paul Mahaffy²; Will Brinckerhoff²; ¹*SRI International, St Petersburg, FL*; ²*Goddard Space Flight Center, Greenbelt, MD*; ³*Danell Consulting Inc., Winterville, NC*
- TP 091 **Design of Portable Mass Spectrometers with Handheld Probes: An Aspect of Ion Introduction and Pumping System;** Tsung-Chi Chen¹; Chien-Hsun Chen¹; R. Graham Cooks¹; Robert Kline-Schoder²; Paul Sorensen²; Zheng Ouyang¹; ¹*Purdue University, West Lafayette, IN*; ²*Creare Inc., Hanover, NH*
- TP 092 **Development of Portable Mass Spectrometer Coupled with Probe Heating Method for Illicit Drug Screening;** Shun Kumano¹; Masuyuki Sugiyama¹; Masuyoshi Yamada¹; Kazushige Nishimura¹; Hidetoshi Morokuma²; Hiroyuki Inoue³; Yuichiro Hashimoto¹; ¹*Hitachi, Ltd., Kokubunji-Shi, Japan*; ²*Hitachi High-Technologies, Hitachinaka, Japan*; ³*National Research Institute of Police Science, Kashiwa, Japan*
- TP 093 **Predictive Automatic Gain Control on a New Quadrupole Mass Filter-Orbitrap-Linear Ion Trap Platform;** Philip M Remes; Justin Blethrow; Vlad Zabrouskov; Michael Senko; *Thermo Fisher Scientific, San Jose, CA*
- TP 094 **Implementing UV and Visible Photodissociation in a Q-Exactive Mass Spectrometer;** Marion Girod^{1,2}; Quentin Enjalbert¹; Jérémy Jeudy¹; Rodolphe Antoine^{1,2}; Jerome Lemoine¹; Philippe Dugourd^{1,2}; ¹*Université Lyon 1, Villeurbanne, France*; ²*CNRS, Villeurbanne, France*
- TP 095 **Advances in Quantitative High Throughput Proteomics Using Data-Independent Scanning Methods;** Enrique Calvo; Fernando Garcia-Marqués; Juan Carlos Silla; Jose Antonio Enriquez; Adela Guaras; Estefanía Nuñez; Marta Loureiro-López; Juan Antonio López del Olmo; Jesús Vázquez; *CNIC, Madrid, Spain*

- TP 096 **Harnessing Q Exactive Multiplexing Capabilities for Improvements in Peptide Quantitation and Identification;** Jolene K. Diedrich¹; Gregory A. Barding²; Xuemei Han¹; Vlad Zabrouskov³; Michael W. Senko³; John R. Yates III¹; ¹The Scripps Research Institute, La Jolla, CA; ²University of California, Riverside, CA; ³ThermoFisher Scientific, San Jose, CA
- TP 097 **Design and Characterization of a Novel Hybrid-field Ion Guide as part of a Time-of-Flight Mass Spectrometry Platform;** Alexander Lekkas; Athanasios Zacharos; Diamantis Kounadis; Ioannis Orfanopoulos; Dimitris Papanastasiou; Emmanuel Raptakis; *Fasmatech, Athens, Greece*
- TP 098 **Duty Cycle-Based Cross Section Measurement of Large Singly Charged Proteins;** Gregory Brabeck¹; Vivek Jayaram²; Rachit Singh²; Peter T. A. Reilly¹; ¹Washington State University, Pullman, WA; ²Pullman High School, Pullman, WA
- TP 099 **Multiplexed Analysis of Steroid Hormones in Human Serum Using Novel Microflow Tile Technology and LC-MS/MS;** Carolyn Broccardo¹; Kevin Schauer¹; Wendy Kohrt²; Robert Schwartz²; James Murphy³; Jessica Prenni¹; ¹Colorado State University, Ft Collins, CO; ²University of Colorado Anschutz Medical Campus, Aurora, CO; ³Waters Corporation, Milford, MA
- TP 100 **State-of-the-Art Multidimensional HPLC+GC-MS System: Innovations in the Operational Principles and Applications;** Nieves Sarrion¹; David Alonso¹; Roger Gibert¹; Josep M^a Gibert²; Ileana Garcia²; ¹Konik-Tech, S.A., Sant Cugat Del Vallés, Spain; ²KONIK Instruments, Miami, FL
- TP 101 **Design of a High Throughput Atmospheric Pressure Interface with Improved Ion Transmission at High Pressure;** Eloy R. Wouters¹; Satendra Prasad¹; Alexander A. Makarov²; Jean-Jacques Dunyach¹; ¹Thermo Fisher Scientific, San Jose, CA; ²Thermo Fisher Scientific (Bremen) GmbH, Bremen, Germany
- TP 102 **Velocity-map Imaging Mass Spectrometry: Electron Impact Ionization;** James Bull; Jason Lee; Claire Vallance; *University of Oxford, Oxford, UK*
- TP 103 **A Novel Ion-Optical Design for Laminarization of Under-Expanded Gas Flows;** Diamantis Kounadis¹; Dimitris Papanastasiou¹; Ioannis Orfanopoulos¹; Alexander Lekkas¹; Athanasios Zacharos¹; Ioannis Nikolos²; Emmanuel Raptakis¹; ¹Fasmatech, Athens, Greece; ²Technical University of Crete, Chania, Greece
- TP 104 **A Novel Front-End Automation Approach for Sample Introduction, Cleanup and Collection;** Emile Koster; Anne Vos; *Spark Holland, Emmen, Netherlands*
- TP 105 **Progress Towards the Development of a Combined Molecular and Atomic Spectrometry System: Sonic-Spray Ionization MS with Laser Induced Breakdown Spectroscopy;** Katerina Kanaki¹; Olga Kokkinaki²; Kostas Marmatakis^{1,2}; Demetrios Anglos^{1,2}; Spiros Pergantis¹; ¹University of Crete, Heraklion, Greece; ²IESL-FORTH, Heraklion, Greece
- TP 106 **Core Excitation and Specific Dissociation of DNA Carbohydrate, 2-Deoxy-D-Ribose;** Chen-Lin Liu; *NSRRC, Hsinchu, Taiwan*
- TP 107 **Novel bi-polar ion detector with avalanche diode;** Hiroshi Kobayashi; Motohiro Suyama; *Hamamatsu Photonics K.K., Iwata, Japan*
- TP 108 **Space-Charge Shifts of the Cyclotron Mode Frequencies in Multi-Species Ion Plasmas;** Matthew Affolter; Francois Anderegg; C. F. Driscoll; DHE Dubin; *UCSD, La Jolla, CA*
- TP 109 **Duty Cycle-Based Isolation in Linear Quadrupole Ion Traps;** Peter TA Reilly¹; Rachit Singh²; Vivek Jayaram²; ¹Washington State University, Pullman, WA; ²Pullman High School, Pullman, WA
- Peptides: Fragmentation Mechanisms, 110 – 123**
- TP 110 **Sequence Scrambling in Collision-Induced Dissociation (CID) of y-Type Fragment Ions;** Mahsan Miladi¹; Brett Harper¹; John Badger²; Nabeel Hashmi²; Touradj Solouki¹; ¹Baylor University, Waco, TX; ²University of Maine, Orono, ME
- TP 111 **Modulating SOH versus CH₂SO Loss in Arginine Containing Dipeptide Sulfinyl Radical Cations;** Lei Tan; Joseph S. Francisco; Yu Xia; *Purdue University, West Lafayette, IN*
- TP 112 **Electron Transfer Dissociation (ETD) of Peptides Containing Two Intra-Chain Disulfide Bonds;** Lei Tan; Kirt Durand; Xiaoxiao Ma; Yu Xia; *Purdue University, West Lafayette, IN*
- TP 113 **Collision-Induced Dissociation (CID) of Dipeptide Sulfinyl Radical Ions (SO[•]CX);** Lei Tan; Hanfeng Hu; Xia Yu; *Department of Chemistry Purdue University, West Lafayette, IN*
- TP 114 **Energy Dependent Reactions between Cysteine Sulfinyl Radical (SO•Cys) and Thiol (-SH) Within Gas-Phase Polypeptide Ions;** Kirt Durand; Xiaoxiao Ma; Yu Xia; *Purdue University, Lafayette, IN*
- TP 115 **Effects of C-terminal Amide vs Carboxylic Acid Groups on the Dissociation of Deprotonated Model Peptides Containing Acidic Residue;** Ahmet Emin Atik¹; Carolyn J. Cassidy²; Talat Yalcin¹; ¹Dept. of Chemistry, Izmir Institute of Technology, Izmir, Turkey; ²Dept. of Chemistry, The University of Alabama, Tuscaloosa, AL
- TP 116 **Effects of Metal Cationization on Electron Transfer Dissociation of the Acidic Peptide Human Fibrinopeptide B;** Juliette J. Commodore; Carolyn J. Cassidy; *The University of Alabama, Tuscaloosa, AL*
- TP 117 **Characterization of Peptide Disulfide Regio-Isomers via Atmospheric Pressure Ion/Radical Reactions and Tandem Mass Spectrometry;** Xiaoxiao Ma; Craig Stinson; Yu Xia; *Purdue University, West Lafayette, IN*
- TP 118 **Mass Spectrometry Investigation of Elastin-Mimetic Peptides with Unnatural Amino Acids Substitution;** Gianluca Giorgi¹; I-Lin Wu²; Vincent P. Conticello²; ¹Department of Chemistry, University of Siena, Siena, Italy; ²Department of Chemistry, Emory University, Atlanta, GA
- TP 119 **A New Rearrangement Reaction of Peptide b Ions Containing Acetylated Lysine Residue;** Ahmet Emin Atik¹; Oscar Hernandez²; Philippe Maître²; Talat Yalcin¹; ¹Dept. of Chemistry, Izmir Institute of Technology, Izmir, Turkey; ²Laboratoire de Chimie Phys., Université Paris Sud, Orsay, France
- TP 120 **Tandem Mass Spectrometry for the Structural Characterisation of Peptoids that are Peptidomimetics for Antimicrobial Peptides;** Lauren R. Mackay; Steven L. Cobb; Jackie A. Mosely; *Durham University, Durham, UK*
- TP 121 **Spectral Immonium Ion Detection (SPIID): A Software Tool to Systematically Discover New Diagnostic Fragment Ions in Tandem Mass Spectra;** Christian Kelstrup; Jesper V. Olsen; Michael L. Nielsen; *CPR, University of Copenhagen, Copenhagen N, Denmark*
- TP 122 **Electron detachment / Photodetachment Dissociation Mechanisms of Natural and Modified Microcin J25 Lasso Peptides;** Marie Pérot-Taillandier¹; Carlos Afonso²; Quentin Enjalbert³; Rodolphe Antoine³; Philippe Degourd³; Richard B. Cole⁴; Jean-Claude Tabet⁴; Sylvie Rebuffat¹;

- Séverine Zirah¹; ¹National Museum of Natural History; UMR 7245, Paris, France; ²Normandie Univ UMR 6014, FR 3038; Univ Rouen; CNRS, Mont-Saint-Aignan, France; ³University Claude Bernard of Lyon; UMR 5579, Lyon, France; ⁴University Pierre & Marie Curie; UMR 7201, Paris, France
- TP 123 **Modification of the Prolyl Ring of Val-Pro-Ala and the Impact of this Modification on b₂ ion Structure;** Matthew Bernier¹; Ashley Gucinski²; Julia Chamot-Rooke³; Vicki Wysocki¹; ¹The Ohio State University, Columbus, OH; ²U.S. FDA, Saint Louis, MO; ³Institut Pasteur, Paris, France
- Peptides: Ion Activation/Dissociation Strategies, 124 – 128**
- TP 124 **Peptide Sequencing by MALDI Using Negative Ion Mode In-Source Decay;** Chelsea L. McMillen; Patience Wright; Qiaoli Liang; Carolyn J. Cassidy; *The University of Alabama, Tuscaloosa, AL*
- TP 125 **A Study of Non-Covalent Complexes between Peptides Containing Multiple Binding Sites Using CID, HCD and ETD;** Ludovic M. Muller; Luciana Tovo Rodrigues; Shelley N. Jackson; Aurelie Roux; Amina S. Woods; *NIH/NIDA-IRP, Baltimore, MD*
- TP 126 **Gas-Phase Platination of Peptides via Ion/Ion Reactions: Selective Cleavage at Sulfur-Containing Residues;** Alice Pilo; John Stutzman; Scott McLuckey; *Purdue University, West Lafayette, IN*
- TP 127 **De novo Sequencing of Unusual Non Tryptic Peptides Thanks to 4-sulfophenylisothiocyanate Derivatization by Post-Source Decay MALDI-MS;** Julien Echterbille¹; Loic Quinton¹; Pierre Escoubas²; Nicolas Gilles³; Edwin De Pauw¹; ¹Universtiy of Liege, Liege, Belgium; ²Venomotech, Valbonne, France; ³IBiTecS SIMOPRO CEA, Gif-sur-Yvette, France
- TP 128 **Enhanced ETD in Tryptic Digests of Complex Samples by Derivatizing Peptide Carboxyl Groups;** Brian L. Frey; Daniel Lador; Samuel B. Sondalle; Lloyd M. Smith; *University of Wisconsin, Madison, WI*
- Peptides: Quantitative Analysis I, 129 – 163**
- TP 129 **Specificity of SRM Measurements: Contributions of Mass Accuracy, Number of Transitions, Liquid Chromatography Separations, and MS³;** Konstantinos Petritis¹; Tony Tegeler¹; Patrick Pirrotte¹; Waibhav Tembe¹; Jianqiu Zhang²; Jian Liu¹; ¹Translational Genomics Research Institute, Phoenix, AZ; ²University of Texas, San Antonio, TX
- TP 130 **Developing Target-specific MRM Assay for Protein Quantification: An Empirical Example;** Bob Xiong¹; Lance Miller¹; Kendall Powell¹; Brian Nofsinger¹; Mike Allen¹; Robert Hammer²; Sam Massoni²; ¹Tandem Labs - RTP, Durham, NC; ²New England Peptide, Gardner, MA
- TP 131 **Improving Throughput for Highly Multiplexed Targeted Quantification Methods Using Novel API-remote Instrument Control and State-Model Data Acquisition Schemes;** Amol Prakash¹; Scott Peterman¹; Barbara Frewen¹; Andreas Kuehn²; Gene Ciccimaro³; Tara Schroeder³; Lisa Vasicek⁶; Brian Hood⁶; Ryan Bomgarden⁴; Bryan Krastins¹; David Sarracino¹; Gregory Byram¹; Maryann Vogelsang¹; Jonathan Worboys⁵; Claus Jorgensen⁵; Thomas Conrads⁶; Mary Lopez¹; ¹ThermoFisher Scientific BRIMS, Cambridge, MA; ²ThermoFisher Scientific Bremen, Bremen, Germany; ³ThermoFisher Scientific Somerset, Somerset, NJ; ⁴ThermoFisher Scientific Rockford, IL; ⁵Institute for Cancer Research, London, UK; ⁶Women's Integrated Research Center at Inova Health, Annandale, VA
- TP 132 **The Effect of a Newly Redesigned Triple Quadrupole Mass Spectrometer on Targeted Peptide Quantitation;** Michael Bereman¹; Richard Johnson¹; Reiko Kiyonami²; Harald Oser²; Mary Blackburn²; Brendan MacLean¹; Andy Hoofnagle¹; Michael MacCoss¹; ¹Univ of Washington, Seattle, WA; ²Thermo Fisher Scientific, San Jose, CA
- TP 133 **Effect of Using Non-identical Peptides as Internal Standards;** Richard S. Johnson; Jennifer Merrihew; Michael MacCoss; *University of Washington, Seattle, WA*
- TP 134 **Techniques to Improve Multiple Reaction Monitoring (MRM) Assay Development Efficiency;** David Cox¹; Christie Hunter²; ¹AB Sciex, Concord, Canada; ²AB Sciex, Foster City, CA
- TP 135 **Intact versus Signature Peptide Approach to Reach Optimal Sensitivity in Large Molecule Quantification by LC-MS: Exenatide Case Study;** Jean-Nicholas Mess; Daniel Villeneuve; Fabio Garofolo; *Algorithme Pharma Inc., Laval, Quebec, Canada*
- TP 136 **Exploring the Sensitivity Differences for Targeted Peptide Quantification in the Low Flow Rate Regime;** Tina Settineri¹; Christie Hunter²; Remco van Soest¹; Xiang Zhu¹; ¹Eksigent, part of AB SCIEX, Dublin, CA; ²AB SCIEX, Foster City, CA
- TP 137 **Increasing the Multiplexing of High Resolution Targeted Peptide Quantification Assays Using a Scheduled High Resolution MS/MS Workflow;** Mark Cafazzo; *AB SCIEX, Framingham, MA*
- TP 138 **Dynamic Setting of Acquisition Parameters for High Resolution / Accurate Mass Quantitative Analyses Using a Quadrupole-Orbitrap Instrument;** Bruno Doman; Sang-Yoon Kim; Sebastien Gallien; *Luxembourg Clinical Proteomics Center, Strassen, Luxembourg*
- TP 139 **High Resolution Pseudo MRM Peptide Assays on a QTOF Instrument;** Dominic Helm¹; Benjamin Ruprecht¹; Simone Lemeer¹; Christopher J Hughes²; Johannes PC Vissers²; James I Langridge²; Bernhard Kuster¹; ¹Technische Universität München, Freising, Germany; ²Waters Corporation, Manchester, UK
- TP 140 **Advanced Use of High Resolution Mass Spectrometry (HRMS) to Overcome Triple Quadrupole Limitations in Large Molecules Quantification;** Louis-Philippe Morin; Jean-Nicholas Mess; Milton Furtado; Fabio Garofolo; *Algorithme Pharma Inc., Laval, Quebec, Canada*
- TP 141 **Finding the Unexpected in SWATH™ Data Sets - Implications for Protein Quantitation;** Ron Bonner; Stephen Tate; Adam Lau; *AB SCIEX, Concord, Canada*
- TP 142 **Protein Profiling across Large Sets of Samples: A Comparison of SWATH-acquisition with Shotgun LC-MS/MS and LC-MRM Using a "Gold-Standard-Sample-Set";** Roland M. Bruderer^{1,2}; Saša M. Miladinović^{1,2}; Oliver Rinner¹; Rudolf Aebersold²; Lukas Reiter¹; ¹BiognoSYS AG, Schlieren, Switzerland; ²Institute of Molecular Systems Biology, ETH, Zurich, Switzerland
- TP 143 **Universal Approach to Relative Quantitation of Proteomic Data Using a Novel Library of Peptide Standards;** Michael Heaven¹; Archie Cobbs²; Landon Wilson¹; Matthew Renfrow¹; Stephen Barnes¹; Michael Brenner¹; Jeremy Norris³; ¹Univ. of Alabama at Birmingham, Birmingham, AL; ²Vulcan Analytical, Birmingham, AL; ³Vanderbilt University, Nashville, TN
- TP 144 **Automated Protein Expression Analysis – A Procedure Robust to Experimental Variance;** Gordana Ivosev; Stephen Tate; Ron Bonner; Lyle Burton; *AB Sciex, Concord, Canada*

- TP 145 **FDR of “Different”: empirical, Probability Based Determination of Up- and Down-Regulation in Quantitative Proteomics;** John Wilson; Darryl D. Pappin; *Cold Spring Harbor, Cold Spring Harbor, NY*
- TP 146 **Peptide Peaks Growing Up in a Tough Chromatographic Neighborhood: Characterizing MRM Reproducibility and Robustness in Complex Microbial Samples;** Adam Martin^{1,2}; Paul Abraham^{1,2}; Rachel Adams^{1,2}; Robert Hettich¹; ¹*Oak Ridge National Laboratory, Oak Ridge, TN*; ²*University of Tennessee, Knoxville, TN*
- TP 147 **Lessons Learned: What to Expect when Using MS1- and MS2-based Label Free Methods for Quantification;** Jan Muntel¹; Sarah A. Boswell²; Waltraud Mair¹; Judith A. J. Steen¹; Michael Springer²; Hanno Steen¹; ¹*Children’s Hospital Boston, Boston, MA*; ²*Harvard Medical School, Boston, MA*
- TP 148 **Automation of the Multiplexed Peptide immuno-MRM-MS Workflow on Bravo AssayMAP Platform;** Eric Kuhn¹; Lola Fagbami¹; Zach Van Den Heuvel²; Steve Murphy²; Jacob Jaffe¹; Steve Carr¹; ¹*Broad Institute, Cambridge, MA*; ²*Agilent Technologies, Santa Clara, CA*
- TP 149 **Carry-Over Issue in LCMSMS Bioanalysis with a Peptide-like Compound;** Marcel Fournier; Nathalie Pelletier; Nadine Boudreau; Ann Lévesque; *PharmaNet Canada, Quebec, Canada*
- TP 150 **Quantitative Bottom-Up Proteomics Depends on Digestion Conditions;** Mark Lowenthal; Yuxue Liang; Stephen Stein; Karen Phinney; *National Institute of Standards and Technology, Gaithersburg, MD*
- TP 151 **Approaching Nanoflow Level Sensitivity Using Microflow Rates for Peptide Quantitation;** Kelli Jonakin; Christie Hunter; *ABSCIEX, Foster City, CA*
- TP 152 **Selectivity and Sensitivity Evaluation in Peptide Quantification by Using LC-SRM3 and LC-Differential Ion Mobility Spectrometry Approaches;** Bandar Alghanem¹; Dario Bottinelli¹; Ying Zhang¹; Aivett Bilbao^{1,3}; Frédéric Nikitin³; Markus Mueller³; Frédérique Lisacek³; Jeremy Luban²; Caterina Strambio De Castillia²; Emmanuel Varesio¹; Gérard Hopfgartner¹; ¹*University of Geneva, Geneva, Switzerland*; ²*University of Massachusetts, Worcester, MA*; ³*Swiss Institute of Bioinformatics, Geneva, Switzerland*
- TP 153 **SF₆: A Robust and Effective Proton Transfer Reagent for Improved Accuracy in Quantitative Proteomics through Precursor Ion Purification;** Arne Ulbrich; Aaron R. Ledvina; Christopher M. Rose; Michael S. Westphall; Joshua J. Coon; *University of Wisconsin, Madison, WI*
- TP 154 **Comparison of Automated Protocols for Quantitative Profiling of Peptides in Brain Tissue Extracts by High Throughput MALDI-TOF MS;** Elena V Romanova; Jonathan V Sweedler; *University of Illinois at Urbana-Champaign, Urbana, IL*
- TP 155 **Mixture Effects on Peptide Quantification by MALDI MS;** Kd Priyasantha; Mary Kinsel; Gary Kinsel; *Southern Illinois University, Carbondale, IL*
- TP 156 **SILAC Peptide Ratio Calculator - A New Tool for Robust SILAC Peptide Quantitation;** Xiaoyan Guan; Neha Rastogi; Mark Parthun; Michael A. Freitas; *Ohio State University, Columbus, OH*
- TP 157 **Expression of Mutant Proteins as Reagents for LC-MRM Assay Development and Internal Standards for Quantification;** Elizabeth Remily-Wood¹; Nicholas Woods¹; Robin Hurst²; Michael Rosenblatt²; Alvaro Monteiro¹; John Koomen¹; ¹*H. Lee Moffitt Cancer Center, Tampa, FL*; ²*Promega, Madison, WI*
- TP 158 **Proteomic Analysis of Mouse Macrophage (RAW264.7) Cells Infected with Burkholderia pseudomallei K96243;** Zhaojing Meng¹; King Chan¹; Ming Zhou¹; David Deshazer²; ¹*SAIC-Frederick, Inc., Frederick, MD*; ²*USAMRIID, Frederick, MD*
- TP 159 **Development of a Quantitative LCMS Method for the Novel Antifungal Compound Occidiofungin using QuanBrowser and TraceFinder 3.0;** Wanjin Tang¹; Jamie K. Humphries²; Lawrence J. Dangott³; Akshaya Ravichandran¹; Leif Smith¹; ¹*Dept of Biology, Texas A&M University, College Station, TX*; ²*ThermoScientific, Austin, TX*; ³*Protein Chemistry Laboratory, Texas A&M University, College Station, TX*
- TP 160 **Absolute Quantification of XRCC4 in Cells and Human Tissue by LC-MS/MS;** Matt Myers; Xiaomin Wang; *Celgene Corporation, Summit, NJ*
- TP 161 **Quantitative Analysis of Human Progranulin and Granulin Peptides Using Multiple Reaction Monitoring;** Toshiya Matsubara^{1,2}; Noriyuki Ojima¹; Tairo Ogura¹; Ichiro Hirano¹; Susumu Seino²; ¹*Shimadzu Corporation, Kyoto, Japan*; ²*Kobe University Graduate School of Medicine, Kobe, Japan*
- TP 162 **Improved Sensitivity and Throughput for LC-MS/MS Analysis of CB-315 Lipopeptide in Human Urine Using Micro-elution SPE;** Qiuying Zhu¹; Laixin Wang¹; Toni Pollock¹; Scott Reuschel¹; Min Meng¹; Qiao Zhan²; Robert Pawliuk²; David Benziger²; Gurudatt Chandorkar²; ¹*Tandem Labs, Salt Lake City, UT*; ²*Cubist Pharmaceuticals, Inc., Lexington, MA*
- TP 163 **New 2-Dimensional Image-Converted Analysis of Liquid Chromatography and Mass Spectrometry (2DICAL) Version with an Algorithm for High-Performance Mass Spectrometry Data;** Tomohiro Sakuma¹; Miho Banno¹; Masahiro Kamita²; Tesshi Yamada²; Masaya Ono²; ¹*Mitsui Knowledge Industry Co.,Ltd., Tokyo, Japan*; ²*National Cancer Center Research Institute, Tokyo, Japan*
- Proteins: Conformation Analysis, 164 – 172**
- TP 164 **Probing the Effect of Primary Structure Variance on the Gas-Phase Conformations of Insulin and Lispro;** Brett Harper; Mahsan Miladi; Behrooz Zekavat; Touradj Solouki; *Baylor University, Waco, TX*
- TP 165 **Domain-Localized Energy-Resolved Unfolding of Native-Like Protein Structures in the Gas Phase: Corollaries from Ion Mobility and Electron Transfer Dissociation;** Deepali Rathore; Eric D. Dodds; *University of Nebraska, Lincoln, NE*
- TP 166 **Structure of Histone H2A/H2B Dimer Analyzed by Ion Mobility Mass Spectrometry and Molecular Dynamics Simulation;** Kazumi Saikusa¹; Sotaro Fuchigami¹; Yuuki Asano¹; Aritaka Nagadoi¹; Hiroaki Tachiwana²; Hitoshi Kurumizaka²; Mitsunori Ikeguchi¹; Yoshifumi Nishimura¹; Satoko Akashi¹; ¹*Yokohama City Univ., Grad. Sch. of Nanobioscience, Yokohama, Japan*; ²*Waseda Univ., Sch. of Adv. Sci. & Eng., Tokyo, Japan*
- TP 167 **Protein Conformational Dynamics Studies Using TIMS-MS and Theoretical Calculations;** John Daniel DeBord; Emily Schenk; Jaroslava Miksovskaja; Francisco Fernandez Lima; *Florida International University, Miami, FL*
- TP 168 **Time-Dependent Labeling of Proteins by Fast Photochemical Oxidation of Proteins (FPOP);** Ben Niu; Hao Zhang; Don Rempel; Michael Gross; *Washington University, Saint Louis, MO*
- TP 169 **Electrochemical Generation of Hydroxyl Radicals for Hydroxyl Radical Footprinting Experiments;** Eric Monroe; Michael Heien; *Univ of Arizona, Tucson, AZ*

- TP 170 **Photo Activation Dependent Unfolding of Model Proteins to Analyse the Effect of Deamidation on Gas-Phase Structure Using Top-Down ECD FTICR-MS;** Andrew Soulbey^{1,2}; Huilin Li¹; Mark Barrow¹; James Scrivens²; Peter O'Connor¹; ¹Chemistry, University of Warwick, Coventry, UK; ²Biological Sciences, University of Warwick, Coventry, UK
- TP 171 **Protein Unfolding and Folding in the Gas Phase Probed by Electron Capture Dissociation;** Moritz Schennach; Kathrin Breuker; *University of Innsbruck, Innsbruck, Austria*
- TP 172 **Differential Isotopic SMTA Amine Labeling for in Solution Protein Conformation Studies by Top-Down UVPD and Bottom-up Approaches;** Michael Cammarata; Walter Fast; Hung-wen Liu; Jennifer Brodbelt; *University of Texas, Austin, TX*
- Protein Covalent Labeling, 173 – 193**
- TP 173 **Covalent Labeling Strategies for the Improvement of Whole Protein and Large Peptide Sequence Determination by Electron Transfer Dissociation;** Lissa C. Anderson¹; A. Michelle English¹; Weihang Wang¹; Jeffrey Shabanowitz¹; Donald F. Hunt^{1,2}; ¹Department of Chemistry, University of Virginia, Charlottesville, VA; ²Department of Pathology, University of Virginia, Charlottesville, VA
- TP 174 **Covalent Labeling of Peptides and Proteins inside Reverse Micelles is Under Electrostatic Control;** Feng Wang; Rajasekharreddy Ramireddy; Sankaran Thayumanavan; Richard Vachet; *University of Massachusetts Amherst, Amherst, MA*
- TP 175 **Catching Protein N-terminus Using Mass Spectrometry - Insights into Protein/Peptide Modification and Enrichment;** Eva Zakoucka²; Petr Man^{1,2}; Alan Kadek¹; Petr Novak^{1,2}; Petr Jedelsky²; Jan Tachezy²; ¹Institute of Microbiology, Prague 4, Czech Republic; ²Faculty of Science, Charles University, Prague 2, Czech Republic
- TP 176 **Identification and Characterization of the Modification Sites in Formaldehyde-Inactivated Diphtheria Toxin;** Joost P. Uittenbogaard; Ad P.J.M. de Jong; Hugo D. Meiring; Geert P.M. Mommen; Gideon F.A. Kersten; Bernard Metz; *InTraVacc, Bilthoven, The Netherlands*
- TP 177 **Unexpected Arginine Biotinylation by N-Hydroxysulfosuccinimide (sulfoNHS) Linked Biotin Reagents;** Qinfeng Liu; Andres Lam; Kinjal Amin; *Campbell University, Buies Creek, NC*
- TP 178 **New Evidence for Covalent Binding of 4-Hydroxynonenal to Matrix Metalloproteinase 13 Using High Resolution Tandem Mass Spectrometry;** Makan Golizeh¹; Mohamed Benderdour²; Lekha Sleno¹; ¹Université du Québec à Montréal (UQAM), Montreal, Canada; ²Hôpital Sacré-Coeur, Université de Montréal, Montréal, CA
- TP 179 **Large Scale Analysis of Protein-Ligand Binding Interactions Using a SILAC-Based Proteomics Platform;** Duc T. Tran; Jagat Adhikari; Michael C. Fitzgerald; *Duke University, Durham, NC*
- TP 180 **Comprehensive Characterization of Citrullinated Sites in Proteins by Br-Tagging and MALDI TOF/TOF MS;** Sangwon Cha¹; Hyelin Seo¹; Eunbi Shin¹; Eun Young Lee²; ¹Hankuk University of Foreign Studies, Yongin, South Korea; ²Seoul National University Hospital, Seoul, South Korea
- TP 181 **Can Structural Elements of Proteins be Identified by Mass Spectrometry and Rapid Derivatization in Electrospray Plumes?** Paul Martino¹; Ga-Ram Han¹; Joshua Denny¹; Jennifer Bowman¹; Chance Lewis¹; Douglas Steiner²; Daniel Therrien²; ¹Carson-Newman University, Jefferson City, TN; ²Montana Tech, Butte, MT
- TP 182 **MeCAT Labelling and ESI MS – A New Means to Quantify Proteins in Extracts;** Gunnar Schwarz¹; Rene Becker¹; David Benda¹; Violette Frochoux¹; Sebastian Beck¹; Hartmut Schlueter²; Michael Linscheid¹; ¹Humboldt-Universitaet zu Berlin, Berlin, Germany; ²Universitaetsklinikum Hamburg-Eppendorf, Hamburg, Germany
- TP 183 **Covalent Labeling with Isotopically Encoded Reagents for Improved Structural Analysis of Proteins;** Yuping Zhou; Richard Vachet; *University of Massachusetts, Amherst, MA*
- TP 184 **Mass Spectrometry in the New World of Tight-Binding Slow Off-Rate Inhibitors;** Philip Ross; *AstraZeneca PLP, Waltham, MA*
- TP 185 **Insulin as a Model for Amyloid-Beta Fibril Inhibition Studies Using Rapid Derivatization in Electrospray Plumes;** Jeddiah Griffin; Paul Martino; *Carson-Newman University, Jefferson City, TN*
- TP 186 **Synthesis and Characterization of NHS Ester Conjugated Magnetic Nanoparticles for Labeling Primary Amine Groups in Proteins/Peptides;** Ujwal S. Patil²; Haiou Qu²; Daniela Caruntu²; Charles J. O'Connor²; Arjun Sharma^{1,2}; Matthew A. Tarr²; Yang Cai^{1,2}; ¹The Research Institute for Children, New Orleans, New Orleans, LA; ²Department of Chemistry, University of New Orleans, New Orleans, LA
- TP 187 **Identification of Phosphorylation of Tyrosines on Human Kinesin KIF3C Motor Domain by Organophosphorus Pesticides Using LC-MS/MS;** Pei Li; Michael Bartlett; *University of Georgia, Athens, GA*
- TP 188 **Ultraprotein Folding Studies by Sub-Millisecond Mixing in Combination with Pulsed Oxidative Labeling and ESI-MS;** Siavash Vahidi; Bradley B. Stocks; Yalda Liaghati-Mobarhan; Lars Konermann; *Univ. of Western Ontario, London, Canada*
- TP 189 **On-line Generation of Reactive Intermediates by Electrochemistry as Approach for Differential Protein Labeling;** Lars Büter¹; Helene Faber²; Kristina Wentker²; Uwe Karst²; ¹University of Münster-Graduate School of Chemistry, Münster, Germany; ²University of Münster, Münster, Germany
- TP 190 **A New Label Free Approach for The Determination of Reaction Rates in Oxidative Footprinting Experiments;** Eduardo Pilau¹; Amadeu Iglesias²; Fabio Gozzo³; ¹University of Maringá, Maringá, Brazil; ²Waters Technology, São Paulo, Brazil; ³University of Campinas, Campinas, Brazil
- TP 191 **Study of Terephthalic Acid as the Radical Dosimeter in Hydroxyl Radical Protein Footprinting;** Boer Xie; *Complex Carbohydrate Research Center, UGA, Athens, GA*
- TP 192 **Identification of the Antithrombin III-Arixtra Binding Interface by Rapid Hydroxyl Radical Protein Footprinting;** Qi Gao; Matthew Tessier; Robert Woods; Joshua Sharp; *Complex Carbohydrate Research Center, Athens, GA*
- TP 193 **Structural Characterization of Robo1 IG1-2 Protein by Hydroxyl Radical Footprinting;** Zixuan Li; *Complex Carbohydrate Research Center UGA, Athens, GA*
- Biomolecular Structure, 194 – 205**
- TP 194 **Tracing Nanoparticle Cellular Entry and Trafficking: A Proteomics Strategy Coupling Photo-Cross-Linkable Dendrimer with Mass Spectrometry Quantitation Approach;** Li Yang; Liang Xue; W. Andy Tao; *Purdue University, West Lafayette, IN*
- TP 195 **Native Cell Surface Protein Labeling by sulfo-NHS Ester Conjugated Cleavable Affinity Tags;** Jiang Qian^{1,2}; Ujwal S. Patil²; Arjun Sharma^{1,2}; Richard B. Cole²; Matthew

- A. Tarr²; Yang Cai^{1,2}; ¹The Research Institute for Children, New Orleans, New Orleans, LA; ²Department of Chemistry, University of New Orleans, New Orleans, LA
- TP 196 **Using Isotopically-Coded Hydrogen Peroxide as a Surface Modification Reagent for the Structural Characterization of Prion-Protein Aggregates;** Jason Serpa¹; Evgeniy Petrotchenko¹; David Wishart²; Christoph Borchers^{1,3}; ¹University of Victoria-Genome BC Proteomics Centre, Victoria, Canada; ²University of Alberta, Alberta, Canada; ³Dept of Biochemistry and Microbiology, U Victoria, Victoria, Canada
- TP 197 **Novel Carbene Labeling Candidates for Topographic Protein Analysis;** Jinyu Ma¹; Ryan Bomgarden²; John Rogers²; Chris Etienne²; David C. Schriemer¹; ¹University of Calgary, Calgary, Canada; ²Thermo Fisher Scientific, Rockford, IL
- TP 198 **Simultaneous Oxidation and On-plate Deposition to Facilitate High Throughput Protein Footprinting by Radical Probe Mass Spectrometry;** Simin Maleknia¹; Kevin Downard²; ¹University of New South Wales, Sydney, Australia; ²University of Sydney, Sydney, Australia
- TP 199 **Charting Calmodulin and Calcium Dependent Structural Changes of Eukaryotic Elongation factor-2 Kinase Using 351 nm UVPD-MS;** John O'Brien; Clint Tavares; Kevin Dalby; Jennifer Brodbelt; University of Texas, Austin, TX
- TP 200 **Thermodynamic Analysis of Protein Folding Reactions Using a Mass Spectrometry-Based Tryptophan Modification Protocol;** Yingrong Xu; Erin C. Strickland; Michael C. Fitzgerald; Duke University, Durham, NC
- TP 201 **Top-Down And Bottom-Up Structural Analysis of Fibrillar and Prefibrillar Oligomeric Forms of Amyloid A β Using Covalent Labeling;** Alexandra Klinger²; Janna Kiselar¹; Sergei Ilchenko¹; Mark R. Chance¹; Paul Axelsen²; ¹Case Western Reserve Univ, Cleveland, OH; ²University of Pennsylvania, Philadelphia, PA
- TP 202 **Accuracy and Precision of a New Covalent Modification- and Quantitative MS-Based Proteomics Approach for Protein-Ligand Binding Analyses in Complex Mixtures;** Erin C. Strickland; Michael C. Fitzgerald; Duke University, Durham, NC
- TP 203 **Targeted Derivatization for a Better MS/MS: Combining Chemistry and an Interactive Search Algorithm for Sequencing Peptides above 3500 Da;** David Morgenstern¹; Yong Kil²; Wilfred Tang²; Chris Becker²; Marshall Bern²; David Fenyo¹; Beatrix Ueberheide¹; ¹New York University Langone Medical Center, New York City, NY; ²Protein Metrics, San Carlos, CA
- TP 204 **Deciphering the Sequence Specificity of Protein Citrullination of Glial Fibrillary Acidic Protein;** Dylan Meyer; Andrew Kuhn; Katherine Herting; Jennifer Grant; Univ. Wisconsin- Stout, Menomonie, WI
- TP 205 **A Novel Method to Investigate the Serum Stability of PEGylated Peptides;** Qingyuan Liu; Michael De Felippis; Jorge Alsina-Fernandez; Lihua Huang; Eli Lilly and Company, Indianapolis, IN
- Intact Proteins: PTM Discovery, 206 – 212**
- TP 206 **In-depth Characterization of Intact Myofibrillar Proteoforms by Top-down LC/MS-based Proteomics;** Ying Peng; Han Zhang; Matthew Lawrence; Song Jin; Ying Ge; University of Wisconsin, Madison, WI
- TP 207 **Characterization of Human Tropomyosin Molecular Heterogeneities Using Top-Down Mass Spectrometry;** Deyang Yu^{1,2}; Ying Peng^{1,4}; Zachery Gregorich^{1,3}; Xin Chen^{1,4}; Ying Ge^{1,5}; ¹Human Proteomics Program, Madison, WI; ²Molecular and Environmental Toxicology, SMPH, Madison, WI; ³Molecular and Cellular Pharmacology Program, Madison, WI; ⁴Department of Cell and Regenerative Biology, SMPH, Madison, WI; ⁵Department of Chemistry, UW-Madison, Madison, WI
- TP 208 **Expanding Top Down Proteoform Coverage on Emerin through Targeted MS2 and Modified Databases Using ProSightPC 3.0;** Robert O'Meally; Raghothama Chaerkady; Robert Cole; Johns Hopkins School of Medicine, Baltimore, MD
- TP 209 **Functional Characterization of Microbial Proteins Using the Top-Down Proteomics;** Si Wu; Charles Ansong; Samuel Payne; Roslyn Brown; Da Meng; Rui Zhao; Nikola Tolic; Yi Qu; Ronald Moore; Mary Lipton; Joshua Adkins; Ljiljana Pasa-Tolic; PNNL, Richland, WA
- TP 210 **Top Down Proteomics Applied to Cultural Heritage;** Sophie Dallongeville; Fabrice Bray; Christian Rolando; Caroline Tokarski; Université Lille 1, Sciences et Technologies, Villeneuve d'Ascq, France
- TP 211 **Top-Down MS for Clinical Proteomics, Functional Biology, and Biomarker Validation: Proteotyping CNS Dysfunction;** Steven Patrie; Junmei Zhang; Daniel Plymire; John Corbett; UT Southwestern Med. Center, Dallas, TX
- TP 212 **Online Core-Shell HPLC Protein Separation and Top-Down Proteomics Using High Resolution Mass Spectrometry;** Christopher Bolcato; Xianglin Yuan; Matthew Maust; Matthew Powell; Protea Biosciences Group, Inc., Morgantown, WV
- Intact Proteins: Quantitative Analysis, 213 – 217**
- TP 213 **Quantitative Assessment of Alpha-Synuclein Forms in Parkinson's Disease and Normal Brains by Use of Top-Down Mass Spectrometry;** John F. Kellie; John Ryder; Kalpana Merchant; Michael Knierman; Eli Lilly and Company, Indianapolis, IN
- TP 214 **Bioanalytical Quantitation of Biotherapeutics using Intact Protein vs. Proteolytic Peptides by LC-HR/AM on a Q Exactive;** Jenny Chen; Jessica wang; Zhiqi hao; Patrick bennett; greg kilby; Thermo Fisher Sci., San Jose, CA
- TP 215 **Development of a Top-Down Approach for Staphylococcus aureus Enterotoxin A and B Absolute Quantification;** Alexandre Seyer¹; Kahina Kachetel¹; Mathieu Dupre¹; Francois Fenaille¹; Dorothee Lebert²; Mathilde Louwagie²; Jean-Claude Tabet³; Christophe Junot¹; Virginie Brun²; Francois Becher¹; ¹CEA, IBItec-S, SPI, LEMM, Gif Sur Yvette Cedex, France; ²CEA, DSV, iRTSV, U1038 INSERM, EDyP, Grenoble, France; ³UPMC, CNRS UMR 7613, Paris, France
- TP 216 **Quantitative Dissection of Polymorphic Neuronal Receptor Families Using a Selected Reaction Monitoring-Based Approach;** Jovan Simicevic; Dietmar Schreiner; Erik Ahrné; Peter Scheiffele; Alexander Schmidt; University of Basel, Basel, SWITZERLAND
- TP 217 **Identification and Quantitation of Intact SOD1 Metal States to Monitor Metal Loading Dysfunction in ALS Animals Models;** Jared Williams; Nathan Lopez; Joe Beckman; Oregon State University, Corvallis, OR
- Intact Proteins: Sequence Analysis, 218 -224**
- TP 218 **Systematic Evaluation of Ultrahigh Resolution MS Instrument Parameter to Optimize Topdown Analysis;** Martin Zeller¹; Mathias Mueller¹; Eugen Damoc¹; Eduard Denisov¹; Alexander Makarov¹; Dirk Nolting¹; Shannon Eliuk²; Justin Blethrow²; August Specht²; Thomas Moehring¹; Vlad Zabrouskov²; ¹Thermo Fisher Scientific, Bremen, Germany; ²Thermo Fisher Scientific, San Jose, CA

- TP 219 **Top-Down Analysis of Intact Antibodies Using Orbitrap Mass Spectrometry;** Eugen Damoc; Eduard Denisov; Alexander Makarov; *Thermo Fisher Scientific, Bremen, Germany*
- TP 220 **Top-down Analysis by LC-MS/MS of Proteins in Exosomes Shed by Murine Suppressor Cells;** Avantika Dhabaria¹; Yan Wang¹; Nathan Edwards²; Suzanne Ostrand-Rosenberg³; Catherine Fenselau¹; ¹*University of Maryland, College Park, MD*; ²*Georgetown University Medical Center, Washington, D.C.*; ³*University of Maryland Baltimore County, Baltimore, MD*
- TP 221 **Top-down Intact Protein Database Search with Isotopic Mass-to-Charge Ratio and Envelope Fingerprinting and ProteinGoggle;** Zhixin Tian; Li Li; Bo Wang; Jing Li; *Dalian Institute of Chemical Physics, CAS, Dalian, China*
- TP 222 **Top-down Assisted Bottom-up Method for Avian Hemoglobin Sequencing;** Yang Stella Song¹; Ü nige A. Laskay²; Alan G. Barbour³; Vicki H. Wysocki¹; ¹*The Ohio State University, Columbus, OH*; ²*The University of Arizona, Tucson, AZ*; ³*University of California, Irvine, CA*
- TP 223 **A Front-End ETD Modified Orbitrap-Velos with Ion-Ion Proton Transfer Reactions and Multiple Fills Provides Near-Complete Sequence Coverage of Intact Proteins;** A. Michelle English; Lissa C. Anderson; Weihang Wang; Dina L. Bai; Jeffrey Shabanowitz; Donald F. Hunt; *University of Virginia, Charlottesville, VA*
- TP 224 **Preferential N-terminal Conjugation as a Strategy to Sequence N-terminus by ISD-MALDI Top Down Sequencing Alone;** Gomathinayagam Ponniah; Adam Lucka; Bruce Andrien; *Alexion Pharmaceuticals, Cheshire, CT*
- Protein Therapeutics: Structural Characterization, 225 – 238**
- TP 225 **An Integrated Cross-Platform Workflow for Detecting Low-Abundance Sequence Variants;** Hangtian Song; Wei Wu; Yunping Huang; Richard Ludwig; Li Tao; *Bristol-Myers Squibb, Hopewell, NJ*
- TP 226 **New Approaches for MALDI MS-based Biopharmaceutical Characterization;** Marion Rohmer¹; Dominic Baeumlisberger^{1,2}; Ute Bahr¹; Michael Karas¹; ¹*Goethe University, Frankfurt Am Main, Germany*; ²*SunChrom GmbH, Friedrichsdorf, Germany*
- TP 227 **Optimized HDX-MS Workflow for Analyzing the Conformation of Therapeutic Antibodies;** Pernille Foged Jensen¹; Maximiliane Hilger²; Kasper D. Rand¹; ¹*University of Copenhagen, Copenhagen, Denmark*; ²*Roche Diagnostics GmbH, Penzberg, Germany*
- TP 228 **Contribution of the Interchain Disulfide Bonds to the Conformation and Stability of Immunoglobulin as Revealed by HDX MS;** Jing Fang; Jason Richardson; Zhongqi Zhang; *Amgen, Thousand Oaks, CA*
- TP 229 **Sheathless Capillary Electrophoresis Mass Spectrometry as a Versatile and Very Powerful Tool for the Characterization of Monoclonal Antibodies;** Anna Lou¹; Jean-Marc Busnel¹; Zhiqi Hao²; Dona Neloni Wijeratne¹; David Horn²; Elsa Wagner³; Alain Beck³; Patrick Bennett²; ¹*Beckman Coulter, Brea, CA*; ²*Thermo Fisher Scientific, San Jose, CA*; ³*Centre d'Immunologie Pierre Fabre, Saint-Julien-En-Genevois, FR*
- TP 230 **Characterization of Lower Molecular Weight Fragments of Recombinant Monoclonal IgG1 Antibodies Using Non-Reducing SDS-PAGE and Mass Spectrometry;** Chong-Feng Xu; Li Zang; Yi Wang; Andrew Weiskopf; *Biogen Idec, Cambridge, MA*
- TP 231 **Characterization of Heterogeneous Therapeutics by Mass Spectrometry Utilizing Charge Reduction;** Cedric E. Bobst¹; Ruth Frenkel²; Damian Houde²; Andrew Weiskopf²; Igor A. Kaltashov¹; ¹*University of Massachusetts, Amherst, MA*; ²*Biogen IDEC, Cambridge, MA*
- TP 232 **Characterization and Comparison of O-glycosylation between the Innovator and a Biosimilar of Etanercept;** Stephane Houel¹; Ying Qing Yu¹; Jonathan P. Williams²; Weibin Chen¹; ¹*Waters Corp., Milford, MA*; ²*Waters Corp, Manchester, UK*
- TP 233 **Glycoform Profiling from Therapeutic Antibodies at the Protein, Peptide and Cleaved Glycan Level Using Mass Spectrometry;** Chris Hosfield¹; Marjeta Urh¹; Michael Rosenblatt¹; Richard Jones²; Michael Ford²; Ravi Amunugama²; Dave Allen²; ¹*Promega, Madison, WI*; ²*MS Bioworks, Ann Arbor, MI*
- TP 234 **Ion Mobility-Mass Spectrometry Enables the Facile Characterization of Stapled Peptide Crosslink Configuration;** Eric (Xiangguo) Shi; Vincent Guerlavais; Krzysztof Darlak; Jim Horstick; Scott Lentini; D. Allen Annis; *Aileron Therapeutics, Cambridge, MA*
- TP 235 **Isomer-specific LC/MS/MS Characterization of Biopharmaceutically-Relevant Glycans and Glycan Modifications;** Serenus Hua¹; Myung Jin Oh¹; Ha Neul Jeong¹; Bum Jin Kim¹; Gregory Staples²; Rudolf Grimm^{1,2}; Hyun Joo An¹; ¹*Chungnam National University, Daejeon, Korea*; ²*Agilent Technologies, Santa Clara, CA*
- TP 236 **In-Depth Characterization of a Q β Virus-like Particle Using High Resolution Mass Spectrometry;** Justin B. Sperry¹; John H. A. Amery¹; James A. Carroll¹; Jason C. Rouse²; ¹*Analytical R&D, Pfizer, Chesterfield, MO*; ²*Pfizer, Andover, MA*
- TP 237 **Characterizing Glycosylation in Therapeutic Antibodies;** Maria Lorna A. De Leoz^{1,2}; Xinjian Yan¹; Xiaoyu Yang¹; Yuxue Liang¹; Lisa Kilpatrick¹; Yamil Simon¹; Michael J. Tarlov¹; Stephen E. Stein¹; ¹*NIST, Gaithersburg, MD*; ²*University of Maryland, College Park, MD*
- TP 238 **LC-MS/MS Analysis of Site-Specific Glycosylation and Site-Occupancy of Glycoproteins Containing Multiple N-linked and O-linked Glycosylation Sites;** Hongwei Xie; Song Klapoetke; Jeremy Woods; Linda Yi; Tyler Davis; *KBI Biopharma, Durham, NC*
- Informatics: Intact Proteins, 239 – 244**
- TP 239 **The Lambda Scoring Framework: a Bayesian Posterior Probability Model to Improve Identification and Characterization of Top-Down Proteomic Results;** Ryan T. Fellers¹; Richard D. LeDuc²; Bryan P. Early¹; Paul M. Thomas¹; Neil L. Kelleher¹; ¹*Northwestern University, Evanston, IL*; ²*Indiana University, Bloomington, IN*
- TP 240 **Algorithm for Identification and Sequencing of Protein Variants Using Top-Down MS Data;** Christian Heckendorf; Roger Theberge; Jean L. Spencer; Catherine E. Costello; Mark E. McComb; *Boston University School of Medicine, Boston, MA*
- TP 241 **MIND: A Soft-Sensor to Improve Mass Accuracy in High-Resolution Top-Down Proteomics;** Piotr Dittwald³; Frederik Lermyte^{2,4}; Frank Sobott^{2,4}; Ania Gambin³; Dirk Valkenborg^{1,2}; ¹*Applied Bio & Molecular Systems, VITO, Mol, Belgium*; ²*Center for Proteomics, University of Antwerp, Antwerp, Belgium*; ³*Computational Biology Group, University of Warsaw, Warsaw, Poland*; ⁴*Biomolec. Mass Spectrometry, University of Antwerp, Antwerp, Belgium*
- TP 242 **Identification of Ultramodified Proteins Using Top-Down Mass Spectra;** Xiaowen Liu¹; Shawna Hengel²; Si Wu²; Nikola Tolic²; Ljiljana Pasa-Tolic²; Pavel Pevzner³; *IUPUI, Indianapolis, IN*; ²*PNNL, Richland, WA*; ³*UCSD, San Diego, CA*
- TP 243 **Sequencing Antibodies from Top-Down Spectra;** Mikhail Dvorkin¹; Sonya Alexandrova¹; Xiaowen Liu²; Si Wu³; Ljiljana Paša-Tolić³; Nikola Tolić³; Lennard Dekker⁴; Martijn Vanduijn⁴; Theo Luider⁴; Pavel Pevzner^{1,5}; Kira Vyatkin¹;

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Alexander Koch¹; Sandra Steyaert¹; Wim Van Criekinge¹; ¹Ghent University, Ghent, Belgium; ²VIB-Flanders Institute for Biotechnology, Ghent, Belgium

Biomarker Discovery: Proteins, 255 – 275

- TP 244 **Autopilot: An Acquisition Control System with Fragmentation Reanalysis Informed by Online Database Searching to Optimize Top Down Proteome Analysis;** Ken Durbin; Philip Compton; Ioanna Ntai; Adam Catherman; Ryan Fellers; Neil Kelleher; *Northwestern University, Evanston, IL*
- Informatics: Systems Biology and Large-Scale Analyses, 245 – 254**
- TP 245 **Comparative Study of Global Protein Turnover in Tissues and Cell Lines;** Martin Damsbo; Jacob Poder; Erik Nielsen; Christian Ravensborg; Alexandre Podtelejnikov; *Thermo Fisher Scientific, Odense, Denmark*
- TP 246 **Quantitative In-Depth Analysis of the Vascular Smooth Muscle Proteome in a Model of Angiotensin-II Mediated Hypertrophy;** Fernando J. García-Marqués; Elena Bonzón Kulichenko; Jesus Vazquez Cobos; *CNIC, Madrid, Spain*
- TP 247 **An Automated Program for Protein Turnover Calculations from LC/MS Shotgun Proteomics Data Resulting from Partial Metabolic Labelling Experiments;** David Lyon; *Molecular Systems Biology, Vienna, Austria*
- TP 248 **An Integrated Systems Biology Platform for Complete Proteogenomic Analysis;** Pratik Jagtap¹; John Chilton¹; Ebbing de Jong²; James Johnson¹; Joel Kooren²; Getiria Onsongo¹; Sricharan Bandhakavi³; Timothy Griffin²; ¹Minnesota Supercomputing Institute, UMN, Minneapolis, MN; ²University of Minnesota, Minneapolis, MN; ³Bio-Rad Laboratories, Hercules, CA
- TP 249 **Scoring Protein Interactions Using CRAPome – A Contaminant Repository for Affinity Purification Mass Spectrometry Data;** Dattatreya Mellacheruvu¹; Zachary Wright¹; Anne-Claude Gingras^{2,3}; Alexey Nesvizhskii¹; ¹University of Michigan, Ann Arbor, MI; ²University of Toronto, Toronto, Canada; ³Samuel Lunenfeld Research Institute, Toronto, Canada
- TP 250 **Analysis of the STAT3 Interactome Using *in-situ* Biotinylation and SILAC;** Stefan Kalkhof¹; Conny Blumert²; Riccardo Brumm³; Dirk Labudde³; Friedemann Horn²; Martin von Bergen¹; ¹Helmholtz-Centre UFZ, Leipzig, Germany; ²University Leipzig, Leipzig, Germany; ³University of applied sciences, Mittweida, Germany
- TP 251 **IsoMS: A High-Throughput Data Analysis Software for Extracting Quantitative Information from Data Generated by Differential Isotope Labeling LC-MS;** Ruokun Zhou; Chiao-Li Tseng; Liang Li; *Department of Chemistry, University of Alberta, Edmonton, Canada*
- TP 252 **A Novel Algorithm for Protein Profiling Based on Cross-Run Correlations Implemented in the Spectronaut Software;** Oliver M. Bernhardt¹; Roland M. Bruderer^{1,2}; Tejas P. Gandhi¹; Saša M. Miladinović^{1,2}; Reto Ossola¹; Yulia Butscheid¹; Oliver Rinner¹; Lukas Reiter¹; ¹Biognosys, Schlieren, Switzerland; ²ETH Zurich, Zurich, Switzerland
- TP 253 **Identification of More than 8000 Proteins in Single-Runs in Cancer Cell Lines Using Rigorous, FDR-controlled Matching between Runs;** Nagarjuna Nagaraj; Jurgen Cox; Matthias Mann; *MaxPlanck Institute of Biochemistry, Martinsried, Germany*
- TP 254 **Mass Spectrometry and Ribosome Profiling, a Perfect Combination towards a More Comprehensive Identification Strategy of True *in vivo* Protein Forms;** Gerben Menschaert¹; Petra Van Damme^{1,2}; Jeroen Crappé¹; Alexander Koch¹; Sandra Steyaert¹; Wim Van Criekinge¹; ¹Ghent University, Ghent, Belgium; ²VIB-Flanders Institute for Biotechnology, Ghent, Belgium
- TP 255 **Comparison of Long-term-non-progressors vs. Normal-progressors among HIV-1 Infected Patients Using Extensive Ion-Current-Based Proteomic Expression Profiling Revealed Novel Virus Control Mechanisms;** Xiaomeng Shen¹; Xiaosheng Jiang^{1,2}; Jun Li^{1,2}; Jun Qu^{1,2}; ¹University at Buffalo, Buffalo, NY; ²NY CoE in Bioinformatics and Life Sciences, Buffalo, NY
- TP 256 **Differential Proteomics of Monosodium Urate Crystal Induced Inflammatory Response in Dissected Murine Air Pouch Membranes by iTRAQ Technology;** Chih-Wei Chiu¹; Ying-Chu Shih²; Sung-Fang Chen¹; ¹National Taiwan Normal University, Taipei, Taiwan; ²Industrial Technology Research Institute, Hsinchu, Taiwan
- TP 257 **Tandem Affinity Depletion Coupled with Large-Scale, Extensive Ion Current Based Profiling Revealed Interesting Plasma Biomarkers Predicting Sudden Cardiac Arrest;** Chengjian Tu^{1,2}; Jun Li^{1,2}; James Fallavollita¹; Rebecca Young¹; Xiaomeng Shen^{1,2}; Bo An^{1,2}; John M. Canty¹; Jun Qu^{1,2}; ¹University at Buffalo, Buffalo, NY; ²NY CoE in Bioinformatics and Life Sciences, Buffalo, NY
- TP 258 **Biomarkers of Western Diet Induced Metabolic Disorder in Mouse Heart;** Stephen A. Whelan; Chunxiang Yao; Jessica B. Behring; Jean L. Spencer; Deborah A. Siwick; Wilson S. Colucci; Richard A. Cohen; Catherine E. Costello; Markus M. Bachschmid; Mark E. McComb; *Boston University School of Medicine, Boston, MA*
- TP 259 **Detection of Endothelial Cell Surface Proteins Following Irradiation as Potential Targets for Brain Arteriovenous Malformations;** Margaret Simonian²; Nalaka Runnulu¹; Rachel Ogorzalek Loo^{2,1}; Joseph Loo¹; Marcus Stoodley²; Mark Molloy³; ¹UCLA, Los Angeles, CA; ²Australian School of Advanced Medicine, Sydney, Australia; ³Australian Proteomics Analysis Facility, Sydney, Australia
- TP 260 **Quantitative Proteomic Analysis of Saliva in Periodontal Health, Gingivitis, Mild and Severe Periodontitis, and Following Periodontal Treatment;** Andrew Creese¹; Melissa Grant¹; Marcelo Aspiras²; Marko de Jager²; Helen Cooper¹; Iain Chapple¹; ¹University of Birmingham, Birmingham, UK; ²Philips Oral Healthcare, Bothell
- TP 261 **Quantitative Proteomic Mapping of Gingival Crevicular Fluid From Dogs Progressing from Mild Gingivitis to Periodontitis;** Andrew W. Jones¹; Andrew J. Creese¹; Ian Davis²; Iain L. C. Chapple¹; ¹College of Medical & Dental Sciences, University of Birmingham, Birmingham, UK; ²Waltham Centre for Pet Nutrition, Waltham-on-the-Wolds, Melton Mowbray, UK
- TP 262 **Application of Multi-omic and Functional Network Analysis for Paediatric Patients Diagnosed with Idiopathic Nephrotic Syndrome;** Lee A Gethings¹; Johannes P.C. Vissers¹; John Shockcor²; Stephen McDonald²; Sandra Kraljević Pavelić³; Mirela Sedić³; Maja Lemac⁴; Danica Batinić⁴; James Langridge¹; Olga Vasieva⁵; Keith Compson¹; ¹Waters, Manchester, UK; ²Waters Corp, Milford, MA; ³University of Rijeka, Rijeka, Croatia; ⁴University of Zagreb, Zagreb, Croatia; ⁵University of Liverpool, Liverpool, UK
- TP 263 **Proteomic Profiling for Peritoneal Dialysate: Differential Display Analysis for the Protein Expression between Diabetes Mellitus and Chronic Glomerulonephritis;** Yi-Ling Chen¹; Ming-Hui Yang²; Yu-Chang Tyan³; ¹Kaohsiung

Medical University Hospital, Kaohsiung, Taiwan; ²National Yunlin University of Science & Technology, Yunlin, Taiwan; ³Kaohsiung Medical University, Kaohsiung, Taiwan

- TP 264 **Characterization of the Secretome of Vascular Smooth Muscle Cells in Response to TGF- β /Smad3 by Label-free MS^E Quantification;** Chenxi Yang; Di Ma; Xudong Shi; K. Craig Kent; Lingjun Li; *University of Wisconsin, Madison, WI*
- TP 265 **Protein Profile Analysis of Kidney Transplant: Value in Prognosis of Kidney Failure;** Matthew Wroblewski; William Oetting; Gary Nelsestuen; *University of Minnesota, Minneapolis, MN*
- TP 266 **Nicotine Alters the Proteome of Pancreatic Cell Lines: Implications in Pancreatic Disease;** Joao A. Paulo; Steven P. Gygi; *Harvard Medical School, Boston, MA*
- TP 267 **Proteomic Analysis of Matched Normal and Diseased Formalin-Fixed Paraffin-Embedded Human Breast Tissues;** Fayun Che; Jennifer T aguilan; Edward Nieves; Abdissa Negassa; Ruth H Angeletti; Thomas E Rohan; *Albert Einstein College of Medicine, Bronx, NY*
- TP 268 **Protein and Post-Translational Modification Markers in Sickle Cell Disease;** Stephen A Whelan; Roger Theberge; Jean L Spencer; Paula Griffin; Chuanhua Xing; Martin H Steinberg; Catherine E Costello; Elizabeth S Klings; Mark E. McComb; *Boston University School of Medicine, Boston, MA*
- TP 269 **Interference of Protease Inhibitors with Peptidomic Biomarker Discovery and Peptide Identification;** Diana Klingler; Markus Hardt²; ¹*Boston Biomedical Research Institute, Watertown, MA*; ²*The Forsyth Institute, Cambridge, MA*
- TP 270 **Direct MALDI Analysis of Naturally Cleaved Human Saliva Samples: Mapping to a Series of KPQ-terminated Peptides from Small Salivary Proteins;** Kenneth Parker¹; Na Tian²; Frank Oppenheim²; Eva Helmerhorst²; ¹*SimulTOF/ VIC Instruments, Sudbury, MA*; ²*Boston University School of Dental Medicine, Boston, MA*
- TP 271 **Identification of Novel Serum Biomarkers for Preeclampsia with High Predictive Sensitivity;** Swati Anand; *BYU, Provo, UT*
- TP 272 **Proteomic Profiling of Bronchopulmonary Dysplasia in Preterm Infants;** Lindsay Schambeau¹; Lewis Pannell¹; John Benjamin²; Chadi Eltaha³; ¹*USA Mitchell Cancer Institute, Mobile, AL*; ²*Vanderbilt University Medical Center, Nashville, TN*; ³*University of South Alabama, College of Medicine, Mobile, AL*
- TP 273 **Global Quantitative Proteomics of Irradiated Nrf2 Knockout Mus for Biomarker Discovery;** Joseph Capri; Puneet Souda; Upendra Kar; Chris Ryan; William McBride; Andrew Norris; Julian Whitelegge; *UCLA DGSOM, Los Angeles, CA*
- TP 274 **Mass Spectrometry Based Quantitative Proteomics for Discovery of Plasma Protein Biomarkers at Different Phases of Atherosclerosis;** Linhong Jing¹; Zhu-qiu Jin¹; Wei Xie¹; ShuaiPeng Zhang²; ¹*South Dakota State University, Brookings, SD*; ²*Vanderbilt University, Nashville, Tennessee*
- TP 275 **SWATH MS Quantification of Human Urine from ICU Patients Applied to the Quest for Predictive Biomarkers in Acute Kidney Injury;** Peter Pichler¹; Ludwig Wagner²; Christian Baumann³; Michael Schutzbier¹; Volker Kruff³; Karl Mechtler¹; ¹*IMP Vienna, Vienna, Austria*; ²*Medical University of Vienna, Vienna, Austria*; ³*AB SCIEX, Darmstadt, Germany*
- TP 276 **Developing a High-Throughput Clinical Assay Using Selected Reaction Monitoring-Mass Spectrometry to Diagnose Parkinson's Disease;** Christine Jelinek¹; Liana Rosenthal¹; Rachel Lieberman²; Kevin Meyers³; Ted Dawson¹; Jennifer Van Eyk¹; ¹*Johns Hopkins School of Medicine, Baltimore, MD*; ²*Shimadzu Scientific Instruments, Columbia, MD*; ³*Perfinity Biosciences, Inc, West Lafayette, IN*
- TP 277 **Identification of Age Dependent Periodontitis Associated Changes in the Proteome of Whole Human Saliva By Mass Spectrometric Analysis;** Manuela Gesell Salazar; Annette Murr; Elke Hammer; Nico Jehmlich; Vishnu Mukund Dhople; Birte Holtfreter; Thomas Kocher; Uwe Völker; *University Medicine Greifswald, Greifswald, Germany*
- TP 278 **Identification of Novel Serum Biomarkers for Alzheimer's Disease Using an Integrated Serum Proteomics Method;** Dipti Shah; Frederick Rohlfing; Jesse Cobell; MeiHwa Tanielle Bench Alvarez; John Kauwe; Steven Graves; *Brigham Young University, Provo, UT*
- TP 279 **Characterization and Quantitation of Alpha-Synuclein and Subspecies in Human CSF as Candidate Biomarkers for Parkinson's Disease;** Bekim Bajrami; Cheryl Lu; Sri Laxmanan; Jaya Goyal; Juan Chavez; Bernard Ravina; Joleen White; Teresa Compton; Ru Wei; *Biogen Idec, Cambridge, MA*
- TP 280 **Characterization of the C-terminal End of Soluble Amyloid Precursor Protein in Human Cerebrospinal Fluid;** Gunnar Brinkmalm¹; Ann Brinkmalm¹; Philippe Bourgeois²; Rita Persson¹; Oskar Hansson^{3,4}; Erik Portelius¹; Marc Mercken⁵; Ulf Andreasson¹; Stéphane Parent²; Francesco Lipari²; Annika Öhrfelt¹; Maria Bjerke¹; Lennart Minthon^{3,4}; Henrik Zetterberg^{1,6}; Kaj Blennow¹; Magdalena Nutu¹; ¹*University of Gothenburg, Mölndal, Sweden*; ²*PerkinElmer Biosignal, Inc., Montreal, Canada*; ³*Lund University, Malmö, Sweden*; ⁴*Skåne University Hospital, Malmö, Sweden*; ⁵*Janssen Research and Development, Beerse, Belgium*; ⁶*UCL Institute of Neurology, London, UK*
- TP 281 **Comprehensive Analysis of Glycosylation Patterns of Human Plasma Clusterin - A Putative PTM Marker of Alzheimer's Disease;** Hui-Chung Liang¹; Claire Russell¹; Ray Chung²; Abdul Hye²; Chantal Bazenet²; Simon Lovestone²; Ian Pike¹; Malcolm Ward¹; ¹*Proteome Sciences plc, London, UK*; ²*King's College London, London, UK*
- TP 282 **Quantitative Proteomic Analysis of Amyotrophic Lateral Sclerosis-linked Cellular Stress Response with Tandem Mass Tags;** Kristin J. Boggio; John D. Leszyk; Scott A. Shaffer; Daryl A. Bosco; *University of Massachusetts Medical School, Worcester, MA*
- TP 283 **Disease Biomarkers for Schizophrenia Reverted by Antipsychotic Drug Administration: Six-Plex Quantitative Phosphoproteomics of Prefrontal Cortex Synaptosomes;** Marianne Danielsen¹; Kamilla Sofie Pedersen¹; Nadia Taouatas¹; Jens D Mikkelsen²; Henrik H Hansen³; Majbrit M Jensen²; Hans Christian Beck⁴; ¹*Danish Technological Institute, Aarhus, DK*; ²*Neurobiology Research Unit, Rigshospitalet, Copenhagen, DK*; ³*NeuroSearch A/S, Ballerup, DK*; ⁴*Centre for Clinical Proteomics, OUH, Odense, DK*
- TP 284 **Validation of Disease Markers in Secretin-Stimulated Duodenal Juice Using Selected Reaction Monitoring;** Yngvild Bjorlykke¹; Erling Tjora¹; Fiona E. McAllister³; Frode

- Berven⁴; Helge Raeder²; ¹University of Bergen, Department of Medicine, Bergen, Norway; ²University of Bergen, Department of Pediatrics, Bergen, Norway; ³Department of Cell Biology, Harvard Medical School, Boston, MA; ⁴Proteomics Unit (PROBE), University of Bergen, Bergen, Norway
- TP 285 **Systematic Characterization of Human Platelets in Arterial Vascular Disorders by Quantitative Proteomics**; Julia M. Burkhart¹; Marc Vaudel¹; Kristin Becker¹; Lennart Martens²; Albert Sickmann¹; Rene P. Zahedi¹; ¹Leibniz-Institut für Analytische Wissenschaften, Dortmund, Germany; ²VIB Department of Medical Protein Research, Gent, Belgium
- TP 286 **Taking Control: Human Cytomegalovirus Invades Host Cellular Organelles for Virion Assembly, Maturation, and Release**; Rommel Mathias; Todd Greco; Ileana M. Cristea; Princeton University, Princeton, NJ
- TP 287 **Quantitative Analysis of the Parotid Salivary Proteome in Patients with Primary Sjögren's Syndrome**; Stephen Swatkoski¹; Kiran Ambatipudi²; James Melvin²; Marjan Gucek¹; ¹NIH/NHLBI, Bethesda, MD; ²NIH/NIDCR, Bethesda, MD
- TP 288 **Finding Invasive Aspergillosis Protein Biomarkers in Patient Bronchoalveolar Lavage Fluid**; Chengsi Huang^{1, 2}; Jason W. McCarthy³; Yun Zhang¹; Carmen Luraschi-Monjagatta²; Donna Wolk²; KS Knox²; Marta Feldmesser³; Vicki H. Wysocki¹; ¹The Ohio State University, Columbus, OH; ²The University of Arizona, Tucson, AZ; ³Albert Einstein CoM, Yeshiva University, Bronx, NY
- TP 289 **Identification of Plasma Protein and Glycoprotein Markers of Intestinal Fibrosis Using Lectin Enrichment, cystTMT Labeling, and LC/MS**; Andy Lo; Ryan W. Stidham; David M. Lubman; University of Michigan, Ann Arbor, MI
- TP 290 **Glycomic Profiling and IgG Quantification of HIV-Infected Plasma**; Cynthia Williams; Anne Fenton; Lauren Nagy; Qiuting Hong; L.Renee Ruhaak; Satya Dadenkar; Carlito Lebrilla; UC Davis, Davis, CA
- TP 291 **Valley Fever: MS Based Diagnostics and Potential Vaccine Characterization**; Andrew VanSchoiack¹; Tao Peng¹; Lourdes Lewis¹; John Galgiani¹; Vicki Wysocki²; ¹University of Arizona, Tucson, AZ; ²The Ohio State University, Columbus, OH
- TP 292 **Unique Protein Signature of Circulating Microparticles in Systemic Lupus erythematosus**; Ole Østergaard¹; Christoffer T. Nielsen¹; Line V. Iversen¹; Julia T. Tanassi¹; Steen Knudsen²; Søren Jacobsen³; Niels H. H. Heegaard¹; ¹Statens Serum Institut, Copenhagen, Denmark; ²Medical Prognosis Institute, Copenhagen, Denmark; ³Rigshospitalet, Copenhagen University Hospital, Copenhagen, Denmark
- TP 293 **Analysis of Key Methionine Oxidation in ADAMTS13 from Human Plasma by nanoLC-ESI-MS/MS**; Yi Wang¹; Junmei Chen¹; William E. Hobbs¹; José A. López^{1, 2}; Dominic W. Chung^{1, 2}; Xiaoyun Fu^{1, 2}; ¹Puget Sound Blood Center, Seattle, WA; ²University of Washington, Seattle, WA
- TP 294 **Improvement of a Targeted MS Method used to Compare Enzyme Levels versus Enzyme Activity as Tools for Diagnosing Liver Disease**; Julie Weisz; Christine Wu; University of Pittsburgh, Cell Biology, Pittsburgh, PA
- TP 295 **A Novel Hybrid Targeted/Unbiased LC/MS/MS Method Using Isotopic TMT Enables Superior Peptide Selection for Clinical MS Assay Development**; Christopher Löfner¹; Stephan Jung¹; Emma Lahert²; Hans Dieter Zucht¹; Stefan Selzer¹; Ian Pike²; Malcolm Ward²; ¹Proteome Sciences R&D GmbH & Co. KG, Frankfurt, Germany; ²Proteome Sciences plc, London, UK
- TP 296 **Evaluation of a Multiplexed Mass Spectrometry-Based Method for Measuring Candidate Peptide Biomarkers in Alzheimer's Disease Neuroimaging Initiative (ADNI) CSF**; Daniel S. Spellman¹; Kristin R. Wildsmith²; Lee Honigberg²; Angus C. Nairn³; Judith A. Siuciak^{4, 7}; Mitchel A. Kling⁵; Howard Schulman⁶; Michael Schirm⁶; Daniel Chelsky⁶; William Z. Potter^{4, 7}; Alzheimer's Disease Neuroimaging Initiative⁷; Biomarkers Consortium CSF Proteomics Project Team⁴; ¹Merck and Co., Inc., West Point, PA; ²Genentech, Inc., South San Francisco, CA; ³Yale University School of Medicine, New Haven, CT; ⁴Foundation of the National Institutes of Health, Bethesda, MD; ⁵University of Pennsylvania, Philadelphia, PA; ⁶Capriom Proteome, Inc., Montreal, Canada; ⁷Alzheimer's Disease Neuroimaging Initiative (ADNI), Bethesda, MD
- TP 297 **Simultaneous Analysis of Tryptophan, Kynurenines and Several Amino Acids Using GC/Q-TOF in Negative Chemical Ionization Mode**; Anthony Macherone^{1, 2}; Rafael Acosta¹; David Graham²; ¹Agilent Technologies, Santa Clara, CA; ²Johns Hopkins University School of Medicine, Baltimore, MD
- New Technologies in Biomarker Discovery, 298 – 305**
- TP 298 **Screening of 13-HPODE-derived Protein Modifications by Orbitrap Mass Spectrometry with Isotope Data Dependent Scan**; Ryo Takahashi; Seon Hwa Lee; Takaaki Goto; Tomoyuki Oe; Tohoku University, Sendai, Japan
- TP 299 **New Analytical Platform Based on MS Technologies for Investigation of Exhaled Breath Condensate (EBC) for Medical Diagnostics**; Igor Popov^{1, 5}; Alexey Kononikhin^{2, 3}; Konstantin Nagornov²; Nataliia Starodubtseva^{2, 3}; Anna Ryabokon¹; Maria Indeykina^{1, 2}; Evgeny Kukaev^{1, 5}; Viktoria Kurova¹; Alexander Spassky^{1, 2}; Stanislav Pekov²; Irina Larina⁴; Sergei Varfolomeev^{1, 6}; Eugene Nikolaev^{1, 2}; ¹Emanuel Institute of Biochemical Physics, Moscow, Russia; ²Institute for Energy Problems of Chemical Physics, Moscow, Russia; ³Research Center for Obstetrics, Gynecology, Moscow, Russia; ⁴Institute for Biomedical Problems, Moscow, Russia; ⁵Moscow Institute of Physics and Technology, Moscow, Russia; ⁶Lomonosov Moscow State University, Moscow, Russia
- TP 300 **Optimization of LCMS for Analysis of Small Peptide and Disulfide Molecules**; Usha Mishra; Minnmass (Minnesota Mass Spec), Minneapolis Mn, MN
- TP 301 **Rapid Analysis of Endogenous Steroids Using Convergence Chromatography Coupled with Mass Spectrometric Detection**; Christopher J. Hudalla¹; Stuart Chadwick²; Fiona Liddicoat²; Andrew Peck¹; Kenneth J. Fountain¹; ¹Waters Corporation, Milford, MA; ²Waters Corporation (UK), Manchester, UK
- TP 302 **Accelerated Protein Biomarker Discovery with Microwave & Magnetic (M²) Proteomics**; David Black¹; Linda Nagore¹; Anjali Purkar¹; Swetha Mahesula¹; Itay Raphael¹; Jonathan Gelfond²; Stephen Bach¹; Thomas Forsthuber¹; William Haskins^{1, 2}; ¹University of Texas, San Antonio, TX; ²University of Texas HSC, San Antonio, TX
- TP 303 **Over-Representation of Proteins Identified as Disease Biomarkers and Their Relation to Post-Mortem Events**; Ulla Sollenberg¹; Kim Kultima²; Mats Borén¹; Marcus Söderquist¹; Karl Sköld¹; ¹Denator AB, Gothenburg, Sweden; ²Uppsala University, Uppsala, Sweden
- TP 304 **Calcylin Levels Determined by High-Throughput SRM in Serum Samples of Pre-Eclampsia Patients**; Coskun Güzel²; Johannes PC Vissers¹; Lennard Dekker²; Gerda G Zeeman³; Eric AP Steegers³; Theo M Luider²; ¹Waters Corporation, Manchester, UK; ²ErasmusMC, Department of Neurology, Rotterdam, The Netherlands; ³ErasmusMC, Department of Gynaecology, Rotterdam, The Netherlands

- TP 305 **The Role of GC/Q-TOF in Exposomics**; Anthony Macherone^{1,2}; ¹Agilent Technologies, Wilmington, DE; ²Johns Hopkins University School of Medicine, Baltimore, MD
- Proteomics: Plasma and Tissue, 306 – 341**
- TP 306 **Absolute Quantitation of Vitellogenin Using microLC-SRM to Determine Reproductive Status of Breeding Leatherback Turtles, a Non-Sequenced Organism**; Marine Plume¹; Virginie Plot²; Alain Van Dorsselaer¹; Christine Carapito¹; Jean-Yves Georges²; Fabrice Bertile¹; ¹DSA, IPHC, Strasbourg, France; ²DEPE, IPHC, Strasbourg, France
- TP 307 **Plasma Proteome Kinetics in Nonhuman Primates: Probing Lipoprotein Synthesis with ²H₂O and Targeted Proteomics**; Haihong Zhou; David McLaren; Ablatt Mahsut; Yi Pan; Ying Chen; Kathy Bierlo; Dan Xie; Steve Stout; Kithsiri Herath; Keiana Dunn; Alison Kulick; Rui Tang; Ray Rosa; Marcie Donnelly; Cesaire Gai; Andrew Gewain; Harmony Lederman; Jose Castro-Perez; Doug Johns; Michelle Cleary; Stephen Previs; Thomas Roddy; *Merck & Co., Inc., Kenilworth, NJ*
- TP 308 **Serum Proteomics for Biomarker Discovery Before and After Antidepressant Treatment of Major Depressive Disorder**; JiYeong Lee¹; Hee-Joung Lim²; Jong-Moon Park³; Kyu Young Lee⁴; Ju Eun Yi⁴; HooKeun Lee³; Jong-Hoon Kim²; Eun-Jeong Joo⁴; Hee-Gyoo Kang¹; ¹Eulji University, Seongnam, Korea; ²Korea University, Seoul, Korea; ³Lee Gil Ya Cancer and Diabetes Institute, Incheon, Korea; ⁴School of Medicine Eulji University, Seoul, Korea
- TP 309 **Improving Label-Free Quantitation of Plasma and Serum Proteins Using a High-Resolution Hybrid Orbitrap Mass Spectrometer**; Maryann S. Vogelsang¹; Amol Prakash¹; David A. Sarracino¹; Scott Peterman¹; Bryan Krastins¹; Jennifer N. Sutton¹; Gregory Byram¹; Gouri Vadali¹; Shadab Ahmad¹; Bruno Darbouret²; Mary F. Lopez²; ¹Thermo Fisher Scientific, BRIMS Center, Cambridge, MA; ²Thermo Fisher Scientific, CD Biomarkers, Nimes, France
- TP 310 **Variability in Individual Plasma Protein Profiles over Time Using SWATH acquisition**; Saša M. Miladinović^{1,2}; Reto Ossola¹; Jasmin van den Heuvel¹; Tejas Gandhi¹; Yulia Butscheid¹; Oliver Bernhardt¹; Lukas Reiter¹; Ruedi Aebbersold²; Johan Malstroem^{1,3}; Oliver Rinner¹; ¹Biognosys AG, Schlieren, Switzerland; ²ETH Zurich, Zurich, Switzerland; ³Lund University, Lund, Sweden
- TP 311 **Comparative Proteomic and Metabolomic Analyses to Study the Effects of Nanoparticle Exposure**; Greg Donohoe; Hossein Maleki; Tim Nurkiewicz; Stephen Valentine; *West Virginia University, Morgantown, WV*
- TP 312 **Hexafluoroisopropanol as a Novel Reagent for Plasma Proteomic Analysis**; Jon Reed; Ariel Hart; Robert Pelot; Gogce Crynen; James Evans; Laila Abdulla; Fiona Crawford; *Roskamp Institute, Sarasota, FL*
- TP 313 **QconCATs for Cholesterol-Related Proteins in Alzheimer's Disease**; Meiyao Wang; Ilharion V. Turko; *IBBR, Rockville, MD*
- TP 314 **Easy Access to Mass Spectrometry at Multiple Core Facilities Operating TripleTOF 5600 and Orbitrap Elite/Velos Pro/Q Exactive Instruments**; Anthony Yeung¹; Kelly Jones¹; Phillip Kim¹; Bhavinkumar Patel¹; Kelsen Steven²; Alan Braverman²; Derrick Swinton³; Philip Gafken⁴; Lisa Nader Jones⁴; William Lane⁵; John Neveu⁵; Hon-Chiu Leung⁶; Scott Shaffer⁷; John Leszyk⁷; Bruce Stanley⁸; Todd Fox⁸; Anne Stanley⁸; Michael Hall¹; Heather Hampel⁹; Albert de la Chapelle⁹; Christopher South⁹; Randall Burt¹⁰; David Jones¹⁰; Levy Kopelovich¹¹; ¹Fox Chase Cancer Center, Philadelphia, PA; ²Temple University School of Medicine, Philadelphia, PA; ³Lincoln University, Lincoln, PA; ⁴Fred Hutchinson Cancer Center, Seattle, WA; ⁵Harvard University, Cambridge, MA; ⁶Baylor College of Medicine, Houston, TX; ⁷University of Massachusetts Medical School, Worcester, MA; ⁸Penn State College of Medicine, Hershey, PA; ⁹The Ohio State University, Columbus, OH; ¹⁰The U. of Utah, Salt Lake City, UT; ¹¹National Cancer Institute, Bethesda, MD
- TP 315 **Effects of Chronic Ethanol Consumption on Protein Expression in Rat Amygdala Studied by Quantitative Proteomics Using Dimethyl or 18O Labeling**; Bill Huang¹; Zheng-Ming Ding²; William McBride²; Hee-Yong Kim¹; ¹NIAAA/NIH, Rockville, MD; ²Indiana University School of Medicine, Indianapolis, IN
- TP 316 **Quantitative Proteomic Study of Nucleus Accumbens in Response to Cocaine Self-Administration in Environmentally Enriched and Isolated Rats**; Cheryl F. Lichti; Robert D. English; Xiuzhen Fan; Thomas Green; *University of Texas Medical Branch, Galveston, TX*
- TP 317 **Effect of Chronic Methamphetamine Exposure on the Proteomics of Different Mouse Brain Tissues**; Rui Zhu¹; Tianjiao Yang¹; Firas Kobeissy²; Kevin Wang²; Mark Gold²; Yehia Mechref¹; ¹Texas Tech University, Lubbock, TX; ²University of Florida, Gainesville, FL
- TP 318 **In vivo Quantitative Proteomics of Somatosensory Cortical Synapses Shows Which Protein Levels are Modulated by Sensory Deprivation**; Jeffrey Savas¹; Margaret Butko²; Beth Friedman²; Claire Delahunty¹; Ford Ebner³; Roger Tsien²; John Yates III¹; ¹The Scripps Research Institute, La Jolla, CA; ²University of California at San Diego, La Jolla, Ca; ³Vanderbilt University, Nashville, TN
- TP 319 **Postsynaptic Density Protein Composition is Altered in Behaviorally Depressed Adult Female Cynomolgus Macaques**; Stephanie L. Willard¹; Karin E. Borgmann-Winter^{1,2}; Matthew L. MacDonald¹; Carol A. Shively³; Chang-Gyu Hahn¹; ¹University of Pennsylvania, Dept of Psychiatry, Philadelphia, PA; ²Childrens Hospital of Philadelphia, Philadelphia, PA; ³Wake Forest School of Medicine, Dept of Pathology, Winston-Salem, NC
- TP 320 **Constellation of Synaptic Proteins at the Postsynaptic-Density Differentiates Schizophrenia from Normal Controls**; Matthew L Macdonald¹; Nathan Yates²; Robert Sweet¹; ¹Univ. of Pittsburgh, Dept of Psychiatry, Pittsburgh, PA; ²Univ. of Pittsburgh, Genomics and Proteomics Core, Pittsburgh, PA
- TP 321 **Study of Cerebral Proteomics Expression of Hippocampal Region from Rats Exposed to Stress Induced by Forced Swimming Using 2D-SDS-PAGE and MALDI-TOF/TOF**; Victor Alfonso Hernández; Enrique Mejía-Ospino; Nasser Guerrero; Rodrigo Torres-Saez; Carlos Conde; *Universidad Industrial de Santander, Bucaramanga, Colombia*
- TP 322 **The Sex Biased Phosphoproteome: A Novel Approach Towards Understanding The Molecular Basis for Sex Differences in Neuropsychiatric Diseases**; Rita J. Valentino; Debra A. Bangasser; Zach Plona; Christopher McKennan; Hua Ding; Steven H. Seeholzer; *Children's Hospital of Philadelphia, Philadelphia, PA*
- TP 323 **Targeted mass Spectrometry Based Quantification and Characterization of SNARE Complex proteins from Human Brain Tissue**; Ann Brinkmalm¹; Gunnar Brinkmalm¹; Henrik Zetterberg¹; Rita Persson¹; Jenny Ho^{2,3}; Martin Hornshaw^{2,3}; Madalina Oppermann^{2,3}; William G Honer⁴; Kaj Blennow¹; Annika Öhrfelt¹; ¹University of Gothenburg, Molndal, Sweden; ²Thermo Fisher Scientific, Hemel Hempstead, UK; ³Thermo Fisher Scientific, Kungens kurva, Sweden; ⁴University of British Columbia, Vancouver, Canada

- TP 324 **Quantitative Phosphoproteomic Analysis of Postmortem Brain Tissues from Healthy and HIV-Infected Individuals;** Lerna Uzasci¹; Avindra Nath²; Robert Cotter¹; ¹Johns Hopkins University School of Medicine, Baltimore, MD; ²National Institute of Health, Bethesda, MD
- TP 325 **Effects of Developmental Exposure to a Commercial PBDE Mixture (DE-71) on Protein Networks in the Rat Cerebellum and Hippocampus;** Witold M Winnik¹; Joyce E. Royland¹; Cristina Osorio²; Oscar Alzate²; Prasada Rao S. Kodavanti¹; ¹U.S. Environmental Protection Agency, Research Triangle Park, NC; ²Systems Proteomics Center, UNC, Chapel Hill, NC
- TP 326 **Data-Independent Acquisition with Ion Mobility (HDMS^E) for Analysis of the Mouse Synaptosome Proteome;** Lewis M. Brown; Guomei Tang; Ryan M. Colligan; David Sulzer; *Columbia University, New York, NY*
- TP 327 **Global Proteome Analysis of Wild-Type and FoxJ1 Knock-Out Mouse Brain Tissues Using a Quadrupole Orbitrap Mass Spectrometer;** Radiance J. Gibson; Angelito I. Nepomuceno; Nagendran Muthusamy; Shan M. Randall; Philip L. Loziuk; H. Troy Ghashghaei; David C. Muddiman; *North Carolina State University, Raleigh, NC*
- TP 328 **Absolute Quantification of the Lignin Biosynthesis Pathway Proteins and Metabolites in Transgenic Populus trichocarpa;** Zhichang Yang; Jie Liu; Quanzi Li; Ronald Sederoff; Vincent L. Chiang; David C. Muddiman; *North Carolina State University, Raleigh, NC*
- TP 329 **Mass Spectrometry-Based Proteome Characterization of Laser Microdissected Ovary and Oviduct Tissues from Chickens with Ovarian Cancer;** Angelito I. Nepomuceno¹; Adam M. Hawkridge²; James N. Petitte¹; David C. Muddiman¹; ¹North Carolina State University, Raleigh, NC; ²Virginia Commonwealth University, Richmond, VA
- TP 330 **In-depth Proteomic Analysis of Rhesus Macaque Testis;** Jing Wang; Yankai Xia; Gaigai Wang; Yueshuai Guo; Tao Zhou; Yujie Sun; Xuejiang Guo; Zuomin Zhou; Jiahao Sha; *Nanjing Medical University, Nanjing, China*
- TP 331 **Qualitative and Quantitative Expression Status of the Human Chromosome 20 Genes in Cancer Tissues and the Representative Cell Lines;** Quanhui Wang^{1,2}; Bo Wen¹; Shaohang Xu¹; Dahai Jiang¹; Liang Lin¹; Jin Zi¹; Xiaomin Lou²; Haidan Sun²; Chuangbin Chen¹; Fengji Tan¹; Siqi Liu^{1,2}; ¹BGI-Shenzhen, Shenzhen, China; ²Beijing Institute of Genomics, Beijing, China
- TP 332 **A Streamlined Proteomic Workflow from Global Analysis through Parallel Reaction Monitoring with SID MS for Breast Cancer Tumor Tissue;** Matthew Meyer¹; Kelly V. Ruggles²; Petra Erdmann-Gilmore¹; Robert Kitchens¹; Jacqueline Snider¹; Jeremy Hoog¹; Shunqing Li¹; Jeanne Rumsey¹; Sherri R. Davies¹; Matthew J. Ellis¹; David Fenyo²; R. Reid Townsend¹; ¹Washington University School of Medicine, St. Louis, MO; ²New York University, New York, NY
- TP 333 **Development of an SRM Assay for the Quantification of HER2 in FFPE Tissue from Breast Cancer;** Carine Steiner^{1,2}; Pierre Lescuyer^{1,3}; Jean-Christophe Tille³; Thomas McKee³; Marlene Thomas⁴; Miro Venturi⁴; Laura Rubbia-Brandt³; Denis Hochstrasser^{1,3}; Paul Cutler²; Alexander Scherl³; Axel Ducret²; ¹University Hospital Geneva, Geneva, Switzerland; ²F. Hoffmann-La Roche, Basel, Switzerland; ³University of Geneva, Geneva, Switzerland; ⁴Roche Pharma Research, Penzberg, Germany
- TP 334 **An MRM-based Approach for Quantifying Microheterogeneity in Cancer Tissues;** Jeffrey Whiteaker; Richard Ivey; Lei Zhao; Regine Schoenherr; Jacob Kennedy; Chenwei Lin; Ping Yan; Amanda Paulovich; *Fred Hutchinson Cancer Research Center, Seattle, WA*
- TP 335 **The Detection of Breast Cancer Using Mass Spectrometry Based Targeted Proteomics;** Yun Chen; *Nanjing Medical University, Nanjing, China*
- TP 336 **Proteomic Investigation of the Mechanism of Infection of Hepatitis B Virus (HBV) in HepaRG Cells;** Catalina Petrareanu¹; Izabela Sokolowska²; Alina Macovei¹; Alisa G Woods²; Costel C. Darie²; Norica Branza-Nichita¹; ¹Institute of Biochemistry, Bucharest, Romania; ²Clarkson University, Potsdam, NY
- TP 337 **An Extensive and Reproducible Ion-Current-Based Method Enabled Large-Scale Pharmacoproteomic Assessment of Corticosteroid Treatment in 60 Animals;** Eslam Nouri-nigjeh; Siddharth Sukumaran; Chengjian Tu; Jun Li; Haoying Yu; Debra C. DuBois; Richard R. Almon; William Jusko; Jun Qu; *University at Buffalo, Buffalo, NY*
- TP 338 **Quantitative Mitochondrial Proteomics Revealed an Intimate Connection between Insulin Signaling, Mitochondrial Metabolism, and Aging;** Chun-Qing Song^{1,2}; En-Zhi Shen^{1,2}; Mei-Jun Zhang²; Hanqing Zhao³; Yu-Xin Li²; Wen-Hong Zhang²; Liping Wei^{2,3}; Meng-Qiu Dong^{1,2}; ¹College of Biological Sciences, CAU, Beijing, China; ²National Institute of Biological Sciences, Beijing, China; ³Center for Bioinformatics, Peking University, Beijing, China
- TP 339 **Heat Inactivation Enables Reliable Measurement of Tissue Proteome;** Charlotta Göransson; Marcus Söderquist; *Denator AB, Gothenburg, Sweden*
- TP 340 **Identification of Proteomic Differentiation Factors in Beta Cell Development;** Christopher Moss¹; Holger Russ²; Roger Higdon¹; Matthias Hebrok²; Eugene Kolker¹; ¹Seattle Children's Research Institute, Seattle, WA; ²University of California, San Francisco, CA
- TP 341 **Protein Profiling of Animal Tissues Using Laser Ablation Electrospray Mass Spectrometry (LAESI-MS);** Trust Razunguzwa; Gregory Boyce; Pamela Williams; Callee Walsh; Holly Henderson; Brent Reschke; Matthew Powell; *Protea Biosciences, Morgantown, WV*
- Epigenetic Modifications/Histones, 342 – 356**
- TP 342 **WCX-HILIC Coupled to Middle-Down ECD Mass Spectrometry for Histone Post-Translational Modifications Analysis;** Annie Moradian¹; Michael Sweredoski¹; Anastasia Kalli²; Sonja Hess¹; ¹California Institute of Technology, Pasadena, CA; ²Children's Hospital Los Angeles, Los Angeles, CA
- TP 343 **Quantitative Histone Proteoform Dynamics with Top and Middle Down FT-ICR Mass Spectrometry;** Xibei Dang; Yeqing Tao; Jenna Scotcher; Nicolas L. Young; *NHMF/L / FSU, Tallahassee, FL*
- TP 344 **Dynamic Changes in Histone Post-Translational Modifications During the Cell Cycle by Top-Down MS/MS Analysis;** Xibei Dang^{1,2}; Jenna Scotcher¹; Yeqing Tao^{1,2}; Takayo Sasaki²; David M. Gilbert²; Alan G. Marshall^{1,2}; Nicolas L. Young¹; ¹National High Magnetic Field Laboratory, Tallahassee, FL; ²Florida State University, Tallahassee, FL
- TP 345 **Investigations of Histone H2B Isoform Function Using Top and Middle-down Mass Spectrometry;** Rosalynn Molden¹; Anna Arnaudo¹; Nicolas Young²; Benjamin Garcia³; ¹Princeton University, Princeton, NJ; ²National High Magnetic Field Laboratory, Tallahassee, FL; ³University of Pennsylvania, Philadelphia, PA
- TP 346 **Novel Somatic Mutations in Histone H3 are Associated with Global Histone PTM Changes in Human Pediatric Glioblastomas;** Shu Lin¹; Peter Lewis²; Manuel Müller³; Matthew Koletsky²; Francisco Cordero⁴; Laura Banaszynski²; Tom Muir³; Oren Becher⁴; C. David Allis²; Benjamin Garcia¹; ¹University of Pennsylvania, Philadelphia, PA; ²The Rockefeller University, New York, NY; ³Princeton

- University, Princeton, NJ; ⁴Duke University Medical Center, Durham, NC
- TP 347 **Development of a Click-Chemistry Based Method to Quantitatively Study Propagation of Histone Post-Translational Modifications on Newly Synthesized Nucleosomes;** Anna Arnaudo^{1,2}; Peter DiMaggio³; A James Link¹; Benjamin Garcia²; ¹Princeton University, Princeton, NJ; ²University of Pennsylvania, Philadelphia, PA; ³Imperial College, London, UK
- TP 348 **Quantification of Lysine Crotonylation during *in vitro* Human Myogenic Differentiation;** Natarajan Bhanu; Leila Afjehi-Sadat; Benjamin A Garcia; *University of Pennsylvania, Philadelphia, PA*
- TP 349 **An *in vitro* Enzymatic Assay for Quantification of Immediate-Early Histone Modifications in Compartmentalized Cell Extracts via Mass Spectrometry;** Tobias Maile¹; Laura-Mae Britton²; Tom Januario¹; Bob Yauch¹; Benjamin Garcia³; David Arnott¹; ¹Genentech, South San Francisco, CA; ²Princeton University, Princeton, NJ; ³University of Pennsylvania, Philadelphia, PA
- TP 350 **A New Strategy for Bottom-Up Analysis of Histone Posttranslational Modifications Improves Detection and Quantification of H3K4 Di- and Tri-Methyl Marks;** Anita Izrael-Tomasevic¹; Tobias Maile¹; Victoria Pham¹; Robert Pitti¹; Alexandre Masselot¹; Eric Chan²; Patrick Trojer²; Marie Classon¹; David Arnott¹; ¹Genentech, Inc., S. San Francisco, CA; ²Constellation Pharmaceuticals, Cambridge, MA
- TP 351 **High-Resolution Accurate Mass and Intelligent Acquisition-Enabled Global Discovery and Quantification of Histones, PTMs and Modification Enzymes in Mesenchymal Stem Cells;** Amol Prakash¹; Maryann Vogelsang¹; David Sarracino¹; Scott Peterman¹; Victoria Lunyak²; James Tollervey²; Benny Blackwell²; Shadab Ahmad¹; Gregory Byram¹; Bryan Krastins¹; Mary F Lopez¹; ¹ThermoFisher, Cambridge, MA; ²Buck Institute, Novato, CA
- TP 352 **A Direct LC-MRM Measurement of Histone H3K27 Di-, Tri-Methylation and Acetylation without Lysine Propionylation;** Lei Wang; Yasuhiro Funahashi; Mark Matijevic; Yoshiya Oda; *Eisai Inc, Andover, MA*
- TP 353 **Quantifying the Effects of FLASH Knockdown On Regulation of Histone Synthesis by LC-MS/MS;** Joshua A Reavis; Kerry M Bauer; Susan B Skube; Evan S Merryman; Amanda B Hummon; *University of Notre Dame, Notre Dame, IN*
- TP 354 **Systems Analysis of Epigenetic Domains – Deducing the Interactome of Modified Chromatin Using Quantitative Mass Spectrometry;** Miroslav Nikolov¹; Nadin Zimmermann¹; Alexandra Stützer¹; Efrat Shema²; Mahmood Haj-Yahya³; Ashraf Brik³; Moshe Oren²; Henning Urlaub^{1,4}; Wolfgang Fischle¹; ¹Max Planck Institute for Biophysical Chemistry, Göttingen, Germany; ²Weizmann Institute of Science, Rehovot, Israel; ³Ben-Gurion University, Beer-Sheva, Israel; ⁴University Medical Center, Göttingen, Germany
- TP 355 **Studying the Influence of DNA Methylation on a Translational Level in the DNMT Double Knockout (DKO) HCT116 Model;** Alexander Koch¹; Gerben Menschaert¹; Petra Van Damme^{1,2}; Jolien Hollebeke^{1,2}; Wim Van Criekinge¹; ¹Ghent University, Ghent, Belgium; ²VIB-Flanders Institute for Biotechnology, Ghent, Belgium
- TP 356 **Absolute Quantification of Histone Deacetylase Isoforms Using ¹⁵N-labeled Quantification Concatamers as Internal Standards;** Kyle W. Anderson; Junjun Chen; Illarion V. Turko; *IBBR, Rockville, MD*
- Metabolomics: General, 357 – 382**
- TP 357 **Off-line High-pH Low-pH 2D-LC Separation Combined with Isotope Labeling MS for Comprehensive Metabolome Profiling of Saliva, Serum and Urine Samples;** Tao Huan; Wei Han; Liang Li; *University of Alberta, Edmonton, Canada*
- TP 358 **Comprehensive Polar Metabolite Analysis in Two Minutes: Rapid CE-MS Separations Combined with Ultrafast, High Resolution Time-Of-Flight Mass Spectrometry;** Roza Wojcik; Matthew Giardina; Jeffrey S. Patrick; Viatcheslav Artaev; *LECO Corporation, St. Joseph, IN*
- TP 359 **Metabolite Profiling of Carbohydrates and Their Isomers with Improved Selectivity by Capillary Electrophoresis-Mass Spectrometry;** Naomi Kuehnbaum; Philip Britz-McKibbin; *McMaster University, Hamilton, Canada*
- TP 360 **An Automated Microfluidics System for Real-Time Measurement of Intracellular Metabolites;** Joshua Heinemann; Ece Topulzu; Brian Bothner; *Montana State University, Bozeman, MT*
- TP 361 **Collision-Cross Sections of Common Cellular Metabolites to Support Metabolomics Applications;** Giuseppe Paglia¹; Giuseppe Astarita^{2,4}; J. Will Thompson³; Jonathan P. Williams^{2,4}; James Langridge^{2,4}; Bernhard O. Palsson^{1,5}; ¹Center for Systems Biology, University of Iceland, Reykjavik, Iceland; ²Waters Corporation, Milford, MA; ³Duke Proteomics Core Facility, Durham, NC; ⁴Waters Corporation, Manchester, UK; ⁵Systems Biology Research Group, UCSD, San Diego, CA
- TP 362 **Comparison and Refinement of UPLC-MS Based Broad Spectrum Metabolomics Methods;** Suraj Dhungana; Brian F. Thomas; Susan Sumner; *RTI RCMRC, RTI International, Durham, NC*
- TP 363 **Using Simultaneous Selective Ion Monitoring and Scan Data Collection to Streamline the Analysis of Untargeted Metabolomic Datasets Generated by GC-MS;** Joe Gummer¹; Catherine Rawlinson¹; Laura Grogan²; John Hewetson³; Robert Trengove¹; ¹Murdoch University, Murdoch, Australia; ²James Cook University, Townsville, Australia; ³Shimadzu Scientific Instruments (Oceania), Sydney, Australia
- TP 364 **An IROA (Isotopic Ratio Outlier Analysis) Phenotypic Analysis of Field-Grown Corn Using High Resolution Accurate Mass;** Josef Ruzicka¹; Mark Szewc¹; Jan Hazebroek²; Chris Vlahakis²; Chris Beecher³; ¹Thermo Fisher Scientific, Somerset, NJ; ²DuPont Pioneer, Johnston, IA; ³NextGen Metabolomics, Ann Arbor, MI
- TP 365 **Chemosselective Capture of Carbonyl-Containing Metabolites for Stable Isotope Resolved Metabolomic Analysis of Crude Cell Extracts by FTICR-MS;** Pawel K. Lorkiewicz^{1,2}; Richard M. Higashi^{1,2}; Stephanie J. Mattingly²; Michael H. Nantz²; Hunter N. B. Moseley^{1,2}; Andrew N. Lane^{1,3}; Teresa W-M. Fan^{1,2}; ¹CREAM, University of Louisville, Louisville, KY; ²Department of Chemistry, University of Louisville, Louisville, KY; ³J.G. Brown Cancer Center, University of Louisville, Louisville, KY
- TP 366 **Protein Sensor for Discrimination of Complex Metabolite Samples;** Timothy Hamerly¹; Joshua Heinemann¹; Monika Tokmina-Lukaszewska¹; Elizabeth R. Lusczek²; Kristine E. Mulier²; Greg Beilman²; Brian Bothner¹; ¹Montana State University, Bozeman, MT; ²Department of Surgery - University of Minnesota, Minneapolis, MN

- TP 367 **A Novel Strategy for Quantification of Primary Amine-Containing Metabolites Using N,N-Dimethyl Leucine Reagents via Capillary Electrophoresis-Electrospray Ionization-Mass Spectrometry;** Ling Hao; Hui Ye; Xuefei Zhong; Tyler Greer; Dustin Frost; Zhidan Liang; Lingjun Li; *University of Wisconsin, Madison, WI*
- TP 368 **Material-oriented Tandem MS Libraries for Metabolomics and Other “-omics” Technologies;** Yamil Simón-Manso¹; Kelly H. Telu¹; John Halket²; Yuri Mirokhin¹; Stephen E. Stein¹; ¹NIST, Gaithersburg, MD; ²King's College London and Imperial College London, London, UK
- TP 369 **Construction of a Plant Natural Products Tandem Mass Spectral Library;** Zhentian Lei¹; Li Jing²; Hua Zhang²; David Huhman¹; Zhiqin Zhou²; Lloyd Sumner¹; ¹The Samuel Roberts Noble Foundation, Ardmore, OK; ²Southwest University, Chongqing, China
- TP 370 **Understanding Environmental Tobacco Smoke Exposure and Effects in Asthmatic Children through Determination of Urinary Cotinine and Targeted Metabolomics of Plasma;** Denise K. MacMillan; R. Dan Zehr; Barbara Jane George; James L. Crooks; Jane E. Gallagher; *USEPA/NHEERL, Durham, NC*
- TP 371 **Metabolic Alterations in Breast Cancer Cells and Mitochondria;** Haiwei Gu¹; Daciana Margineantu²; Danijel Djukovic¹; George Rogers³; David Hockenbery²; Daniel Raftery¹; ¹University of Washington, Seattle, WA; ²Fred Hutchinson Cancer Research Center, Seattle, WA; ³Seahorse Bioscience, North Billerica, MA
- TP 372 **Xenobiotic Control of Lung Cancer Metabolism by activation of the Aryl Hydrocarbon Receptor (AhR);** Sonnet Davis; Alexander Patent; Kylie Mitchell; Arvind Ramanathan; *Buck Institute for Research on Aging, Novato, CA*
- TP 373 **A Nutritional Urinary Metabolomics Approach to Investigate the Effect of Pulse-Based Diets in an Spontaneously Hypertensive Rat (SHR) Model;** Matthew Hanson^{2,3}; Carla G Taylor^{1,3}; Peter Zahradka^{2,3}; Michel Aliani^{1,3}; ¹Human Nutritional Sciences, University of Manitoba, Winnipeg, MB, Canada; ²Dept Physiology, University of Manitoba, Winnipeg, MB, Canada; ³CCARM, St. Boniface Hospital Research Centre, Winnipeg, MB, Canada
- TP 374 **Metabolic Rebalancing of CR6 Interaction Factor 1-Deficient Mouse Embryonic Fibroblasts; A Mass Spectrometry-Based Analysis;** Surendar Tadi^{1,2}; Soung Jung Kim²; Min Jeong Ryu²; Tae Seong Park³; Ji-Seon Jeong¹; Young Hwan Kim³; Gi Ryang Kweon²; Minh Shong²; Yong-Hyeon Yim¹; ¹KRISS, Daejeon, South Korea; ²Chungnam National University, School of Medicine, Daejeon, Korea; ³Korea Basic Science Institute, Cheongwon-gun, Korea
- TP 375 **Regulation of Oligodendrocyte Lipid Composition by mTOR and Metabolomic Profiling of Its Variables;** Richard Schneider¹; Caroline Reiss²; Hebe Guardiola-Diaz³; ¹Pfizer Global R&D, Groton, CT; ²Yale University, New Haven, CT; ³Trinity College, Hartford, CT
- TP 376 **Application of nanoLC-MS/MS in a Metabolomics Study of Acute Kidney Injury in Mice;** Stephen Barnes¹; Landon Wilson¹; Ali Arabshahi¹; Wei Wu²; Sanjay Niggam²; ¹University of Alabama at Birmingham, Birmingham, AL; ²University of California-San Diego, La Jolla, CA
- TP 377 **On-line Detection of Human Stress by Real Time Mass Spectrometric Monitoring of Skin Volatiles;** Ernesto Criado-Hidalgo¹; Guillermo Vidal-de-Miguel¹; Rafael Borrajo-Pelaez^{1,2}; ¹SEADM S. L., Boecillo, Spain; ²University of California, Irvine, CA
- TP 378 **Finding Potential Biologically Significant Metabolites in C. Elegans Media Using Global Metabolomics;** Yaoling Long; Puneet Chowdhary; Rebecca Butcher; Nicolas Polfer; David Powell; *Department of Chemistry, University of Florida, Gainesville, FL*
- TP 379 **A Metabolomic Analysis of the Effects of Environmental Stress on Deinococcus radiodurans using LC-MS;** Jingyueh Jeng¹; Chunain Cheng²; Kuan-lin Yu¹; ¹Chia Nan Univ of Pharmacy & Science, Tainan, Taiwan; ²National Sun Yat-sen University, Kaohsiung, Taiwan
- TP 380 **High Resolution Peptidomics Links Drug Resistance to Impaired Hemoglobin Metabolism in the Malaria Parasite Plasmodium falciparum;** Ian A. Lewis; Katelynn S. Baska; David H. Perlman; Manuel Llinas; *Princeton University, Princeton, NJ*
- TP 381 **Method for Analysis of Wine and Origin Grape Juice Properties;** Julie Lin¹; Michael Athanas¹; Mark Dreyer¹; Rose Herbold¹; Paul Tarr²; ¹Thermo Fisher Scientific, San Jose, Ca, CA; ²California Institute of Technology, Pasadena, Ca
- TP 382 **Untargeted Metabolomics Workflow Using UHPLC/Quadrupole Orbitrap Mass Spectrometer and SIEVE 2.1;** Junhua Wang; David Peake; Yingying Huang; *Thermo Fisher Scientific Inc, San Jose, CA*
- Metabolomics: Untargeted Metabolite Profiling Applications, 383 – 419**
- TP 383 **Evaluating the Effects of Penicillin Treatment on the Urine and Plasma Metabolomes of Sprague-Dawley Rats;** Jinchun Sun¹; Laura Schnackenberg¹; Sangeeta Khare¹; Xi Yang¹; James Greenhaw¹; William Salminen²; Donna Mendrick¹; Richard Beger¹; ¹NCTR / USFDA, Jefferson, AR; ²PAREXEL International, Boston, MA
- TP 384 **UPLC-MS Metabolic Profiling Reveals Involvement of Novel Biological Pathways in the Progression of Atherosclerosis;** Panagiotis Vorkas¹; Joseph Shalhoub²; Giorgis Isaac³; Elizabeth Want¹; Jeremy Nicholson¹; Alun Davies²; Elaine Holmes¹; ¹Biomolecular Medicine, Imperial College, London, UK; ²Section of Vascular Surgery, Imperial College, London, UK; ³Waters Corporation, Milford, MA
- TP 385 **Determination of SIRT-3 Dependent Metabolic Changes in Diabetic Nephropathy Using Novel Metabolomic Approaches;** Suma Ramagiri¹; Hari Kosanam²; Kerri Thai³; Dave Cox¹; Lyle Burton¹; Eva Duchoslav¹; Ron Bonner¹; Andrew Advani³; Richard Gilbert³; ¹AB SCIEX, Concord, Canada; ²Mt. Sinai Hospital, Dept of Pathology and Lab Med, Toronto, Canada; ³St. Michael's Hospital, Dept of Medicine, Toronto, Canada
- TP 386 **Multi-platform Metabolomic Study of Burn Injury in a Rat Model using NMR Spectroscopy and HILIC and Reverse Phase LC-MS/MS;** Sam Li¹; Anna Karen Carrasco Laserna¹; Siong Chun Foo¹; Shabbir Mochhala²; ¹National University of Singapore, Singapore, Singapore; ²DSO, Singapore
- TP 387 **Direct Analysis of Serum Lipids from Zucker Rats using High Performance TOFMS – Resolution, Mass Accuracy and Unsaturation;** Jeffrey Patrick; Lucas Smith; Kevin Siek; Stephanie Amaya; Joe Binkley; *LECO Corporation, St. Joseph, MI*
- TP 388 **Metabolomics of Opiate-Induced Changes in Murine Brain by GC/Q-TOF;** Manhong Wu¹; Peyman Sahbaie¹; Ming Zheng¹; David Clark¹; Gary Peltz¹; Sofia Aronova²; Stephan Baumann²; ¹Stanford University, Stanford, CA; ²Agilent Technologies, Inc., Santa Clara, CA

- TP 389 **High Accuracy Prostate Cancer Detection Using Human Blood Sera Metabolomic Profiling;** Xiaoling Zang¹; Christina Jones¹; Tran Long¹; Maria Monge¹; Manshui Zhou¹; L. DeEtte Walker¹; Alexander Gray¹; John McDonald¹; Nikhil Shah²; Rajesh Laungani²; Facundo Fernández¹; ¹Georgia Institute of Technology, Atlanta, GA; ²Piedmont Hospital, Atlanta, GA
- TP 390 **Metabolomic Profiling of Human Breast Cancer Tissues by UPLC-IM-MS;** Kelly Hines¹; Billy Ballard²; Dana Marshall²; John McLean¹; ¹Vanderbilt University, Nashville, Tennessee; ²Meharry Medical College, Nashville, Tennessee
- TP 391 **Metabolomic Response of Human Breast Cancer Lines after Exposure to Estradiol;** Liang Zhao; Shelly Odwin-DaCosta; Mounir Bouhifd; Helena Hogberg; Lena Smirnova; Andre Kleensang; James D. Yager; Thomas Hartung; School of Public Health, Johns Hopkins University, Baltimore, MD
- TP 392 **Metabolite Phenotypes Predictive of Non-Small Cell Lung Cancers;** Ji-Won Park¹; Hyobin Jeong²; Sujin Kim¹; Byeongsoo Kang²; Hark Kyun Kim³; Daehee Hwang²; Tae Geol Lee¹; ¹KRISS, Daejeon, South Korea; ²postech, Pohang, South Korea; ³NCC, Goyang, South Korea
- TP 393 **Biomarkers of Pancreatic Cancer;** Suhong Zhang⁴; Maya Khezam^{1,4}; Nathaniel Snyder^{2,4}; Clementina Mesaros^{2,4}; Kenneth Yu^{3,4}; Ian Blair^{2,4}; ¹Centers for Excellence in Environmental Toxicology, Philadelphia, PA; ²Cancer Pharmacology, University of Pennsylvania, Philadelphia, PA; ³Memorial Sloan-Kettering Cancer Center, New York, NY; ⁴Philadelphia, PA
- TP 394 **Metabolomics Investigation of Ovarian Cancer Progression in a Dicer-Pten Double Knockout Mouse Model;** Christina Jones¹; Maria Monge¹; Jaeyeon Kim²; Martin Matzuk²; John McDonald¹; Facundo Fernandez¹; ¹Georgia Institute of Technology, Atlanta, GA; ²Baylor College of Medicine, Houston, TX
- TP 395 **Metabolic Profiling of Gottingen Minipig Plasma Using GC-MS and LC-MS;** Jeffrey Mcguire; US Army ECBC, Aberdeen Proving Ground, MD
- TP 396 **Mass Spectrometry Metabolomics to Identify Novel Diet-Dependent Plasma Metabolites;** Masoumeh Karimpour¹; Izabella Surowiec¹; Johan Trygg¹; Angela Zivkovic²; Malin Nording¹; ¹Department of Chemistry, Umea University, Umea, Sweden; ²University of California, Davis, CA
- TP 397 **Effect of Exercise on Fatty Acid Metabolism in Aging Brain;** Nataliya Chorna; Ivan Santos; Sandra Pena de Ortiz; University of Puerto Rico, San Juan, PR
- TP 398 **Untargeted Metabolite Profiling of Porcine Urine Samples: Individual's Response to Stress During Hemorrhage, Shock and Recovery;** Monika Tokmina-Lukaszewska¹; Navid Movahed¹; Kristine Mulier²; Nancy Witowski²; Greg Beilman²; Brian Bothner¹; ¹Montana State University, Bozeman, MT; ²Medical School, University of Minnesota, Minneapolis, MN
- TP 399 **Metabolite Profiling of Wild Yeast Strains for Brewing Makgeolli Depending on the Strains and the *in vitro* Physiological Activities;** HyeRyun Kim; Jang-Eun Lee; Jae Ho Kim; Byung Hak Ahn; Korea Food Research Institute, Seongnamsi, Asia/Pacific Region
- TP 400 **Expanding Metabolic Pathways in the Ovarian Tissues Using Metal-assisted SIMS (MetA-SIMS);** Tae Geol Lee¹; Ji-Won Park¹; Su Jin Kim¹; Byeongsoo Kang²; Hyobin Jeong²; Hark Kyun Kim³; DaeHee Hwang²; ¹KRISS, Daejeon, South Korea; ²Postech, Pohang, South Korea; ³NCC, Goyang, South Korea
- TP 401 **Fecal Metabolomics of the Mouse Digestive Tract to Determine the Effect of Host Antimicrobial Peptides;** Samanthi I. Wickramasekara¹; Chunxiao Guo¹; Fereshteh Zandkarimi¹; Jeffrey Morr  ¹; Richard L. Gallo²; Adrian F. Gombart¹; Claudia S. Maier¹; ¹Oregon State University, Corvallis, OR; ²University of California, San Diego, CA
- TP 402 **Exploration of Ethanol-induced Liver disease using High Performance GC-TOF-MS and Robust Statistical Analysis;** Jeffrey Patrick¹; Joe Binkley¹; John Heim¹; Jens Hoefkens²; ¹LECO Corporation, St. Joseph, MI; ²Genedata (USA), Lexington, MA
- TP 403 **Untargeted Metabolomics Reveals Alteration of the Sphinganine-Ceramide Pathway in Spinal Cord Injury;** Jaewoo Choi; Debbie J. Mustacich; Wendy I. Baltzer; Jan F. Stevens; Oregon State University, Corvallis, OR
- TP 404 **Analysis of Cerebrospinal Fluid to Investigate the Effect of Iron Deficiency Anemia on the Central Nervous System Metabolome;** Farbod Fazlollahi¹; Christopher Coe²; Gabriele Lubach²; Kym Faull¹; ¹UCLA, Los Angeles, CA; ²University of Wisconsin, Madison, WI
- TP 405 **Metabolomic Profiling of Obese Pig Colon Mucosa and Fecal Samples to Study the Effect of Consuming Anthocyanin-rich Color-fleshed Potatoes;** Lavanya Reddivari¹; Sridhar Radhakrishnan¹; Sumit Shah²; Jairam Vanamala^{1,3}; ¹Colorado State University, Fort Collins, CO; ²Agilent Technologies, Inc, Wakefield, MA; ³University of Colorado Cancer Center, Aurora, CO
- TP 406 **Untargeted Metabolomics Identifies Putrescine as a Candidate Predictive Biomarker of L-Asparaginase Response and as an Additive for Possible Combination Therapy;** Leslie Silva; Philip Lorenzi; David Hawke; John Weinstein; MD Anderson Cancer Center, Houston, TX
- TP 407 **Metabolomics of Asbestos Exposure;** Clementina Mesaros; Nathaniel W. Snyder; Anil Vachani; Ian A. Blair; University of Pennsylvania, Philadelphia, PA
- TP 408 **The Metabolomics of Oxidative Stress: Investigating the Impact of a Sod1-null Mutant and Paraquat Induced Stress Using Liquid Chromatography/Mass Spectrometry;** Jose M. Kne  ¹; Teresa Z. Rzezniczak¹; Kevin K. Guo³; Aiko Barsch²; Gabriela Zurek²; Thomas J. S. Merritt¹; ¹Dept. Chemistry&Biochemistry Laurentian University, Sudbury, Ontario, Canada; ²Bruker Daltonik GmbH, Bremen, Germany; ³Bruker Daltonics Inc., Billerica, MA
- TP 409 **Untargeted Metabolomics for Profiling Multiple Auxotrophic Yeast Strains by LC-QqTOF;** Lekha Sleno¹; Audrey Ste-Rose¹; Guri Giaever²; Corey Nilow²; ¹UQAM, Montreal, Canada; ²UBC, Vancouver, CA
- TP 410 **Comprehensive Metabolomic Profiling of Lotus Seeds from Different Cultivars Using GC-MS and LC-MS;** Ming-Zhi Zhu; Sha Chen; Shao-Hua Li; Ming-Quan Guo; Wuhan Botanical Garden, Chinese Academy of Science, Wuhan, China
- TP 411 **Metabolomic Analysis of a Staphylococcus Variant SG1 Cultured in the Absence and Presence of Butanol;** Feifei Fu; Yiman Wu; Victor Cheng; Joel Weiner; Liang Li; University of Alberta, Edmonton, Canada
- TP 412 **Untargeted Metabolomic Analysis of UV Stress Response in Chlamydomonas reinhardtii Using GC-QTOF and GC-TOF Mass Spectrometry;** Zipora Tietel; Kohei Takeuchi; Mine Palazoglu; Oliver Fiehn; UC Davis Genome center, Metabolomics, Davis, CA
- TP 413 **Untargeted Metabolomic Study on the Effect of *in vitro* Mineral Nutrition on Raspberry (Rubus idaeus) Growth;** Soyoun Ahn^{1,2}; Sukalya Poothong²; Barbara Reed^{2,3}; Claudia Maier^{1,2}; ¹EHSC Oregon State University, Corvallis, OR; ²Department of Horticulture Oregon State University, Corvallis, OR; ³USDA-ARS, Corvallis, OR

- TP 414 **Metabolomics of Hermaphroditic *C. elegans* via Isotopic Ratio Outlier Analysis Using High-Resolution Accurate Mass LC/MS/MS**; Kevin J. McHale¹; Mark Szewc¹; Gregory S. Stupp²; Chaevien Clendinen²; Ramadan Ajredini²; Arthur S. Edison²; Chris Beecher³; ¹*Thermo Fisher, Somerset, NJ*; ²*University of Florida, Gainesville, FL*; ³*NextGen Metabolomics, Ann Arbor, MI*
- TP 415 **Natural Products Drug Discovery from Marine Invertebrate-Associated Bacteria: Strain Selection Using Principle Component Analysis of LC/MS Data**; Gregory A. Ellis¹; Yanpeng Hou²; Thomas P. Wyche¹; Doug R. Braun¹; Navid Adnani¹; Emmanuel Vazquez-Rivera¹; Tim S. Bugni¹; ¹*University of Wisconsin School of Pharmacy, Madison, WI*; ²*PepsiCo, New Haven, CT*
- TP 416 **Untargeted Metabolomics for the Discovery of Small Molecule Regulators of Thermogenesis**; Jay Kirkwood; Cristobal Miranda; Fred Stevens; *Oregon State University, Corvallis, OR*
- TP 417 **Metabolomics Study or Model Systems for Microbially**; Vincent Bonifay¹; Whitney Smith¹; Iwona Beech²; Jan Sunner¹; ¹*Oklahoma University, Norman, OK*; ²*University of Portsmouth, Portsmouth, UK*
- TP 418 **Bacterial Nutritional Growth and Responses to Varying Nitrogen Sources by IROA Protocol**; Chris Beecher¹; Peng Jiang²; Alex Ninfa²; ¹*NextGen Metabolomics, Ann Arbor, MI*; ²*University of Michigan Medical School, Ann Arbor, MI*
- TP 419 **Metabolomics of Carbon Fixing Mutants of Cyanobacteria by GC/Q-TOF**; Dong hee Chung¹; Christine Rabinovitch-Deere¹; Shota Atsumi¹; Sofia Aronova²; ¹*University of California, Davis, CA*; ²*Agilent Technologies, Inc., Santa Clara, CA*
- Drug Metabolism: Quantitative Analysis, 420 – 451**
- TP 420 **Investigating the Importance of Resolution and Scan Speed for Qualitative/Quantitative Bioanalysis Using a Benchtop HR/AM Orbitrap Mass Spectrometer**; Brad Yuska¹; Ragu Ramanathan¹; Tim Stratton²; Hongxia Wang²; Frank Morris¹; Patrick Bennett²; ¹*QPS, LLC, Newark, DE*; ²*ThermoFisher, San Jose, CA*
- TP 421 **Analysis of Pharmaceutical Small Molecules Using a Prototypic Microfluidics Tandem Quadrupole LCMS System**; Yun W. Alelyunas¹; Mark D. Wrona¹; Catalin Doneanu¹; Stephen McDonald¹; Paul D. Rainville¹; Philip Tiller²; ¹*Waters Corporation, Milford, MA*; ²*RMI laboratories, North Wales, PA*
- TP 422 **Development of Ultrasensitive Nanoscale LC/MS Techniques for Quantification of an HIV-1 Integrase Inhibitor in Human Plasma**; Miaoqing Shen¹; Li Sun²; Kevin Bateman²; Jack Henion¹; ¹*Advion Bioanalytical Lab, a Quintiles company, Ithaca, NY*; ²*Merck Research Laboratories, West Point, PA*
- TP 423 **Parallel-Micro Liquid Chromatography - Mass Spectrometry for the Quantification of Pharmaceuticals using Dried Blood Spot Tube-based Sample Collection Format**; Kyoko Watanabe^{1,3}; Emmanuel Varesio¹; Neil Loftus²; Gérard Hopfgartner¹; ¹*Université de Genève, Genève, Switzerland*; ²*Shimadzu Corporation, MS/BU, Manchester, UK*; ³*Shimadzu Corporation, GADC, Kyoto, Japan*
- TP 424 **Electrochemistry Coupled to LC-ICP-MS for the Elucidation and Quantitative Assessment of the Oxidation Pathway of Selected Isatins**; Daniel Melles¹; Christoph A. Wehe²; Panupun Limpachayaporn¹; Günter Haufe²; Uwe Karst²; ¹*University of Münster-Graduate School of Chemistry, Münster, DE*; ²*University of Münster, Münster, DE*
- TP 425 **A Novel Direct Analysis in Real Time (DART) Mass Spectrometry Method for Determination of Imatinib in Human Plasma**; Kumari Ubhayasekera; Warunika Aluthgedara; Tommy Lewander; Jonas Bergquist; *Uppsala University, Uppsala, Sweden*
- TP 426 **Evaluation of Centroid and Profile Mode Data Collection Methods for High Resolution Mass Spectrometry Based Integrated Qualitative and Quantitative Bioanalysis**; Eldho Raju; Dil Ramanathan; *Kean University, Union, NJ*
- TP 427 **SWATH – A High Resolution Data Independent Acquisition Approach to Pharmaceutical/ Biotherapeutic Quantitation and Retrospective Qualitative Interrogation**; Loren Olson^{1,2}; Paul Clemens^{1,2}; Eva Duchoslav^{1,2}; Gary Impey^{1,2}; ¹*AB SCIEX, Foster City, CA*; ²*AB SCIEX, Toronto, Canada*
- TP 428 **SWATH Based Pharmacokinetic Quantification to Increase Selectivity, Specificity and Signal-to-Noise Ratio with the Benefits of Non-Targeted Approach on UHPLC-HRMS**; Ragu Ramanathan¹; Suma Ramagiri²; Brad Yuska¹; Frank Morris¹; Jiyl Wang¹; Anthony Srnka¹; Yves LeBlanc²; Gary Impey²; Loren Olson²; Helen Shen¹; ¹*QPS, LLC, Newark, DE*; ²*AB SCIEX, Concord, Ontario, Canada*
- TP 429 **Parameter-Free Peak Area Integration for Multiple Batches of LC/MS/MS Data**; Yongdong Wang; Hongliang (Leo) Xu; Ming Gu; *Cerno Bioscience, Norwalk, CT*
- TP 430 **Pragmatic Approaches to Determine the Exposures of Drug Metabolites in Pre-Clinical and Clinical Subjects**; Johanna Haglund^{1,2}; Åsa Brunnström^{1,2}; Göran Eklund^{1,2}; Antti Kautiainen^{1,2}; Anna Sandholm^{1,3}; Magnus Halldin¹; Suzanne Iverson Hemberg¹; ¹*AstraZeneca AB, Södertälje, Sweden*; ²*MetaSafe AB, Södertälje, Sweden*; ³*Scandinavian Development Services AB, Stockholm, Sweden*
- TP 431 **Evaluate and Overcome the Impact of Hemolysis on the Quantitation Using LC-MS/MS - Is "Revising SOP" the Solution?** Jing Ke; Yijin Xiao; Kelly Lam; Harry Zhao; Zhongping (John) Lin; *Frontage Laboratories, Inc, Exton, PA*
- TP 432 **Automated, Empirical Method Development for Solid-Phase Extraction of Pharmaceuticals from Biological Fluids for LC-MS/MS Analysis**; Kc Van Home¹; Phil Dimson¹; Luigi Chanco¹; Bruce Redmond¹; Jacob Christ²; David Hall¹; ¹*SPEware Corporation, Baldwin Park, CA*; ²*ProLinear/Pontech, Inc., Rancho Cucamonga, CA*
- TP 433 **Quantitation of Amino Acids in Response to L-Asparaginase Treatment in Ovarian Cancer**; Preeti Purwaha; Philip L. Lorenzi; David Hawke; John N. Weinstein; *MD Anderson Cancer Center, Houston, TX*
- TP 434 **UPLC-ESI+-MS/MS Method for Quantitation of Circulating Levels of 13 Opiate and Opioid Analgesics from Dried Blood Spot Samples**; Melissa Goggin; Richard Lundberg; Karla Walker; Gregory Janis; *MedTox Laboratories, New Brighton, MN*
- TP 435 **An LC-MS/MS Method for Quantification of Debrisoquine and OH-debrisoquine in Dried Blood Spots**; Jason Barricklow; Hongying Gao; *Pfizer, Groton, CT*
- TP 436 **A Sensitive and Selective Liquid Chromatography-Tandem Mass Spectrometry Method for Quantitative Analysis of Efavirenz in Human Dried Blood Spots**; Praveen Srivastava¹; Ganesh Moorthy¹; Vu Nguyen¹; Robert Gross²; Jeffrey Barrett¹; ¹*The Children's Hospital of Philadelphia, Philadelphia, PA*; ²*University of Pennsylvania, Philadelphia, PA*
- TP 437 **Quantitative Acetylation Analysis of Mitochondrial Proteins in Type 2 Diabetic Mice and Treatment of Metformin**; Xiaolu Zhao¹; Jie Dai²; Jianshuang Li¹; Xiujuan Zhu¹; Ling Zheng¹; Ole Nørregaard Jensen²; Lin Guo¹;

- ¹Wuhan University, Wuhan, P.R.China; ²University of Southern Denmark, Odense, Denmark
- TP 438 **Determination of Norgestrel and Norgestimate in Human Plasma by LC/MS-MS**; Hongkun Liang; crystal Nguyen; Angel Tseng; Vi Dan; Yuan-Chek Chen; Kumar Ramu; QPS, LLC., Newark, DE
- TP 439 **An LC-MS/MS Assay for Simultaneous Quantitation of Docetaxel and its Prodrug-Conjugate for Pharmacokinetic Studies of PRINT-Lipidized-Docetaxel Nanoparticles in Mice**; Allison N Schorzman; Kevin Chu; Matthew Finniss; Charles Bowerman; Jennifer Kuijer; Andrew Madden; Joseph DeSimone; William Zamboni; UNC, Chapel Hill, NC
- TP 440 **Characterization of Xylazine Metabolism in Rat Liver Microsomes by HPLC-QqLIT MS**; David St-Germain Lavoie¹; Floriane Pailleux^{1,2}; Pascal Vachon¹; Francis Beaudry¹; ¹Université de Montréal, Saint-Hyacinthe, Canada; ²Université de Lyon, Villeurbanne, France
- TP 441 **Validation of the Trans Stereoisomer Enclomiphene in Human Serum by LC/MS/MS API5000**; Adlai Niggebrugge; Mario Pellerin; Ardeshir Khadang; PRACS Institute, Fargo, ND
- TP 442 **Simultaneous Determination of Pinitol and its metabolites (Chiro-, Myo-inositol) in Rat Plasma by LC-MS/MS**; Yun Kyoung Choi¹; In Young Choi¹; Ji Hoon Jeoung²; Hohyun Kim¹; ¹Korea Medicine Research Institute, Inc., Seoungnam, South Korea; ²College of Medicine, Chung-Ang University, Seoul, South Korea
- TP 443 **Quantitation of Praziquantel and Its Metabolites in Mouse Plasma Using Ultra-Performance Liquidchromatography- Tandem Mass Spectrometry**; Amy Qiu Wang; Edward Kerns; Xin Xu; Gurmit Grewal; Philip Sanderson; John Shen; John McKew; NCATS, NIH, Rockville, MD
- TP 444 **Study of the Brain-Uptake of a Non-Radioactive Pseudo-Carrier for [¹⁸F]-AV-133 by Ultra-Performance Liquid Chromatography Tandem Mass Spectrometry**; Xue Zhou¹; Ai-Fang Deng¹; Jinping Qiao¹; Xian-Ying Wu¹; Yan Zhang¹; Wei Yin¹; Lin Zhu¹; Hank Kung²; ¹Beijing Normal University, Beijing, China; ²Department of Radiology, University of Pennsylvania, Philadelphia, PA
- TP 445 **Highly Sensitive Determination of Desmopressin in Human Plasma by UPLC-MS/MS**; Yun Kyoung Choi¹; Jae Geun Lee¹; Ji Hoon Jeoung²; Hohyun Kim¹; ¹Korea Medicine Research Institute, Inc., Seoungnam, South Korea; ²Chung-Ang University, Seoul, South Korea
- TP 446 **A Simplified Method for Quantification of Gemcitabine with LC-MS from Tissue Applied to Research on the Surgical Delivery of Chemotherapy**; Preston Sparks¹; Michael Roach¹; Jesse Hines²; ¹Eisenhower Army Medical Center, Fort Gordon, GA; ²Perkin Elmer, Waltham, MA
- TP 447 **Mometasone Furoate in Human Plasma by LC/MS/MS with Column Switch**; Allan Xu; Xiaohua Li; Vince Windisch; Keystone Bioanalytical, North Wales, PA
- TP 448 **A Sensitive and Robust Assay for Determination of Clonidine in Human Plasma Using Derivatization and LC-MS/MS Techniques**; Yansheng Liu; Marsha Luna; Julie Showalter; Rochelle Burke; Moo-Young Kim; KCAS LLC, Shawnee, KS
- TP 449 **The "Double edge sword" of Hydroxypropyl-beta-Cyclodextrin on the Quantitative Analysis of a Lipoglycopeptide and its Hydroxylated Metabolites by LC-MS/MS**; Moucun Yuan; James Waltrip; Song Zhao; William R. Mylott; Bruce Hidy; Rand Jenkins; PPD, Richmond, VA
- TP 450 **Determination of CTP-499 and Its Major Metabolites in Dog, Rat and Rabbit Plasma by LC-MS/MS**; Xiaonan Tang¹; Jing Ke¹; Halil Erol¹; Chih Hsien Lin¹; Harry Zhao¹; Zhongping (John) Lin¹; Changfu Cheng²; ¹Frontage Laboratories, Inc., Exton, PA; ²CoNCERT Pharmaceuticals, Inc., Lexington, MA
- TP 451 **Diastereomeric Separation of Chiral Metabolites Utilizing SFC-MS/MS; A Powerful Tool to Investigate Stereoselective Metabolism?** Chester L Bowen¹; Hermes Licea-Perez¹; Tom DePhillipo²; Denise Heyburn²; Paul Rainville²; Robert Plumb²; Christopher Evans¹; ¹GlaxoSmithKline, King Of Prussia, PA; ²Waters, Milford, MA
- Small Molecules: Quantitative Analysis II, 452 – 477**
- TP 452 **Detailed Characterization of Conjugation Pathways of the Tetrahydro-Reduced Metabolites of Glucocorticoids by Rat and Human Liver Fractions Using LC/ESI-MS/MS**; Kuniko Mitamura¹; Mami Kamibayashi¹; Kanta Sato¹; Sachi Fujioka¹; Rika Satoh (née Okihara)²; Takashi Iida²; Shigeo Ikegawa¹; ¹Kinki University, Higashi-Osaka, Japan; ²Nihon University, Tokyo, Japan
- TP 453 **Quantitation of Testosterone and Nandrolone Using Dried Blood Spots (DBS) for Steroid Pharmacological Study**; Gurmeet Kaur Surindar Singh^{1,2}; Reena Desai¹; Mark Jimenez¹; David Handelsman¹; ¹ANZAC Research Institute, University of Sydney, New South Wales, Sydney, Australia; ²Faculty of Pharmacy, Universiti Teknologi MARA, Kuala Selangor, Selangor, Malaysia
- TP 454 **Quantitative Measurement of Fludarabine Incorporation in Cellular DNA by Enzymology and Mass Spectrometry**; Ye Feng¹; Lan Li¹; Lili Liu²; Stanton L. Gerson²; Yan Xu^{1,2}; ¹Cleveland State University, Cleveland, OH; ²Case Comprehensive Cancer Center, Cleveland, OH
- TP 455 **Neurotransmitter Analysis in Rat Brain Microdialysis Samples Using LC-MS/MS**; Changyu Quang; Michael V. Stoeling; William C. Nethero; Jonathan D. Toot; Eric S. Bodle; Spencer J. Carter; WIL Research, Ashland, OH
- TP 456 **Pharmacokinetic Studies of a Novel Thiazolidinedione mitoNEET Ligand, NL-1, Using a Quantitative LC-MS/MS Method in Dosed Mouse Serum and Brain**; Kiran Pedada¹; Xiang Zhou¹; Harini Jogiraju¹; Richard Carroll²; Werner Geldenhuys²; Li Lin²; David Anderson¹; ¹Cleveland State University, Cleveland, OH; ²Northeast Ohio Medical University, Rootstown, OH
- TP 457 **Simultaneous LC-ESI-MSMS-MRM Quantification of Glutathione and Six Related Compounds**; Alexander Yoon; Stephen Shew; Joseph Watson; Kym Faull; University of California, Los Angeles, CA
- TP 458 **Comprehensive LC/MS/MS Assay for Determination of Nerve Agent Therapeutics in Guinea Pig Brain Microdialysate and African Green Monkey Plasma**; Benjamin Oyler; Tsung-Ming Shih; John McDonough; Benedict Capacio; USAMRICD, Aberdeen Proving Ground, MD
- TP 459 **Low-Level Quantitative Analysis of Prostaglandins in Human Serum and Urine by LC/MS/MS Utilizing Dual Ion Funnel Technology**; Yanan Yang; Kevin McCann; Anabel Fandino; Caroline Chu; Mark Sartain; Na Pi; Agilent Technologies, Inc, Santa Clara, CA
- TP 460 **Application of a Highly Sensitive LC/MS/MS Assay for the Comparison of Exposure to Nicotine and its Metabolites**; Kimberly Clark; Joshua Prey; Richard O'Connor; Mark Travers; Gerald Fetterly; Roswell Park Cancer Institute, Buffalo, NY

- TP 461 **Determination of Urinary Catecholamines and Metanephrines in a Single Run by LC/MS/MS for Clinical Research;** Linda Cote¹; Christophe Deckers¹; Kevin McCann²; ¹Agilent Technologies Canada, Saint-Laurent, Canada; ²Agilent Technologies, Santa Clara, CA
- TP 462 **Quick Sample Preparation of Opiates from Urine for UHPLC/MS analysis;** Daniel Tran; *Agilent Technologies, Lake Forest, Ca, CA*
- TP 463 **High Throughput, Simultaneous Analysis, Separation and Validation of Eight Opioids and Metabolites in Human Urine by LC-MS/MS;** Jianmei Wang; Ramiro Cavazos; Toqueer Rizvi; *Texas Medical Toxicology, Houston, Texas*
- TP 464 **Fast and Sensitive Assay of Tobacco Specific Nitrosamines by UHPLC-MS/MS;** Mikael Levi; Maureen Ramero; Stéphane Moreau; *Shimadzu France, Noisiel, France*
- TP 465 **Quantifying Metformin in Mouse Serum Using Hydrophilic Interaction Liquid Chromatography and Stable Isotope Dilution-Assisted Multiple Reaction Monitoring Mass Spectrometry (HILIC-SID-MRM-MS);** Da-Qing Yang; Mikel R. Roe; Michael E. Grossmann; Nancy K. Mizuno; Adrian D. Hegeman; Margot P. Cleary; *University of Minnesota, Austin, MN*
- TP 466 **Small Molecule, Big Challenges: Development and Validation for the Determination of Mesalamine and Its Metabolite in Human Plasma by HILIC-MS/MS;** Jingguo Hou; Ravi Orugunty; Xiaodong Zhu; Melvin Tan; Thomas Horvath; Jing Zhou; Gregory Poch; Michael Sullivan; Edward Wells; Steve Unger; *WWCT, Austin, TX*
- TP 467 **Development and Validation of a HILIC Based UPLC-ESI-MS/MS Method for the Quantification of Free Carnitine in Human Plasma;** Tiffany Thomas; Roseann Zott; Danielle Awad; Dawn Hershman; Serge Cremers; *Columbia University, New York, NY*
- TP 468 **Quantitation of Glutathione and Related Thiols in Acid-Preserved Samples by Hydrophilic Interaction Chromatography-Mass Spectrometry;** Alan W. Taylor; Deborah Hobbs; Debbie J. Mustacich; Balz Frei; *Linus Pauling Institute, Oregon State University, Corvallis, OR*
- TP 469 **Simultaneous Quantification of Metanephrine, Normetanephrine, Histamine, Serotonin, and 3,4-dihydroxyphenylglycol in Dog plasma by LC-MS/MS;** Aihua Liu; Troy Voelker; Min Meng; *Tandem Labs, Salt Lake City, UT*
- TP 470 **Development of an Analytical Method for Hydroxyurea in Rat Plasma, Amniotic Fluid, and Fetus by HILIC-MS/MS;** Michael S. Gardner¹; Melanie A. Rehder Silinski¹; Reshan A. Fernando¹; Veronica G. Robinson²; Suramya Waidyanatha²; ¹RTI International, Research Triangle Park, NC; ²Division of National Toxicology Program, NIEHS, Research Triangle Park, NC
- TP 471 **Determination of S-ketamine in Rat Plasma by a Short-Run LC-MS/MS Method;** Qingtao (Mike) Huang¹; Eric De Waal¹; Naidong Weng¹; Weimin Wang^{2,2}; Chih Hsien Lin^{2,2}; Hsiaoju Lin²; Zhongping (John) Lin²; Harry Zhao²; ¹Johnson & Johnson, Raritan, NJ; ²Frontage Lab, Exton, PA
- TP 472 **Validation of (R,S)-Enantiomers of Amphetamine in Human Plasma by SOLA-CX LC/MS/MS API4000;** Adlai Niggebrugge; Laura Baum; Sarah Maasjo; Dan Pederson; David O'Connor; Mario Pellerin; Ardeshir Khadang; *PRACS Institute, Fargo, ND*
- TP 473 **(S)-(+)-Vigabatrin Determination in Plasma by LC/MS with Two Methods: Chiral Column Without Derivatization and Non-Chiral Column with Pre-Column Derivatization;** Shan Jin; Eric Britton; Steven Wiltshire; *Agilux Laboratories, Worcester, MA*
- TP 474 **Analysis for Hydroxylated Polybrominated Diphenyl Ethers (OH-PBDEs);** Yan-Ping Lin¹; Louis Majlers²; Helen Sun²; Isaac N. Pessah¹; Birgit Puschner¹; ¹University of California, Davis, CA; ²Bruker Daltonics Inc., Fremont, CA
- TP 475 **Determination of Valproic Acid in Human Plasma Using Derivatization and LC-MS/MS Techniques;** Moo-Young Kim; Anika Pippin; Yu-Hui Ann Fu; Yansheng Liu; *KCAS, Shawnee, KS*
- TP 476 **A Novel LC-MS/MS Method for the Ultra-Sensitive Isolation and Detection of 1a,25(OH)₂-Vitamin D3 and Its Common Metabolites in Serum Samples;** Adam Latawiec; Michael Jarvis; *AB SCIEX, Concord, Canada*
- TP 477 **Chemical Derivatization of d6-bisphenol A Increases Sensitivity in Trace Level Serum Evaluations;** Nathan C. Twaddle; Mona I. Churchwell; Daniel R. Doerge; *NCTR/FDA, Jefferson, AR*
- Lipids: Quantitative Analysis, 478 – 497**
- TP 478 **High-speed Monitoring Method for Eicosanoids and Related Compounds Using Liquid Chromatography / Mass Spectrometry;** Masaki Yamada^{1,2}; Yoshihiro Kita¹; Suzumi Tokuoka¹; Takahiro Kohira^{1,3}; Takao Shimizu¹; ¹The University of Tokyo, Tokyo, Japan; ²Shimadzu Corporation, Kyoto, Japan; ³Japanese Red Cross Society, Tokyo, Japan
- TP 479 **Global Analysis of Lipidome of Caenorhabditis elegans Based on Shotgun Lipidomics Strategy;** Tanxi Cai¹; Jiaojiao Ma¹; Charles C. Liu²; Fuquan Yang¹; ¹Institute of Biophysics, CAS, Beijing, China; ²ASPEC Technologies Limited, Beijing, China
- TP 480 **A Novel UHPLC-Q-TOF Method for the Detection and Quantification of Plasma Lipids;** Carlos Leon; William Wikoff; Tomas Cajka; Brian DeFelice; Dmitry Grapov; Oliver Fiehn; *UC Davis, Davis, CA*
- TP 481 **Differential Quantitation of TAG Isomers by Mathematical Modeling of Neutral Losses Of Fatty Acids;** Haowei Song; Jack Ladenson; Fongfu Hsu; John Turk; *Washington University in St. Louis, School of Medi, St. Louis, MO*
- TP 482 **Quantitative Analysis of Sulfatides in Mouse Plasma Membrane Using UHPLC-MS-MS;** Guannan Li¹; Ana Lis Moyano²; Jan-Eric Mansson³; Maria Irene Givogri²; Richard B. van Breemen¹; ¹University of Illinois College of Pharmacy, Chicago, IL; ²University of Illinois College of Medicine, Chicago, IL; ³University of Gothenburg The Sahlgrenska Academy, Gothenburg, Sweden
- TP 483 **Quantitative Targeted Lipidomics in Urine: Phosphatidylserine by UPLC-MS/MS;** Sabrina Forni; Lawrence Sweetman; *Baylor Research Institute, Dallas, TX*
- TP 484 **Lipids Analysis in 9 Seconds Sample to Sample with Surface Improved Plates and Vaporization Enhancement Solution in LDTD-MS/MS;** Pierre Picard¹; Gregory Blachon¹; Serge Auger¹; Réal Paquin²; ¹Phytronix Technologies, Quebec city, Canada; ²Université Laval, Quebec City, Canada
- TP 485 **Comprehensive Lipid Profiling of Drosophila melanogaster (fruit fly) under Diverse Starvation Conditions Using Metabolic 13C Isotope Labeling;** Vinzenz Hofferek; *Max-Planck-Institute, Potsdam-Golm, Germany*
- TP 486 **Shotgun Lipidomics Analysis of Diacylglycerol Species in Biological Samples after One-step Derivatization;** Miao Wang; Huafeng Fang; Jacina Redden; Xianlin Han; *Sanford-Burnham Medical Research Institute, Orlando, FL*

- TP 487 **Trimethylation Enhancement using Diazomethane (TrEnDi): Rapid Methylation of Phospholipids to Permit Quantitative Analysis Using Tandem Mass Spectrometry;** Karl Wasslen; Hyunmin Lee; Jeffrey Manthorpe; Jeffrey C. Smith; *Carleton University, Ottawa, Canada*
- TP 488 **Formation and the Use of [M+42]⁺ Ion for the Identification and Quantitation of sphingosine-1-phosphate and Its Analogs after bis-Acetylation;** Irina Gorshkova; Evgeny Berdyshev; *University of Illinois at Chicago, Chicago, IL*
- TP 489 **LC-MS and MALDI-TOF Characterization of Glycolipid-bearing Liposomes;** Spiros Manolakos^{1,2}; Theresa Evans-Nguyen^{1,2}; Leila Albers^{1,2}; James Comolli^{1,2}; ¹*The Charles Stark Draper Laboratory, Tampa, FL*; ²*The Charles Stark Draper Laboratory, Cambridge, MA*
- TP 490 **A Rapid Serum Free Fatty Acids Profiling by MALDI-FTICR MS;** Yaping Zhang; Yujie Liu; Shuai Guo; Hui Liu; Fenjie Li; Zhili Li; *IBMS, CAMS&PUMC, Beijing, China*
- TP 491 **Profiling Biochemical Effects of Osteopathic Manipulative Treatment on COPD Patients: Multi-Class Determination of Bioactive Lipids in Plasma Samples;** Chen Zhang; *Michigan State University, East Lansing, MI*
- TP 492 **Rapid Profiling of Oxylipins for Drug Discovery&Development, Nutritional and Clinical Research;** Roy Martin¹; Katrin Strassburg^{2,3}; Thomas Hankemeier³; Giorgis Isaac¹; James Langridge¹; Claude Mallet¹; Rob Vreeken^{2,3}; Giuseppe Astarita¹; ¹*Waters Corporation, Milford, MA*; ²*Netherlands Metabolomics Centre, Leiden, The Netherlands*; ³*Analytical BioSciences, LACDR, Leiden, The Netherlands*
- TP 493 **Hydroxylated Metabolites of Docosahexaenoic Acid are Substrates for 15-Hydroxyprostaglandin Dehydrogenase (15-PGDH): Electrophile Formation and Anti-inflammatory Signaling Actions;** Stacy L. Gelhaus; Franca Golin-Bisello; Sally Wenzel; Fernando Holguin; Bruce A. Freeman; *School of Medicine, University of Pittsburgh, Pittsburgh, PA*
- TP 494 **Combined Proteomics and Lipidomics Analyses Enable the Characterization of Phagosome Maturation in Activated Macrophages;** Christina Bell¹; Guanghou Shui²; Markus Wenk²; Michel Desjardins¹; Pierre Thibault¹; ¹*University of Montreal, Montreal, Canada*; ²*National University of Singapore, Singapore*
- TP 495 **Quantification of Lipids in Human Cancer Cells and Culture Supernatants by LC-MS/MS;** Finnur Eiriksson²; Baldur Sigurdsson²; Sesselja Omarsdottir¹; Kari Skulason¹; Helga Ogmundsdottir¹; Margret Thorsteinsdottir^{1,2}; ¹*University of Iceland, Reykjavik, Iceland*; ²*ArcticMass, Reykjavik, Iceland*
- TP 496 **Identification of Lipid Bio-Markers for Dry Eye Disease in Post-Menopausal Women Using Shotgun Electrospray Mass Spectrometry;** Mark Apsega¹; Jianzhong Chen¹; Kelly Nichols²; Jason J. Nichols²; Kari B. Green¹; ¹*The Ohio State University, Columbus, OH*; ²*University of Houston, Houston, TX*
- TP 497 **Phosphatidylserine Effects on Platelet-Activating Factor Secretion from Platelets;** Audrey Meyer; Secil Koseoglu; Yiwen Wang; Joseph Dalluge; Christy Haynes; *University of Minnesota, Minneapolis, MN*
- Informatics: Quantification/Validation, 498 – 528**
- TP 498 **Evaluation of Different Computational Algorithms for Label-Free Protein Quantitation by Mass Spectrometry;** Francesco Mattia Mancuso; Cristina Chiva; Mireia Ortega; Eduard Sabidó; *Proteomics Unit, CRG/UPF, Barcelona, Spain*
- TP 499 **Integration of mProphet Chromatogram Peak Identification Probability Model into Skyline;** Brendan Maclean¹; Don Marsh¹; Hannes Röst²; Lucia Espona Pernas²; George Rosenberger²; Ruedi Aebersold²; Michael MacCoss¹; ¹*Univ of Washington, Seattle, WA*; ²*Institute of Molecular Systems Biology, ETH Zurich, Zurich, Switzerland*
- TP 500 **The Use of QCONCAT Labeled Peptides to Validate Label-Free Antigen Quantitation for Influenza Vaccines;** Daryl G.S. Smith; Genevieve Gingras; Yves Aubin; Terry D. Cyr; *Health Canada, Ottawa, Canada*
- TP 501 **PRiMe: Open Source Software for Visualization and Quantitation of Large Scale Targeted Proteomics Using Parallel Reaction Monitoring;** Michael R. Hoopmann; Samuel L. Bader; Robert L. Moritz; *Institute for Systems Biology, Seattle, WA*
- TP 502 **Tandem MS Epigenetics histones Analysis: A Novel Medium Throughput Approach for Identification, Labeled Quantification and Exploration;** Alexandre Masselot; Tobias Maile; Victoria Pham; Anita Izrael-Tomasevic; Robert Yauch; David Arnott; *Genentech Inc., South San Francisco, CA*
- TP 503 **X-Quant: A Transplantable Tool for Label-Free Quantification of Proteomics Based on MS/MS;** Bo Wen¹; Haiyi Zhao¹; Guilin Li¹; Qiang Feng¹; Quanhui Wang^{1,2}; Siqi Liu^{1,2}; Jun Wang¹; ¹*BGI-Shenzhen, Shenzhen, China*; ²*Beijing Institute of Genomics, CAS, Beijing, China*
- TP 504 **iPiG: Proteogenomic Data Integration in Genome Browsers;** Mathias Kuhring; Bernhard Renard; *Robert Koch-Institute, Berlin, Germany*
- TP 505 **MRM Protein Quantification and Serum Sample Classification;** Pascal Szacherski¹; Laurent Gerfault¹; Jean-François Giovannelli²; Audrey Giremus²; Pierre Mahé^{3,4}; Tanguy Fortin^{3,4}; Geneviève Choquet-Kastylevsky^{3,4}; Amna Klich⁵; Catherine Mercier⁵; Pascal Roy⁵; Arnaud Salvador⁶; Jérôme Lemoine⁶; Jean-Philippe Charrier^{3,4}; Bruno Lacroix^{3,4}; Pierre Grangeat¹; ¹*CEA Leti, MINATEC Campus, Grenoble, France*; ²*Univ. Bordeaux, IMS, UMR 5218, Talence, France*; ³*bioMérieux, Grenoble, France*; ⁴*bioMérieux, Marcy l'Etoile, France*; ⁵*HCL, Service de Biostatistique, Univ. Lyon I, CNRS, Lyon, France*; ⁶*Institut des Sciences Analytiques, CNRS, Univ. Lyon, Lyon, France*
- TP 506 **Collisional Ion Trap Simulator (CITSIM) for Trajectory Computation for Unsteady Flow Conditions Ranging from Vacuum to Atmospheric Pressure;** Sorin Mitran; Bruno Couplier; J. Michael Ramsey; *University of North Carolina, Chapel Hill, NC*
- TP 507 **Detection and Correction of Interference in MS1 Quantitation of Peptides Using their Isotope Distributions;** Yifei Bao²; Jessica Chapman¹; Joseph Glavy²; Beatrix Ueberheide¹; Manor Askenazi³; David Fenyo¹; ¹*New York University Langone Medical Center, New York, NY*; ²*Stevens Institute of Technology, Hoboken, NJ*; ³*The Ionomix Initiative, Arlington, MA*
- TP 508 **Accurate Multiplexed Proteomics at the MS2-Level Using the Complement Reporter Ion Cluster;** Martin Wühr; Wilhelm Haas; Graeme C. McAlister; Leonid Peshkin; Ramin Rad; Marc W. Kirschner; Steven P. Gygi; *Harvard Medical School, Boston, MA*
- TP 509 **Protein Cluster Identification and Quantitation with Scaffold;** Caleb J. Emmons; Brian C. Searle; *Proteome Software, Portland, OR*
- TP 510 **Deconvolution of Overlapping Peptide Isotopic Peak Clusters with EM Algorithm for Label-free Quantification;** Lei Xin¹; M. Ziaur Rahman¹; Weiwu Chen¹; Bin Ma²; ¹*Bioinformatics Solutions Inc., Waterloo, Canada*; ²*University of Waterloo, Waterloo, Ontario*

- TP 511 **RIPPER: A New Software Framework for Biomarker Discovery Using the Proportionality Paradigm and Proximity-based Intensity Normalization (PIN);** Susan K. Van Riper¹; Kathryn J. Doroschak²; Ebbing P. de Jong²; LeeAnn Higgins²; Nelson L. Rhodus²; Frank G. Ondrey²; John V. Carlis²; Timothy J. Griffin²; ¹University of Minnesota Rochester, Rochester, MN; ²University of Minnesota, Minneapolis, MN
- TP 512 **An Instrument Independent Demultiplexing Method for Computationally Improving the Specificity of Data Independent Acquisition;** Dario Amodei¹; Jarrett Egerton²; Brendan McLean²; Richard Johnson²; Olga Vitek³; Michael MacCoss²; Parag Mallick¹; ¹Stanford University, Palo Alto, CA; ²University of Washington, Seattle, WA; ³Purdue University, West Lafayette, IN
- TP 513 **New Algorithm Utilizing All Ions MS/MS Data on TOF/Q-TOF and Accurate Mass MS/MS Libraries for Rapid Development of Quant/Qual Methods;** Frank Kuhlmann; Stephen Madden; Bernhard Wuest; Maithilee Samant; Hong Chen; Prerana Kapase; *Agilent Technologies, Santa Clara, CA*
- TP 514 **Automated Quantification and Analysis of SILAC-iTRAQ Dual-labeled Data;** Getiria Onsongo; John Chilton; Michelle Henderson; Timothy J. Griffin; Pratik Jagtap; Edgar Arriaga; *University of Minnesota, Minneapolis, MN*
- TP 515 **Refinements to Label-free Proteome Quantitation: Applying Spectral Counting Strategies to Parent Ion and Fragment Ion Intensities and Chromatographic Peak Area;** Ying Zhang; Zhihui Wen; Michael Washburn; Laurence Florens; *The Stowers Institute for Medical Research, Kansas City, MO*
- TP 516 **Label-Free Inter-Sample Replicate Similarity Metrics for LC-MS Data Using Intra-Sample Information;** Rob Smith; Dan Ventura; John Prince; *Brigham Young University, Provo, UT*
- TP 517 **A Simplified Method Development Interface for Routine Quantification Applications on High-Resolution, Accurate Mass Instrumentation;** David Brant¹; Catharina Crone²; Tim Stratton¹; Nick Duczak¹; Patrick Bennett¹; ¹Thermo Fisher Scientific, San Jose, CA; ²Thermo Fisher Scientific GmbH, Bremen, Germany
- TP 518 **ProDIA-id: An Automatic Tool to Extract MS/MS Spectra for Protein Identification in Proteomic Experiments Using Data-Independent Acquisition;** Hui-Yin Chang¹; Nai-Yuan Chiang¹; Chia-Feng Tsai²; Ya-Wen Tsai²; Ke-Shiuan Lynn¹; Chia-Ying Cheng¹; Yu-Ju Chen²; Ting-Yi Sung¹; Wen-Lian Hsu¹; ¹Institute of Information Science, Academia Sinica, Taipei, Taiwan; ²Institute of Chemistry, Academia Sinica, Taipei, Taiwan
- TP 519 **A Qualitative and Quantitative Ion Mobility Enabled Data Independent SILAC Workflow;** Andrew JK Williamson¹; Steven Ciavarini²; Scott J Geromanos²; Andrew Tudor³; Barry Dyson³; Lee Gethings³; Kelly McMahon³; Robert Tonge³; James I Langridge³; Anthony D Whetton¹; Johannes PC Vissers³; ¹School of Cancer and Imaging Sciences, Manchester, UK; ²Waters Corporation US, Milford, MA; ³Waters Corporation UK, Manchester, UK
- TP 520 **Critical Assessment of Proteome-Wide Label-Free Absolute Quantification Strategies;** Erik Ahrné; Timo Glatter; Lars Molzahn; Alexander Schmidt; *Proteomics Core Facility, Biozentrum, Basel, Switzerland*
- TP 521 **MS1Probe – Implementation of a Statistical Tool for MS1-based Quantitation in Skyline for High Throughput Quantitative Analysis;** Alexandria K. D'Souza¹; Birgit Schilling¹; Julian Chytrowski¹; Brendan MacLean²; Daniel Broudy²; Nicholas J. Shulman²; Michael J. MacCoss²; Bradford W. Gibson¹; ¹Buck Institute for Research on Aging, Novato, CA; ²University of Washington, Seattle, Seattle, WA
- TP 522 **Validation of Label-Free Methods for Protein Quantitation and Their Application to the Characterization of the Exon Junction Complex;** John Leszyk; Guramrit Singh; Melissa J. Moore; Scott A. Shaffer; *University of Massachusetts Medical School, Worcester, MA*
- TP 523 **THOR: an Algorithm for Determining the Variance Cutoff In Proteomics Count Data;** Scott Walmsley¹; Damian Fermin¹; Hyungwon Choi²; Alexey Nesvizhskii¹; ¹University of Michigan Department of Pathology, Ann Arbor, MI; ²National University of Singapore, Singapore, Singapore
- TP 524 **Automatic Reprocessing, Analysis and Reporting in High-Throughput Analytical Environments;** Manuel Perez Pacheco¹; Carlos Cobas¹; Felipe Seoane¹; Santiago Dominguez¹; Mike Bernstein¹; Chen Peng¹; Agustin Barba¹; George Maydwell²; Scott Campbell²; ¹Mestrelab Research, Santiago De Compostela, Spain; ²Sierra Analytics, Modesto, CA
- TP 525 **New Functionality for the Trans-Proteomic Pipeline: Tools for the Analysis of Proteomics Data;** Luis Mendoza¹; David Shteynberg¹; Joseph Slagel¹; Michael Hoopmann¹; Terry Farrah¹; Zhi Sun¹; Brian Pratt²; Henry Lam³; Jimmy K. Eng⁴; Alexey I. Nesvizhskii⁵; Eric W. Deutsch¹; Robert L. Moritz¹; ¹Institute For Systems Biology, Seattle, WA; ²Insilicos, LLC, Seattle, WA; ³Hong Kong University of Science and Technology, Clear Water Bay, Hong Kong; ⁴University of Washington, Seattle, WA; ⁵University of Michigan, Ann Arbor, MI
- TP 526 **Capturing Multi-Dimensional Proteomes in an Online Encyclopedia;** Yasmeen Ahmad; Mark Larance; Tony Ly; Kathryn Kirkwood; Dalila Bensaddek; Armel Nicolas; Angus I. Lamond; *Centre for Gene Regulation & Expression, University of Dundee, UK*
- TP 527 **MZDASoft™ Parallel Peak Extractor™: A Software Tool for LC/MS data Integration and Compression;** Nelson Ramirez; Zhiwei Wang; David M. Noriega; Yung Lai; Jianqiu (Michelle) Zhang; *UTSA, San Antonio, TX*
- TP 528 **Graph-based Time Alignment Algorithms for LC-MS Datasets with Large Retention-Time Drifts;** Jijie Wang; Henry H. N. LAM; *The Hong Kong University of Science and Technology, Clear Water Bay, Kowloon, Hong Kong, China*
- Toxicology, 529 – 556**
- TP 529 **High-Throughput Cotinine Determination in Human Plasma, Urine and Saliva Using LDTD-MS/MS in 8 Seconds Sample to Sample;** Sylvain Letarte¹; Gregory Blachon¹; Serge Auger¹; Pierre Picard¹; Sarah Demers²; ¹Phytronix Technologies, Québec, Canada; ²Université Laval, Québec, Canada
- TP 530 **Cadmium Exposure Results in the Up-regulation of DDAH I&II in Human Fibroblast Cells as Revealed by SILAC-based Quantitative Proteomics;** John Prins; Yinsheng Wang; *University of California, Riverside, CA*
- TP 531 **Stable Isotope Dilution NanoLC-Nanospray Ionization Tandem Mass Spectrometry Analysis of Three Ethylated Thymidine Adducts in Human Salivary DNA;** Hauh-Jyun Candy Chen; Chin-Ron Lee; *National Chung Cheng Univ., Ming-Hsiung, Chia-Yi, Taiwan*
- TP 532 **High Throughput Liquid Chromatography-Tandem Mass Spectrometry Method for Analysis of 4-(Methylnitrosamino)-1-(3-pyridyl)-1-butanol (NNAL) and its Glucuronides in Human Urine;** Steven Carmella; Xun Ming; Andrea Yoder; Elizabeth Vielguth; Stephen S. Hecht; *Univ. of Minnesota Cancer Center, Minneapolis, MN*
- TP 533 **Liquid Chromatography-Tandem Mass Spectrometry Quantitation of DNA Adducts in Tissues of Rats Treated Chronically with Enantiomers of the Carcinogen N'-Nitrosornicotine;** Lijiao Zhao; Silvia Balbo; Mingyao

- Wang; Peter Villalta; Pramod Upadhyaya; Stephen S. Hecht; *Univ. of Minnesota Cancer Center, Minneapolis, MN*
- TP 534 **Toxicological Analysis of Whole Blood Samples Using Automated SPE/HPLC/MS/MS;** Ken Lewis¹; Robert Sears²; Kim Gamble³; ¹*OpAns, LLC, Durham, NC*; ²*South Carolina Law Enforcement Division, Columbia, SC*; ³*ITSP Solutions, Hartwell, GA*
- TP 535 **Comprehensive Toxicological Screening Using Generic MS/MS^{ALL} Acquisition on a Q-TOF Tandem Mass Spectrometer;** Michael J. Y. Jarvis; Jesse Seegmiller; Jenny Moshin; Adrian Taylor; *AB SCIEX, Concord, Canada*
- TP 536 **Automated Direct Sample Analysis (DSA/TOF) for the Rapid Screening and Confirmation of Illicit Street Drugs;** Sean Daugherty¹; Alun Huchings²; Mark Upton¹; ¹*PerkinElmer, Bucks, UK*; ²*Cardiff Tox Lab, University Hospital Llandough, Cardiff, Wales*
- TP 537 **Detection and Metabolic Characterization of the Hallucinogenic Compound 25I-NBOME in Biological Samples via LC-MS;** David Le¹; An Nguyen¹; Samuel J Stelpflug²; Gregory Janis¹; ¹*MedTox Laboratories, New Brighton, MN*; ²*Regions Hospital Dept. of Emergency Medicine, Saint Paul, MN*
- TP 538 **Chiral Separation and Quantification of Methamphetamine Stereoisomers by Capillary Electrophoresis/Triple Quadrupole Mass Spectrometry;** Flaubert Mbeunkui; Steven Cohen; Joseph Wiegel; Brent Dixon; *Physicians Choice Laboratory Services, Charlotte, NC*
- TP 539 **A Mixed Targeted and Untargeted LC-TOF Approach for Monitoring Emerging Drugs of Abuse in Biological Samples;** An Nguyen; Gregory Janis; *MedTox Laboratories, New Brighton, MN*
- TP 540 **Qualitative and Quantitative Analysis of Illicit Drugs in Biological Fluids by Turbulent-Flow LC Coupled to an Active benchtop Orbitrap MS;** Jérémy Pinguet^{1, 2}; Lucie Roche¹; Pauline Herviou¹; Damien Richard^{1, 2}; ¹*CHU Clermont Ferrand, Clermont Ferrand, France*; ²*UMR INSERM 1107 Neurodol, Université d'Auvergne, Clermont ferrand, France*
- TP 541 **Determination of Barbiturates and 11-nor-9-carboxy- Δ^9 -THC in Urine Using Automated Disposable Pipette Extraction (DPX) and LC/MS/MS;** Oscar G. Cabrices; Fred Foster; Edward Pfannkoch; *Gerstel Inc., Linthicum, MD*
- TP 542 **Development of an LC-NSI-HRMS/MS-PRM Method for Quantification of Attomole Levels of 7-Phenyl-Guanine to Determine the Mechanism of Benzene-Induced Cancer;** Adam Zarth; Silvia Balbo; Guang Cheng; Stephen Hecht; *University of Minnesota, Minneapolis, MN*
- TP 543 **Selective Inhibition of Cytochrome P450 Isoform of Hyperoside: Potent Effect on CYP2D6;** Oh Kwang Kwon; Miri Hong; Min Song; Sunju Kim; Ju Hee Sim; Jong-Sup Bae; Sangkyu Lee; *Kyungpook National University, Daegu, Korea*
- TP 544 **Pain Management Drug Monitoring in Urine Using HPLC/MS-MS;** Jill Wolken; Thomas Doran; Paula Smith; Anita Iwanski; Don Wiebe; *University of Wisconsin Hospital and Clinics, Madison, WI*
- TP 545 **An Improved Immunosuppressant Drug Research Method based on a Novel SPLC-MS/MS System;** Joseph Di Bussolo; Christopher Esposito; Francois Espourteille; *Thermo Fisher Scientific, Franklin, MA*
- TP 546 **Comprehensive Clinical Toxicology Screening by a Novel Ion Trap MSⁿ Workflow;** Markus Meyer¹; Christoph Gebhardt¹; Birgit Schneider¹; Sebastian Götzel¹; Laura M. Huppertz²; Susanne Vogt²; Jürgen Kempf²; ¹*Bruker Daltonik, Bremen, Germany*; ²*Institute of Legal Medicine, University Freiburg, Freiburg, Germany*
- TP 547 **High Throughput Analysis of the Polycyclic Aromatic Hydrocarbon Metabolite Phenanthrene Tetraol in Human Urine by Gas Chromatography-Tandem Mass Spectrometry;** Natalie Olvera; Claire Brookmeyer; Steven Carmella; Stephen S. Hecht; *Univ. of Minnesota Cancer Center, Minneapolis, MN*
- TP 548 **devTOX quickPredict: A Rapid LC-MS-Based Metabolite Biomarker Assay to Predict Developmental Toxicity Using Human Cells;** Paul R. West; Egnash Laura; Alan Smith; Jessica Palmer; Kevin Conard; Mark Ross; Burr Fontaine; Preeti Bais; Elizabeth Donley; Robert Burrier; *Stemina Biomarker Discovery, Madison, WI*
- TP 549 **Aristolactam N-sulfate: A Highly Reactive Metabolite of Aristolochic Acid;** Irina Zaitseva; Viktoriya Siderenko; Sivaprasad Attaluri; Francis Johnson; Arthur P. Grollman; Charles R. Iden; *Stony Brook University, Stony Brook, NY*
- TP 550 **Analysis of All Citric Acid Cycle Metabolites by Liquid Chromatography – Tandem Mass Spectrometry;** Andrew J. Worth; Sankha Basu; Clementina Mesaros; Nathaniel W. Snyder; Ian A. Blair; *University of Pennsylvania, Philadelphia, PA*
- TP 551 **Rapid Determination of Tramadol and N-desmethyl Tramadol in Human Urine by HPLC-MS-MS Optimized Method;** Mehdi Jalali; *Pacific Toxicology Laboratory, Chatsworth, CA*
- TP 552 **Transformation of Aflatoxin B1 in Soil;** Mustafa Selim¹; James Starr²; ¹*East Carolina University, Greenville, NC*; ²*U.S. Environmental Protection Agency, Research Triangle Park, NC*
- TP 553 **DNA Adductomics Methodology Utilizing a High Resolution Accurate Mass MSⁿ Approach for Analysis of Human DNA Samples;** Peter Villalta; Silvia Balbo; Pramod Upadhyaya; Stephen Hecht; *University of Minnesota, Minneapolis, MN*
- TP 554 **USP<467>: Benefits of Use Headspace GC-Mass Spectrometry System;** Daniele Recenti¹; Roberta Lariccia¹; Ilaria Ferrante¹; Luigi Motti²; ¹*DANI, Cologno Monzese, Italy*; ²*Dani SA, Contone, Switzerland*
- TP 555 **Automated Sample Preparation for Toxicology Screenings Workflows on Linear Ion Trap Instruments;** Adrian Taylor¹; Michael Jarvis¹; Jesse Seegmiller¹; Oscar Cabrices²; ¹*AB SCIEX, Concord, Canada*; ²*GERSTEL, Inc., Linthicum, MD*
- TP 556 **Evaluation of Mitochondrial Function Based on the Direct Single-Cell Molecular Analysis by Mass Spectrometry;** Sachiko Date¹; Kiyoko Bando²; Jiro Deguchi²; Izuru Miyawaki²; Juki Kimura²; Hitoshi Funabashi²; Tsutomu Masujima¹; ¹*Quantitative Biology Center (QBiC), Riken, Osaka, Japan*; ²*Dainippon Sumitomo Pharma Co., Ltd., Osaka, Japan*

Diagnostic Clinical Chemistry: Small Molecules I, 557 – 577

- TP 557 **Measurement of Thiopurine Metabolites as a Companion Diagnostic Test to the Genotypic and Phenotypic Thiopurine Methyltransferase Assays;** Stacy Dee; Yvonne Wright; Russell Grant; *LabCorp, Burlington, NC*
- TP 558 **Improved UPLC Tandem Mass Spectrometry Assay for Uridine Diphosphate Galctose-4-epimerase Deficiency;** Jie Chen¹; Gail A Ditegwig Meyers¹; Michael J Bennett^{1, 2}; ¹*Children's Hospital of Philadelphia, Philadelphia, PA*; ²*University of Pennsylvania, Philadelphia, PA*
- TP 559 **Determination of 3-Epi-25-hydroxyvitamin D2 in Human Serum Using Liquid Chromatography-Tandem Mass Spectrometry;** Susan Tai; *NIST, Gaithersburg, MD*

- TP 560 **Development of an Improved Standard Reference Material for Vitamin D Metabolites in Serum;** Karen Phinney; Mary Bedner; Susan Tai; Lane Sander; Katherine Sharpless; Stephen Wise; *National Institute of Standards and Technology, Gaithersburg, MD*
- TP 561 **Results from the Initial Comparability Studies of the NIST/NIH Vitamin D Metabolites Quality Assurance Program;** Mary Bedner; Katrice Lippa; Susan Tai; *NIST, Gaithersburg, MD*
- TP 562 **Reducing Systematic Errors in the LC-MS/MS Determination of Vitamin D;** Dietrich Volmer; Julia Aspenleiter; *Saarland University, Saarbrücken, Germany*
- TP 563 **A Novel Method for the Extraction of 1 α , 25-dihydroxy-Vitamin D2/D3 and Analysis Using UHPLC-MS/MS;** Alan Edgington¹; Lee Williams¹; Rhys Jones¹; Adam Senior¹; Helen Lodder¹; Geoff Davies¹; Steve Jordan¹; Gavin Jones¹; Claire Desbrow¹; Victor Vandell²; Frank Kero²; ¹*Biotage GB Limited, Cardiff, UK*; ²*Biotage, Charlotte, NC*
- TP 564 **The Determination of Optimum Centrifugation Parameters when Designing a Robust and Sensitive 25OH-Vitamin D Assay using UPLC/MS;** Maria Cid; Stuart Coleman; *New York Presbyterian Hospital, New York, NY*
- TP 565 **The Search for 3-Epi-25 Hydroxy Vitamin D;** Jonathan Tang; William Fraser; *University of East Anglia, Norwich, UK*
- TP 566 **Simple, Accurate Quantitation of Nicotinic Acid and Nicotinamide in Human Plasma by Rapid Protein Precipitation Using HPLC-MS/MS;** Shuguang Li; Erica Pike; *Phenomenex, Torrance, CA*
- TP 567 **Evaluation of Acylcarnitines with Dicarboxylic Acid Residues as Candidate Markers for Neurodegenerative Syndromes;** Andrea Raffaelli¹; Riccardo Donzelli²; Alessandro Saba³; Adriano Carpita²; Gabriele Siciliano³; ¹*CNR ICCOM - UOS Pisa, Pisa, Italy*; ²*University of Pisa, Department of Chemistry, Pisa, Italy*; ³*University of Pisa, Department of Medicine, Pisa, Italy*
- TP 568 **Challenges in the Conversion of a Multianalyte GC-MS Method to a High-Throughput LC-MS/MS Clinical Diagnostic Assay;** Lisa Ford; Qibo Zhang; Carolyn Sheffield; Jonathan McDunn; Robert Wolfert; *Metabolon, Research Triangle Park, NC*
- TP 569 **Simultaneous and Fast Analysis of Amino Acids, Acylcarnitines and Orotic Acid in Dried Blood Spots by Triple Quadrupole LC-MS/MS;** Scott Kuzdzal¹; Hironori Kobayashi²; Toshikazu Minohata³; Yuki Hasegawa²; Ichiro Hirano³; Seiji Yamaguchi²; ¹*Shimadzu Scientific Instruments, Inc., Columbia, MD*; ²*Shimane University Faculty of Medicine, Izumo, Japan*; ³*Shimadzu Corporation, Kyoto, Japan*
- TP 570 **Analysis of Dried Blood Spot Samples by High Resolution Mass Spectrometry – Validation of a Novel Method for Newborn Screening;** Julia Denes¹; Steven L. Robinette¹; Eszter Szabo²; Ildiko Sztatmari²; Laszlo Szonyi²; Ernst W. Rauterberg³; Zoltan Takats¹; ¹*Imperial College London, London, UK*; ²*1st Dept. of Pediatrics, Semmelweis University, Budapest, Hungary*; ³*Hesse Child Health Centre, Giessen, Germany*
- TP 571 **Determination of Desmosterol, Campesterol, Cholesterol, and β -sitosterol in Plasma Utilizing LC-MS/MS Technology in Clinical Diagnostics;** Jim Bruton; Joseph McConnell; Daniel Hoefner; Tara Dall; Thomas Dayspring; *Health Diagnostic Laboratory, Richmond, VA*
- TP 572 **Characterizing Blood Bile Alcohols in Cerebrotendinous Xanthomatosis (CTX); Promising Disease Markers Detectable in a Dried Bloodspot LC-ESI-MS/MS Test for CTX;** Andrea E DeBarber; Robert D Steiner; *Oregon Health & Science University, Portland, OR*
- TP 573 **Simplified Extraction of 3 Steroids from Biological Fluid for LC-MS/MS Analysis;** Silvia Bächer¹; Michael Vogeser¹; Christine Lehmann²; Robert Wohleb²; Roland Geyer²; ¹*Clinical Chemistry, University Hospital Munich, Munich, Germany*; ²*Tecan Schweiz AG, Männedorf, Switzerland*
- TP 574 **Performance of the Absolute/DQ[®] Stero17 Kit on ABSciex, Waters and Thermo Scientific Triplequad Mass Spectrometers for Steroid Hormones Analysis;** Hai Pham Tuan; Doreen Kirchberg; Therese Koal; *BIOCRATES Life Sciences, Innsbruck, Austria*
- TP 575 **Quantification of Immunosuppressants by LC-MS/MS Ion Trap Analysis with a New Smart MRM Mode and Compound Verification by Library Search;** Andrea Kiehne; Birgit Schneider; Markus Peer; Markus Meyer; *Brüker Daltonik GmbH, Bremen, Germany*
- TP 576 **Cross Validation between LDTD-MS/MS and LC-MS/MS for the Determination of 4 Immunosuppressant Drugs in Whole Blood;** Gregory Blachon¹; Kamisha Johnson-Davis²; Jean Lacoursiere¹; Pierre Picard¹; Serge Auger¹; Annick Dion-Fortier¹; ¹*Phytronix Technologies, Québec, Canada*; ²*ARUP Laboratories, Salt Lake City, UT*
- TP 577 **High-Throughput Determination of 25-OH-Vitamin D2 and D3 in Plasma Using LDTD-MS/MS with Differential Mobility Spectrometry in 9 seconds Per Sample;** Alex Birsan¹; Pierre Picard¹; Gregory Blachon¹; Michael Jarvis²; Serge Auger¹; Adrian Taylor²; Jean Lacoursiere¹; ¹*Phytronix Technologies Inc., Quebec, Canada*; ²*AB SCIEX, Concord, Canada*
- Environmental Analysis:
Pharmaceuticals and Pesticides, 578 – 607**
- TP 578 **A Strategy for an automated Unknown Screening Approach on Environmental Samples Using HRAM Mass Spectrometry;** Olaf Scheibner^{1,3}; Maciej Bromirski^{1,3}; Patricia van Baar²; Florian Wode²; Uwe Dünbnier²; Kristi Akervik^{1,3}; Jamie Humphries^{1,3}; ¹*Thermo Fisher Scientific, Bremen, Germany*; ²*Berliner Wasserbetriebe, Berlin, Germany*; ³*Thermo Fisher Scientific, Austin, TX*
- TP 579 **Screening Environmental Samples for a Diverse Range of Compound Classes/Structures with Accurate Mass LC-MS and an Integrated Scientific Information System;** Gareth Cleland; Lauren Mullin; Claude Mallet; Jennifer Burgess; *Waters Corporation, Milford, MA*
- TP 580 **Ultra-sensitive Detection of Pharmaceutical and Personal Care Products (PPCP's) in Water with an Integrated On-Line Extraction (OLE)-UHPLC-MS/MS System;** Zicheng Yang; Helen Sun; Kefei Wang; *Bruker, Fremont, CA*
- TP 581 **Determination of Pharmaceuticals by Direct Aqueous Injection-HPLC/MS/MS in Source and Drinking Waters from 25 Municipal Treatment Plants;** Edward T. Furlong¹; Mary C. Noriega¹; Susan T. Glassmeyer²; Dana W. Kolpin³; ¹*National Water Quality Lab, U.S. Geological Survey, Denver, CO*; ²*U.S. Environmental Protection Agency, Cincinnati, OH*; ³*U.S. Geological Survey, Iowa City, IA*
- TP 582 **Determination of Pharmaceutical Compounds from Drinking and Surface Water at Low ng/L Levels Using Direct Aqueous Injection Triggered MRM LC-QQQ-MS;** László Toelgyesi¹; Andreas Wanke²; Thomas Glauner¹; Susanne Soelter¹; ¹*Agilent Technologies, Waldbronn, Germany*; ²*SMUL Sachsen, Nossen, Germany*
- TP 583 **Degradation Processes of Environmentally Relevant Pharmaceuticals;** Linyan Zhu^{1,2}; Beatrix Santiago-Schuebel¹; Agnieszka Kraj³; Zhiliang Zhu²; Yanling Qiu²; Stephan Kueppers¹; ¹*Research Center Jülich, ZEA-3, Jülich, Germany*; ²*Tongji University, Shanghai, China*; ³*Antec, Zoeterwoude, The Netherlands*

- TP 584 **Natural Attenuation of Emerging Contaminants in the Critical Zone: Time of Flight Mass Spectrometry Measurement Approaches;** Rachel Maxwell¹; Leif Abrell¹; Andrea Conine²; Shane Snyder¹; Jon Chorover¹; ¹University of Arizona, Tucson, AZ; ²Skidmore College, Saratoga Springs, NY
- TP 585 **LC-MS/MS for Screening and Quantifying Anti-Cancer Drugs and Metabolites in Waste Water Rejected in Mediterranean Sea;** Thérèse Schembri¹; Mikael Levi²; François Gray¹; Stéphane Moreau²; Claude Villard¹; Pierre Boissery³; Daniel Lafitte¹; ¹Aix Marseille Université, Inserm UMR 911 CRO2, Marseille, France; ²Shimadzu France, Noisiel, France; ³Agence de l'Eau Rhône Méditerranée & Corse, Marseille, France
- TP 586 **Determination of Non-Steroidal Anti-Inflammatory Drugs in Environmental Water by Dispersive Liquid-Liquid Microextraction Coupled with Liquid Chromatography-Tandem Mass Spectrometry;** Shih-Shan Tai; Chung-Yu Chen; Maw-Rong Lee; *National Chung-Hsing University, Taichung, Taiwan*
- TP 587 **Removal of Matrix Effects Using Ion-Exchange SPE during Analysis of veterinary Antibiotics Present in Manure by LDTD-APCI-MS/MS;** Morgan Sollie^{1,2}; Daniel Massé²; Sébastien Sauvé¹; ¹Université de Montréal, Montréal, Canada; ²Agriculture and Agri-Food Canada, Sherbrooke, Canada
- TP 588 **Identification and Structural Elucidation of Ozonation Transformation Products of Emerging Contaminants;** Pedro A. Segura; Angela Rodayan; Pearl Kaplan; Karim Saadi; Rachel Benoit; Viviane Yargeau; *McGill University, Montréal, Canada*
- TP 589 **Routine, Targeted and Non-Targeted Analysis of Environmental Contaminants of Emerging Concern – Development and Validation of a UHPLC-Orbitrap MS Method;** Paul Yang¹; Tung Vi Nguyen²; Vince Pileggi¹; Kristi Akervik³; Chunyan Hao¹; Xiaoming Zhao¹; Serei Thach¹; Jennifer Newman¹; Yafang Lu¹; Sonya Kleywegt¹; Shahram Tabe¹; Ramin Farnood²; Charles Yang³; Jonathan Beck³; Maciej Bromirski³; Dipankar Ghosh³; ¹Ministry of the Environment, Etobicoke, Canada; ²University of Toronto, Toronto, Canada; ³Thermo Scientific, San Jose, CA
- TP 590 **Simultaneous Determination of Cationic and Anionic Pharmaceuticals Using an Online SPE LC and a High-Speed Polarity Switching ESI MS/MS;** Mitsuha Yoshikane¹; Tairo Ogura²; Ichiro Hirano²; Yayoi Suzuki³; Shoji Nakayama³; ¹The University of Tokyo, Kashiwa, Japan; ²Shimadzu Corporation, Kyoto, Japan; ³National Institute for Environmental Studies, Tsukuba, Japan
- TP 591 **Results of a National Scale Survey Investigating the Occurrence of Prescription Pharmaceuticals Present in Wastewater Discharges;** Angela Batt; Mitchell Kostich; Jim Lazorchak; *U.S. Environmental Protection Agency, Cincinnati, OH*
- TP 592 **Paper Spray Ionization of Herbicides from Dried Blood Spot Cards;** Steven L. Reeber; Sneha Gadi; Gary L. Glish; *University of North Carolina at Chapel Hill, Chapel Hill, NC*
- TP 593 **Determination of Glucocorticoid- And Mineralocorticoid-Active Compounds in Waste and River Waters by LC-MS/MS and in vitro Testing;** Adrian A Ammann¹; Petra Macikova²; Ksenia J Groh¹; Kristin Schirmer¹; Marc J.-F. Suter¹; ¹Eawag, Dübendorf, Switzerland; ²Masaryk University, Brno, CZ
- TP 594 **Quantitative Determination of Antidepressants by Solvent Microextraction LC ESI-MS/MS in Biosolids Destined for Land Application;** Melissa M. Schultz; Lydia Niemi; Madigan Murphy; Katherine Stencel; *The College of Wooster, Wooster, OH*
- TP 595 **Analysis of Targeted and Non-Targeted Identified Contaminants in Storm Water Retention Ponds Using LC-HRMS with Online Solid Phase Extraction;** Jonathan Beck¹; P. Lee Ferguson²; Gordon Getzinger²; ¹Thermo Fisher Scientific, San Jose, CA; ²Duke University, Durham, NC
- TP 596 **Trace Level Analysis of Herbicides in Drinking and Surface Water by Online-SPE LC/Triple Quadrupole MS to the Lower ppt Range;** Edgar Naegele; *Agilent Technologies, Waldbronn, Germany*
- TP 597 **Analysis of Diquat and Paraquat Using UHPLC-MS/MS and UHPLC-Orbitrap MS – Method Development, Matrix Effects and Performance;** Paul Yang¹; Chunyan Hao¹; Franca Morra¹; Xiaoming Zhao¹; Xiaodong Liu²; Charles Yang²; Jonathan Beck²; Maciej Bromirski²; Dipankar Ghosh²; ¹Ministry of the Environment, Etobicoke, Canada; ²Thermo Scientific, San Jose, CA
- TP 598 **Multi-Residue Method for the Target Analysis of Pesticides in Crops by Liquid Chromatography-Tandem Mass Spectrometry;** Nam-Sun Kim; SeongSoo Park; Hwa-Mi Lee; Mi-Jung Noh; Hyun-Sook Lee; Sungll Kim; SeungYoung Park; KeunHwa Choi; Dae Hyun Cho; *Regional Food and Drug Administration, Incheon, Korea*
- TP 599 **Rapid and Simultaneous Identification and Quantitation of Pesticides in different Matrices Using High Sensitive LC/MS/MS;** Karsten Ott¹; Ugo Chiuminatto²; Sebastian Fabritz²; Jianru Stahl-Zeng²; ¹bilacon GmbH, Berlin, Germany; ²AB Sciex, Darmstadt, Germany
- TP 600 **Sensitive Quantification of Pesticides at Low ppt Levels in Drinking Water Using High Performance Triple Quadrupole Mass Spectrometer;** Guifeng Jiang; Jia Wang; Marcus Miller; Terry Zhang; Jonathan Beck; Charles Yang; Dipankar Ghosh; *Thermo Fisher Scientific, San Jose, CA*
- TP 601 **High Throughput Analysis of Pesticide Residues in Raw Agricultural Commodities;** Leah Riter; Chad Wujcik; *Monsanto, St. Louis, MO*
- TP 602 **Improved Screening for 500 Pesticides in Matrix Using a LC-triple Quadrupole Mass Spectrometer;** Marcus Miller; Mary Blackburn; Dipankar Ghosh; Oleg Silva; *ThermoFisher Scientific, San Jose, CA*
- TP 603 **High-Throughput Simultaneous Analysis of Pesticides by Supercritical Fluid Chromatography/Orbitrap Mass Spectrometry;** Megumi Ishibashi¹; Miho Sakai^{1,2}; Takashi Ando²; Tomoko Hamasaka³; Shigeru Sakamoto³; Eiichiro Fukusaki¹; Takeshi Bamba¹; ¹Graduate School of Engineering, Osaka University, Suita, Japan; ²Miyazaki Agricultural Research Institute, Miyazaki, Japan; ³Thermo Fisher Scientific, Yokohama, Japan
- TP 604 **On-line SPE Coupled to UHPLC MS/MS for Analysis of Multiple TOCs in Water Using Simultaneous Positive and Negative Electrospray Ionization;** Tarun Anumol¹; Sheher Mohsin²; Sylvain Merel¹; Shane Snyder¹; ¹University of Arizona, Tucson, AZ; ²Agilent Technologies, Schaumburg, IL
- TP 605 **Simultaneous Screening Target and Non-Target Pesticides in Vegetable by GC/Q-TOF MS with Accurate Mass Ion Formula Database and Deconvolution Technique;** Fang Zhang¹; Yinlong Guo¹; Chongtian Yu²; zhe Cao²; Zhixu Zhang²; ¹Shanghai insititue of organic chemistry, Shanghai, China; ²Agilent Technologies(China) Co., Ltd., Shanghai, China
- TP 606 **High Speed TOFMS for GC and GCxGC Endocrine Disrupting Compounds Characterization in Biological Samples for Environmental Risk Factors Assessment;** Daniela Cavagnino¹; Antonella Siviero¹; Alessandra Mantegazza¹; Veronica Termopoli²; Pierangela Palma²; Giorgio Famigliani²; Anna Maria Lavezzi³; Luigi Matturri³; Achille Cappiello²; ¹DANI Instruments, Cologno Monzese,

Italy; ²LC-MS Laboratory, DiSTeVA, University of Urbino, Urbino, Italy; ³Research Center "Lino Rossi", University of Milan, Milan, Italy

- TP 607 **A Novel Screening Method for Anthropogenic Sewage Pollutants in Waste Water, Ground Water and Drinking Water Samples by LC-HRAM Analysis;** Sebastian Westrup; Nick Duczak; Michal Godula; *Thermo Fisher Scientific, San Jose, CA*

Elemental Analysis, 608 – 618

- TP 608 **Development of Capillary Electrophoresis Inductively Coupled Plasma Mass Spectrometry for Quantitative Analysis of Phosphorylated Peptide with Metrological Traceability;** Kyoung-Seok Lee¹; Jinil Kim²; Yong-Hyeon Yim¹; Su Kyeong Bang²; Tae Kyu Kim²; ¹KR/ISS, Yuseong-Gu, Korea; ²Department of Chemistry, Pusan National University, Busan, Korea
- TP 609 **Optimizing Cold Cell LA-ICP-MS Conditions for the Analysis of Elemental Localization and Imaging of Biological Tissues;** Jason Hamilton; William Hoffman; Guido Verbeck; *University of North Texas, Denton, TX*
- TP 610 **Reducing Matrix Effect through Femtosecond Laser Ablation and Ionization;** Bochao Zhang; Wei Hang; *Xiamen University, Xiamen, China*
- TP 611 **Development of a Method Based on Tandem Inductively Coupled Plasma Mass Spectrometry for Determination of Calcium/Phosphorus Ratio in Teeth Samples;** Mohamed Amr¹; Saeed Al-Meer¹; Khalid Al-Saad¹; Elham Fawzi²; ¹Qatar University, Doha, Qatar; ²The Queen Dental Center, Doha, Qatar
- TP 612 **The State of the Matter: Providing Insight through Chemical Speciation;** Craig Westphal; *DuPont, Wilmington, DE*
- TP 613 **Analysis of Phosphorus in Some Environmental Samples by ESI - Mass Spectrometry and ICP - Mass Spectrometry;** Jerzy Mierzwa; *Tennessee State University, Nashville, TN*
- TP 614 **Determination of Iopromide in Environmental Waters by Ion Chromatography-ICP-MS;** Armando Durazo; Tarun Anumol; Shane A. Snyder; *University of Arizona, Tucson, AZ*
- TP 615 **Redox Speciation Analysis of Iron by Ion-Chromatography and ICP-MS Based on Speciated Isotope Dilution Mass Spectrometry (EPA Method 6800);** Mesay M. Wolle¹; Timothy Fahrenholtz²; G. M. Mizanur Rahman²; Matt Pamuku²; H. M. "Skip" Kingston¹; ¹Duquesne University, Pittsburgh, PA, ²Applied Isotope Technologies, Pittsburgh, PA
- TP 616 **Rapid Detection of Metal Contaminants Using Ambient Mass Spectrometry;** Jamie Nizzia; Christopher Mulligan; *Illinois State University, Normal, IL*
- TP 617 **Ultra-fast LDTD-APCI-MS/MS Analysis of Steroid Hormones Oxidized in Surface Water Using Potassium Permanganate;** Paul Fayad¹; Michele Prevost²; Sebastien Sauve¹; ¹Universite de Montreal, Montreal, Canada; ²Ecole Polytechnique de Montreal, Montreal, Canada
- TP 618 **Simultaneous Analysis of Heavy-Metals by ICP-MS: Efficiency of Clay, TiO₂ and SiO₂ Nanoparticles for the Removal of Toxic-Metals from Water;** Khalid A. Al-Saad¹; Mohamed A. Amr¹; Saeed H. Almeer¹; Aisha N. Alsaygh¹; Esraa Y. Abbas¹; Mohammed A Abdul-Hakim¹; Mohammed S. Muthana¹; Siham S. Hersi¹; Noor M. Bader¹; Ahmed A. Ramadan¹; Sakthivel Sundaresan²; Narendra Agnihotra²; ¹Qatar University, Doha, Qatar; ²TCE QSTP-LLC, Doha, Qatar

Ion Mobility Applications, 619 – 661

- TP 619 **Using Ion Mobility Spectrometry to Screen Small Molecule Inhibitors for the Alzheimer's Disease Aβ42 Protein;** Xueyun Zheng; Michael Bowers; *University of California Santa Barbara, CA*
- TP 620 **Separation of Isomeric Cationized Diterpene Glycosides from *Stevia Rebaudiana* Bertoni Leaves by Traveling Wave Ion Mobility Mass Spectrometry (TWIM-MS);** Alessandra Tata¹; Giovana Anceski Bataglion¹; Gustavo Henrique Martins Ferreira Souza²; Marcos Nogueira Eberlin¹; ¹University of Campinas UNICAMP, Campinas (SP), Brazil; ²MS Applications & Develop Lab, Waters Corporation, Sao Paulo, Brazil
- TP 621 **Separation and Characterization of Polymeric Architectures by Matrix Assisted Ionization Vacuum (MAIV)-Ion Mobility Spectrometry (IMS)-Mass Spectrometry (MS);** Lorelie Imperial¹; Barbara Larsen²; Scott Grayson³; Sarah Trimpin¹; ¹Department of Chemistry, Wayne State University, Detroit, MI; ²The DuPont Company, Wilmington, DE; ³Department of Chemistry, Tulane University, New Orleans, LA
- TP 622 **Ion Mobility-Mass Spectrometry Analysis of Globular Electrospayed Polymer Ions Obtained via Charge Control;** Ernesto Criado Hidalgo^{1, 2}; Juan Fernández García¹; Juan Fernández de la Mora¹; ¹Yale University, New Haven, CT; ²SEADM S.L., Boecillo, Spain
- TP 623 **Characterization of Amino Acid and Peptide Isomers Using Traveling Wave Ion Mobility Spectrometry-Mass Spectrometry;** Tawnya Flick; Chul Yoo; Iain Campuzano; Michael Bartberger; *Amgen, Inc., Thousand Oaks, CA*
- TP 624 **Spontaneous Cold Ionization and Characterization of Molecules from Surfaces by Matrix Assisted Ionization Vacuum Ion Mobility Spectrometry Mass Spectrometry;** Ellen D. Inutan; Sarah Trimpin; *Wayne State University, Detroit, MI*
- TP 625 **Hadamard Transform Atmospheric Pressure Ion Mobility Time-of-Flight Mass Spectrometry for Complex Sample Analysis;** Xing Zhang¹; William Siems¹; Stephan Graf²; Richard Knochenmuss²; Herbert Hill¹; ¹Washington State University, Pullman, WA; ²Tofwerk AG, Thun, Switzerland
- TP 626 **Determination and Characterization of PFOS in Environmental Samples Using Travelling Wave Ion Mobility Mass Spectrometry;** Michael McCullagh¹; Kendon Graham¹; Dominic Roberts¹; Kieran J Neeson¹; Jeff Goshawk¹; Leonard Dillon¹; Mike Hodgkinson¹; Ingrid Ericson²; Bert van Bavel²; ¹Waters Corporation, Manchester, UK; ²MTM Research Centre, Örebro University, Örebro, Sweden
- TP 627 **A Novel Approach to the Reduction of False Positive and Negative Identifications in Screening of Pesticide Residues in Food Analysis;** Séverine Goscinny¹; Michael McCullagh²; Kieran Neeson²; Jeff Goshawk²; David Eatough²; Sara Stead²; Ramesh Rao²; Dominic Roberts²; ¹Scientific Institute of Public Health, Brussels, Belgium; ²Waters, Manchester, UK
- TP 628 **Effective Analysis of Explosives with IMS-MS Using Corona Discharge Ionization;** Jihyeon Lee¹; Soo Gyeong Cho²; Eun Mee Goh²; Sungman Lee³; Sung-Suk Koh³; Jeongkwon Kim¹; ¹Chungnam National University, Daejeon, South Korea; ²Agency for Defense Development, Daejeon, South Korea; ³Sensor Tech Inc., Kyunggi-Do, South Korea
- TP 629 **Ion Evaporation from Amine-Nitrate Nanodrops Yields Singly-Charged "Magic" Octamer Cluster-Ion;** Juan Fernández García; Juan Fernández de la Mora; *Yale University, New Haven, CT*

- TP 630 **Characterization of Amyloid β / Neuropeptide interactions using Ion Mobility - Mass Spectrometry and Site-Direct Mutagenesis;** [Molly T. Soper](#); Brandon T. Ruotolo; *Department of Chemistry, University of Michigan, Ann Arbor, MI*
- TP 631 **The Effects of Polar Side Chains and Multiple Charges on Conformational Preferences of Peptide Ions;** [Chunying Xiao](#); David H. Russell; *Texas A&M University, College Station, Texas*
- TP 632 **Ion Cluster Effects on Differential Mobility as a Function of ESI Flow Rate;** [Thomas Covey](#); Bradley Schneider; Jay Corr; *AB SCIEX, Concord, Canada*
- TP 633 **Ion Mobility Study of Isomeric Carbohydrates as their Group I Metal Cation Adducts: Evidence for Isomer-Specific Conformations;** [Yuting Huang](#); Eric D. Dodds; *University of Nebraska-Lincoln, Lincoln, NE*
- TP 634 **Separation and Identification of Isomeric Glycans by Trapped Ion Mobility Spectrometry-Fourier Transform Mass Spectrometry;** [Yi Pu](#)¹; Mark Ridgeway²; Melvin Park²; Cheng Lin³; Catherine E Costello^{1,3}; ¹*Boston University, Boston, MA*; ²*Bruker Daltonics, Billerica, MA*; ³*Boston University School of Medicine, Boston, MA*
- TP 635 **High Pressure Liquid Chromatography of Sugars and Pharmaceuticals using a single Ambient Pressure Ion Mobility LC Detector;** [Stephen Davila](#); Cheng-Hui Yuan; Hermann Wollnik; Gary Eiceman; *New Mexico State University, Las Cruces, NM*
- TP 636 **Origin of Conformers Produced During Electrospray Ionization Revealed by Cryogenic Ion Mobility-Mass Spectrometry: A Benchmark Study Using Substance P;** [Joshua A. Silveira](#)¹; Kyle L. Fort¹; Nicholas A. Pierson²; David E. Clemmer²; David H. Russell¹; ¹*Texas A&M University, College Station, TX*; ²*Indiana University, Bloomington, IN*
- TP 637 **Analyzing/Separating Isomers, Conformers, Isobaric Compounds and Other Closely Related Small Molecules: An IMS Case Study;** [Filip Lemiere](#)^{1,2}; Frank Sobott^{1,2}; Jasper Boschmans¹; Eliane Goossens¹; Debbie Dewaele¹; ¹*Biomolecular Mass Spec., University of Antwerp, Antwerp, Belgium*; ²*Centre for Proteomics, University of Antwerp, Antwerp, Belgium*
- TP 638 **Characterizing Conformation of Peptides in Low Dielectric Media Using Ion Mobility Mass Spectrometry;** [Suk-Joon Hyung](#); Matthew Teague; Justin Stroh; Michael Shapiro; Xidong Feng; *Pfizer Worldwide Research, Groton, CT*
- TP 639 **Exploring nanoESI-DMS-MS/MS as a Rapid Quantitative Platform;** [Amol Kafle](#)¹; Stephen Coy¹; Adam Hall²; Sunita Yadav¹; James Glick¹; Paul Vouros¹; ¹*Northeastern University, Boston, MA*; ²*Boston University, School of Medicine, Boston, MA*
- TP 640 **Improved Accuracy of Isobaric Tagging in Quantitative Proteomics Using High Field Asymmetric Waveform Ion Mobility Spectrometry (FAIMS);** [Eric Bonnell](#)¹; Dave Barnett²; Christelle Pomiès¹; Pierre Thibault¹; ¹*Universite de Montréal, Montreal, Canada*; ²*Atlantic Cancer Research Institute, Moncton, Canada*
- TP 641 **The Effects of Protein Glycation on Structural Dynamics of α B-Crystallin;** [Weston Struwe](#); Georg Hochberg; Justin Benesch; *University of Oxford, Oxford, UK*
- TP 642 **Separation and Relative Quantitation of Complex Lipid Regioisomers in Biological Extracts using Differential Mobility Spectrometry;** J. Larry Campbell¹; Eva Duchoslav¹; J. C. Yves Le Blanc¹; [Chris M. Lock](#)¹; Alan T. Maccarone²; Stephen J. Blanksby²; Todd W. Mitchell²; ¹*AB SCIEX, Concord, Canada*; ²*University of Wollongong, Wollongong, NSW, Australia*
- TP 643 **Hofmeister Salts Recover a Misfolded Multiprotein Complex for Subsequent Structural Measurements in the Gas Phase;** [Linjie Han](#); Brandon Ruotolo; *University of Michigan, Ann Arbor, MI*
- TP 644 **Combined Crosslinking and Ion Mobility-Mass Spectrometry for Structural Analysis of Protein Complexes;** Billy Clifford-Nunn; Linjie Han; Yueyang Zhong; Philip Andrews; Brandon Ruotolo; *University of Michigan, Ann Arbor, MI*
- TP 645 **Exploring the Potential of Ion Mobility-Mass Spectrometry in Protein Tyrosine Kinase Inhibitor Discovery;** [Jessica N. Rabuck](#)¹; Matthew Soellner²; Brandon T. Ruotolo¹; ¹*Department of Chemistry, University of Michigan, Ann Arbor, MI*; ²*College of Pharmacy, University of Michigan, Ann Arbor, MI*
- TP 646 **A Robotically-sampled Electrospray Ion Mobility-Mass Spectrometry Protocol for Structural Proteomics;** [Yueyang Zhong](#); Brandon Ruotolo; *University of Michigan, Ann Arbor, MI*
- TP 647 **Structural Analysis of Transmembrane Spanning Peptides by Drift Tube Based Ion-Mobility Spectrometry;** [Christian Klein](#); Christine Miller; Ruwan Kurulugama; Alexander Mordehai; Bill Barry; George Stafford; *Agilent Technologies, Santa Clara, CA*
- TP 648 **Probing Secondary Structure of Insulin B-chain by MS-CID-IM-MS;** [Nathanael F Zinne](#); David H. Russell; *Texas A&M University, College Station, TX*
- TP 649 **Insight into the Structure of Peptoids and Thioamide-Containing Peptoids by Ion-Mobility Mass Spectrometry (IMS);** Magdalena Zimnicka; *Institute of Organic Chemistry, PAS, Warsaw, Poland*
- TP 650 **Ion Mobility-Mass Spectrometry and Molecular Dynamics Simulations Reveal Structural Changes of Metallothionein: The Effects of Metal Binding on Conformation;** [Shu-Hua Chen](#); Liuxi Chen; David Russell; *Texas A&M University, College Station, TX*
- TP 651 **Conformation and Binding Differences between Chemokine Analogs and Heparin as Determined by Ion Mobility Mass Spectrometry;** [Youjin Seo](#); Christian Bleiholder²; Armann Andaya¹; Julie Leary¹; ¹*UC Davis, Davis, CA*; ²*UC Santa Barbara, Santa Barbara, CA*
- TP 652 **Applying a High Throughput IMS-QTOF MS Platform to Complex Samples for Increased Molecular Coverage;** [Erin Baker](#)¹; Kristin Burnum-Johnson¹; Yehia Ibrahim¹; Daniel Orton¹; Elizabeth Torres¹; William Danielson¹; Kevin Crowell¹; Matthew Monroe¹; Gordon Slysz¹; Mary Lipton¹; Thomas Metz¹; Ruwan Kurulugama²; Alex Mordehai²; Ed Darland²; George Stafford²; Gordon Anderson¹; Richard Smith¹; ¹*Pacific Northwest National Laboratory, Richland, WA*; ²*Agilent Technologies, Santa Clara, CA*
- TP 653 **Structural Characterization of Disulfide-Bridged-Peptides;** [Philippe Massonnet](#)¹; Loïc Quinton¹; Nicolas Smargiasso¹; Nicolas Gilles²; Edwin De Pauw¹; ¹*Laboratory of Mass Spectrometry, Ulg, Liège, Belgium*; ²*CEA/DSV/iBiTec-S/SIMOPRO, Gif sur Yvette, France*
- TP 654 **Investigation of the Prebiotically Plausible Formation of Water-soluble Polyesters by Traveling Wave Ion Mobility-Mass Spectrometry;** [Manshui Zhou](#)¹; Irena Mamajanov¹; Francis Joseph Schork¹; Ramanarayanan Krishnamurthy²; Martha A Grover¹; Nicholas V. Hud¹; Facundo M. Fernandez¹; ¹*Georgia Institute of Technology, Atlanta, GA*; ²*Scripps Research Institute, La Jolla, CA*
- TP 655 **Isomeric Separation and Structure Characterization of Polar Compounds in Petroleum by traveling Wave Ion Mobility Mass Spectrometry;** [Priscila M. Lalli](#)^{1,2}; David C. Podgorski^{1,3}; Yuri E. Corilo^{1,3}; Marcos N. Eberlin²;

- Ryan P. Rodgers^{1,3}; Alan G. Marshall^{1,4}; ¹National High Magnetic Field Laboratory, Tallahassee, FL; ²ThOMSON MS Laboratory, University of Campinas, Campinas, Brazil; ³Florida State University Future Fuels Institute, Tallahassee, FL; ⁴Florida State University, Department of Chemistry, Tallahassee, FL
- TP 656 **Global Peptide Collision Cross-section Profiling on a Travelling Wave Ion Mobility Mass Spectrometer;** Christopher B. Lietz; Chenxi Jia; Lingjun Li; *University of Wisconsin, Madison, WI*
- TP 657 **Collision Cross Sections and Reduced Mobilities of Endogenous Steroids in a Drift Tube IM-MS Using Nitrogen Bath Gas;** Christopher Crutchfield¹; Stephanie Cologna¹; Peter Backlund¹; Christian Klein²; Ruwan Kurulugama²; Ed Darland²; Alex Mordehai²; Alfred L. Yergey¹; ¹NIH, Columbia, MD; ²Agilent Technologies, Santa Clara, CA
- TP 658 **Influence of Drift Gas in the Separation of Hydroxybenzoic Acid Isomers (tautomers) via Traveling Wave Ion Mobility Mass Spectrometry (TWIM-MS);** Renan S. Galaverna; Giovana A. Bataglion; Gabriel Heerd; Nelson H. Morgon; Marcos N. Eberlin; *State university of campinas, Campinas, Brasil*
- TP 659 **The Effect of Ion Temperature on the Conformation(s) of Gas-Phase Peptide Ions: An Ion Mobility-Mass Spectrometry Study;** Kyle L. Fort; Joshua A. Silveira; David H. Russell; *Texas A&M University, College Station, TX*
- TP 660 **Theoretical Investigation on the Ion Mobility Separation of Metal-Coordinated Oligosaccharide Isomers;** Yiqun Huang¹; Erin Baker²; Catherine E. Costello¹; Cheng Lin¹; ¹Boston University School of Medicine, Boston, MA; ²Pacific Northwest National Laboratory, Richland, WA
- TP 661 **A Novel Approach to Improve Quantitation Accuracy and Proteome Coverage Upon Application of TWIMS (Travelling Wave Ion Mobility Mass Spectrometry);** Pavel Shliaha; Laurent Gatto; Nick Bond; Michael Muelleder; Floriana Capuano; Markus Ralser; Kathryn Lilley; *University of Cambridge, Cambridge, UK*
- Ambient Ionization: Applications I, 662 – 690**
- TP 662 **In situ Analysis of Single Plant Cells by Laser Ablation Electrospray Ionization Mass Spectrometry with Ion Mobility Separation;** Linwen Zhang¹; Bindesh Shrestha¹; Éric Maréchal²; Denis Falconet²; Akos Vertes¹; ¹George Washington University, Washington, DC; ²Université Joseph Fourier Grenoble, Grenoble, France
- TP 663 **Metabolic Analysis of Small Cell Populations by Plume Collimation in LAESI Mass Spectrometry with Ion Mobility Separation;** McKenzie Floyd; Akos Vertes; *George Washington University, Washington, DC*
- TP 664 **Metabolomic and Lipidomic Analysis of Live Microalgae by Laser Ablation Electrospray Ionization Mass Spectrometry with Ion Mobility Separation;** Sylwia Stopka¹; Bindesh Shrestha¹; Denis Falconet²; Éric Maréchal²; Akos Vertes¹; ¹George Washington University, Washington, District Of Columbia; ²Université Joseph Fourier Grenoble, Grenoble, France
- TP 665 **Ex vivo Analysis of Lymnaea Organs by Laser Ablation Electrospray Ionization Mass Spectrometry with Ion Mobility Separation;** Laine Compton¹; Zsolt Pirger²; Laszlo Mark³; Zita Laszlo²; Bindesh Shrestha¹; Akos Vertes¹; ¹George Washington University, Washington, District of Columbia; ²Hungarian Academy of Sciences, Tihany, Hungary; ³University of Pecs, Pecs, Hungary
- TP 666 **LAESI Mass Spectrometry Imaging of Contact Lens Spoilage;** Holly Henderson; Brent Reschke; Matthew Powell; Callee Walsh; Trust Razunguzwa; *Protea Biosciences Group, Inc., Morgantown, WV*
- TP 667 **Characterization of Drugs in Dried Blood Spots Using Electrospray Laser Desorption Ionization Mass Spectrometry;** Chin-Hsiung Wang; Min-Zong Huang; Jentaie Shiea; *National Sun Yat-Sen Univ., Kaohsiung, Taiwan*
- TP 668 **Adding Ammonium Salts as Co-Matrices for Improving Analyte Detection and Sensitivity Using Laserspray Ionization Inlet (LSII);** Nicholas Chubatyi; Charles McEwen; *University of the Sciences, Philadelphia, PA*
- TP 669 **Rapid Breath Profiling by Thermal Desorption – Electrospray Mass Spectrometry;** James Reynolds; Cristina Guallar-Hoyas; Modupe Jimoh; Colin Creaser; Paul Thomas; *Loughborough University, Loughborough, UK*
- TP 670 **Solid Phase Microextraction Coupled with Thermal Desorption Electrospray Ionization Mass Spectrometry for the Detection of Trace Chemical Compounds in Liquids;** Min-Zong Huang; Jo-Han Chou; Jentaie Shiea; *National Sun Yat-Sen Univ., Kaohsiung, Taiwan*
- TP 671 **Rapid Determination of Urinary Creatinine Levels Using Atmospheric Pressure Thermal Desorption Combined with Ion Mobility-Mass Spectrometry;** Neil Devenport¹; James Reynolds¹; Daniel Weston²; Colin Creaser¹; ¹Loughborough University, Loughborough, UK; ²AstraZeneca, Alderley Edge, UK
- TP 672 **Qualitative Analysis of 1-OHP with Extractive Electrospray Ionization Mass Spectrometry from a Wet Surface;** Jing Li; Eric Handberg; Huanwen Chen; *East China Institute of Tech., Nanchang, China*
- TP 673 **Detection of Exhaled Nitric Oxide by Extractive Electrospray Ionization Mass Spectrometry;** Susu Pan¹; Yan Zhang¹; Jianhua Ding¹; Jiuyan Zhao²; Lanlan Zhu²; Qian Zeng¹; Xinglei Zhang¹; Eric Handberg¹; Huanwen Chen¹; ¹East China Institute of Tech., Nanchang, China; ²Nanchang University, Nanchang, China
- TP 674 **Electrospray Charging of Quartz, Olivine, and Chondritic Meteorite Microparticles;** Daniel Austin; Terik Daly; Jonathan Kerby; *Brigham Young University, Provo, UT*
- TP 675 **Differentiation of Two Morphologically Similar Amazonian Aniba Species by Electron Spray Ionization Mass Spectrometry;** Carlos H.V. Fidelis¹; Renan S. Galaverna¹; Lauro E.S. Barata²; Paulo T. B. Sampaio³; Marcos N. Eberlin¹; ¹State University of Campinas, Campinas, SP; ²Federal University of Western Pará (UFOPA), Santarém, PA; ³National Research Institute of Amazon, Manaus, AM
- TP 676 **Direct Analysis of Herbal Powders by Pipette-tip Electrospray Ionization Mass Spectrometry;** Haixing Wang; Zhong-Ping Yao; *The Hong Kong Polytechnic University, Hong Kong, China*
- TP 677 **Electrostatic-Spray Ionization Mass Spectrometry;** Liang Qiao¹; Hubert Girault¹; Romain Sartor¹; Natalia Gasilova¹; Elena Tobolkina¹; Baohong Liu²; ¹École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; ²Fudan University, Shanghai, China
- TP 678 **The Fast Screening Analysis for Alkylphenol and Alkylphenol Ethoxylates Using Mass Spectrometer;** Nam-Yong Cheong¹; Eun-Ho Shin¹; Seung-Woon Myung²; ¹KATRI, Seoul, South Korea; ²Kyonggi University, Su-Won, Kyonggi-do, Korea
- TP 679 **Shvo's Catalyst in Chemoenzymatic Dynamic Kinetic Resolution of Amines - Inner or Outer Sphere Mechanism?** Cintia Milagre¹; Boniek Vaz²; Marcos Eberlin³;

- Humberto Milagre¹; ¹UNESP, Araraquara, Brazil; ²Federal University of Goiás, Goiânia, Brazil; ³UNICAMP, Campinas, Brazil
- TP 680 **Accelerated Reactions in Small Volumes;** Ryan Bain; Michael Wlekinski; R. Graham Cooks; *Purdue University, West Lafayette, IN*
- TP 681 **Simple, Direct and Reliable Analysis of Bull Semen Extracts and Intact Sperm Cells by Easy Ambient Sonic-Spray Ionization Mass Spectrometry;** Anna Maria A. P. Fernandes¹; Nicolas V. Schwab¹; Alessandra Tata¹; Athos A. Pastore²; Rosana M. Alberici¹; Marcos N. Eberlin¹; Christina R. Ferreira³; ¹Thomson Mass Spectrometry Laboratory, UNICAMP, Campinas, SP, Brazil; ²CRV Lagoa, Sertãozinho, SP, Brazil; ³Aston Labs, Purdue University, West Lafayette, IN
- TP 682 **Quality Control Analysis of Cosmetic Compounds by Easy Ambient Sonic-Spray Ionization Mass Spectrometry;** Soraya Elkhatib; Rosana Alberici; Marcos N. Eberlin; *Thomson Laboratory University of Campinas, UNICAMP, Campinas, SP, Brazil*
- TP 683 **Detection of Ginkgo Tablets Adulteration Using Easy Ambient Sonic Spray Ionization Mass Spectrometry;** Endler Borges¹; Dietrich Volmer²; Marcos Eberlin¹; ¹Unicamp, Campinas, Brazil; ²Saarland University, Saarbrücken, Germany
- TP 684 **A Digital Microfluidic Surface Acoustic Wave Nebulization Chip for Direct Phosphoproteomic Analysis;** Yue Huang¹; Michael Wilson^{1,2}; Scott Heron¹; John Chapman¹; J. Scott Edgar³; Sung Hwan Yoon^{1,2}; David R. Goodlett^{1,2}; ¹University of Washington, Seattle, WA; ²University of Maryland, Baltimore, MD; ³Deurion LLC, Seattle, WA
- TP 685 **Preparative Scale Paper Spray for Small Scale Chemical Synthesis;** Xin Yan¹; Xin Li¹; Rodinei Augusti²; R. Graham Cooks^{*1}; ¹Purdue University, West Lafayette, IN; ²Federal University of Minas Gerais, Belo Horizonte, Brazil
- TP 686 **In-field Agrochemical Analysis Using Ambient Ionization and a Handheld Mass Spectrometer;** Pu Wei¹; Joshua S. Wiley¹; Jiangjiang Liu¹; Chris Pulliam¹; Ayanna U. Jackson²; Holger Tank²; Jeffrey R. Gilbert²; Jim Gifford²; Kerrm Yau²; John Whitteck²; Zheng Ouyang¹; R. Graham Cooks¹; ¹Purdue University, West Lafayette, IN; ²Dow AgroSciences, Indianapolis, IN
- TP 687 **In-situ Analysis of Corrosion Inhibitors Using Paper Spray Ionization Mass Spectrometry;** Fred Paul Mark Jjunju¹; Anyin Li²; Abraham Badu-Tawiah²; Pu Wei²; Iman Roqan¹; R. Graham Cooks²; ¹CEMSE KAUST, Thuwah, KSA; ²Department of Chemistry Purdue University, West Lafayette, IN
- TP 688 **Improvement of Quantitative Performance of Paper Spray Mass Spectrometry by oxidative Treatment Of Paper Substrates;** Yuan Su; Jiangjiang Liu; R. Graham Cooks; Zheng Ouyang; *Purdue University, West Lafayette, IN*
- TP 689 **Quantitative Analysis of Triglycerides and Fatty Acid Profiling in Oils and Oil Seeds Using Ambient Mass Spectrometry;** Jiangjiang Liu¹; Pu Wei¹; Joshua Wiley¹; Ayanna Jackson²; Paresh Sanghani²; Jeffery Gilbert²; Brita McNew²; Zheng Ouyang¹; R. Graham Cooks¹; ¹Purdue University, West Lafayette, IN; ²Dow AgroSciences, Indianapolis, IN
- TP 690 **Direct Identification of Glycosyl Flavonoids in Bergamot Tissues by Leaf Spray Ambient Mass Spectrometry;** Fabio Mazzotti; Leonardo Di Donna; Domenico Taverna; Donatella Aiello; Anna Napoli; Giovanni Sindona; *Dipartimento di Chimica Università della Calabria, Arcavacata Di Rende, Italy*
- TP 691 **Method Development for Compositional Analysis of Free HS and HS in Proteoglycans from Human Serum and Saliva;** Wei Wei¹; Rebecca Miller¹; Susan Fisher²; Julie Leary¹; ¹University of California, Davis, CA; ²University of San Francisco Medical Center, San Francisco, CA
- TP 692 **High Temperature LC-MS Analysis of Native and Permethylated Glycans Derived from Glycoproteins;** Shiyue Zhou; Yunli Hu; James Blcakmer; Yehia Mechref; *Texas Tech University, Lubbock, TX*
- TP 693 **Robust Relative Quantitation of Dual Isotope Labeled Glycans by Mass Spectrometry;** Weiqian Cao; Wei Zhang; *Fudan University, Shanghai, China*
- TP 694 **Isomeric Separation of Procainamide Labeled N-Glycans by Using Novel Superficially Porous Particle HILIC Column;** Shujuan Tao¹; Yining Huang¹; Barry Boyes²; Ron Orlando¹; ¹Complex Carbohydrate Research Center, UGA, Athens, GA; ²Advanced Material Technology, Inc., Wilmington, DE
- TP 695 **Confident Identification of Isomeric N-glycan Structures by Combined Ion Mobility Mass Spectrometry and Hydrophilic Interaction Liquid Chromatography;** Yoshiki Yamaguchi¹; Kenji Hirose²; Wataru Nishima¹; Suyong Re¹; Yuji Sugita¹; ¹RIKEN, Wako-Shi, Japan; ²Nihon Waters K.K., Osaka, Japan
- TP 696 **Nano-HILIC-Orbitrap-MS Combined with Linkage Specific Derivatization of Sialic Acid for Improved Characterization of Isomeric Sialylated N-Glycans in Cancer Biomarker Discovery;** Fateme Tousi¹; William Hancock¹; Marina Hincapie¹; Jonathan Bones²; ¹Barnett Institute, Northeastern University, Boston, MA; ²NIBRT, Dublin, Ireland
- TP 697 **N-glycan Analysis of Immunoglobulin G by Enzymatic Release with Remove-iT Endo S and LC-MS;** Elizabeth McLeod; Paula Magnelli; Alicia Beliek; Xiaofeng Shi; Ellen Guthrie; *New England Biolabs, Ipswich, MA*
- TP 698 **A Fully Automated Workflow for LC-MS Analysis of Labeled and Native N-Linked Glycans Released From Proteins;** Udayanath Aich¹; Julian Saba²; Xiaodong Liu¹; Sergei Snovid³; Yury Agroskin¹; Srinivasa Rao¹; Chris Pohl¹; ¹ThermoFisher Scientific, Sunnyvale, CA; ²Thermo Fisher Scientific, San Jose, CA; ³Thermo Fisher Scientific, Rockford, IL
- TP 699 **Data Analysis and Processing Strategy for Large Scale Mass Spectrometry N-linked Glycan Relative Quantification Studies;** Amber Taylor; S. Hunter Walker; David C. Muddiman; *North Carolina State University, Raleigh, NC*
- TP 700 **Novel N-linked Glycan Relative Quantification Strategy via Stable-Isotope Labeled Hydrazone Formation and Application to Biomarker Discovery Efforts in Ovarian Cancer;** S. Hunter Walker¹; Amber D. Taylor¹; William A. Cliby²; David C. Muddiman¹; ¹North Carolina State University, Raleigh, NC; ²Mayo Clinic College of Medicine, Rochester, MN
- TP 701 **Quantitative Analysis of Carbohydrates and Artificial Sweeteners in Food Samples Using LC/MS with Post-column Reagent Addition and APCI Interface;** Jie Xing¹; Yin Ling Chew^{*2}; Zhe Sun¹; Zhaoqi Zhan¹; ¹Shimadzu (Asia Pacific) Pte Ltd, Singapore, Singapore; ²Department of Chemistry, Faculty of Science, National University of Singapore, Singapore
- TP 702 **Profiling of Permethylated Glycans Released and Collected from Mouse Brain Sections Fixed to Microscopic Slides;** Yunli Hu; Shiyue Zhou; Sarah Khalil; Calvin Renteria; Yehia Mechref; *Texas Tech University, Lubbock, TX*

- TP 703 **Comparative N-glycomic Profiling Differentiates Primary Hepatocellular Carcinoma Tissue from Cirrhotic and Normal Liver Tissues**; Christa L. Feasley¹; Matthew B. West^{1,3}; Nikhil Mirjankar²; Barry K. Levine²; Christopher M. West¹; Marie H. Hanigan¹; ¹University of Oklahoma HSC, Oklahoma City, OK; ²Oklahoma State University, Stillwater, OK; ³Hough Ear Institute, Oklahoma City, OK
- TP 704 **Tissue O-glycans Change during Mouse Natural Aging**; Bum Jin Kim¹; Hyoung Jin Jeong¹; Serenus Hua^{1,2}; Sureyya Ozcan^{1,2}; Lauren Dimapasoc³; Ik-Soon Jang⁴; Jong-Soon Choi⁴; Hyun Joo An^{1,2}; ¹GRAST, Chungnam National University, Daejeon, South Korea; ²Cancer Research Institute, Daejeon, South Korea; ³University of California, Davis, CA; ⁴Korea Basic Science Institute, Daejeon, South Korea
- TP 705 **N-glycan Profiling of the Urinary Exosome for Biomarker Discovery**; Nayoung Yun¹; Seunghyup Jeong¹; Serenus Hua¹; Pyong-Gon Moon²; Moon Chang Baek²; Hyun Joo An¹; ¹Chungnam National University, Daejeon, Korea; ²Kyungpook National University, Daegu, Korea
- TP 706 **Mass Spectra Analysis of Bacteria-Resistant *bus-4 Caenorhabditis elegans* Mutants Reveals Defects in O-glycosylation**; Lisa Parsons¹; Rahman Mizanur²; Ewa Jankowska¹; Jonathan Hodgkin³; Delia O'Rourke³; Dave Stroud³; John Cipollo¹; ¹FDA, Bethesda, Md; ²army, Bethesda, US; ³Department of Biochemistry, University of Oxford, Oxford, UK
- TP 707 **Structural Determination of N-Glycans from Viral Glycoproteins by Ion Mobility Mass Spectrometry and Negative Ion Fragmentation**; David J. Harvey¹; Christopher Scanlan¹; Max Crispin¹; Camille Bonomelli¹; Thomas Bowden¹; Bitto David¹; Huiskenon Juha¹; Matthew Edgeworth²; James Scrivens²; ¹University of Oxford, Oxford, UK; ²University of Warwick, Coventry, UK
- TP 708 **Structural Elucidation of N-glycans Originating from Ovarian Cancer Cells Using High Vacuum MALDI Mass Spectrometry**; Matthew S. F. Choo¹; Roberto Castangia²; Matthew E. Openshaw²; Omar Belgacem²; Stuart M. Haslam¹; Anne Dell¹; ¹Faculty of Natural Sciences, Imperial College, London, UK; ²MALDI Applications Group, Shimadzu, Kratos, Manchester, UK
- TP 709 **MALDI and ESI MS-based Quantitative Analysis of N-linked Glycans Using Carbonyl-Reactive Tandem Mass Tags**; Yan Liu^{1,2}; Xuefei Zhong¹; Sergei Snovida³; John C. Rogers³; Lingjun Li¹; ¹University of Wisconsin, Madison, WI; ²Xiamen University, Xiamen, China; ³Thermo Fisher Scientific, Rockford, IL
- TP 710 **Detection and Quantification of Carbohydrates in the Murine Gastrointestinal Tract Following Antibiotic Treatment and During Clostridium difficile Infection**; Li Zhang¹; Casey Theriot²; Thekkelnaycke Rajendiran¹; Jaeman Byun¹; Stephen Brown¹; Vincent Young³; ¹University of Michigan, Metabolomics Core Facility, Ann Arbor, MI; ²University of Michigan, Dept of Internal Medicine, Ann Arbor, MI; ³The University of Michigan, Dept of Microbiology, Ann Arbor, MI
- TP 711 **Homeostasis of Plasma N-linked Glycome as Defined in the Domestic Hen Model of Spontaneous Ovarian Adenocarcinoma**; Amber Cook¹; S. Hunter Walker¹; Amber D. Taylor¹; Adam M. Hawkrigde²; James N. Petite¹; David C. Muddiman¹; ¹North Carolina State University, Raleigh, NC; ²Virginia Commonwealth University, Richmond, VA
- TP 712 **Method for the Analysis of 4-aminobenzoic Acid Ethyl Ester Derivatized N-linked Oligosaccharides from Cytopreservative Solutions**; Francis Murphy; Michael Finan¹; Rodney Rocconi¹; Lewis Pannell¹; ¹University of South Alabama, Mobile, AL
- TP 713 **Rapid Differentiation of Core- and Antennae-Fucosylation in N-glycans Using Procainamide Labeling and ESI-QTOF MS/MS**; Charles Nwosu; Hoi Kei (Natalie) Yau; Steven Becht; William Bakewell; *PPD, Middleton, WI*
- TP 714 **O-glycan Analysis of Glycoprotein by UPLC-ESI QTOF MS through Beta-Elimination and Reductive Amination**; Song Klapoetke; Hongwei Xie; *KBI, Durham, NC*

Glycoproteins I, 715 – 737

- TP 715 **Multidimensional Tandem Mass Spectrometry Strategies for Extracting Complementary Connectivity Information on Glycosylated Peptide Ions**; Venkata Kolli; Eric D. Dodds; *Univ of Nebraska Lincoln, Lincoln, NE*
- TP 716 **In-depth Characterization of Glycopeptides by Combination of CID and ETD Fragmentation after Charge State Enhancement**; Andreas Breckenfeld; Kristina Marx; Andrea Kiehne; Markus Meyer; *Bruker Daltonik GmbH, Bremen, Germany*
- TP 717 **Functional Glycan Epitopes: Sequential Mass Spectrometry, Spectral Matching, and Application to Biological Samples**; David Ashline; Andrew Hanneman; Hailong Zhang; Vernon Reinhold; *University of New Hampshire, Durham, NH*
- TP 718 **Linking Quantitative Glycan Profiling with Sequential Mass Spectrometry and Spectrum Matching for Detailed Structure**; Andrew Hanneman^{1,2}; David Ashline¹; Hailong Zhang¹; Vernon Reinhold¹; ¹University of New Hampshire, Durham, NH; ²Glycan Connections, Lee, NH
- TP 719 **Rapid N-linked Glycan Glycopeptide Analysis of the Biotherapeutic Erythropoietin (EPO) Using HILIC UPLC/FLR and Mass Spectrometry**; Mark Hilliard¹; Pauline Rudd¹; Jonathan Bones¹; Ying Qing Yu²; ¹NIBRT, Dublin, Ireland; ²Waters, Milford, Boston, MA
- TP 720 **Characterization of Glycopeptides in Tryptic Mixtures by 2D-UPLC (High/Low pH) – nanoESI-QToF**; Irina Perdivara; Kenneth B. Tomer; *NIEHS, Rtp, NC*
- TP 721 **Resolution of Sialylated Glycopeptides Using a Pentafluorophenylpropyl (F5) Stationary Phase**; Catherine A. Formolo; Karen W. Phinney; *National Institute of Standards and Technology, Gaithersburg, MD*
- TP 722 **Ion Mobility Mass Spectrometry of IgG Fc Glycopeptides from Different Subclasses**; Michiko Tajiri¹; Feifei Zhu²; Maissa M. Gaya²; Yoshinao Wada¹; David E. Clemmer²; ¹Osaka MCHR1, Izumi, Osaka, Japan; ²Indiana University, Bloomington, IN
- TP 723 **Demonstration of Informational Power of Chip-Based Liquid Chromatography-Ion Mobility Spectrometry Mass Spectrometry for Glycopeptidomics**; Kshitij Khatri¹; Qi Wang¹; Crystal K. Cody²; Ruwan Kurulugama²; Ed Darland²; Catherine E. Costello¹; Joseph Zaia¹; ¹Boston University, Boston, MA; ²Agilent Technologies, Santa Clara, CA
- TP 724 **A Robust LC-MS Based Workflow for Comparative Glycoproteomics with Online Glycopeptide Enrichment and Separation**; Kshitij Khatri¹; Nancy Leymarie¹; Gregory O. Staples²; Yu Huang¹; Deborah R. Leon¹; Joseph Zaia¹; ¹Boston University, Boston, MA; ²Agilent Technologies, Santa Clara, CA
- TP 725 **Highly Selective Enrichment of Sialylated Glycopeptides Using Titania Sol-Gels for MALDI-MS Applications**; H. Mehmet Kayili; Ömür Çelikbiçak; Bekir Salih; *Hacettepe University, Department of Chemistry, Ankara, Turkey*
- TP 726 **Magnetic Nanoparticle Technology for Sequestering Glycopeptides**; Edward Bodnar; H  lene Perreault; *University of Manitoba, Winnipeg, Canada*

- TP 727 **Comparison of Hydrazide Capture and Lectin Affinity Based Enrichment Methods for Glycoproteomics**; Yue Zhou; Peng Xue; Xiang Ding; Jun Wang; Fu quan Yang; *Institute of biophysics, CAS, Beijing, China*
- TP 728 **Sugar-azide Metabolic Labeling Combined with Alkyne-bead Capture for Efficient Isolation of Glycoproteins Involved in the Epithelial-Mesenchymal Transition**; Stephen Roper; Arch Martin; Benjamin Neely; E. Ellen Jones; Harry Drabkin; Robert Gemmill; Richard R Drake; *Medical University of South Carolina, Charleston, SC*
- TP 729 **Negative-Ion MALDI-QIT-TOF MSⁿ of N-glycans Derivatized with Pyrene Butanoic Acid Hydrazide**; Kazuko Hirose-Hachisu; Junko Amano; *The Noguchi Institute, Tokyo, Japan*
- TP 730 **The GlycoFilter: A Simple and Comprehensive Sample Preparation Platform for Proteomics, N-Glycomics and Glycosylation Site Assignment**; Hui Zhou; John Froehlich; Andrew Briscoe; Richard Lee; *Boston Children's Hospital, Boston, MA*
- TP 731 **MALDI and ESI Evaluation of Glycopeptide Signal Strengths for Quantitative Label-Free Glycoproteomics: Demystifying Glycopeptide Ionisation Using Synthetically Produced Sialylated N-glycopeptides**; Kathrin Stavenhagen^{1,2}; Hannes Hinneburg¹; Morten Thaysen-Andersen³; Laura Hartmann¹; Daniel Varón Silva¹; Jens Fuchser⁴; Stephanie Kaspar⁴; Erdmann Rapp²; Peter H. Seeberger^{1,5}; Daniel Kolarich¹; ¹Max Planck Institute of Colloids and Interfaces, Berlin, Germany; ²MPI for Dynamics of Complex Technical Systems, Magdeburg, Germany; ³Macquarie University, Sydney, Australia; ⁴Bruker Daltonics, Bremen, Germany; ⁵Free University Berlin, Berlin, Germany
- TP 732 **Mass Spectrometry Analysis of NXS/T Glycosylation Sites in Recombinant Glycoproteins**; Izabela Sokolowska; Armand Ngounou Wetie; Urmi Roy; Christopher Talbot; Alisa Woods; Costel Darie; *Clarkson University, Potsdam, NY*
- TP 733 **Top-Down Analysis of Plasma-Derived and Recombinant Human Factor VII and Bovine Prothrombin Reveal Extensive, Cell-Line Related Heterogeneity of PTMs**; Stephen Harvey; Julie Kirihara; Lorraine Anderson; Matthew Wroblewski; Gary Nelsestuen; *University of Minnesota, Minneapolis, MN*
- TP 734 **Novel Strategy for Prediction of MSⁿ Spectrum of Glycans from its Structure**; Hiromitsu Takaba¹; Qi Xiaofeng¹; Hiroshi Setogawa¹; Atsushi Ogiwara²; Kazuko Hirose-Hachisu³; Mitsuhiro Kanazawa²; Junko Amano³; ¹Tohoku University, Sendai, Japan; ²Reifycs Inc., Tokyo, Japan; ³The Noguchi Institute, Tokyo, Japan
- TP 735 **Comparison of Trypsin and Nonspecific Digestions for Site Specific Characterization of Protein Glycans Utilizing New Software for Automated Matching and Scoring**; Evan Parker; Qiuting Hong; Andres Guerrero; Michael Xin Sun; Jincui Huang; Carlito Lebrilla; *UC, Davis, CA*
- TP 736 **GLIDE : GLycoprotein IDentification software**; Atsushi Ogiwara¹; Hisae Anyoji¹; Mitsuhiro Kanazawa¹; Kazuko Hirose-Hachisu³; Hiromitsu Takaba²; Junko Amano³; ¹Reifycs Inc., Tokyo, Japan; ²Tohoku University, Sendai, Japan; ³The Noguchi Institute, Tokyo, Japan
- TP 737 **O-Glycomap-Sera: A Tool for Discovery of O-linked Glycopeptides in Human Serum Samples**; Jagadheshwar Balan¹; Anoop Mayampurath¹; Chuan-Yih Yu¹; Yehia Mehcref²; Haixu Tang¹; ¹Indiana University Bloomington, Bloomington, IN; ²Texas Tech University, Lubbock, TX
- Food Safety, 738 – 772**
- TP 738 **Method Development for Trace Level Detection of N-Nitrosamines in Beer by GC-MS/MS**; Lai Chin Loo¹; Cynthia Melanie Lahey¹; Shao Hua Chia²; Fang Yan Li³; Yai Fong Chew³; Gee Siang Ling¹; Sheot Harn Chan³; S. F. Y. Li²; ¹Shimadzu Asia Pacific Pte. Ltd., Singapore; ²National University of Singapore, Singapore; ³Food Safety Laboratory, Health Science Authority, Singapore
- TP 739 **Minimization of Carryover for High Throughput LC-MS/MS Analysis of 14 Mycotoxins in Beer**; Masayoshi Tamura¹; Keiko Matsumoto²; Jun Watanabe²; Junko Iida²; Naoki Mochizuki¹; ¹Asahi Group Holdings, Limited, Ibaraki, Japan; ²Shimadzu Corporation, Kyoto, Japan
- TP 740 **Determination of 20 Phthalic Acid Esters in Alcohol Drinks by Ultra High Performance Liquid Chromatography/Tandem Mass Spectrometry**; Hengtao Dong; Jinting Yao; Hongyuan Hao; Luying Zhou; Qiang Li; Yuling Song; Taohong Huang; Shin-ichi Kawano; Yuki Hashi; *Shimadzu (China) Co., Ltd., Shanghai, China*
- TP 741 **Determination of Industrial Dyes in Foods by LCMS-IT-TOF**; Xiaozhen Chen¹; Liying Huang¹; Jin Wang¹; Hui Cao¹; Luying Zhou²; Jinting Yao²; Hengtao Dong²; Hongyuan Hao²; Taohong Huang²; Yuki Hashi²; ¹Zhejiang Institute of Quality Inspection Science, Hangzhou, China; ²Shimadzu Global COE, Shimadzu (China) Co., Ltd, Shanghai, China
- TP 742 **Determination of the Derivatives of Nitrofurantol Metabolites in Marine Products by Ultra High Performance Liquid Chromatography/Triple Quadrupole Mass Spectrometry**; Xiongxiang Qiu; Jinting Yao; Song Zhan; Taohong Huang; *Shimadzu Global COE, Shimadzu (China) Co., Ltd. Guangzhou, China*
- TP 743 **Ultra High performance Liquid Chromatography Tandem Quadrupole-Time of Flight Mass Spectrometry for Simultaneous Screening Hazardous Compounds in Food Samples**; Chuanqi Zheng; *Agilent Technologies, Guangzhou, China*
- TP 744 **Determination of Six Major Ergot Alkaloids and Their Epimers in Wheat Using LC-MS/MS**; Mike Roscoe; Dainna Drul; Sheryl tittlemier; *Canadian Grain Commission, Winnipeg, Canada*
- TP 745 **Direct Analysis of 4-Methylimidazole in Foods using Paper Spray Mass Spectrometry**; Anyin Li¹; Pu Wei¹; Hsu-Chen Hsu¹; Linfan Li²; Zheng Ouyang²; R. Graham Cooks¹; ¹Department of Chemistry, Purdue University, West Lafayette, IN; ²Biomedical Engineering, Purdue University, West Lafayette, IN
- TP 746 **Rapid Simultaneous Assay of 25 Mycotoxins in a Variety of Food Samples by UHPLC-MS/MS Using Fast Polarity Switching**; Eric Capodanno¹; Stéphane Moreau²; Mikael Levi²; ¹Phytocontrol, Nîmes, France; ²Shimadzu France, Noisiel, France
- TP 747 **Development and Application of an Exact Mass LC-MS/MS Library for Screening of Mycotoxins and Fungal Metabolites in Food and Feed**; Elisabeth Varga¹; Thomas Glauner²; Bernhard Wuest²; Michael Sul yok¹; Rainer Schuhmacher¹; Rudolf Krska¹; Franz Berthiller¹; ¹University of Natural Resources and Life Sciences, Tulln, Austria; ²Agilent Technologies, Waldbronn, Germany
- TP 748 **Identification and Quantification of 19 Phthalic Acid Esters in Chinese Liquors Using GC-MS/MS**; Xing Jiangtao; Gao Peng; Wang Furong; Fan Jun; *Shimadzu Global COE, Shimadzu (China) Co., Ltd., Beijing, China*

- TP 749 **Identification and Quantitation of Beta-Agonists in Beef and Pork Extracts Using Ultra-High Performance Liquid Chromatography Tandem Mass Spectrometry with Triggered Multiple Reaction Monitoring**; Shan-An Chan; *Agilent, Taipei, Taiwan*
- TP 750 **Using Ion Mobility Mass Spectrometry to Identify Multiple Protonation Sites and Different Fragmentation Patterns Within the Fluoroquinolone Class of Antibiotics**; Michael McCullagh¹; Sara Stead¹; David Eatough¹; Kieran Neeson¹; Jeff Goshawk¹; Wouter de Keizer²; Aldert Bergwerff²; ¹Waters, Manchester, UK; ²RnAssays BV, Utrecht, The Netherlands
- TP 751 **Rapid Screening of Sorbic and Benzoic Acids in Soy Sauce by Direct Analysis in Real Time Time-of-Flight Mass Spectrometry**; Xiaojing Ding¹; Junwei Huang²; Shan Zhao¹; Jing Zhang¹; Echo W. Jia²; Bing Shao¹; Charles C. Liu²; ¹Beijing Centre for Disease Control and Prevention, Beijing, China; ²ASPEC Technologies Limited, Beijing, China
- TP 752 **Multi Antibiotic Residue Detection - Status quo and Challenges for Confirmatory and Screening approaches**; Nelli Jochim¹; Lutz Hartig¹; Scarlett Biselli¹; Sebastian Westrup²; ¹Eurofins WEJ Contaminants, Hamburg, Germany; ²Thermo Scientific, Dreieich, Germany
- TP 753 **HighResolution Mass Spectrometric Characterization of Toxic Jatropha Factors from *Jatropha curcas*: Possible Contaminants in Animal Feed and Non-Food Grade Glycerin**; Hiranthi Jayasuriya; Upul Nishshanka; Renate Reimschuessel; Chaitali Chattopadhyay; *FDA, CVM, Laurel, MD*
- TP 754 **Rapid, High Throughput Quantitation of Thujone in Absinthe by UHPLC-MS-MS**; Jared Russell; Jeffrey Dahl; *Shimadzu Scientific Instruments, Columbia, MD*
- TP 755 **Analysis of Non-steroidal Anti-inflammatory Drugs in Food Matrices by Means of HPLC-MS/MS**; Pavel Metalnikov; Alexandre Komarov; Alexandre Panin; *VGNKI, Moscow, Russian Federation*
- TP 756 **Overcoming Challenges of Protein Sample Preparation for Food Allergen Analysis**; Rachel Lieberman¹; Brian Feild¹; Scott Kuzdzal¹; Kevin Meyer²; Nick Herold²; ¹Shimadzu Scientific Instruments, Columbia, MD; ²Perfinity Biosciences, Inc., West Lafayette, IN
- TP 757 **Development and Evaluation of a Standardized Method for Food Contaminant Analysis Based on Liquid-Liquid-Extraction or QuEChERS, UHPLC and HRAM Platform**; Jinyuan Wang; Jonathan Beck; Charles Yang; Guifeng Jiang; Jennifer Massi; *Thermo Fisher Scientific, San Jose, CA*
- TP 758 **High-Throughput Screening of Illegal Drugs in Functional Foods by Ultra Performance Liquid Chromatography Coupled with Quadrupole-Time Of Flight Mass Spectrometry**; Qiaozhen Guo; Jie Yin; Jing Zhang; Bing Shao; *Beijing Center for Disease Control and Prevention, Beijing, China*
- TP 759 **Determination of 62 Non-Dioxin-Like PCBs and 7 indicatorPCBs in Food**; Jungju Seo; Jijeong Ryu; Seunghee Ahn; *Korea Basic Science Institute, Seoul, South Korea*
- TP 760 **Determination of Antibiotics in Honey by LC-MSMS – The Replacement Three Methods with One Single Method**; Leena Saari; *Finnish Food Safety Authority, Helsinki, Finland*
- TP 761 **Determination of Arsenic Speciation in Rice Grain by IC-ICP-MS**; Cheong-Tae Kim¹; Youn-Jee Kim¹; Dae-Hyun Kim¹; Seung-Il Yang²; Jung-Kun Lee¹; ¹NONGSHIM CO., LTD, Seoul, South Korea; ²ThermoFisher Scientific-Korea, Seoul, South Korea
- TP 762 **Comparison of Low-Resolution MSⁿ Data and High-Resolution Mass Spectrometric Data for Non-Targeted Analysis Using Spectral Data Interpretation Software**; Carrie Sisk¹; Ann Knolhoff²; Timothy Croley²; ¹Commonwealth of Virginia DCLS, Richmond, VA; ²FDA, CFSAN, College Park, MD
- TP 763 **Analysis of Antibiotics in Food Matrix Using LC High Resolution Accurate Mass Spectrometry**; Jia Wang; Charles Yang; Dipankar Ghosh; *Thermo Fisher Scientific, San Jose, CA*
- TP 764 **Improving a Regulatory Method to Quantify Triarylmethane Dyes in Fish Tissue**; Sarah Pierce; Darin Files; Haejung An; Eugene Chang; Han Paek; *US Food & Drug Administration, Irvine, CA*
- TP 765 **Extraction of Jatropha Factors from Glycerin for Analysis using LC/MS**; Bethany Subel; Jonathan Litzau; *FDA, Cincinnati, OH*
- TP 766 **Proteomic Analysis of Poor and Robust Colonizing *Campylobacter jejuni* Isolates from Chick Cecum**; Yuan Gao¹; Kidon Sung¹; Saeed Khan¹; Kelli Hiatt²; Eric Line²; Oh-Gew Kweon¹; Carl Cemiglia¹; Li-Rong Yu¹; ¹National Center for Toxicological Research, US FDA, Jefferson, AR; ²Agricultural Research Service, USDA, Athens, GA
- TP 767 **Comparison Quantitation Ability of Quadrupole-Orbitrap HR/AM MS and Triple Quadrupole MS in Food Additives within Candies**; Shu-Hui Lee; Hsin-Hung Huang; Wei-Shun Lai; *Mass Solutions Technology, New Taipei City, Taiwan*
- TP 768 **A Study of the Presence of Arecoline and Guvacoline in Saliva of 'Betel-Quid' Chewer Using Ion Trap LC/MS**; A. F. M. Motiur Rahman; Mohamed W. Attwa; Adnan, A. Kadi; *King Saud University, Riyadh, SAUDI ARABIA*
- TP 769 **Direct Detection of Illegal Additives in Red Wine Using MALDI-FTMS**; Hai Pu; Nan Hu; Ow Saw Yen; *Bruker, Beijing, China*
- TP 770 **Identification of True and Fake Wines Using Single Photon Ionization Mass Spectrometry**; Cao Li¹; Ya-Fei Zhou¹; Ya-Li Liu^{1,3}; Wei Gao²; Zhen Zhou²; Eric Handberg¹; Huanwen Chen¹; ¹East China Institute of Tech., Nanchang, China; ²Shanghai University, Shanghai, China; ³Hebei University of Technology, Tianjin, China
- TP 771 **Nanotile based UPLC - Mass Spectrometry for Anabolic Steroids Analysis in Food Safety**; Arjen Gerssen¹; Eric O. van Bennekom¹; Marco H. Blokland¹; Saskia S. Sterk¹; Michel W.F. Nielen^{1,2}; ¹RIKILT - Institute of Food Safety, Wageningen UR, Wageningen, The Netherlands; ²Laboratory of Organic Chemistry, Wageningen UR, Wageningen, The Netherlands
- TP 772 **Determination of Urethane in Chinese Rice Wine by Supported Liquid Extraction Coupled and Gas Chromatography-Mass Spectrometry**; Suzi Qin; Jack Liu; Wan Wang; Guotao Lu; *Bonna-Agela Technologies, Tianjin, China*



7:30-8:00 am	Set up all Wednesday posters	Metabolomics: Clinical Applications	312-323
10:30 am-1:00 pm	Odd-numbered posters present	Food "omics" MS Characterization of Food and Nutritional Supplements	324-355
12:00-2:30 pm	Even-numbered posters present	Food Safety	356-372
7:30-8:00 pm	Remove all Wednesday posters	H/D Exchange, Software and Hardware	373-385
Mass Spectrometry - History & Education	001-002	H/D Exchange: Protein Structure/Function II	386-400
Nanomaterials	003-012	Proteins: Non-Covalent Interactions	401-421
Environmental Analysis: General II	013-035	Antibody & Antibody Drug Conjugates	422-446
Environmental Analysis: Hydrocarbons and DOM	036-044	Analysis of Biosimilars	447-452
Energy: Hydrocarbons and Petrochemical	045-069	Biomarkers: Discovery	453-475
Small Molecules: Quantitative Analysis III	070-097	Biomarker Quantitation: New Methods	476-489
Diagnostic Clinical Chemistry: Small Molecules II	098-116	Proteins: Complexes and Aggregation	490-514
Forensics - Drugs of Abuse	117-135	Proteins PTM I	515-539
Imaging MS: Method Development I	136-157	Peptides: PTM Identifications	540-574
Imaging MS: Software	158-169	Informatics: Peptide Identification/Characterization I	575-596
Imaging MS: Pharmaceutical Applications	170-193	Informatics: Post-Translational Modifications	597-607
Imaging MS: Small Molecules	194-221	Peptides: Quantitative Analysis II	608-643
Informatics: Small Molecule ID and Characterization	222-233	Phosphopeptides: Enrichment Methods	644-668
Small Molecules: Qualitative Analysis	234-251	Advances in Separation Techniques for Proteomic Applications	669-684
Drug Metabolism: Qualitative Analysis	252-282	Interactions and Pathway Analysis	685-706
Drug and Metabolite Analysis: Novel Approaches for Dried Biological Samples	283-291	Ambient Ionization: Applications II	707-734
Metabolomics: Quantitative Analysis	292-311	Ion Mobility Fundamentals	735-754

Mass Spectrometry - History & Education, 001 – 002

- WP 001 **Origin, Growth, and Development of the Mass Spectrometry Societies;** P. Jane Gale¹; Michael A. Grayson²; ¹*Gale-Bentz Consulting, Southborough, MA;* ²*Retired, St. Charles, MO*
- WP 002 **Chem./Bio. 429 - Experimental Genomics and Proteomics. An Interdisciplinary Upper-Division Laboratory Course for Undergraduates;** Charlotte Platner; Jacquelyn Blake-Hedges; Samuel Clamons; Ruth Dana; Adam Drici; Sophia Dudte; Gregory Ginsburg; Veronica Gray; Alexandra Mellis; Allison Roberts; Charles Thompson; Stephanie Wraith; Mark Forsyth; Margaret Saha; Kurt Williamson; John Poutsma; *College of William & Mary, Williamsburg, VA*

Nanomaterials, 003 – 012

- WP 003 **Functionalized Gold Nanoparticle Coated Surfaces for the Detection of Biomolecules by Laser Desorption/Ionization Mass Spectrometry;** Alyssa L. M. Marsico; Brian Creran; Bradley Duncan; Vikas Nandwana; Vincent M. Rotello; Richard W. Vachet; *University of Massachusetts, Amherst, MA*
- WP 004 **Improving MS Sensitivity for Underivatized Carbohydrates with Diamond Nanoparticles in MALDI;** Hsun Lee; Chia-Chen Wang; Chieh-Lin Wu; Yin-Hung Lai; Jia-Der Lin; Yi-Sheng Wang*; *Genomics Research Center, Academia Sinica, Taipei 115, Taiwan, ROC*
- WP 005 **Investigating the Impact of Nanoparticle Surface Ligand Structures on Protein Adsorption by Mass Spectrometry;** Shang Zeng; Wenwan Zhong; *University of California, Riverside, CA*
- WP 006 **Graphene/Polyaniline Nanocomposite Along with MALDI-MS for Sensitive Detection of Small Biomolecules;** Nadnudda Rodthongkum¹; Nipapan Ruecha¹; Voravee Hoven¹; Richard Vachet²; Orawon Chailapakul¹; ¹*Chulalongkorn University, Bangkok, Thailand;* ²*University of Massachusetts, Amherst, MA*
- WP 007 **A Sol-Gel Derived Silver Nanoparticle Embedded Thin Film for Mass Spectrometry-Based Biosensing;** Roberto Gamez; David Russell; *Texas A&M University, College Station, TX*

- WP 008 **Mass Spectrometric Analysis of Impurities in Crystalline Organic Semiconductors;** Anna Voloshenko¹; Ke Jie Tan²; Christian Kloc²; Rimma Shelkov¹; Sergey Sladkevich¹; Peter Prikhodchenko¹; Jenny Gun¹; Ovadia Lev¹; ¹*The Hebrew University of Jerusalem, Jerusalem, Israel;* ²*Nanyang Technological University, Singapore*

- WP 009 **Mass Spectrometric Analysis of Species Evolution in Mesoporous Silica Synthesis;** Ivy Hwee Lim; Ferdi Schüth; Wolfgang Schrader; *Max-Planck-Institut für Kohlenforschung, Mülheim An Der Ruhr, Germany*
- WP 010 **Phenylboronic Acid-Decorated Lectins for Specific Enrichment of Glycoproteins and Their Glycoproteomic Application;** Ying-Wei Lu¹; Chih-Wei Chien¹; Po-Chiao Lin²; Sz-Wei Wu³; Chang-Yang Chen⁴; Chia-Li Han³; Kay-Hooi Khoo³; Chun-Cheng Lin¹; Yu-Ju Chen³; ¹*National Tsing Hua University, Hsinchu, Taiwan;* ²*National Sun Yat-sen University, Kaohsiung, Taiwan;* ³*Academia Sinica, Taipei, Taiwan;* ⁴*National Taiwan Normal University, Taipei, Taiwan*
- WP 011 **Photocatalytic Nanoweb for Matrix-Free MALDI-TOF Mass Spectrometry;** Jo-Il Kim¹; Su-Yeol Ryu²; Seung-Yeop Kwak²; Min-Jung Kang³; Jae-Chul Pyun¹; ¹*Yonsei University, Seoul, Republic of Korea;* ²*Seoul National University, Seoul, Republic of Korea;* ³*Korea Institute of Science and Technology, Seoul, Republic of Korea*
- WP 012 **TiO₂ Nanowire Array for Matrix-Free MALDI-TOF Mass Spectrometry;** Jo-Il Kim¹; Min-Jung Kang²; Jae-Chul Pyun¹; ¹*Yonsei University, Seoul, Republic of Korea;* ²*Korea Institute of Science and Technology, Seoul, Republic of Korea*

Environmental Analysis: General II, 013 – 035

- WP 013 **LC/QTOF Confirmation of Previously Unreported Microcystins in Alberta Lake Waters;** Ralph Hindle¹; Xu Zhang²; ¹*Vogon Laboratory Services Ltd., Cochrane, Canada;* ²*Alberta Centre for Toxicology, Calgary, Canada*
- WP 014 **Using LDTD-APCI-MS/MS for the Ultrafast Analysis of Emerging Contaminants;** Sébastien Sauvé; *Université de Montreal, Montreal, Canada*
- WP 015 **The Comprehensive Analysis of CID MS/MS Spectra Of Bisphenol A Derivatives;** Wei Zou; Anupama Aditham; Qi Gavin; Jianwen She; *California Department of Public Health, Richmond, CA*

- WP 016 **Analysis of Naphthenic Acids in Tissue by Liquid Chromatography Tandem Mass Spectrometry;** Million Woudneh; Coreen Hamilton; Guanghui Wang; Jonathan Benskin; John Cosgrove; *AXYS Analytical Services Ltd., Sidney, Canada*
- WP 017 **High-Throughput LC-MS/MS assay of Phthalates;** Hui Qiao; Sha Joshua Ye; Changtong Hao; *IONICS Mass Spectrometry Group Inc, Bolton, Canada*
- WP 018 **QuEChERS Extraction for the Determination of Free Microcystins in Fish Muscle Using Liquid Chromatography/Tandem Mass Spectrometry;** Xu Zhang; David Kinniburgh; *ACFT, University of Calgary, Calgary, Canada*
- WP 019 **Analysis of Fish Tissue for Perfluorinated Compounds by Reversed Phase High Performance Liquid Chromatography Multiple Reaction Monitoring Tandem Mass Spectrometry;** Michael Stagliano; Joseph Colombo; Paul Gulyas; Matthew Geiger; Bonnie Taffe; *Mi. Dept. of Community Health, Lansing, MI*
- WP 020 **Cyanobacterial Toxins Analysis by Direct Aqueous Injection High Performance Liquid Chromatography – Quadrupole Linear Ion Trap Tandem Mass Spectrometry;** Curtis Hedman¹; Stacy Tremintin²; William Krick¹; ¹*WI State Lab of Hygiene, Madison, WI*; ²*AB SCIEX, Foster City, CA*
- WP 021 **Full Scan Tandem Quadrupole Mass Spectrometry for the Determination of Novel Chlorinated Environmental Pollutants;** Qian Wang; Gergana Georgieva; M. Paul Chiarelli; *Loyola University, Chicago, IL*
- WP 022 **Drinking Water Disinfection by Peracetic Acid and Disinfection Byproducts Studied by UFLC-MS/MS and GC-MS;** Honglan Shi¹; Ruipu Mu¹; Yongbo Dan¹; Qihua Wu¹; Danielle West¹; Yinfa Ma¹; John Yang²; Bin Hua²; Enos Inniss³; ¹*Missouri University of Science and Technology, Rolla, MO*; ²*Lincoln University, Jefferson City, MO*; ³*University of Missouri, Columbia, MO*
- WP 023 **Tandem Quadrupole Mass Spectrometry for the Determination of Glucuronides Found in Surface and Waste Water;** Matthew Reichert; Deepika Panawennage; Gergana Georgieva; M. Paul Chiarelli; *Loyola University, Chicago, IL*
- WP 024 **Fast Analysis of Cyanobacterial Toxins in Water by Online Preconcentration-Orbitrap MS and Flow Injection-LC-MS/MS and Removal Properties of Chlorination;** Jaewon Choi¹; Jeheon Jang¹; Yuns Kim¹; Charles Yang²; Dipankar Ghosh²; ¹*Kwater, Daejeon, South Korea*; ²*ThermoFisher, San Jose, ca*
- WP 025 **The Effects of Acid Pretreatment on the Measurement of 28 VOC Metabolites in Urine by UPLC-ESI-MS/MS;** Liqun Wang; K. Udeni Alwis; Yu Qiu; Benjamin Blount; *Center for Disease Control and Prevention, Chamblee, GA*
- WP 026 **Simultaneous Analysis of Alkylphenol Ethoxylates Using Ultra-High Speed LC-MS/MS;** Daisuke Kasai¹; Jun Watanabe²; Keiko Matsumoto²; Koji Takinami¹; ¹*Nissenken Quality Evaluation Center, Tokyo, Japan*; ²*Shimadzu Corporation, Kyoto, Japan*
- WP 027 **Determination of Ten Nitrosamines in Drinking Water by Gas Chromatography/Electron Ionization Tandem Mass Spectrometry;** Peng Gao¹; Jun Fan¹; Changqing Lin²; ¹*Shimadzu (China) Co.,Ltd, Shanghai, China*; ²*Putuo Environmental Monitoring Station, Shanghai, Shanghai, China*
- WP 028 **Analysis of Linear Alkylbenzene Sulfonate in Environmental Water Using Online SPE LC System Coupled with LC-MS/MS;** Benjamin Figard¹; Keiko Matsumoto²; Jun Watanabe²; Yoshihiro Hayakawa²; ¹*Shimadzu Scientific Instruments, INC., Columbia, MD*; ²*Shimadzu Corporation, Kyoto, Japan*
- WP 029 **From Source Water to Tap Water to Swimming Pool and Spa Water: Effects of Disinfectants and Implications for Exposure/Toxicity;** Eric Daiber¹; Susan Richardson¹; Sridevi Anduri¹; David DeMarini²; Ernest Blatchley³; Mehrmaz Afifi³; ¹*US EPA, NERL, Athens, GA*; ²*U.S. EPA, NHEERL, RTP, NC*; ³*Purdue University, West Lafayette, IN*
- WP 030 **A Comparison of the Use of Online SPE and Large Volume Injection Using LC-MS/MS for the Detection of Environmental Contaminants;** Stephen J. Lock; Pamela Stoddart; *ABSCIEX, Warrington, UK*
- WP 031 **Reliable Analysis of Priority Pollutants in Water by GC/HRMS with Faster, Cheaper, and Safer Sample Preparation;** Olga Polyakova¹; Dmitry Mazur¹; Slava Artaev²; Albert T. Lebedev¹; ¹*Moscow State University, Moscow, Russian Federation*; ²*Leco Corporation, St. Joseph, MI*
- WP 032 **Solid Phase Micro-extraction (SPME) with Gas Chromatography/Mass Spectrometry (GC/MS) to Quantify Polar Haloamides in Drinking Water;** Brandon Jessie; Christine N. Dalton; *Carson-Newman College, Jefferson City, TN*
- WP 033 **Determination of Microcystins in Drinking Water by Ultra High Performance Liquid Chromatography/Triple Quadrupole Mass Spectrometry;** Jinting Yao; Hongyuan Hao; Yin Huo; Hengtao Dong; Taohong Huang; Shin-ichi Kawano; Yuki Hashi; *Shimadzu Global COE, Shimadzu (China) Co., Ltd., Shanghai, China*
- WP 034 **Quantitative Determination of Disinfection Byproduct Haloacetic Acids in Drinking Water Using Liquid Chromatography Tandem Mass Spectrometry;** Jinyuan Wang^{1,2}; Xiaodong Liu^{1,2}; Jonathan Beck^{1,2}; Charles Yang^{1,2}; Guifeng Jiang^{1,2}; Richard Jack^{1,2}; ¹*Thermo Fisher Scientific, San Jose, CA*; ²*Thermo Fisher Scientific, Sunnyvale, CA*
- WP 035 **N-nitrosodimethylamine (NDMA) Analysis in Water Using GC Triple Quadrupole Mass Spectrometry in Positive Chemical Ionization Mode;** Anthony Macherone²; Alandra Kahl¹; Darryl Jones¹; Lisa Lowe¹; Shane Snyder¹; ¹*University of Arizona, Tuscon, AZ*; ²*Agilent Technologies, Wilmington, DE*

Environmental Analysis: Hydrocarbons and DOM, 036 – 044

- WP 036 **Sulfur Rich Crude Oil and Bitumen Analysis on the Molecular Level by APPI and LDI FT-ICR Mass Spectrometry;** Matthias Witt; Jochen Friedrich; *Bruker Daltonik GmbH, Bremen, Germany*
- WP 037 **Dissolved Organic Matter in Lake Superior: A Study Combining Characterization by ESI FT-ICR MS, UV-Visible Spectroscopy and Isotopic Analysis;** Hongyu Li; Elizabeth Minor; *Large Lakes Observatory, University of Minnesota, Duluth, MN*
- WP 038 **Integrated Alkane, PAH, and Petroleum Biomarker Analysis by Tandem GC/MS;** Stephan Baumann; *Agilent Technologies, Inc., Santa Clara, CA*
- WP 039 **Applying Differential Mobility Spectrometry with Unique Gas-Phase Separations to the Analysis of Naphthenic Acids;** J. Larry Campbell¹; Takeo Sakuma¹; Andre Schreiber¹; Paul Winkler¹; John V. Headley²; Kerry M. Peru²; ¹*AB SCIEX, Concord, Canada*; ²*Water Sci. Tech. Directorate, Environment Canada, Saskatoon, SK, Canada*
- WP 040 **GCxGC Profiling of Naphthenic Acid Esters in Oil Sands Composite Tailings;** David Bowman¹; David Alonso²; Lorne Fell²; Joe Binkley²; Brian McCarry¹; ¹*McMaster University, Hamilton, Canada*; ²*Leco Corporation, St Joseph, MI*

- WP 041 **Characterization of Carbonaceous Particulate Matter Using Thermal Extraction Followed by Pyrolysis with Gas Chromatography Mass Spectrometry;** Alena Kubatova; Josef Beranek; Richard Cochran; Haewoo Jeong; Evguenii Kozliak; *University of North Dakota, Grand Forks, ND*
- WP 042 **Characterization of 2.5 Micron Particulate Borne Semivolatile Organic Compounds by GCxGC-TOFMS and UHPLC-Orbitrap MS – Method Development, Performance and Applications;** Paul Yang¹; Nicholas Karellas¹; Adrienne Boden¹; Xiaoming Zhao¹; Mike Spencer¹; Chunyan Hao¹; Stephanie Lemanik¹; Gerald Ladwig¹; Charles Yang²; Kristi Akervik²; Maciej Bromirski²; Dipankar Ghosh²; *Ministry of the Environment, Etobicoke, Canada*; ²Thermo Scientific, San Jose, CA
- WP 043 **Calibration of a Membrane Inlet Mass Spectrometer for Environmental Monitoring;** Simon Maher; Boris Brkic; Stephen Taylor; *University of Liverpool, Liverpool, UK*
- WP 044 **Detection of Nitrated and Oxygenated Polycyclic Aromatic Hydrocarbons Using Atmospheric Pressure Chemical Ionization High Resolution Mass Spectrometry;** Richard Cochran; Alena Kubatova; *University of North Dakota, Grand Forks, ND*
- Energy: Hydrocarbons and Petrochemical, 045 – 069**
- WP 045 **Oil Spill Source Identification by Principal Component Analysis of Electrospray Ionization Fourier Transform Ion Cyclotron Resonance Mass Spectra;** Yuri E. Corilo^{1,2}; David C. Podgorski^{1,2}; Amy M. McKenna^{1,3}; Ryan P. Rodgers^{1,2}; Karin L. Lemkau⁴; Christopher M. Reddy⁴; Alan G. Marshall^{1,3}; *National High Magnetic Field Laboratory - FSU, Tallahassee, FL*; ²Future Fuels Institute - FSU, Tallahassee, FL; ³Department of Chemistry and Biochemistry - FSU, Tallahassee, FL; ⁴Woods Hole Oceanographic Institute, Woods Hole, MA
- WP 046 **Improved Relative Abundance and Overall Sensitivity by Optimized Modifier/Analyte Concentration in Positive Ion Electrospray Crude Oil FT-ICR-MS;** Brian M. Ruddy¹; Christopher L. Hendrickson²; Alan G. Marshall^{1,2}; Ryan P. Rodgers^{1,2}; *Florida State University, Tallahassee, FL*; ²National High Magnetic Field Laboratory, Tallahassee, FL
- WP 047 **Development of High-Field Orbitrap FTMS-based Platform for Petroleum Analysis;** Konstantin O. Zhurov; Anton N. Kozhinov; Yury O. Tsybin; *Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland*
- WP 048 **Characterization of Petroleum Fractions Using Mass Spectrometry Tools;** Hung Pham¹; Haiyan Wang¹; Howard Greenberg¹; Matthew Unterfenger¹; Wayne Rathbun¹; Jonathan Pierson¹; Paul Adams¹; Gil Jones¹; Kendall Guyer¹; Dave Hindenlang²; *UOP LLC, A Honeywell Company, Des Plaines, IL*; ²Honeywell International Inc., Morristown, NJ
- WP 049 **FT-ICR-MS – Studying the Effects of Ion Suppression on Crude Oil Mass Spectral Response Using Standard Compounds and Systems;** Melisa Brown; Ning Sangantrakun; Ken Chanthamontri; Thomas Oldenburg; Steve Larter; *PRG, University of Calgary, Calgary, Canada*
- WP 050 **Petroleomics at Moderate Mass Resolution;** Fan Huang; Kermit K. Murray; *Louisiana State University, Baton Rouge, LA*
- WP 051 **Ionization of Hydrocarbons by Atmospheric Solid Analysis Probe (ASAP) and Atmospheric Pressure Gas Chromatography (APGC);** Chunping Wu; Kuangnan Qian; Kathleen Edwards; Clifford Walters; Anthony Mennito; Christopher Jurtschenko; *ExxonMobil Research & Engineering Co., Annandale, NJ*
- WP 052 **Comparisons and Characterization of Different Asphaltenes Using Novel Ion Mobility-Mass Spectrometry Comparison Software ;** Eleanor Riches¹; Jeremie Ponthus²; *Waters Corporation, Manchester, UK*; ²IFP Energies Nouvelles, Lyon, France
- WP 053 **Isolation and Characterization of Interfacial Material from Athabasca Bitumen by Ultrahigh Resolution FT-ICR Mass Spectrometry;** Amy Clingenpeel¹; Jacqueline Jarvis¹; Winston Robbins²; Alan Marshall^{1,3}; Ryan Rodgers^{1,3}; *Florida State University Department of Chemistry, Tallahassee, FL*; ²Consultant, Brunswick, ME; ³Ion Cyclotron Resonance Program, NHMFL, Tallahassee, FL
- WP 054 **Comparing LDI-FT-ICR and LDI-TOF/TOF Mass Spectrometry to Characterize Vacuum Residue of Colombian Crude Oils;** Enrique Mejía-Ospina¹; Rafael Cabanzo¹; Jorge Armando Orrego-Ruiz²; Andrea Gómez²; Yustina Rodríguez²; *Universidad Industrial de Santander, Bucaramanga, Colombia*; ²Instituto Colombiano de Petróleos (ICP-Ecopetrol), Piedecuesta, Colombia
- WP 055 **Asphaltene Analysis by TLC MALDI-TOF-MS;** Martha L. Chacón¹; Andrea Gómez-Escudero²; Cristian Blanco-Tirado¹; Marianny Y. Combariza¹; *Escuela de Química, Univ Industrial de Santander, Bucaramanga, Colombia*; ²Instituto Colombiano del Petróleo, Ecopetrol, Piedecuesta, Colombia
- WP 056 **A CAD Study on Ionized Model Compounds of Asphaltenes Containing Varying Alkyl Side Chains and Different Aromatic Core Sizes;** Mohammad Sabir Aqueel; James Riedeman; Hilikka Kenttamaa; *Purdue University, West Lafayette, IN*
- WP 057 **Examination of Solvent/Reagent Effects on Collisionally Activated Dissociation of Ionized Asphaltenes Using Atmospheric Pressure Chemical Ionization;** Matthew Hurt; Priya Murria; Hilikka Kenttamaa; *Purdue University, West Lafayette, IN*
- WP 058 **Structural Comparison of Asphaltenes of Different Origins by Using Tandem Mass Spectrometry;** Weijuan Tang; *Purdue University, West Lafayette, IN*
- WP 059 **Characterization of Nitrogen Containing Compounds in Vacuum Gas Oils Resins by ESI FT-ICR MS and HT-GCxGC/MS;** Laure Boursier¹; Jérémie Ponthus¹; Vincent Souchon¹; Cyril Dartiguelongue¹; Didier Thiébaud²; *IFP New Energy, Solaize, France*; ²UMR 7195 PESCA - ESPCI Paris Tech, Paris, France
- WP 060 **Quantitative Analysis of Long Chain Fatty Acids Present in a Type I Kerogen Using ESI-FT-ICR-MS and Compared With GC-FID;** Albert W. Kamga¹; Françoise Behar²; Patrick G. Hatcher¹; *Department of Chemistry and Biochemistry, ODU, Norfolk, VA*; ²TOTAL, Paris, France
- WP 061 **Quantitation of Asphaltene Inhibitors in Crude Oil by LC-TOF MS;** Steven Rowland¹; Winston Robbins³; Ryan Rodgers^{1,2}; *Florida State University, Tallahassee, FL*; ²National High Magnetic Field Laboratory, Tallahassee, FL; ³Future Fuels Institute, Tallahassee, FL
- WP 062 **High-Throughput Analysis Method for Straight Chain Alkanes Using LDTD-MS/MS;** Pascal Belisle; Gregory Blachon; Annick Dion; Serge Auger; Pierre Picard; *Phytronix Technologies, Quebec City, Canada*
- WP 063 **Targeted Petroleomics: Using High-Resolution TOF-MS to Evaluate the Efficiency of Acid and Sulfur Compound Removal from Crude Oil;** Kevin Siek¹; Julie Hernández²; Clécio Klitzke³; Joe Binkley¹; Jeffrey S. Patrick¹; Rubens Maciel-Filho²; Marcos Eberlin³; *LECO Corporation, Saint Joseph, MI*; ²UNICAMP Separation Process Development Laboratory, Campinas SP, Brazil; ³Thomson Mass Spectrometry Laboratory UNICAMP, Campinas SP, Brazil

- WP 064 **Characterization of Heteroatom-Containing Aromatics in Crude Oil on a Research-Type High-Field Orbitrap MS by Utilization of a Deuterated Derivatization Reaction;** XuXiao Wang; Wolfgang Schrader; *Max-Planck Inst für Kohlenforschung., Mülheim / Ruhr, Germany*
- WP 065 **Identification of Sulfur Compounds in Petroleum Samples Using Derivatization with Mass Deficient Reagents;** Ting Wang¹; Daniel Jupiter²; Laxman Devkota¹; Kevin Chambliss¹; Kevin Pinney¹; Touradj Solouki¹; ¹*Baylor Univerisy, Waco, TX;* ²*Texas A&M Health and Science Center, Temple, TX*
- WP 066 **Geotracers by FT-ICR MS;** Hendrik Muller¹; Khaled Arouri²; Saroj Panda¹; Adnan Al-Hajji¹; ¹*Research and Development Center, Saudi Aramco, Dhahran, Saudi Arabia;* ²*EXPEC Advanced Research Center, Saudi Aramco, Dhahran, Saudi Arabia*
- WP 067 **Petroleum Biomarkers Analyzed by Atmospheric Pressure Gas Chromatography Tandem Mass Spectrometry (APGC/MS/MS);** Douglas Stevens¹; Quan Shi²; Chang Samuel Hsu^{3,4}; ¹*Waters Corporation, Milford, MA;* ²*China University of Petroleum, Beijing, China;* ³*Florida State University, Tallahassee, FL;* ⁴*Petro Bio Oil Consulting, Tallahassee, FL*
- WP 068 **Investigating Polyaromatic Sulfur Heterocycles in Model Systems and Crude Oil Using Atmospheric Pressure Chemical Ionization Orbitrap Mass Spectrometry;** Nadim Hourani¹; Ma'an Amad¹; Jan Andersson²; Mani Sarathy¹; ¹*King Abdullah University Of Science and Technology, Thuwal, Saudi Arabia;* ²*University of Muenster, Muenster, Germany*
- WP 069 **An Approach to Analysis and Visualization of Crude Oil Samples;** Manhoi Hur¹; Yunju Cho²; Sungwhan Kim²; Eve Syrkin Wurtele¹; ¹*Iowa State University, Ames, IA;* ²*Kyungpook National University, Daegu, South Korea*
- Small Molecules: Quantitative Analysis III, 070 – 097**
- WP 070 **Method Development and Validation of an Assay for the Quantitation of Balsalazide in Human Plasma by Basic Reversed-Phase LC-MS/MS;** Melissa Meyer; Sara Clemens; Nancy Zheng; Zong-Ping Zhang; *PPD, Middleton, WI*
- WP 071 **High Sensitivity and Low Sample Volume Method Development for Quantitation of Fluticasone Propionate and Salmeterol in Human Plasma by LC-MS/MS;** Nancy Zheng; Jun Wang; Zong-Ping Zhang; *PPD Inc, Middleton, WI*
- WP 072 **Simultaneous Determination of Pioglitazone and Celecoxib in Mouse Plasma by nanoLC-MS;** Hong Wang¹; Hiroyuki Katayama¹; Mark Schliekelman²; Sam Hanash¹; ¹*MD Anderson Cancer Center, Houston, TX;* ²*Fred Hutchinson Cancer Research Center, Seattle, WA*
- WP 073 **Development of a Mass Spectrometric Method for Quantitating Sex Steroids in Human Serum;** Kerry M. Wooding; Chris A. Johnson; Joseph A. Hankin; Robert M. Barkley; Andrew P. Bradford; Nanette Santoro; Robert C. Murphy; *University of Colorado Denver AMC, Aurora, CO*
- WP 074 **Determination of Abiraterone in Human Plasma by LC-MS/MS;** Lan Li; Yuan-Shek Chen; Kumar Ramu; *QPS, LLC, Newark, DE*
- WP 075 **Quantitative Determination of Irsogladine in Human Plasma by Liquid Chromatography-Tandem Mass Spectrometry;** Haejong Jang; Yuchang Choi; Kyunghwan Kim; Seungwoo Kang; *International Scitntific Standard, Chuncheon, South Korea*
- WP 076 **A Validated Method for the Determination of Adefovir in Human Plasma by Liquid Chromatography-Electrospray Ionization Tandem Mass Spectrometry;** Won Seok Nam; Seo Hyun Yoon; Kyung-Sang Yu; In-Jin Jang; Joo-Youn Cho; *Seoul National University College of Medicine, Seoul, South Korea*
- WP 077 **A Sub-Picogram LC-MS/MS Method for the Analysis of Mometasone Furoate in Human Plasma;** Veniamin Lapko; Alan Dzerk; Karl Linderholm; Roger Coe; Brandon Retke; Mike Merrill; Curtis Sheldon; *Celerion, Inc, Lincoln, NE*
- WP 078 **Simultaneous Quantification of 15 Drugs of Abuse in Oral Fluid and Plasma by Ultra High Performance Liquid Chromatography/Tandem Mass Spectrometry;** Yuling Song; Jinting Yao; Xiongxiang Qiu; Taohong Huang; Shin-ichi Kawano; Yuki Hashi; *Shimadzu (China) Co., LTD, Shanghai, China*
- WP 079 **Sensitive LC-MS/MS Quantitation of Thyroid Hormones in Serum;** Changtong Hao; Hui Qiao; Chuck Jolliffe; Sha Joshua Ye; *IONICS Mass Spectrometry, Bolton, ON, Canada*
- WP 080 **Highly Sensitive LC-MS/MS Quantification of Underivatized 1a,25-dihydroxyvitamin D3 Comparing Various Sample Extraction Methods;** Sha Joshua Ye; Changtong Hao; Hui Qiao; *IONICS Mass Spectrometry, Bolton, ON Canada*
- WP 081 **Developing High Throughput 2D-LC-MS/MS Method for Quantification of Vitamin D which Overcomes Challenges of Chemiluminescent Immunoassay;** Sreekala Narayanan¹; Anura .V Kurpad¹; Siji Joseph²; Sudha Rajagopalan²; Amit Kumar Mandal¹; Suresh Babu C.V²; ¹*St. John's Research Institute, Bangalore, India;* ²*Agilent Technologies, Bangalore, India*
- WP 082 **Development and Validation for the Determination of (E)-/-(Z)-vitamin K1 Isomers in Human Plasma by LC-MS/MS;** Jingguo Hou; Melvin Tan; Ravi Orugunty; Xiaodong Zhu; Thomas Horvath; Jing Zhou; Gregory Poch; Michael Sullivan; Edward Wells; Steve Unger; *WWCT, Austin, TX*
- WP 083 **UHPLC-MS-MS Quantitation of Flavonoids, Terpene Lactones, and Detection of Unwanted Pesticides and Pharmaceuticals in Ginkgo Biloba Natural Dietary Products;** Frederic L Ciner¹; Thomas Hayes¹; Rachel Lieberman²; Jeffrey Dahl²; ¹*Shimadzu Scientific Instruments, SOE, Raleigh, NC;* ²*Shimadzu Scientific Instruments, Columbia, MD*
- WP 084 **An Alternative USP Method for the Analysis of Impurities in Riboflavin (Vitamin B2) Using LC-MS-MS;** Nicolas J. Hauser¹; Jenna E. Milliken²; Carmen T. Santasania³; ¹*RTC/Sigma-Aldrich, Laramie, WY;* ²*Department of Chemistry, University of Wyoming, Laramie, WY;* ³*Supelco/Sigma-Aldrich, Bellefonte, PA*
- WP 085 **Application of DBS for the Quantitative Determination of Midazolam and Hydroxymidazolam Using an AB Sciex 6500 QTrap LC-MS/MS System;** Alexandre Pimenov; Jeffry Plomley; Mohamed Makhloffi; *Charles River Laboratories, Senneville, Canada*
- WP 086 **Automatic LC/MS/MS Method to Quantitate Eicosapentaenoic acid (EPA) in Rat Plasma;** Rachel Sun; Jordan Nally; Tim Shoaf; *BASi, West Lafayette, IN*
- WP 087 **Quantification of Midazolam and 1-Hydroxymidazolam in Human Plasma Using API-4000 LC-MS/MS Systems with Higher Specificity and Lower Background Noise;** Guangchun Zhou; Nicole Roenker; Yong-Xi Li; *Medpace, Cincinnati, OH*
- WP 088 **A Simple, Direct Quantification of Carboplatin in Human Plasma Using Liquid Chromatography-Tandem Mass Spectrometry;** Tian-Sheng Lu; Elise Malinowski; Nicole Roenker; Yong-Xi Li; *Medpace, Cincinnati, OH*

- WP 089 **A Robust LC-MS/MS Analytical Method for Quantification of β -Lapachone: A Novel Chemotherapeutic Agent for the Treatment of Solid Tumors;** Claudia Meek¹; Erling Beck¹; David Boothman²; David Gerber²; Richard Leff¹; ¹*School of Pharmacy, Texas Tech University HSC, Dallas, TX*; ²*Harold C. Simmons Cancer Center, UT Southwestern, Dallas, TX*
- WP 090 **Two-Dimensional Liquid Chromatography/In-Source Fragmentation and Tandem Mass Spectrometry for Quantification of 2-Hydroxypropyl- β -Cyclodextrin in Human Plasma;** Xuntian Jiang; Hui Jiang; Rohini Sidhu; Jean E Schaffer; Daniel S Ory; *Washington University, St. Louis, MO*
- WP 091 **Determination of Leelamine in Mouse Plasma by Liquid Chromatography/Electrospray Tandem Mass Spectrometry;** Min Song; Miri Hong; Oh Kwang Kwon; Doohyun Lee; Suyoun Lee; Taeho Lee; Sangkyu Lee; *Kyungpook National University, Daegu, Korea*
- WP 092 **Development of a HPLC-MS/MS Assay to Measure Irinotecan and Its Main Metabolites in Plasma. Preliminary Pharmacokinetic Evaluation in Cancer Patients;** Elena Marangon; Elisa Mazzega; Giuseppe Toffoli; *National Cancer Institute of Aviano, Aviano, Italy*
- WP 093 **Determination of Ceftiofur Metabolite Desfuroylceftiofur Cysteine Disulfide in Bovine Ileum by LC-MS/MS;** Gajendiran Mahadevan; Shixia Feng; Oscar A. Chiesa; *Center for Veterinary Medicine, FDA, Laurel, MD*
- WP 094 **Development and Validation of a Sensitive LC-MS/MS Method for Analysis of Midazolam and Their Metabolites in Human Plasma and Urine;** Ganesh Moorthy; Praveen Srivastava; Vu Nguyen; Jeffrey Barrett; Athena Zuppa; *The Children's Hospital of Philadelphia, Philadelphia, PA*
- WP 095 **Rapid and Robust Analysis Method for Quantifying Antidepressants and Major Metabolites in Human Serum by UHPLC-MS/MS;** Vincent Goudriaan¹; Christ Pijnenburg²; Jacob Diepenbroek²; Jan Giesbertsen²; Annemieke Vermeulen Windsant-v.d. Tweel²; ¹*Shimadzu Benelux BV, 's-Hertogenbosch, Netherlands*; ²*ZANOB BV, 's-Hertogenbosch, Netherlands*
- WP 096 **Quantitative Determination of Ultralow Level of Azelastine and Its Metabolite, Desmethylazelastine in Human Plasma via Two-Dimensional HPLC with MS/MS Detection;** Jingduan Chi; Zong-Ping Zhang; *PPD Inc, Madison, WI*
- WP 097 **Development a UHPLC-MS/MS Method for Determination of Clopidogrel, Clopidogrel Acid, and Clopidogrel Active Metabolite H4 in Human Plasma;** Wenyi Hua; Michael Lesslie; Brian T. Hoffman; Daniel Mulvana; *Advion Bioanalytical Labs, a Quintiles Company, Ithaca, NY*
- Diagnostic Clinical Chemistry: Small Molecules II, 098 – 116**
- WP 098 **Sensitive Assay of Free Thyroid Hormones by Online SPE-UHPLC-MS/MS in Human Plasma;** Maureen Ramero; Stéphane Moreau; Mikael Levi; *Shimadzu France, Noisiel, France*
- WP 099 **Quantification of Testosterone from Dried Blood Spots Using Liquid Chromatography Tandem Mass Spectrometry;** Richard E. Mathieu¹; Catherine P. Riley¹; Carmen L. Wiley^{1,2}; ¹*Pathology Associates Medical Laboratories, Spokane, WA*; ²*Providence Sacred Heart Medical Center, Spokane, WA*
- WP 100 **LC-ESI-MS/MS Multi-Target Quantification Method of Derivatized Catecholamines and Serotonin Applied to Clinical Analysis;** Elias Tessaro^{1,2}; Giovana Bataglion¹; Phellipe Amaral^{1,2}; Gianfranco Zampieri³; Diogo Baldim³; ¹*UNICAMP, Campinas, Brazil*; ²*LABMASS Laboratory, Campinas, Brazil*; ³*Salomão & Zoppi Diagnósticos, São Paulo, Brazil*
- WP 101 **Simultaneous Analysis of Urinary Metanephrines, Catecholamines and Serotonin by ESI-LC-MS/MS with Solid Phase Extraction Sample Preparation;** Murat Celik; Hasan Ozgen; Avni Cavdar; *Zivak Technologies, Kocaeli, Turkey*
- WP 102 **Sensitive Liquid Chromatography Mass Spectrometry Method for measuring Plasma Metanephrines;** Catherine Riley¹; Richard E. Mathieu¹; Carmen L. Wiley^{1,2}; ¹*Pathology Associates Medical Laboratories, Spokane, WA*; ²*Providence Sacred Heart Medical Center, Spokane, WA*
- WP 103 **Use of a 2 μ m Ultra High Performance Liquid Chromatography Column and High Resolution MS in the Clinical Laboratory;** Ling Bei¹; Michael Schulz¹; Petra Lewits¹; Patrik Appelblad¹; Hans-Ake Lakso²; Joern Schneede²; ¹*EMD Millipore, Billerica, MA*; ²*Dep Clinical Pharmacology Umeå University Hospital, Umeå, Sweden*
- WP 104 **Diagnosis of Breast Cancer Based on Lipid Profiles Obtained by MALDI-TOF Mass Spectrometry;** Hung Su¹; Ya-Fei Bao¹; Yi-Tzu Cho²; Jentaie Shiea¹; Pei-Yung Nien³; Ya-Hui Chang³; Ming-Feng Hou³; ¹*National Sun Yat-Sen Univ., Kaohsiung, Taiwan*; ²*Yuh-Ing Junior College of Health Care & Management, Kaohsiung, Taiwan*; ³*Kaohsiung Medical University Hospital, Kaohsiung, Taiwan*
- WP 105 **Development of a Method for the Diagnosis of Adrenoleukodystrophy Using Liquid Chromatography-Mass Spectrometry;** Kazuhiro Kida¹; Hideki Nakajima¹; Teruhiko Miwa¹; Jun Watanabe²; Teruhisa Shiota³; Torayuki Okuyama¹; Masafumi Onodera¹; Junichiro Fujimoto¹; ¹*National Center for Child Health and Development, Tokyo, Japan*; ²*Shimadzu Corporation, Kyoto, Japan*; ³*AMR, Inc., Tokyo, Japan*
- WP 106 **Determination of Polyalcohols (polyols) in Urine by Gas Chromatography-Chemical Ionization Mass Spectrometry;** Charles Kroll; Mark Magera; Perry Loken; Brenda Holmen; Dietrich Matern; Dimitar Gavrilov; Silvia Tortorelli; Devin Oglesbee; Piero Rinaldo; Kimiyo Raymond; *Mayo Clinic, Rochester, MN*
- WP 107 **Mucopolysaccharide Quantitation in Urine by LC-MS/MS;** Jean M Lacey; Mark J Magera; Dimitar K Gavrilov; Silvia Tortorelli; Devin Oglesbee; Piero Rinaldo; Kimiyo M Raymond; Dietrich Matern; *Mayo Clinic, Rochester, MN*
- WP 108 **Clinical Diagnostics Approaches of Lysosomal Storage Diseases on DBSs by Fluorimetry and MRM-MS Using Identical α -hydroxy-coumarin based substrates;** Claudia Cozma¹; Marius- Ionut Iurascu¹; Gabriela Paraschiv¹; Laura Ion²; Alina Brandusa Petre²; Adolf Muhl³; Stefan Maeser³; Michael Przybylski¹; ¹*University of Konstanz, Konstanz, Germany*; ²*Al.I. Cuza University, Iasi, Romania*; ³*Centogene AG, Freiburg & Rostock, Germany*
- WP 109 **Nicotine and Metabolites: Evaluation of Supported Liquid Extraction Approaches prior to UPLC-MS/MS Analysis;** Alan Edgington¹; Lee Williams¹; Adam Senior¹; Rhys Jones¹; Helen Lodder¹; Geoff Davies¹; Steve Jordan¹; Claire Desbrow¹; Gavin Jones¹; Victor Vandell²; Frank Kero²; ¹*Biotage GB Limited, Cardiff, UK*; ²*Biotage US, Charlotte, NC*
- WP 110 **Fast On-Line SPE-UHPLC-MS/MS Quantitative Analysis of Multiclass Antibiotics in Human Plasma for Emergency Diagnostic;** Mikael LEVI; Maureen Ramero; Stephane Moreau; *Shimadzu France, Marne La Vallee Cedex 2, France*
- WP 111 **Quantification of Serum Voriconazole by Liquid Chromatography and Tandem Mass Spectrometry;** Karina Helena Morais Cardozo; Jessica Silva Salgueiro; Valdemir Melechco Carvalho; *Fleury Group, São Paulo, Brazil*

- WP 112 **Concentrations of Arsenic in Human Urine: A Correlation between Total Arsenic by ICP-MS and Speciated Arsenic by HPLC-ICP-MS;** Indranil Sen; Wei Zou; *CA Dept of Public Health, Richmond, CA*
- WP 113 **Comparison of Two Sample Preparation Methods for Analyzing Pain Management Drugs in Urine;** Xuejun Zang; Igor Gavin; Krishna Mallia; Asha Oroskar; Anil Oroskar; *Orochem Technologies Inc., Lombard, IL*
- WP 114 **An Enzyme Assay Mass Screening System for Adenosine Deaminase Deficiency from Dried Blood Spots Using a DART MS/MS;** Hideki Nakajima¹; Teruhiko Miwa¹; Kazuhiro Kida¹; Jun Watanabe²; Teruhisa Shiota³; Torayuki Okuyama¹; Masafumi Onodera¹; Junichiro Fujimoto¹; ¹*National Center for Child Health and Development, Tokyo, Japan*; ²*Shimadzu Corporation, Kyoto, Japan*; ³*AMR, Inc., Tokyo, Japan*
- WP 115 **Positive and Negative Mode PESI-MS for Cancer Diagnostics;** Mridul Kanti Mandal¹; Kentaro Yoshimura²; Subhrakanti Saha¹; Md. Obaidur Rahman¹; Yasuo Shida¹; Sen Takeda²; Hiroshi Nonami³; Kenzo Hiraoka¹; ¹*CERC, University of Yamannashi, Kofu, Japan*; ²*Faculty of Medicine, University of Yamannashi, Chuo, Japan*; ³*Faculty of Agriculture, Ehime University, Matsuyama, Japan*
- WP 116 **Catalytic Pyrolysis Metal Oxide Laser Ionization (CP-MOLI MS) Fatty Acid Profiling for Bacterial Identification;** Kirk Jensen¹; Casey McAlpin¹; Christopher Cox¹; Robert Cody²; Jon Rees³; Kent Voorhees¹; ¹*Colorado School of Mines, Golden, CO*; ²*JEOL USA, Peabody, MA*; ³*Centers for Disease Control, Atlanta, GA*
- Forensics - Drugs of Abuse, 117 – 135**
- WP 117 **Method Scalability for Drugs of Abuse Extraction from Urine using Supported Liquid Extraction prior to UPLC-MS/MS Analysis;** Lee Williams¹; Rhys Jones¹; Adam Senior¹; Helen Lodder¹; Geoff Davies¹; Kerry Stephens¹; Steve Jordan¹; Gavin Jones¹; Claire Desbrow¹; Victor Vandell²; Frank Kero²; ¹*Biotage GB Limited, Cardiff, UK*; ²*Biotage, Charlotte, NC*
- WP 118 **High Performance Cost Efficient LC-MS/MS Solution for NIDA-5 Panel Using New Dual Channel Prelude SPLC System and Quantum-Ultra Mass Spectrometer;** Haiqiang Yu; Kristine Van Natta; Marta Kozak; *ThermoFisher Scientific, San Jose, CA*
- WP 119 **Direct Mass Imaging of Ketamine Distribution in Single Scalp Hair by MALDI-CASI-FTMS;** Ping Xiang¹; Hai Pu²; Min Shen¹; ¹*Institute of Forensic Sciences, Shanghai, China*; ²*Bruker, Beijing, China*
- WP 120 **A Reversed-Phase LC-MS/MS Method for the Quantitation of Ethyl Glucuronide and Ethyl Sulfate in Human Urine;** Frances Carroll; Sharon Lupo; Chris Denicola; Ty Kahler; Paul Connolly; *Restek Corporation, Bellefonte, PA*
- WP 121 **Rapid Screening and Semi-Quantitative Analysis for Forensic Drugs in Blood Using Liquid Chromatography Triple Quadrupole Mass Spectrometry;** Thomas Hayes¹; Keiko Kudo²; Toshikazu Minohata³; Kiyotaka Usui⁴; Noriaki Shima⁵; Munehiro Katagi⁵; Hitoshi Tsuchihashi⁶; Koichi Suzuki⁶; Ichiro Hirano³; Noriaki Ikeda²; ¹*Shimadzu Scientific Instruments, Inc., Columbia, MD*; ²*Kyushu University, Fukuoka, Japan*; ³*Shimadzu Corporation, Kyoto, Japan*; ⁴*Tohoku University Graduate School of Medicine, Sendai, Japan*; ⁵*Osaka Prefectural Police, Osaka, Japan*; ⁶*Osaka Medical Collage, Takatsuki, Japan*
- WP 122 **Direct Analysis Using Paper-Spray Mass Spectrometry: Method Development for the Rapid Screening of Drugs of Abuse for Forensic Toxicology;** Maria C. Prieto Conaway¹; Nicholas E. Manicke²; Marta Kozak¹; ¹*Thermo Fisher Scientific, San Jose, CA*; ²*Purdue University, West Lafayette, IN*
- WP 123 **Characterization and Classification of Heroin from Illicit Heroin Seizures by GC/Q-TOF;** Dmitry Koluntaev¹; Sergei Syromyatnikov²; Igor Sarychev²; Sofia Aronova³; ¹*InterLab, Inc., Moscow, Russia*; ²*Federal Drug Control Service of Russian Federation, Moscow, Russia*; ³*Agilent Technologies, Inc., Santa Clara, CA*
- WP 124 **Cocaine and Metabolites: Method Development Strategies Using Supported Liquid Extraction from Urine Prior to UPLC-MS/MS Analysis;** Rhys Jones¹; Lee Williams¹; Adam Senior¹; Helen Lodder¹; Geoff Davies¹; Kerry Stephens¹; Steve Jordan¹; Gavin Jones¹; Claire Desbrow¹; Victor Vandell²; Frank Kero²; ¹*Biotage GB Limited, Cardiff, UK*; ²*Biotage, Charlotte, NC*
- WP 125 **Rapid and Sensitive Quantitation of THC and Metabolites in Urine by Microflow LC-MS/MS;** Daniel Blake¹; Julie Moriceau¹; Sylvain Dulaurent²; Jean-Michel Gaulier²; Aymeric Morla¹; ¹*AB SCIEX, Warrington, UK*; ²*CHU Dupuytren Limoges, Limoges, France*
- WP 126 **Direct Quantification of 11-nor- Δ^9 -tetrahydrocannabinol-9-carboxylic Acid and Its Glucuronide in Urine Using Liquid Chromatography-Tandem Mass Spectrometry;** Jin-Young Kim; Woonyong Kwon; SungIll Suh; Moon Kyo In; *Supreme Prosecutors' Office, Seoul, Korea*
- WP 127 **Ultrafast, Ultra-selective High-Throughput Forensic Drug Screening in Urine Using SPE/MS/MS;** Vaughn Miller; Michelle Romm; Kari Schlicht; Nikunj Parikh; Mohamed Youssef; Maxcy Stroman; William LaMarr; Can Ozbai; *Agilent Technologies, Wakefield, MA*
- WP 128 **Rapid LC-MS/MS Screening Method for Fourteen JWH-type Synthetic and Natural Cannabinoids in Counterfeit Samples;** Philippe Lebel; Karen C. Waldron; Alexandra Furtos; *Université de Montréal, Montréal, Canada*
- WP 129 **Rapid Generation of Synthetic Cannabinoids' "Metabolite Fingerprints" following Human Hepatocyte Metabolism and High Resolution Mass Spectrometry Analysis;** Ariane Wohlfarth¹; Adarsh Gandhi¹; Shaokun Pang²; Hua-fen Liu²; Mingshe Zhu³; Marilyn Huestis¹; ¹*NIDA, NIH, Baltimore, MD*; ²*AB Sciex, Foster City, CA*; ³*Bristol-Myers Squibb, Princeton, NJ*
- WP 130 **Rapid Analysis of Synthetic Cathinones (bath salts) by LC/Triple Quadrupole Mass Spectrometry;** Flaubert Mbeunkui; Joseph Wiegel; Brent Dixon; *Physicians Choice Laboratory Services, Charlotte, NC*
- WP 131 **Analysis of Cathinones in Bath Salts by Direct Sample Analysis TOF MS;** Noelle Elliott¹; Amanda Leffler²; Avinash Dalmia¹; Frank Dorman²; Carl Schwarz¹; ¹*PerkinElmer, Shelton, CT*; ²*Penn State University, University Park, PA*
- WP 132 **Implementation of Bench-Top Quadrupole Orbitrap Ultra High Resolution Mass Spectrometer in Quantitative Analysis of Synthetic Cathinones in Urine Samples;** Marta Kozak; Kristine Van Natta; Shijun Sheng; *Thermo Fisher Scientific, San Jose, CA*
- WP 133 **Trapping 'Spice': A Comprehensive Automated LC-Ion Trap-MS Screening Approach for the Detection of 38 Synthetic Cannabinoids in Serum;** Laura M. Huppertz; Stefan Kneisel; Volker Auwärter; Jürgen Kempf; *Institute of Legal Medicine, University Freiburg, Freiburg, Germany*
- WP 134 **Confirmation and Quantification of Synthetic Cannabinoids in a Sample of "Spice" by GC/TOF-MS;** Chiara Abate¹; Ilaria Ferrante¹; Luigi Motti²; ¹*DANI, Cologno Monzese, Italy*; ²*Dani SA, Contone, Switzerland*

- WP 135 **Development of a LC-MS/MS Analytical Strategy Based on Class-Characteristic Fragmentation Pathways to Detect Synthetic Cannabinoids in Different Matrices;** Monica Mazzarino; Xavier de la Torre; Ilaria Fiacco; Francesco Botrè; *Antidoping Laboratory, Rome, Italy*
- Imaging MS: Method Development I, 136 – 157**
- WP 136 **Recombinant “IMS TAG” Proteins - A Method for Validating MALDI - Ion Mobility Separation - Mass Spectrometry Imaging (MALDI-IMS-MSI);** Laura Cole¹; Khaled Mahmoud²; Gillian Tozer³; Simona Francese¹; David Smith¹; Malcolm Clench¹; ¹Sheffield Hallam University, Sheffield, UK; ²Al-Jouf University, Sakaka, Kingdom of Saudi Arabia; ³Sheffield University, Sheffield, UK
- WP 137 **Optimization of A New Method for Spatial Profiling of N-linked Glycan Expression in Tissues by MALDI Mass Spectrometry Imaging;** Thomas Powers¹; E. Ellen Jones¹; Anand Mehta²; Richard R Drake¹; ¹Medical University of South Carolina, Charleston, SC; ²Drexel Institute for Biotechnology and Virology, Doylestown, PA
- WP 138 **MALDI Imaging Mass Spectrometry (MALDI-IMS) of Colon Adenocarcinoma Formalin-Fixed Paraffin-Embedded Tissues;** Irene (Eirini) Panderi (Panteri)^{1,2}; Lulu Cao²; Lelia Noble²; Kimberly Perez³; Dionysios Pantazatos²; ¹University of Athens, Pharmacy, Pharm.Chemistry, Athens, Greece; ²COBRE Center for Cancer Research, Brown Medical, Providence, RI; ³Rhode Island Hospital, Brown Medical, Providence, RI
- WP 139 **Identification of Accumulated Ceramide Species in a Farber Disease Mouse Model by MALDI-MS Imaging;** Shaalee Dworski¹; Ellen Jones²; Abdulfatah Alayoubi¹; Jeffrey A. Medin¹; Richard Drake²; ¹University of Toronto, Toronto Ontario, Canada; ²Medical University of South Carolina, Charleston, SC
- WP 140 **Microwave-Assisted Enzymatic Digestion On-Tissue for Membrane Protein Analysis with MALDI Imaging Mass Spectrometry;** Jamie L Wenke; Kevin L Schey; *Department of Biochemistry, Vanderbilt University, Nashville, TN*
- WP 141 **The Effect of Heat-Induced Tissue Stabilization on the MS- and Histo-Architecture of Mouse Brain;** Ricardo J. Carreira¹; Cecilia Eriksson²; Walid M. Abdelmoula¹; Reinald Shyti¹; René J.M. van Zeijl¹; Sandra H. van Heiningen¹; Else A. Tolner¹; Arn M.J.M. van den Maagdenberg¹; Jouke Dijkstra¹; Per E. André²; Liam A. McDonnell¹; ¹Leiden University Medical Center, Leiden, Netherlands; ²Uppsala University, Uppsala, Sweden
- WP 142 **Detection of Individual Cells in Tissue Using MALDI-TOF Imaging at 10 µm Pixel Size;** Eckhard Belau¹; Jane-Marie Kowalski²; Janine Rattke¹; Alice Ly³; Soeren-Oliver Deininger¹; Detlev Suckau¹; Axel Walch³; Marius Jeffing³; Michael Becker¹; ¹Bruker Daltonik GmbH, Bremen, Germany; ²Bruker Daltonics, Billerica, MA; ³Helmholtz-Zentrum München, Munich, Germany
- WP 143 **Identifying and Imaging Lipid Oxidation Products by MALDI-MSⁿ: A Multivariate Approach;** Whitney L. Stutts¹; Gert B. Eijkel²; Ron M.A. Heeren²; Richard A. Yost¹; ¹Chemistry Department, University of Florida, Gainesville, FL; ²FOM Institute AMOLF, Amsterdam, NL
- WP 144 **Peptide Bead Arrays Measured by Mass Spectrometry Imaging;** Vladislav Bergo; *Adeptrix Corp, Boston, MA*
- WP 145 **MALDI Imaging of Rat Testis at 10µm Pixel Size and 200k Mass Resolution;** Jens Fuchser; Eckhard Belau; Soeren-Oliver Deininger; Michael Becker; *Bruker Daltonik GmbH, Bremen, Germany*
- WP 146 **Novel Workflow Combining MALDI Imaging and LC-MALDI for Obtaining Identification and Spatial Localization of Proteins from Eye Lens Tissue;** Sergei Dikler; Jane-Marie Kowalski; D. Shannon Cornett; *Bruker Daltonics Inc., Billerica, MA*
- WP 147 **Improved Sensitivity in the Detection of Low Abundance Proteins in Virtual 2D Gels;** Karen Lohnes; Fred Kobzeff; Andrea Rivera; Robert Gunsalus; Joseph Loo; Rachel Ogorzalek Loo; *University of California, Los Angeles, CA*
- WP 148 **Imaging of Lipids in Rat Heart by MALDI-MS;** Shelley N Jackson; Ludovic M Muller; Kathrine Baldwin; Amina S Woods; *NIDA-IRP, NIH, Baltimore, MD*
- WP 149 **Profiling of a Cell Population Using MALDI Mass Spectrometry Imaging;** Ta-Hsuan Ong; David Kissick; Stanislav Rubakhin; Jonathan Sweedler; *University of Illinois, Urbana, IL*
- WP 150 **Separation Effects Caused by the Dried-Droplet Sample Preparation for MALDI Mass Spectrometry of Synthetic Polymers;** Stefan Johannes Gabriel¹; Steffen Weidner¹; Ulrich Panne¹; Clemens Schwarzwinger²; ¹Federal Institute for Material Research BAM, Berlin, Germany; ²Johannes Kepler University JKU, Linz, Austria
- WP 151 **Matrix Application Method Optimization for MALDI-MS Imaging (MSI) of Metabolites during Nitrogen Fixation in the Medicago truncatula–Sinorhizobium meliloti Symbiosis;** Erin Gemperline¹; Vivian Hui Ye²; Muthusubramanian Venkateshwaran³; Jean-Michel Ané³; Lingjun Li^{1,2}; ¹UW-Madison Department of Chemistry, Madison, WI; ²UW-Madison School of Pharmacy, Madison, WI; ³UW-Madison Department of Agronomy, Madison, WI
- WP 152 **Towards 3-Dimensional MALDI MS Molecular Imaging of the Optic Chiasm;** David M. G. Anderson¹; Raf Van de Plas¹; Kevin L. Schey¹; Anne Solga²; David H. Gutmann²; Richard M. Caprioli¹; ¹Vanderbilt University Medical Center, Nashville, TN; ²Washington University School of Medicine, St. Louis, MO
- WP 153 **Fixation of Single Sections and Whole Organs in Formal Lithium Improves *in-situ* Characterisation and Imaging of Lipids by Mass Spectrometry;** Rian L. Griffiths; Joscelyn Sarsby; Emily J. Guggenheim; Alan M. Race; Rory T. Steven; Andrew D. Palmer; Patricia Lalor; Josephine Bunch; *University of Birmingham, Birmingham, UK*
- WP 154 **High Spatial Resolution Imaging of Lipids in Formalin-fixed Cardiac Tissue by MALDI Imaging MS;** Peggi Angel¹; Andrey Zavalin¹; H. Scott Baldwin²; Richard Caprioli¹; ¹Dept Biochem, Vanderbilt University, Nashville, TN; ²Dept Cell & Dev Biol, Peds, Vanderbilt University, Nashville, TN
- WP 155 **Imaging and Accurate Mass Identifications of Intact Proteins above 10 kDa Using Multiply Charged Ions and High Resolution MS;** David G. Rizzo; Jeffrey M. Spraggins; Kristie L. Rose; Richard M. Caprioli; *Vanderbilt University, Nashville, TN*
- WP 156 **1,5-Diaminonaphthelene Pre-Coated Targets for MALDI Imaging of Lipids;** Junhai Yang¹; Richard Caprioli^{1,2}; ¹Department of Biochemistry, Vanderbilt University, Nashville, TN; ²Pharmacology and Medicine, Vanderbilt University, Nashville, TN
- WP 157 **Monitoring Time-Dependent Lipid Degradation on Tissue Sections by MALDI Imaging Mass Spectrometry;** Heath Patterson; Aurélien Thomas; Pierre Chaurand; *University of Montreal, Montreal, Canada*

Imaging MS: Software, 158 – 169

- WP 158 **MSiReader: A Free Open Source Vendor-Neutral Matlab Interface to View and Analyze High Resolving Power MS Imaging Data;** [Kenneth P. Garrard](#); Guillaume Robichaud; Jeremy A. Barry; David C. Muddiman; *North Carolina State University, Raleigh, NC*
- WP 159 **Exploration of Tensor Decomposition for Imaging Mass Spectrometry;** [Yousef El Aalama](#)^{1,4}; Raf Van de Plas²; Nico Verbeeck^{1,4}; Bart De Moor^{1,4}; Etienne Waelkens^{3,4}; ¹*KU Leuven, ESAT-SCD/ iMinds Future Health Dept., Leuven, BE*; ²*Vanderbilt University, Nashville, TN*; ³*KU Leuven, Dept. Cellular and Molecular Medicine, Leuven, BE*; ⁴*KU Leuven, Sybioma, Leuven, BE*
- WP 160 **Customizable Open-Source Mass Spectrometry Imaging (MSI) Data Processing Tool for Use with the .mzxml Data File Format;** [Cynthia Kaeser](#); A. Daniel Jones; *Michigan State University, East Lansing, MI*
- WP 161 **Mass Spectrometry Imaging Software Assisting Labeled Normalization and Quantitation with Standardized Open Access Format;** [Patrik Källback](#); Anna Nilsson; Mohammadreza Shariatgorji; Per E. Andrén; *Uppsala University, Uppsala, Sweden*
- WP 162 **Pathology Interface for Mass Spectrometry (PIMS): A Web-Based Collaborative Tool for Histology-Directed Mass Spectrometry Experiments;** [Jeremy L. Norris](#)¹; Erin H. Seeley¹; Tina Tsui¹; Alireza Sepehr²; Richard M. Caprioli¹; ¹*Vanderbilt University School of Medicine, Nashville, TN*; ²*Harvard Beth Israel Deaconess Medical Center, Boston, MA*
- WP 163 **Going Beyond Imaging Mass Spectrometry: Fusing Information Across Different Imaging Technologies;** [Raf Van de Plas](#); Junhai Yang; Richard M. Caprioli; *Vanderbilt University, Nashville, TN*
- WP 164 **Extensible Software for the Processing of Spectrometry Imaging Data Sped Up Using GPGPU;** [Alan M. Race](#); Andrew D. Palmer; Rory T. Steven; Joscelyn Sarsby; Rian L. Griffiths; Iain B. Styles; Josephine Bunch; *University of Birmingham, Birmingham, UK*
- WP 165 **An Intelligent Data Compression Workflow for the Analysis of Biomedical Mass Spectrometry Images;** [Andrew Palmer](#); Rory Steven; Rian Griffiths; Alan Race; Joscelyn Sarsby; Emily Guggenheim; Patricia Lalor; Iain Styles; Josephine Bunch; *University of Birmingham, Birmingham, UK*
- WP 166 **Deeper Insights through Integration: Linking Imaging Mass Spectrometry Data with Anatomical Data;** [Nico Verbeeck](#)^{1,3}; Junhai Yang²; Bart De Moor^{1,3}; Richard Caprioli²; Etienne Waelkens^{3,4}; Raf Van de Plas²; ¹*ESAT-SISTA / iMinds Future Health Dept., KU Leuven, Leuven, Belgium*; ²*Vanderbilt University, Nashville, TN*; ³*Sybioma, KU Leuven, Leuven, Belgium*; ⁴*Dept. of Cellular & Molecular Medicine, KU Leuven, Leuven, Belgium*
- WP 167 **Targeted Ion Imaging MS: Evaluation of New Algorithms to Reduce Acquisition and Processing Time;** [Paul Murray](#); Keith Richardson; Emmy Hoyes; Chris Jones; Richard Chapman; Jeff Brown; *Waters Corporation, Manchester, UK*
- WP 168 **Investigation of Different Hierarchical Clustering Approaches for Protein Identification Directly from Tissue Section in a MALDI Imaging Experiment;** [Mark Towers](#)¹; Laura M. Cole²; Malcolm R. Clench²; Emmanuelle Claude¹; ¹*Waters Corporation, Manchester, UK*; ²*Biomedical Research Centre, Sheffield Hallam Uni, Sheffield, UK*
- WP 169 **A New 64-Bit Software Application for MS Image Processing;** [Damon Barbacci](#); Thomas Egan; J. Albert Schultz; *Ionwerks, Inc., Houston, TX*

Imaging MS: Pharmaceutical Applications, 170 – 193

- WP 170 **Imaging Mass Spectrometry in Three-Dimensional Cell Culture Systems for Evaluation of Therapeutics;** [Xin Liu](#); Amanda Hummon; *University of Notre Dame, Notre Dame, IN*
- WP 171 **Imaging Analysis of the Brain Distribution of Verapamil by Liquid Extraction Surface Analysis (LESA) Mass Spectrometry;** [Kenichi Watanabe](#); Jun Tadano; Toichiro Yamada; Chihiro Ishikawa; Takao Watanabe; Tetsuya Nakagawa; Naruaki Nomura; Masashi Yabuki; *Dainippon Sumitomo Pharma Co., Ltd., Suita, Osaka, Japan*
- WP 172 **Potential Markers of Tumour Viability and Necrosis in CA-4-P Treated Fibrosarcomas Employing a Multimodal Proteomic Approach;** [Laura Cole](#)¹; Jo Bluff²; Vikki Carolan¹; Martyn Paley²; Gillian Tozer²; Malcolm Clench¹; ¹*Sheffield Hallam University, BMRC, Sheffield, UK*; ²*University of Sheffield, Sheffield, UK*
- WP 173 **Semi-Quantitative Analysis for Distribution of CNS Drugs and Metabolites in Rat Brain by Liquid Extraction Surfaced Analysis Mass Spectrometry;** [Jun Tadano](#); Toichiro Yamada; Kenichi Watanabe; Tetsuya Nakagawa; Naruaki Nomura; Masashi Yabuki; *Dainippon Sumitomo Pharma Co., Ltd., Suita, Japan*
- WP 174 **Imaging LA-ICP-MS as a Powerful Tool for the Investigation of Pd-tagged Photosensitizers in Tumor Spheroids;** [Ann-Christin Bülter](#); Christoph A. Wehe; Franziska Blaske; Olga Reifschneider; Uwe Karst; *Westfälische Wilhelms-Universität Münster, Münster, Germany*
- WP 175 **Extracting More from QWBA's with Liquid Extraction Surface Analysis (LESA): Identifying Drug and Metabolites Directly from Whole Rat Sections;** [William Hardesty](#); Jill Pirhalla; Stephen Castillino; *GlaxoSmithKline, King of Prussia, PA*
- WP 176 **Investigating the Correlation between Plasma PK Analysis with Tissue Abundance and Distribution by using MS Imaging and Profiling;** [John G. Swales](#)^{1,2}; Peter Webborn¹; Malcolm Clench²; Richard Goodwin¹; ¹*Astrazeneca, Macclesfield, UK*; ²*Sheffield Hallam University, Sheffield, UK*
- WP 177 **Validation of Observed Metabolite to Parent Drug Abundance Ratios from IR-MALDESI MSI by Performing LC-MS on Adjacent Tissue Sections;** [Kristin M. Klinc](#)¹; Jeremy A. Barry¹; Guillaume Robichaud¹; Reid Groseclose²; David Wagner²; Stephen Castellino²; David C. Muddiman¹; ¹*North Carolina State University, Raleigh, NC*; ²*GlaxoSmithKline, Research Triangle Park, NC*
- WP 178 **Mapping the Distribution of Intranasally Administered Oxytocin (OXT) in Rat Brain Using MALDI Imaging Mass Spectrometry;** [Bingming Chen](#); Hui Ye; Mohan Gautam; Jingxin Wang; Robert Thorne; Lingjun Li; *School of Pharmacy, University of Wisconsin, Madison, WI*
- WP 179 **High Spatial and Mass Resolution Imaging to Assess Ocular Drug Delivery;** [Cristine Quiason](#)¹; Sheerin K. Shahidi-Latham¹; Katherine A. Kellersberger²; Brian J. Dean¹; ¹*Genentech Inc., South San Francisco, CA*; ²*Bruker Daltonics, Billerica, MA*
- WP 180 **Imaging Mass Spectrometry of Pharmaceutical Drugs Using a High Mass Resolution MALDI-SpiralTOF-TOF;** Ayumi Kubo¹; Takaya Satoh¹; Robert A. DiPasquale²; Naoki Moriguchi³; Hisanao Hazama³; Kunio Awazu³; Michisato Toyoda⁴; ¹*JEOL Ltd., Tokyo, Japan*; ²*JEOL USA, Inc., Peabody, MA*; ³*Graduate School of Engineering, Osaka University, Osaka, Japan*; ⁴*Graduate School of Science, Osaka University, Osaka, Japan*

- WP 181 **Mass Spectrometry Imaging of Raclopride and Fexofenadine in Whole Body Mouse Tissue Using Laser Ablation Electrospray Ionization Mass Spectrometry (LAESI-MS);** Callee Walsh; Pamela Williams; Gregory Boyce; Brent Reschke; Holly Henderson; Matthew Powell; Trust Razunguzwa; *Protea Biosciences, Morgantown, WV*
- WP 182 **Mass Spectrometric Imaging of Potential Lipid Biomarkers in Shiverer Mice by Desorption Electrospray Ionization for Neurologic Diseases;** Daniel Waldon; Liyu Yang; *Biogen idec, Cambridge, MA*
- WP 183 **MALDI Mass Spectrometry Imaging (MALDI-MSI) of Pyrazinamide, Pyrazinoic Acid and Moxifloxacin in Clinical TB Lung Biopsies;** Brendan Prideaux¹; Markus Stoeckli²; Dieter Staab²; Gregory Morandi²; Clifton E Barry³; Laura E Via³; Danielle Weiner³; Veronique Dartois¹; ¹*Public Health Research Institute, UMDNJ, Newark, NJ*; ²*Novartis Institutes for BioMedical Research, Basel, Switzerland*; ³*Tuberculosis Research Section, NIAID, Bethesda, MD*
- WP 184 **Blood-Brain Barrier Drug Targeting by Mass Spectrometry Imaging in Early ADME Profiling;** Anna Nilsson; Richard Goodwin; Henrik Loden; Charlotta Wallinder; Sergio Estrada; Niklas Marklund; Mats Larhed; Per E. Andrén; *Uppsala University, Uppsala, Sweden*
- WP 185 **Development of Combined PK/PD Studies of RAF/MEK/mTOR Inhibitors for the Treatment of Pediatric Low-Grade Astrocytomas by MALDI Mass Spectrometry Imaging;** David Calligaris^{1,2}; Xiaohui Liu^{1,2}; Daniel Feldman^{1,2}; Christopher J. Thompson³; Jennifer L. Ide^{1,2}; Mark Marchionni⁴; Sara Buhrlage⁴; Michael L. Easterling³; Nathanael Gray⁴; Charles D. Stiles⁴; Nathalie Y. Agar^{1,2}; ¹*Brigham & Women's Hospital, Boston, MA*; ²*Harvard Medical School, Boston, MA*; ³*Bruker Daltonics, Inc., Billerica, MA*; ⁴*Dana Farber Cancer Institute, Boston, MA*
- WP 186 **MALDI-Imaging Mass Spectrometry (MALDI-IMS) Analysis of Mouse Liver Injected with Gold and Copper Nanoparticles;** Dionysios Pantazatos^{1,2}; Irene (Eirini) Panderi (Panteri)^{1,4}; Liangran Guo³; Wei Lu³; ¹*COBRE Center for Cancer Research and Development, Providence, RI*; ²*Warren Alpert Medical School, Brown University, Providence, RI*; ³*University of Rhode Island, College of Pharmacy, Kingston, RI*; ⁴*University of Athens, Pharmacy, Pharm.Chemistry, Athens, Greece*
- WP 187 **Developing Imaging Mass Spectrometry in 3D Cell Cultures;** Amanda B. Hummon; Eric Weaver; Xin Liu; Haohang Li; Dorothy Ahlf; *University of Notre Dame, Notre Dame, IN*
- WP 188 **MALDI-MS Imaging of LCL124 (SPG103) Tissue Distribution and Molecular Effects on Lipids and Glycans in a Prostate Tumor Xenograft Model;** Ellen Jones; Xiang Liu; James Norris; Richard Drake; *Medical University of South Carolina, Charleston, SC*
- WP 189 **Pharmaco-Imaging Analysis of Anti-cancer Agents in Tumor Tissues Using Mass Microscope;** Shuichi Shimma; Yuki Takashima; Akinobu Hamada; *National Cancer Center Research Institute, Tokyo, Japan*
- WP 190 **Cosmetic Analysis Using MALDI-MSI – “Cosmetomics”;** Diogo De Oliveira; Sabrina de Bona Sartor; Mônica Ferreira Siqueira; Rodrigo Ramos Catharino; *INNOVARE Biomarkers Lab, University of Campinas, Campinas, Brasil*
- WP 191 **A nano-PALDI Protocol for Anticancer Drugs Tumor Uptake and Distribution Studies;** Enrico Davoli; Lavinia Morosi; Pietro Spinelli; Maria G. Carrera; Raffaella Giavazzi; Massimo Zucchetti; Maurizio D'Incalci; *Mario Negri Institute, Milano, Italy*
- WP 192 **MALDI-MS Imaging of the Molecular Profile Changes Resulting from Sphingosine Kinase Inhibition in an Orthotopic Pancreatic Cancer Model;** Peng Gao; E. Ellen Jones; Thomas Powers; Stephen Roper; Benjamin Neely; Drew Schoenling; Charles Smith; Richard R Drake; *Medical University of South Carolina, Charleston, SC*
- WP 193 **Use of High Resolution MSI Combined with Metabolomics Study to Evaluate Drug Efficacy and Impact onto Biological Environment;** David Bonnel¹; Gregory Hamm¹; Guillaume Hochart¹; Fred Fack²; Olivier Keunen²; Fabien Pamelard¹; Raphael Legouffe¹; Simone Niclou²; Jonathan Stauber¹; ¹*ImaBiotech, MS Imaging Department, Lille, France*; ²*CRP Santé, Luxembourg*
- Imaging MS: Small Molecules, 194 – 221**
- WP 194 **Imaging of Molecular Distribution in Areca Nut by Desorption Electrospray Ionization Mass Spectrometry (DESI-MS);** Amitava Srimany; R. G. Hemalatha; Danica Glenda Pinto; Hemanta R. Naik; T. Pradeep; *IIT Madras, Chennai, India*
- WP 195 **Small Molecules Detection with an Ultrashort Pulsed Laser Ablation VUV Postionization TOF-MS;** Yang Cui; Chhavi Bhardwaj; Slobodan Milasinovic; Robert Gordon; Luke Hanley; *Univ. of Illinois at Chicago, Chicago, IL*
- WP 196 **Laser Ablation Atmospheric Pressure Photoionization Mass Spectrometry Imaging of Sage Leaves;** Anu Vaikkinen¹; Bindesh Shrestha²; Risto Kostiainen¹; Akos Vertes²; Tiina J. Kauppila¹; ¹*University of Helsinki, Helsinki, Finland*; ²*George Washington University, Washington, DC*
- WP 197 **Whole-Body DESI Imaging of Clozapine and Its Metabolite;** Jingzhou Liu; Zhiyang Zhao; Yohannes Teffera; *Amgen, Cambridge, MA*
- WP 198 **Direct Coupling of TLC with MALDI-TOF Mass Spectrometry for Analysis of Extracted Phospholipids from DMXAA Treated Xenograft Tumor;** Afnan Batubara¹; Malcolm Clench¹; Paul Loadman²; Chris Sutton²; ¹*Sheffield Hallam University, Sheffield, UK*; ²*University of Bradford, Bradford, UK*
- WP 199 **MALDI Tissue Imaging: Identification of Amino Acid and Neurotransmitter Metabolites;** M. Lisa Manier; Jeffrey M. Spraggins; Michelle L. Reyzer; Jeremy L. Norris; Richard M. Caprioli; *Vanderbilt University, Nashville, TN*
- WP 200 **MALDI Imaging of Metabolites During the Germination of a Corn Seed;** Adam Feenstra^{1,2}; Andrew Korte^{1,2}; Young Jin Lee^{1,2}; ¹*Iowa State University, Ames, IA*; ²*Ames Laboratory/USDOE, Ames, IA*
- WP 201 **MALDI Imaging of Forensic Samples by Using a Spiral-Trajectory Ion Optics Time-of-Flight Mass Spectrometer;** Masaaki Ubukata; John Dane; Robert B. Cody; Donna Guarrera; Masateru Shibata; *JEOL USA, Inc., Peabody, MA*
- WP 202 **Localization of Endogenous Metabolites in Diabetic Mouse Brain Tissue Using MALDI Imaging Mass Spectrometry;** Michelle L. Reyzer¹; Andre Kleinridders²; Heather Ferris²; Jeffrey M. Spraggins¹; C. Ronald Kahn²; Richard M. Caprioli¹; ¹*Vanderbilt University, Nashville, TN*; ²*Joslin Diabetes Center, Harvard University, Boston, MA*
- WP 203 **MALDI-IMS-MSI Examination of Emollient Treated Living Skin Equivalent for Lipidomic and Small Molecule Analysis;** Christopher Mitchell; *BMRC, Sheffield, UK*
- WP 204 **Rat Skeletal Muscle Fiber Differentiation Using Mass Spectrometric Imaging (MSI) and Tandem MS (MSⁿ);** Yu-Hsuan Tsai¹; Timothy Garrett²; Christy Carter³; Richard Yost¹; ¹*Department of Chemistry, University of Florida, Gainesville, FL*; ²*Department of Pathology, University of Florida, Gainesville, FL*; ³*Dept. Aging & Geriatric Research, Univ of Florida, Gainesville, FL*

- WP 205 **Nanoparticle Assisted Laser Desorption Ionization Mass Spectrometry for Chemical Imaging of Plant Metabolites**; Gargey Yagnik^{1,2}; Andrew Korte^{1,2}; Young-Jin Lee^{1,2}; ¹Iowa State University, Ames, IA; ²Ames lab US DOE, Ames, IA
- WP 206 **Promethazine as a PET Probe for Amyloid Beta in Alzheimer's Disease Using MALDI Imaging Mass Spectrometry**; Chad Chumbley; Richard McClure; Michelle Reyzer; Wellington Pham; Richard Caprioli; *Vanderbilt University, Nashville, TN*
- WP 207 **Mass Spectrometry Imaging of Leaf Surface Using Platinum Vapor Deposition Assisted Laser Desorption/Ionization**; Tomoyuki Ozawa; Hideya Kawasaki; Ryuichi Arakawa; *Kansai University, Osaka, Japan*
- WP 208 **Spatial Correlation Combined with Hierarchical Clustering Analysis for Reducing Complex Multi-Dimensional MALDI Imaging Dataset**; Hernando Olivos^{1,2}; Kieran Neeson^{1,2}; Emmanuelle Claude^{1,2}; Mark Towers^{1,2}; ¹Waters Corporation, Manchester, UK; ²Waters Corporation, Beverly, MA
- WP 209 **Investigations into Adjuvant Efficacy upon the Surface Distribution and Penetration of a Herbicide into Plant Leaves by LAESI-MS Imaging**; Stephen Rumbelow¹; Gregory Lindner¹; Holly Henderson²; Alicia Morgan²; Haddon Goodman²; ¹Croda Inc, New Castle, DE; ²Protea Biosciences Group Inc., Morgantown, WV
- WP 210 **MALDI-MS Imaging and Quantitation of Acetylcholine in Mouse Brain after Administration of Cholinesterase Inhibitor Using Deuterated CHCA as Matrix**; Mohammadreza Shariatgorji¹; Nicoletta Schintu²; Per Svenningsson²; Per. E Andrén¹; ¹Uppsala University, Uppsala, Sweden; ²Karolinska Institute, Stockholm, Sweden
- WP 211 **Imprinting and MALDI-MS Imaging of Metabolites from Soybean Leaves**; Adam Klein^{1,2}; Gargey Yagnik^{1,2}; Young-Jin Lee^{1,2}; ¹Iowa State University, Ames, IA; ²Ames Laboratory US-DOE, Ames, IA
- WP 212 **In situ Quantitative Protein-Metal Co-Localization Using Imaging by Laser Ablation-Inductively Coupled Plasma-Mass Spectrometry**; Dominic Hare^{1,2}; Peng Lei²; Scott Ayton²; Rudolf Grimm³; Jessica George²; Robert Cherny²; Paul Adlard²; Ashley Bush²; David Finkelstein²; Philip Doble¹; ¹University of Technology, Sydney, Broadway, Australia; ²Florey Institute of Neuroscience and Mental Health, Melbourne, Australia; ³Agilent Technologies, Santa Clara, CA
- WP 213 **Carbon Nanodots as a Novel Matrix for the Analysis of Small Molecules by MALDI-TOF MS**; Chen Suming; Nie Zongxiu; *Institute of Chemistry Chinese Academy of Sciences, Beijing, China*
- WP 214 **Visualizing Metabolites in Plants and Insects with High Resolution AP-SMALDI MS Imaging**; Dhaka Bhandari; Andreas Roempp; Bernhard Spengler; *Justus Leibig University Giessen, Giessen, Germany*
- WP 215 **Distribution and Identification of Molecular Interactions between Tomato Roots and Bacterial Biofilms**; Delphine Debois¹; Emmanuel Jourdan²; Nicolas Smargiasso¹; Marc Ongena³; Edwin De Pauw¹; ¹University of Liege, Liège, Belgium; ²University of Liege - CWBI, Liege, Belgium; ³University of Liege Gembloux Agro-Bio Tech, Gembloux, Belgium
- WP 216 **Imaging of Lipids in Rat Sciatic Nerve**; Roberto Fernandez¹; Javier Diez-Garcia²; Miguel Alaminos³; Begoña Castro Feo²; Alejandro Garcia-Garcia²; Jose A. Fernandez¹; ¹Universidad del Pais Vasco, Leioa, Spain; ²Histocecell S. L., Derio, Sp; ³University of Granada, Granada, Spain
- WP 217 **Imaging Mass Spectrometry: Insights into the Interactive Metabolome of *Pseudomonas aeruginosa***; Vanessa Phelan¹; Wilna Moree¹; Alexandra Koumoutsis²; Suzanne Noble²; Pieter Dorrestein¹; ¹UC, San Diego, La Jolla, CA; ²University of California, San Francisco, CA
- WP 218 **MALDI Imaging MS of Metabolites in Human Cancer Tissues**; Tim Dekker; Emrys Jones; René van Zeijl; Willem Corver; Rob Tollenaar; André Deelder; Hans Morreau; Wilma Mesker; Liam McDonnell; *Leiden University Medical Center, Leiden, Netherlands*
- WP 219 **Identifying the Neuroanatomical Substrate Involved in ICVNPY Inhibition of Reinstatement of Cocaine-Induced Behavior in Rats by MALDI Imaging**; Leila Hosseinzadehshahri; *Buffalo, NY*
- WP 220 **Complimentary Use of MALDI FTICR-MS and TOF-SIMS Imaging Approaches in an Invertebrate**; Manuel Liebecke¹; Jens Fuchser²; Katherine A. Kellersberger³; Sarah Fearn⁴; David McPhail⁴; Jacob G. Bundy¹; ¹Department of Surgery and Cancer, Imperial College, London, UK; ²Bruker Daltonik, GmbH, Bremen, DE; ³Bruker Daltonics, Inc., Billerica, MA; ⁴Department of Materials, Imperial College, London, UK
- WP 221 **Structural Properties of Metabolites that Dominate the Ionization Efficiency in MALDI with 9-Aminoacridine as the Matrix**; Daichi Yukihira; Daisuke Miura; Yoshinori Fujimura; Mitsuru Shindo; Hiroyuki Wariishi; *Kyushu University, Fukuoka, Japan*
- Informatics: Small Molecule Identification and Characterization, 222 – 233**
- WP 222 **LC-LC-MS/MS Heart-Cut Approach for Software Assisted Pharmaceutical Impurity Identification from Non-MS Compatible LC Method Using Time of Flight Mass Spectrometer**; Siji Joseph; Ravindra Gudihal; Suresh Babu C.V; *Agilent Technologies, Bangalore, India*
- WP 223 **Scoring Methods for Interpreting Mass Spectra of Unknown Structures Using the MASSPEC Algorithm**; Marshall M. Siegel¹; Gary Walker¹; Yongdong Wang²; ¹MS Mass Spec Consultants, Fair Lawn, NJ; ²Cerno Bioscience, Norwalk, CT
- WP 224 **Fragmentation Outcome Modelling: Prototype Software for Prediction of CID Fragment Ions for Small Molecule Structures**; Kirsten Hobby¹; Richard Gallagher²; Neil Loftus¹; ¹Shimadzu MS/BU, Manchester, UK; ²AstraZeneca, Macclesfield, UK
- WP 225 **Automated Tool for Substructure Annotation of Accurate Mass MS/MS Spectra**; Yan Ma; Tobias Kind; Oliver Fiehn; *University of California, Davis, CA*
- WP 226 **Method for Assessing the Statistical Significance of Mass Spectral Similarities by Using BLAST Statistics**; Fumio Matsuda; Hiroshi Tsugawa; Eiichiro Fukusaki; *Osaka University, Suita, Japan*
- WP 227 **Accurate Mass Report Generation with Spectral Accuracy Isotope Scoring within a High Throughput Laboratory**; Christopher Williams¹; Yongdong Wang²; Leo Xu²; Ming Gu²; ¹Swansea University, Swansea, UK; ²Cerno Bioscience, Norwalk, CT
- WP 228 **Increasing LC/MS Workflow Capacity with Data Analysis by Exception Strategies**; Timothy Dunne; Chan C. K; Travis Mathewson; Holly Mckeith; Rosalia Gonzales; *Pfizer, Groton, CT*
- WP 229 **Critical Assessment of Small Molecule Identification: Results of the Inaugural CASMI Contest 2012**; Emma Schymanski; Steffen Neumann²; ¹Eawag: Swiss Federal Institute of Aquatic Science, Dübendorf, Switzerland; ²Leibniz Institute of Plant Biochemistry, Halle (Saale), Germany

- WP 230 **Towards a Workflow for the Automated Structural Elucidation of Unknowns from MS/MS Spectra;** Gerard Hopfgartner¹; Abhinandan KR¹; Emmanuel Varesio¹; Eva Duchoslav²; Lyle Burton²; Ron Bonner²; ¹University of Geneva, Geneva, Switzerland; ²AB Sciex, Concord, ON, Canada
- WP 231 **Identification of Unknown Metabolites Using Tandem MS: Improving the Quality of Fragmentation Trees;** Kai Dührkop; Kerstin Scheubert; Sebastian Böcker; *Friedrich-Schiller University Jena, Jena, Germany*
- WP 232 **Integrating Datasets from Drug Metabolism and Bioanalytical Studies and Fixing the Missing Link for Quan/Qual;** Mark D. Wrona; Craig Dorschel; Yun W. Alelyunas; Kevin Cook; Stephen McDonald; Paul D. Rainville; *Waters Corporation, Milford, MA*
- WP 233 **Characterization of Oxidative Forced Degradation Products Using Fragment Ion Search;** Chunang (Christine) Gu ¹; Jane Li¹; Kate Comstock²; Alan Deese¹; ¹Genentech, South San Francisco, CA; ²Thermo Fisher Scientific, San Jose, CA
- Small Molecules: Qualitative Analysis, 234 – 251**
- WP 234 **Characteristic Retro-Diels-Alder Fragmentation of Four Cephalosporins and Their Δ-3 Isomers in Positive and Negative Mode: An Experimental and Theoretical Study;** Jian-Qin Qian^{1,2}; Chang-Qin Hu¹; ¹National Institutes for Food and Drug Control, Beijing, China; ²Peking Union Medical College, Beijing, China
- WP 235 **Fundamental Study of Mechanisms of Collision-Activated Dissociation of Ionized Asphaltenes' Model Compounds Using a Linear Quadrupole Ion Trap Mass Spectrometer;** James Riedeman; Nadine Njoya; David Borton; Matt Hurt; Hilikka Kenttämää; *Purdue University, West Lafayette, IN*
- WP 236 **Structural Elucidation of Small Drug Molecules Using Q-TOF, LTQ-Orbitrap and GC-ESI-MS with Supersonic Molecular Beams (SMB);** Lena von Sydow¹; Anja Ekdahl¹; Carina Leandersson¹; Marie Tysk-Rönnqvist²; Aviv Amirav³; ¹AstraZeneca R&D, Mölndal, Sweden; ²AstraZeneca Operations, Södertälje, Sweden; ³Tel Aviv University, Tel Aviv, Israel
- WP 237 **Novel Glutathione Conjugates of Phenyl Isocyanate Studied by Ultra-Performance Liquid Chromatography/ ElectroSpray Ionization Mass Spectrometry;** Tove Johansson Mali'n; Crister Åstot; *Swedish Defense Research Agency, Umeå, Sweden*
- WP 238 **Mass Spectrometric Detection of Local Anesthetics Masking Prohibited Practice of Inducing Limb Soring in Walking Horses to Enhance Appeal;** Szabolcs Szarka; Laszlo Prokai; *UNT Health Science Center, Fort Worth, TX*
- WP 239 **Investigation of an Impurity in Carboplatin through a Forced Degradation Study;** Jeffrey Selenka¹; Cynthia Sanderson²; ¹PPD Inc., Madison, WI; ²AB SCIEX, Framingham, MA
- WP 240 **Unusual Degradation Products of Selective β-Amyloid Aggregation Inhibitor BTB01473;** Ludmila Alexandrova¹; Paul A. Novick²; Vijay S. Pande²; Allis Chien¹; ¹Stanford University Mass Spectrometry, Stanford, CA; ²Stanford University, Chemistry Department, Stanford, CA
- WP 241 **On-line Nanopore Optical Interferometry-Mass Spectrometry for Screening and Quantifying Small Molecule-Protein Interactions;** Iain D G Campuzano; Paul D Schnier; Klaus Michelsen; *Amgen Inc., Thousand Oaks, CA*
- WP 242 **Fast Analysis of Stereo and Structural Related Isomers using Supercritical Fluid Chromatography-Mass Spectrometry;** Yugin Dai; Lisa Zang; *Agilent Technologies, Santa Clara, CA*
- WP 243 **Principal Component Analysis of Laser Desorption Postionization Mass Spectrometry Data for Mixed/ Coculture Biofilms;** Chhavi Bhardwaj¹; Yang Cui¹; Theresa Hofstetter²; Suet Liu²; Hans C. Bernstein³; Ross P. Carlson³; Musahid Ahmed²; Luke Hanley¹; ¹University of Illinois at Chicago, Chicago, IL; ²Lawrence Berkeley National Laboratory, Berkeley, CA; ³Montana State University, Bozeman, MT
- WP 244 **New Methodology for the Analysis of Highly Hydrophobic Calixarenes by MALDI-TOF Mass Spectrometry;** Vincent Guérineau¹; Vincent Huc²; David Touboul¹; Baptiste Boutonnet²; Cyril Martini²; Alain Brunelle¹; ¹CNRS, Institut de Chimie des Substances Naturelles, Gif-sur-Yvette, France; ²Université Paris-Sud, ICMMO, Orsay, France
- WP 245 **Creation of Uniquely Deep and Rich Datasets for the Structural Elucidation of Metabolites in Quan/Qual Analyses;** Jonathan L. Josephs¹; Timothy Stratton²; William Humphreys¹; ¹Bristol-Myers Squibb, Pennington, NJ; ²Thermo Scientific, San Jose, CA
- WP 246 **Application of Mass Spectrometry to Support Authentication and Characterization of Counterfeit Pharmaceuticals;** Michael Peddicord; Charles Pathirana; Holly Shackman; Mark Bolgar; Scott Miller; *Bristol-Myers Squibb, New Brunswick, NJ*
- WP 247 **Application of MALDI-Mass Spectrometry to Investigation of Active Layer Degradation in Organic Solar Cells;** Evgenia Akhmetova; Matthew McMahon; Santhosh Narasimhachary; Charles L. Wilkins; *University of Arkansas, Fayetteville, AR*
- WP 248 **LCMSMS Technique Reveals the Structure of New Impurity in Valproic Acid, an Anticonvulsant Drug – Unseen in GC Analysis!;** Arugavur Ponnusamy Kannan¹; D. Easwaramoorthy¹; Raman Palvannanathan²; Mohan Kasi²; Saravanan Subramanian²; Janani Thyagarajan²; Venkat Manohar²; ¹Dept. of Chemistry B.S.Abdur Rahman University, Chennai, India; ²IICMS, Chennai, India
- WP 249 **Understanding the role of Solvent Media towards Peroxide Degradation Products of Lenalidomide, an Anticancer Compound Using LCMSMS Technique;** Janani Thyagarajan¹; Raman Palvannanathan¹; Mohan Kasi¹; Govindarajan Chandramohan¹; Saravanan Subramanian¹; Thaminun Ansari Abubacker²; Venkat Manohar¹; ¹IICMS, Chennai, India; ²Muthurangam Govt. Arts College, Vellore, Tamil Nadu, India
- WP 250 **Characterization of Hitherto Unknown Process Related Impurities of Crizotinib through Multiple Collision LCMSMS Analysis;** Saravanan Subramanian¹; Thaminun Ansari Abubacker²; Mohan Kasi¹; Govindarajan Chandramohan¹; Rampriya Uthayakumar¹; Raman Palvannanathan¹; Arvind Thyagarajan¹; Venkat Manohar¹; ¹IICMS, Chennai, India; ²Muthurangam Govt. Arts College, Vellore, Tamil Nadu, India
- WP 251 **Identification of an Unknown Photo-degradant in Active Pharmaceutical Ingredient;** Meng Xu; Hongfei Yue; John Castoro; *Bristol-Myers Squibb, New Brunswick, NJ*
- Drug Metabolism: Qualitative Analysis, 252 – 282**
- WP 252 **Identification of Tamoxifen Metabolites in Human Serum using the iHumite Workflow: Metabolite Prediction, LC-HRMS and MS Vendor Independent Data Processing;** Peter L. Jacobs^{1,2}; Lars Ridder³; Marco Ruijken⁴; Hilde Rosing⁵; Nynke G.L. Jager⁶; Jos H. Beijnen⁵; Richard R. Bas¹; William D. van Dongen¹; ¹TNO Triskelion, Zeist, The Netherlands; ²MSam, Oss, The Netherlands; ³Wageningen University, Wageningen, The Netherlands; ⁴MsMetrix, Maarsse, The Netherlands; ⁵Slotervaart Hospital, Netherlands Cancer Institute, Amsterdam, The Netherlands

- WP 253 **IPeaks: Isotope Pattern Matching for Fast and Sensitive Drug Metabolite Detection using High Resolution Mass Spectrometry**; Marco Ruijken; *MsMetrix, Maarssen, Netherlands*
- WP 254 **Evaluation of Xevo G2-S Q-ToF and UNIFI Software for the Identification and Relative Quantitation of Metabolites**; Richard Clayton¹; Richard Lock²; Lucy Fernandes²; ¹Covance, Harrogate, UK; ²Waters Ltd, Manchester, UK
- WP 255 **Comparison of MS/MS^{all} with SWATH™ and Information Dependent Acquisition Methods for Increased Throughput in Metabolic Soft-Spot Identification Using HRMS**; Veronica Zelesky¹; Richard Schneider¹; John Janiszewski¹; Yves LeBlanc²; Eva Duchoslav²; ¹Pfizer Inc., Groton, CT; ²AB SCIEX, Concord, Canada
- WP 256 **Automated Metabolite Identification and Profiling in Non-Specific Fragmentation High Resolution Accurate Mass Spectrometry Data**; Eva Duchoslav; Gordana Ivosev; Ignat Shilov; Hesham Ghobarah; Lyle Burton; *AB SCIEX, Concord, Canada*
- WP 257 **Increasing the Number of Identified Metabolites from *in-vitro* and *in-vivo* Samples with All Ion Fragmentation on an Orbitrap Mass Spectrometer**; Joseph T. Marini; Jie Ding; Donald L. McKenzie; *Covance, Madison, WI*
- WP 258 **Multiple Fragmentation Techniques for Comprehensive Metabolite Identification**; Jack Cunliff¹; Kelly Wang²; Gene Eiserberg²; Tim Stratton¹; Kate Comstock¹; ¹ThermoFisher Scientific, San Jose, CA; ²Gilead Sciences, Inc., Foster City, CA
- WP 259 **Using HRAM Survey Analysis Combined with Rapid MS2 Data to Develop a Fragmentation Based Detection Workflow for Structure ID Acquisition**; Tim Stratton; *Thermo Fisher Scientific, San Jose, CA*
- WP 260 **Electrochemically Initiated Reactions Upfront MS - EC/MS an Unknown Panacea?** Martin Eysberg; Agnieszka Kraj; Hendrik-Jan Brouwer; Nico Reinhoud; Jean-Pierre Chervet; *Antec, Zoeterwoude, The Netherlands*
- WP 261 ***In vitro* Mimicry of Metabolism of Xanthohumol by Electrochemistry Combined with LC-DAD-MS/MS**; Andries P. Bruins¹; Jan F. Stevens²; Ulrik Jurva³; ¹University of Groningen, Groningen, Netherlands; ²Oregon State University, Corvallis, OR; ³AstraZeneca, Mölndal, Sweden
- WP 262 **Use of On-Line Electrochemistry/High-Resolution Mass Spectrometry for the Estimation of the Site of Glucuronidation**; Kazuyoshi Nozaki¹; Kenji Tabata¹; Toshio Teramura¹; Mitsuo Takayama²; ¹Astellas Pharma Inc., Tsukuba, Japan; ²Yokohama City University, Yokohama, Japan
- WP 263 **Automation Strategies for an Electrochemistry/MS Method for Metabolism Studies**; Hannah Simon; Michael Kießhauer; Uwe Karst; *University of Münster, Münster, Germany*
- WP 264 **Utility of Data-Independent LC/MS^E with Ion Mobility to Increase Coverage of Nefazodone Metabolites from *in-vivo* Matrices**; Joseph T. Marini¹; Andrew G. Baker²; Jie Ding¹; Donald L. McKenzie¹; ¹Covance, Madison, WI; ²Waters Corporation, Pleasanton, CA
- WP 265 **Evaluation of Differential Mobility Techniques for Quantitative and Qualitative Identification Workflows in Pharmaceutical Environments**; Keith Goodman; Paul Clemens; James Ferguson; Loren Olson; *AB SCIEX, San Jose, CA*
- WP 266 **Analysis of Urine Samples using Microflow LC Coupled to Differential Ion Mobility Spectrometry**; Carmal Seto; Pauline Vollmerhaus; Alina Dindyal-Popescu; Deolinda Fernandes; Takeo Sakuma; *AB SCIEX, Concord, Canada*
- WP 267 **A Novel Method for the Determination of the Site of Glucuronidation by Ion Mobility Spectrometry-Mass Spectrometry**; Atsushi Shimizu; *Taiho Pharmaceutical, Tsukuba City, Japan*
- WP 268 **Identification of Human Drug Metabolites with Poor Mass Spectrometric Response Using LC-MS Assisted by TopCount Radioactive Detection**; Manfred Zell; Christophe Husser; *F. Hoffmann-La Roche Ltd, Basel, Switzerland*
- WP 269 **Investigation of Metabolism of Peptide Drug by ¹²⁷I-tagging Follow by Analyses Using Capillary UPLC Coupled to ICP-MS and ESI-LTQ/Orbitrap**; Heng-Keang Lim; *Janssen Pharmaceuticals R&D, Raritan, NJ*
- WP 270 **Molecular Level Probing of the Mechanism and Biological Activity of Metal-based Anticancer Drug Candidates by ESI FT-ICR Mass Spectrometry**; Zhihua Yang; Dajena Tomco; Claudio N. Verani; Mary T. Rodgers; *Wayne State University, Detroit, MI*
- WP 271 **Characterization of Bromopride and Metoclopramide N-O-glucuronides in Human Hepatocytes by HPLC/ESI/FTMS/MS and Hydrogen Deuterium Exchange**; Jennifer L. Bushee¹; Christine E. Dunne²; Kevin Colizza¹; Amanda Cirello¹; Upendra A. Argikar¹; ¹Novartis, Cambridge, MA; ²Northeastern University, Boston, MA
- WP 272 **Mass Spectrometric Study of the Nitration and Halogenation of the β 2-Agonist Albuterol**; Larry Sallans¹; Stephen Macha¹; Kari Brown¹; Dennis McGraw^{1,2}; Melinda Butsch Kovacic^{1,3}; Sara Stigler^{1,3}; Bradley Britigan^{4,5}; ¹University of Cincinnati, Cincinnati, OH; ²Veterans Affairs Medical Center, Cincinnati, OH; ³Cincinnati Children's Hospital, Cincinnati, OH; ⁴University of Nebraska Medical Center, Omaha, NE; ⁵Veterans Affairs Medical Center - NE/Western IA, Omaha, NE
- WP 273 **Investigations of Sulfation Phenotyping and Kinetics of Raloxifene and the Active Metabolites of Tamoxifen**; Lori Coward¹; Greg Gorman¹; Teresa Wilborn²; Gwen Nance²; ¹Pharmaceutical Sciences Research Institute, Samford University, Birmingham, AL; ²McWhorter School of Pharmacy, Samford University, Birmingham, AL
- WP 274 **Turning Drug Glucosides into Glucuronides – Making Fungal Incubations Work Together with Chemical Derivatization**; Axel Rydevik¹; Ulf Bondesson^{1,2}; Mario Thevis³; Mikael Hedeland^{1,2}; ¹Uppsala University, Uppsala, Sweden; ²National Veterinary Institute (SVA), Uppsala, Sweden; ³German Sport University, Cologne, Germany
- WP 275 **Unusual Phase I and Phase II Metabolites Prepared by Biotransformation and Their Unexpected MS/MS Fragmentation**; Andreas Fredenhagen; Juergen Kuehnoel; Matthias Kittelmann; Kirsten Schroer; Stephan Luetz; Reiner Aichholz; Lukas Oberer; *Novartis Institutes for BioMedical Research, Basel, Switzerland*
- WP 276 **Evaluation of the Fungus *Cunninghamella elegans* as a Model for the Formation of Reactive Metabolites Using Glutathione Trapping and UHPLC/HRMS**; Axel Rydevik²; Anna Hellqvist²; Ulf Bondesson¹; Mikael Hedeland¹; ¹Nat'l Veterinary Institute, Uppsala, Sweden; ²Uppsala University, Uppsala, Sweden
- WP 277 **UHPLC-MS-MS with Fast Precursor Ion and Neutral Loss Scanning and Glutathione Trapping for Detecting Reactive Metabolites of Licorice**; Ke Huang; Richard B. van Breemen; *University of Illinois College of Pharmacy, Chicago, IL*
- WP 278 **A Reactive Metabolite Investigation of Fenclozic Acid by LC-UV-MSMS**; Scott Martin¹; Malcolm clench²; ¹Astrazeneca, Macclesfield, UK; ²Sheffield Hallam university, Sheffield, UK

- WP 279 **Proteomic Characterization of Ocular S9 Fractions for Biotransformation Studies in Ophthalmic Drug Discovery**; [Joshua L. Johnson](#); Jennifer L. Bushee; Upendra A. Argikar; Amin Kamel; Shawn Harriman; *NIBR, Cambridge, MA*
- WP 280 **A Comparison of LC-MS and a Prototype Microfluidics-MS Device in the Metabolite Identification of *in-vitro* and *in-vivo* Samples**; [Philip Tiller](#)¹; Mark D. Wrona²; Yun W. Alelyunas²; Catalin Doneanu²; Paul D. Rainville²; ¹*RMI Laboratories, North Wales, PA*; ²*Waters Corporation, Milford, MA*
- WP 281 **Characterization of Long Lasting Plasma Radioactivity in Monkey following Single Oral Dose of C-14 labeled Merck Compound A**; [Yuexia Liang](#); Sheri Smith; Kelem Kassahun; Thomayant Prueksaritanont; Dan Cui; *PPDM, Merck, West Point, PA*
- WP 282 **LC-MSⁿ Analysis of Metabolites of ST-255, a Novel Anti-Lassa Virus Compound**; [X. Steven Yan](#); Brian Furmanski; Daniela Kropf; Dongcheng Dai; Jim Burgeson; Candace Lovejoy; Sean Amberg; Shanthakumar Tyavanagimatt; Janet Leeds; *SIGA Technologies, Inc., Corvallis, OR*
- Drug and Metabolite Analysis: Novel Approaches for Dried Biological Samples, 283 – 291**
- WP 283 **Determination of Opiates and Opioids in Dried Blood Spots Using Novel Flow-Through Technology Coupled to LC/MS/MS**; [Dennis Nagtalon](#)¹; Kevin McCann¹; Na Pi Parra¹; Ken Lewis²; ¹*Agilent Technologies, Santa Clara, CA*; ²*OpAns, Durham, NC*
- WP 284 **Rapid Online LC-TOF-MS Analysis of Glycated Hemoglobin from dried Blood Spots Using Automated Direct Flow-Through Elution**; [Robert J. Seward](#)¹; Dhvani Shah¹; Jonathan Wilson¹; Catherine Stacey¹; Christel Hempen²; ¹*PerkinElmer, Waltham, MA*; ²*Spark Holland, Emmen, The Netherlands*
- WP 285 **Advancing Quantitative Dried Blood Spot Analysis Using Temperature-Enhanced Flow-Through Desorption Coupled Online to Solid-Phase Extraction and Mass Spectrometry**; [Christel Hempen](#); Lena Knecht; Bert Ooms; *Spark Holland B.V., Emmen, Netherlands*
- WP 286 **Application of Micro Fluidic LC/MS/MS for the Quantification Rosuvastatin from Dried Blood Spots: A Clinical Study Example**; Robert Plumb²; [Nicola Gray](#)¹; Ian Wilson²; Paul Rainville¹; ¹*Waters, Milford, MA*; ²*Imperial College, London, UK*
- WP 287 **Direct Automated Analysis of Dried Blood Spots (DBS) by 2D LC-HRMS: Effects of Hematocrit on DBS Results**; [Regina Oliveira](#)¹; Jack Henion¹; Enaksha Wickremsinhe²; ¹*Advion Bioanalytical Labs, a Quintiles Company, Ithaca, NY*; ²*Drug Disposition, Eli Lilly and Company, Indianapolis, IN*
- WP 288 **Development of a Molecular Filtration Membrane Substrate as an Alternative for DBS LC/MS Bioanalyses**; [Robert Sturm](#)¹; Jack Henion¹; Richard Abbott²; Phillip Wang³; ¹*Advion Bioanalytical Labs, a Quintiles company, Ithaca, NY*; ²*Shire Pharmaceuticals, Basingstoke, UK*; ³*Shire Development, Wayne, PA*
- WP 289 **Comparison of Proteins in Liquid and Dried Blood Spot Samples by HPLC/ESI-MS/MS**; [Andrew Chambers](#)¹; Andrew Percy¹; Darryl Hardie¹; Christoph Borchers^{1,2}; ¹*University of Victoria-Genome BC Proteomics Centre, Victoria, Canada*; ²*Dept of Biochemistry and Microbiology, U Victoria, Victoria, Canada*
- WP 290 **Heat Stabilized Blood Spots as Alternative to Standard DBS Sampling – Analyte Stability and Coextraction of Matrix Proteins**; [Karl Skold](#)¹; David Zeeberg¹; Daniel Blessborn²; Karnrawee Kaewkhao²; Olof Skold¹; Martin Ahnoff³; ¹*Denator AB, Uppsala, Sweden*; ²*Mahidol University, Bangkok, Thailand*; ³*University of Gothenburg, Gothenburg, Sweden*
- WP 291 **Determination of Eight Metabolically Unstable Drugs in Blood by Heat-Stabilized DBS and LC-MS/MS**; [Olof Skold](#)¹; Karl Skold¹; David Zeeberg¹; Gunnar Häggglund⁴; Eskil Hermansson⁴; Peter Abrahamsson²; Martin Ahnoff³; ¹*Denator AB, Gothenburg, Sweden*; ²*Agilent Technologies, Gothenburg, Sweden*; ³*University of Gothenburg, Gothenburg, Sweden*; ⁴*Q&Q labs AB, Gothenburg, Sweden*
- Metabolomics: Quantitative Analysis, 292 – 311**
- WP 292 **Targeted Ion Mobility and Liquid Chromatography-Mass Spectrometry Metabolomic Strategies for Glucose Quantification in Exhaled Breath Condensate for Cystic Fibrosis Studies**; [María Monge](#)¹; Jose Perez¹; Prabha Dwivedi¹; Manshui Zhou¹; Arlene Stecenko²; Facundo Fernández¹; ¹*Georgia Institute of Technology, Atlanta, GA*; ²*Emory University School of Medicine, Atlanta, GA*
- WP 293 **Quantitative Analysis of Small Molecule Neurotransmitters Secreted by hESCs Derived Serotonergic Neurons via Capillary Electrophoresis-Electrospray Ionization-Multiple Reaction Monitoring**; [Xuefei Zhong](#); Hui Ye; Jianfeng Lu; Su-chun Zhang; Lingjun Li; *University of Wisconsin, Madison, WI*
- WP 294 **Quantification of AQC Derivatized Polyamines in Bovine Intraluminal Fluids by UPLC-MS/MS after Solid Phase Extraction**; [Maxim Maheux](#); Claude-Paul Lafrance; *TransBIOTech, Levis, Canada*
- WP 295 **The Potential of Two Dimensional Liquid Chromatography in Mass Spectrometric Assays of the Primary Metabolome**; [Kristaps Klavins](#)^{1,2}; Dinh Binh Chu¹; Stefan Neubauer¹; Stephan Hann^{1,2}; Gunda Koellensperger^{1,2}; ¹*BOKU - Vienna, Vienna, Austria*; ²*Austrian Centre of Industrial Biotechnology (ACIB), Vienna, Austria*
- WP 296 **Simultaneous Analysis of Hydrophilic Metabolites on Central Carbon Metabolic Pathway, Amino Acids and Nucleotides by Triple Quadrupole LC/MS/MS**; [Tsuyoshi Nakanishi](#)¹; Takako Hishiki^{2,3}; Makoto Suematsu^{2,3}; ¹*Shimadzu Corporation, Kyoto, Japan*; ²*School of Medicine, Keio University, Tokyo, Japan*; ³*JST ERATO Suematsu Gas Biology Project, Tokyo, Japan*
- WP 297 **Differential Analysis for Quantitative Metabolomics Using Isotope-Labeling and LC-HRMS: Data Processing Strategies**; [Michel Wagner](#)¹; Yasmin Boukhedimi¹; Leanne Ohlund¹; Tze Chieh Shiao¹; Amelie Vezina¹; Borhane Annabi¹; Alex P. Parker²; Sarah Jenna¹; Rene Roy¹; Lekha Sleno¹; ¹*UQAM, Montreal, Canada*; ²*University of Montreal, Montreal, CA*
- WP 298 **Mild Base Catalyzed Deuteration of Polyphenolics for Improving their Quantification in Cold Hardy Wines by Multiple Reaction Monitoring Mass Spectrometry**; [Cecilia Gentle](#)^{1,2}; Mikel Roe¹; Adrian Hegeman¹; Jerry Cohen¹; ¹*University of Minnesota, St. Paul, MN*; ²*Anoka-Ramsey Community College, Coon Rapids, MN*
- WP 299 **An Isotope Label Free Quantification Method for Plant Secondary Metabolites by New Developed Make-Up Liquid Chromatography System**; [Che-I Liao](#); Ya-an Lin; Min-Jane Chen; Kuo-Lung Ku; *National Chiayi University, Chiayi City, Taiwan*
- WP 300 **Separation and Complementary ESI-MS/MS and ICP-DRC-MS Detection of Coenzyme A Compounds**; [Stefan Neubauer](#); Dinh Binh Chu; Kristaps Klavins; Stephan Hann; Gunda Koellensperger; *BOKU - Vienna, Vienna, Austria*

- WP 301 **Addressing the Bottlenecks in Metabolomics: Making an Expedient Transition from Global Profiling to Targeted Quantitation;** Mark Sanders¹; Kevin McHale¹; Adam Takvam²; Michael Athanas³; Mark Szewc¹; Jamie Humphries²; ¹Thermo Fisher Scientific NJ, Somerset, NJ; ²Thermo Fisher Scientific TX, Austin, TX; ³Thermo Fisher Scientific CA, San Jose, CA
- WP 302 **Development, Validation and Application of a Novel UPLC-ESI/MS/MS Method for Simultaneous Quantitative Profiling of 14 Endocannabinoids in Biological Matrices;** Sandra Gouveia; Malin Nording; *Department Chemistry, Umea University, Umea, Sweden*
- WP 303 **Quantitative and Qualitative Metabolomics of Neuronal Cell Culture Challenged with Illicit Drugs: A Unified GC/MS/MS and LC/MS/MS approach;** Maria Wenner; Catherine Rawlinson; Joel Gummer; Ian Mullaney; Garth Maker; Robert Trengove; *Murdoch University, Murdoch, Australia*
- WP 304 **Use of CI and EI for Enhanced Selectivity and Sensitivity for the Analysis of Phytohormones;** Catherine Rawlinson¹; Lars Kamphuis²; Paul Wynne^{4,5}; Karam Singh²; Riki Kitano³; Bruce Fraser^{4,5}; Robert Trengove¹; ¹Murdoch University, Murdoch, Australia; ²CSIRO Plant Industry, Perth, Australia; ³Shimadzu Corporation, Tokyo, Japan; ⁴Shimadzu Scientific Instruments (Oceania), Palmerston North, New Zealand; ⁵Shimadzu Scientific Instruments (Oceania), Melbourne, Australia
- WP 305 **Screening of Nandrolone Misuse in Horses by GC-MS/MS Steroid Profiling and Confirmation by UPLC-MS/MS Steroid Esters Detection in Blood;** Zied Kaabia^{1,2}; Gaud Dervilly-Pinel¹; Marie-Agnès Popot²; Ludovic Bailly-Chouribery²; Philippe Plou²; Yves Bonnaire²; Bruno Le Bizec¹; ¹LABERCA, Nantes, France; ²LCH, Paris, France
- WP 306 **Highly Sensitive Method for Quantification of Estradiol, Estrone, and Keto-Androgen Metabolites from Human Serum;** Lisa Bottalico^{1,2}; Kannan Rangiah³; Jasbir Arora⁴; Clementina Mesaros^{1,2}; Ian A. Blair^{1,2}; ¹Center for Cancer Pharmacology, Philadelphia, PA; ²University of Pennsylvania School of Medicine, Philadelphia, PA; ³NCBS, Center for Cellular and Molecular Platforms, Bangalore, India; ⁴HFL Sport Science, LGC Health Sciences, KY
- WP 307 **Comprehensive Analysis of Neurotransmitters from Planarian Extract Using UHPLC-MS/SRM Method;** Kannan Rangiah¹; Dasaradhi Palakodeti²; ¹Scientist, C-CAMP, Bangalore, India; ²Scientist, inSTEM, Bangalore, India
- WP 308 **Metabolomics Investigation of Ovalbumin-Induced Murine Asthmatic Model;** Jun Yang; Jennifer Bratt; Lisa Franzi; Nicholas Kenyon; Bruce Hammock; *University of California, Davis, CA*
- WP 309 **Investigation of Gender Differences in the Hepatic Metabolome of Genotyped Sockeye Salmon (*Oncorhynchus nerka*) Using a Targeted Metabolomics Approach;** Jonathan Benskin^{1,2}; Michael Ikonomou²; Ralf Bogumil³; John Cosgrove¹; ¹AXYS Analytical Services Ltd., Sidney, Canada; ²Institute of Ocean Sciences, Sidney, Canada; ³BIOCRATES Life Sciences AG, Innsbruck, Austria
- WP 310 **Dynamics of Acylsugar Biosynthesis and Metabolism in *Solanum* Glandular Trichome Development;** Zhenzhen Wang; A. Daniel Jones; *Michigan State University, East Lansing, MI*
- WP 311 **Targeted Metabolomic Analysis of Nucleosides in Biological Fluids by Isotope Dilution Liquid Chromatography Electrospray Ionization Tandem Mass Spectrometry;** Jaeman Byun; Anna Mathew; Subramaniam Pennathur; *University of Michigan, Ann Arbor, MI*
- WP 312 **Metabolomic Profiling Reveals Biochemical Pathways Associated with Ethnic Disparity in Breast Cancer;** Nagireddy Putluri¹; Atsushi Terunuma^{2,3}; Tim D. Veenstra⁴; Prachi Mishra^{2,3}; Ewy A. Mathe^{2,3}; Tiffany H. Dorsey⁴; Ming Yi⁴; Tiffany A. Wallace⁴; Haleem J. Issaq⁴; J. Keith Killian⁴; Holly S. Stevenson⁴; Edward D. Karoly⁵; King Chan⁴; Susmita Samanta¹; Daniel C. Edelman⁴; Jacob Wulff⁴; Adrienne M. Starks^{2,3}; Yinneng Yang^{2,3}; Rick A. Kittles⁶; Harry G. Yfantis⁷; Dong H. Lee⁷; Rachel Schiff¹; Robert M. Stephens⁴; Paul S. Meltzer⁴; Arun Sreekumar¹; Stefan Amb⁴; ¹Baylor College of Medicine, Houston, TX; ²National Institutes of Health, Bethesda, MD; ³National Institutes of Health, Bethesda, MD; ⁴National Cancer Institute, Bethesda, MD; ⁵Metabolon Inc, Durham, NC; ⁶University of Illinois, Chicago, IL; ⁷Pathology and Laboratory Medicine, Baltimore, MD
- WP 313 **Application of Metabolomics to Characterize Differences between Plasma and Nipple Aspirate Fluid, a Potential Source of Novel Breast Cancer Biomarkers;** Jessica Miller¹; Patricia Thompson¹; Andrew Baker^{2,3}; Steven Lai^{2,3}; H-H Sherry Chow¹; ¹University of Arizona Cancer Center, Tucson, AZ; ²Waters Corporation, Pleasanton, CA; ³Waters Corporation, Milford, MA
- WP 314 **Metabolomic Comparison of Serum Changes in Focal Segmental Glomerulosclerosis (FSGS) – Preliminary Study;** Chih-Chuan Yu¹; Chen-Chin Chang¹; Lai-Chuan Chang¹; Hung-Chun Chen²; ¹Biotech Total Solutions Co., Ltd., Taipei, Taiwan; ²Kaohsiung Medical University, Kaohsiung, Taiwan
- WP 315 **MALDI-TOF MS Quantitation of Targeted Metabolite Disease Markers from Human Plasma;** Nivedita Bhattacharya¹; Ajeet Singh¹; Avinash Ghanate¹; Gaurav Bharadwaj²; Trayambak Basak²; Shantanu Sengupta²; Venkateswarlu Panchagnula¹; ¹CSIR-National Chemical Laboratory, Pune, India; ²CSIR-Institute of Genomics and Integrative Biology, New Delhi, India
- WP 316 **Metabolomic Study of Malaria-Borrelia Co-Infection in Murine Model;** Izabella Surowiec¹; Maria Nelson²; Sven Bergström²; Johan Trygg¹; Johan Normark²; ¹Department of Chemistry, Umeå University, Umeå, Sweden; ²Department of Molecular Biology, Umeå University, Umeå, Sweden
- WP 317 **A Global LC-MS Metabolomics Approach for Biomarker Identification in Patients with Nonalcoholic Fatty Liver Disease;** Rainey Patterson¹; Romina Lomonaco²; Nishanth Sunny²; Kenneth Cusi²; Timothy Garrett³; David Powell¹; Richard Yost¹; ¹Department of Chemistry, University of Florida, Gainesville, FL; ²Division of Endocrinology, University of Florida, Gainesville, FL; ³Department of Pathology, University of Florida, Gainesville, FL
- WP 318 **Evaluation of Home Sampling DBS and Micro Fluidic LC/MS for Monitoring the Effects of Rosuvastatin on Cholesterol and Triglyceride Levels;** Robert Plumb¹; Ian Wilson¹; Nicola Gray¹; Paul Rainville²; ¹Imperial College, London, UK; ²Waters, Milford, MA
- WP 319 **Determination of Hydroxyecosatetraenoic Acids in Prostate Cancer Serum Samples Using UHPLC-MS/MS;** Giovanny Rodríguez-Blanco¹; Peter Burgers¹; Lennard Dekker¹; Jan Ijzerman²; Mirella Vredenburg-van den Berg³; Ellen Schenk³; Guido Jenster³; Theo Luider¹; ¹Neurology Department, Erasmus Medical Center, Rotterdam, Netherlands; ²Department of Surgery, Erasmus Medical Center, Rotterdam, Netherlands; ³Urology Department, Erasmus Medical Center, Rotterdam, Netherlands
- WP 320 **Plasma Metabolites Associated with Acute Exacerbations of Chronic Obstructive Pulmonary Disease;** Makedonka Gulcevi¹; Cavan Reilly¹; Steven

- Harvey¹; Joseph Dalluge¹; Prescott Woodruff²; Christine Wendt¹; ¹University of Minnesota, Minneapolis, MN; ²University of California, San Francisco, CA
- WP 321 **Assessment of Gut Microbiome Using Metabolomics Analysis of Body Fluids**; Shucha Zhang; Karen Corbin; Xueqing Zhao; Steven Zeisel; *UNC Chapel Hill, Kannapolis, NC*
- WP 322 **Identification of Metabolites Cleared by the Kidney with High Efficiency Using Orbitrap Metabolomics Platform**; Pavel Aronov¹; Tammy Sirich²; Natalie Plummer²; Allis Chien³; Timothy Meyer²; ¹Thermo Scientific, San Jose, CA; ²Department of Medicine, Stanford University, Stanford, CA; ³Mass Spectrometry Laboratory, Stanford University, Stanford, CA
- WP 323 **Metabolomics Input in a Search for Chronic Kidney Disease Targets Utilizing Clinical Cross-Platform Omics Data Integration**; Vladimir Tolstikov; Alexander Nikolayev; Dennis Laska; Ming-Shan Kuo; Kevin Duffin; *Eli Lilly and Company, Indianapolis, IN*
- Food “omics” MS Characterization of Food and Nutritional Supplements, 324 – 355**
- WP 324 **An Advanced CE-QTOF Technique for the Rapid Characterization of Amino Acids in Herbal Medicines**; Tao Bo; Zhengxiang Zhang; Xiaorong Ran; Jianzhong Li; *Agilent Technologies, Beijing, China*
- WP 325 **Sake-omics: Development and Application of Advanced GC-MS Methods for Speciation of Quality Components in Sake Varietals**; Doug D. Carlton Jr.; Kevin A. Schug; *The University of Texas at Arlington, Arlington, TX*
- WP 326 **Rapid Analysis of Triglycerides and Fatty Acids in Food Oils Using DART-MS with High-Speed Polarity Switching**; Shun Wada¹; Jun Watanabe²; Keiko Matsumoto²; Teruhisa Shiota³; Shingo Toda³; ¹Japan Inst. of Oil & Fats, Other Foods Inspection, Tokyo, Japan; ²Shimadzu Corporation, Kyoto, Japan; ³AMR, Inc., Tokyo, Japan
- WP 327 **Quantitative Analysis of α - and β - acids in Hops by Paper Spray Ionization**; Gregg Hasman; Andre Venter; *Western Michigan University, Kalamazoo, MI*
- WP 328 **Rapid Amino Acid Content Analysis in Soybeans and Other Foodstuffs Utilizing Microwave Hydrolysis Coupled with Desorption Electrospray Ionization Mass Spectrometry**; Jonathan R. Person; Christopher C. Mulligan; *Department of Chemistry, Illinois State University, Normal, IL*
- WP 329 **New Method for the Analysis of Antioxidants in Vegetable Oils Using an Hybrid SFC/UHPLC System with MS Detection**; Patric Hoerth¹; Maria Rambla-Alegre²; Martin Vollmer¹; Gerd Vanhoenacker²; ¹Agilent Technologies, Waldbronn, Germany; ²Research Institute for Chromatography, Kortrijk, Belgium
- WP 330 **Use of Supercritical Fluid Chromatography /Mass Spectrometry for Rapid Separation of Fat Soluble Vitamins, A, D, E and K**; Jennifer Van Anda¹; Terry Berger²; ¹Agilent Technologies, Little Falls, DE; ²SFC Solutions, Englewood, FL
- WP 331 **Analysis of Water-Soluble B Vitamins in Infant Formula Using Automated Online Sample Preparation with LC/MS**; Yang Shi; *Thermo Fisher Scientific, Franklin, MA*
- WP 332 **Queued and Ready to Run? Testing the Stability of Vitamin Extracts While in Queue Using Triple Quadrupole LC/MS/MS Analysis**; Jeremy Post¹; Susan Leonard²; Christopher Gilles¹; Scott Kuzdzal¹; ¹Shimadzu Scientific Instruments, Columbia, MD; ²Shimadzu Scientific Instruments., Marlborough, MA
- WP 333 **Characterization of Flavored Tobacco with GCxGC-TOFMS and GC-HR-TOFMS**; Elizabeth Humston-Fulmer; Jeff Patrick; Joe Binkley; *LECO, St. Joseph, MI*
- WP 334 **High Throughput Profiling of Phytic Acid, Inositol Phosphates and Inorganic Phosphate in Seed Extracts with Flow Injection Electrospray Mass Spectrometry**; David Mccaskill; Josh Flook; Scott Greenwalt; Beth Blakeslee; *Dow AgroSciences, Indianapolis, IN*
- WP 335 **LC-MS Analysis of Food and Food Additives with Monolithic Silica Columns**; David Lentz¹; Stephan Altmaier²; Egidijus Machtejevas²; Karin Cabrera²; ¹EMD Millipore, Billerica, MA; ²Merck Millipore Merck KGaA, Darmstadt, Germany
- WP 336 **Characterization and Quantitation of Capsaicin and Related Pungent Agents in Chili Peppers and Hot Sauces by LC/MS/MS**; Seyed Sadjadi; J Preston; Sky Countryman; Zeshan Aqeel; *Phenomenex, Inc, Torrance, CA*
- WP 337 **Comprehensive Analysis of Caecal Contents of the Human Flora-associated (HFA) Mice by High Resolution LC-QTOF Mass Spectrometry**; Masahiko Takino¹; Motoi Tamura²; ¹Agilent Technologies Japan, Tokyo, Japan; ²the National Food Research Institute, Tsukuba, Japan
- WP 338 **Elemental Non-Targeted Profiling of 66 Whiskies Using ICP-MS**; Helene Hopfer^{1,2}; Thomas S. Collins^{1,3}; Jenny Nelson^{2,4}; Susan Ebeler^{1,2}; ¹UC Davis, Davis, CA; ²Food Safety and Measurement Facility, Davis, CA; ³Treasury Wine Estates, Napa, CA; ⁴Agilent Technologies, Santa Clara, CA
- WP 339 **Metabolic Profiling of Wines from Various Geographic Regions and Chateaux Using UHPLC-ESI/QTOF-MS Technique Combined with Principle Components Analysis**; Shen Han¹; Jinhua Wang¹; Ying Liu¹; Qi Zhou¹; Meiling Lu²; ¹Beijing Entry-Exit Bureau of Inspect. and Quarant., Beijing, CN; ²Agilent Technologies, Beijing, CN
- WP 340 **Application of Non-Targeted High Resolution Mass Spectrometry to Monitoring Tea Fermentation Level and Origin**; Karl Fraser²; Don Otter²; Geoff Lane²; Siew-Young Quek¹; Yacine Hemar¹; ¹University of Auckland, Auckland, New Zealand; ²AgResearch, Palmerston North, New Zealand
- WP 341 **A Novel Strategy for *in situ* Label-Free Imaging of a Bioactive Polyphenol**; Yoshinori Fujimura¹; Yoon Hee Kim²; Takatoki Hagihara²; Masako Sasaki²; Daichi Yukihiro²; Tatsuhiko Nagao²; Daisuke Miura¹; Shinichi Yamaguchi³; Kazunori Saito⁴; Hiroyuki Wariishi²; Koji Yamada²; Hirofumi Tachibana²; ¹ICMRN, Kyushu University, Fukuoka, Japan; ²Faculty of Agriculture, Kyushu University, Fukuoka, Japan; ³Shimadzu Corporation, Kyoto, Japan; ⁴Bruker Daltonics K.K., Yokohama, Japan
- WP 342 **Identification of Structural Isomers of Methylated Flavonols by UHPLC Coupled High Resolution QTOF Mass Spectrometry**; ChengYing Ma¹; Haipeng Lv¹; Xingzhong Zhang¹; Zongmao Chen¹; Jiang Shi¹; Zhi Lin¹; Meiling Lu²; Shan Zhou²; ¹Tea Research Institute, CAAS, Hangzhou, CN; ²Agilent Technologies, Beijing, CN
- WP 343 **A Global Proteomics Approach for the Detection and Characterization of Gluten in Food**; Katherine L. Fiedler; Sara C. McGrath; John H. Callahan; Mark M. Ross; *CFSAN, U.S. FDA, College Park, MD*
- WP 344 **Characterization and Quantification of Peanut Allergens Using Ion Mobility Data Independent Label Free Strategies**; Philip Johnson²; Lee A Gethings¹; Justin Marsh²; James Langridge¹; Clare Mills²; ¹Waters, Manchester, UK; ²University of Manchester, Manchester, UK

- WP 345 **Site-Specific Detection of Radicals on α -lactalbumin after riboflavin-Sensitized Reaction, Detected by Immuno-Spin Trapping, ESR and MS;** Trine Dalsgaard¹; Mathilde Triquigneaux²; Leesa Deterding²; Fiona Summers²; Kalina Ranguelova²; Grith Mortensen¹; Ronald Mason²; ¹Aarhus University, Tjele, Denmark; ²NIEHS/NIH, Research Triangle Park, NC
- WP 346 **Identification of AGE Modifications to Peanut Allergens Using LC-ESI Based Mass Spectrometry;** Katina L. Johnson¹; Geoffrey A. Mueller¹; Soheila Maleki²; Allison Schrozman³; Anna Pomes⁴; Lori Edwards¹; Hajeung Park⁵; Leesa Deterding¹; Kenneth B. Tomer¹; Robert London¹; Jason G. Williams¹; ¹National Institute of Environmental Health Science, Research Triangle Park, NC; ²USDA, New Orleans, LA; ³University of North Carolina at Chapel Hill, Chapel Hill, NC; ⁴INDOOR Biotechnologies, Charlottesville, VA; ⁵The Scripps Research Institute, Jupiter, FL
- WP 347 **Rapid Throughput Extraction of Human Milk Oligosaccharides to Allow Studies on Larger Cohorts;** Lauren M. Dimapasoc; Sarah Totten; Carol Stroble; L. Renee Ruhaak; Carlito B. Lebrilla; *University of California, Davis, CA*
- WP 348 **Milk Protein Identification and Relative Quantification by Capillary LC Coupled with Novel Hybrid High Resolution Mass Spectrometer;** Terry Zhang; David Horn; Guifeng Jiang; Charles Yang; Dipankar Ghosh; *ThermoFisher, San Jose, CA*
- WP 349 **Mass Spectrometry Based Glycan Arrays for Determining Specificity of Glycosidases in Bacteria;** Sarah Totten; Santiago Ruiz-Moyano; David Mills; Carlito Lebrilla; *University of California, Davis, CA*
- WP 350 **Digestomics of Human Milk Proteins in Term and Premature Infants;** David Dallas¹; Andres Guerrero¹; Nora Khaldi²; Bruce German¹; Daniela Barile¹; Mark Underwood¹; Carlito Lebrilla¹; ¹University of California, Davis, CA; ²UC Dublin, Dublin, Ireland
- WP 351 **Metabolite Fingerprinting Using High Resolution Mass Spectrometry of Feces from Rats Fed Resistant Starch;** Tim Anderson; R. Sam Houk; Roger Jones; Diane Birt; Yinsheng Zhao; John McClelland; *Iowa State University, Ames, IA*
- WP 352 **Determination of fortified and endogenous folates in food-based Standard Reference Materials by isotope-dilution liquid chromatography-tandem mass spectrometry;** Johanna Camara; Mark Lowenthal; Karen Phinney; *NIST, Gaithersburg, MD*
- WP 353 **Analysis of Triglycerides in Plant Oils by Direct Analysis in Real Time;** Igor Gavin; Anil Oroskar; Asha Oroskar; *Orochem Technologies Inc., Lombard, IL*
- WP 354 **A New, Sensitive Method for Lignan Metabolite Detection of Flaxseed-Fed Mice Using LC-MS/MS;** Rong Tsao¹; Honghui Zhu¹; Sha Joshua Ye²; Lisa M. Cousins²; ¹Guelph Food Research Centre, Agriculture & Agri-F, Guelph, ON, Canada; ²IONICS Mass Spectrometry, Bolton, ON, Canada
- WP 355 **Identification of Wax Esters by LCMS in Cloudy Canola Oil;** Susan Seegers; Tiffanie West; *Bunge North America, Bradley, IL*
- Food Safety, 356 – 372**
- WP 356 **Determination of 3-chloro-1,2-propanediol in Soy Sauce Samples with Supported Liquid Extraction and GC-MS;** Suzi Qin; Jack Liu; Wan Wang; Guotao Lu; *Bonna-Agela Technologies, Tianjin, China*
- WP 357 **Direct Detection of Chloramphenicol in Honey by Neutral Desorption-Extractive Electrospray Ionization Mass Spectrometry;** Xi Zhang^{1,2}; Li-Ping Luo²; Xi-Mo Dai^{1,2}; Xiao-Wei Fang¹; Eric Handberg¹; Huanwen Chen¹; ¹East China Institute of Technology, Nanchang, China; ²Nanchang University, Nanchang, China
- WP 358 **Rapid Screening of Sulfur fumigated Chinese Star Anise by Surface Desorption Atmospheric Pressure Chemical Ionization Mass Spectrometry;** Xi-Mo Dai^{1,2}; Li-Ping Luo¹; Xi Zhang^{1,2}; Ya-Li Liu^{2,3}; Xiao-Wei Fang²; Eric Handberg²; Huanwen Chen²; ¹Nanchang University, Nanchang, China; ²East China Institute of Technology, Nanchang, China; ³Hebei University of Technology, Tianjin, China
- WP 359 **Cadmium-Lead Chemical Signatures Characteristic to the Harvest Areas of the American Oyster, by ICP-MS: A Regulatory and Environmental Monitoring Tool;** Marc E. Engel; *FDACS, Tallahassee, FL*
- WP 360 **Liquid Chromatography – Mass Spectrometry Method for the Quantitative Determination of Residues of Selected Veterinary Hormones in Powdered Milk-Based Commodities;** Stefan Ehling; Murali Reddy; *Abbott Nutrition, Columbus, OH*
- WP 361 **Direct-ELC-MS in Food Safety Applications. Multicomponent Analysis of Environmental Contaminant Residues in Milk Based Raw Materials;** Achille Cappiello¹; Fabiana Capriotti¹; Giorgio Famigliani¹; Pierangela Palma¹; Veronica Termopoli¹; Nicholas Cellar²; ¹University of Urbino, Urbino, Italy; ²Abbott Nutrition, Columbus, OH
- WP 362 **Rapid Quantitative Detection of Residual Malachite Green in Drinking and Aquaculture Water Samples by Extractive Electrospray Ionization Mass Spectrometry (EESI-MS);** Xiaowei Fang; Susu Pan; Liang Zhu; Xinglei Zhang; Eric Handberg; Huanwen Chen; *East China Institute of Tech., Nanchang, China*
- WP 363 **Coupling Neutral Desorption to Dielectric Barrier Discharge Ionization Mass Spectrometry for Direct Analysis of Oil Samples;** Yafei Zhou¹; Zhongchen Wu²; Cao Li¹; Nannan Wang¹; Saijin Xiao¹; Xinglei Zhang¹; Eric Handberg¹; Huanwen Chen¹; ¹East China Institute of Tech., Nanchang, China; ²Shandong University, Weihai, China
- WP 364 **Desorption Atmospheric Pressure Chemical Ionization Mass Spectrometry and Pattern Classification to Identify the Molecular Cause of Aging in Lotus Seeds;** Ximo Dai^{1,3}; Liping Luo^{1,1}; Xi Zhang^{1,3}; Yongzhong Ouyang²; Eric Handberg³; Huanwen Chen³; ¹Nanchang University, Nanchang, China; ²Hebei University of Technology, Tianjin, China; ³East China Institute of Tech., Nanchang, China
- WP 365 **Analysis of α -dicarbonyl Process Contaminants in High Fructose Corn Syrup and Carbonated Soft Drinks by UHPLC-DAD-ESI-MS/MS;** Sabrina Gensberger; Monika Pischetsrieder; *University of Erlangen-Nuremberg, Erlangen, Germany*
- WP 366 **Multi-Target Screening for 138 Veterinary Drugs in Meat Using Liquid Chromatography High Resolution Mass Spectrometry;** Feng Qin¹; Xiaoyan Li¹; Ke Wang¹; Chengyuan Cai²; Yongming Xie²; Huaien Zhu²; ¹Shanghai Institute of Food and Drug Control, Shanghai, China; ²ABCIE, Shanghai, China
- WP 367 **Rapid Identification of Veterinary Drugs from Different Matrices Using High Resolution LC/MS/MS and Library Search;** Franziska Spitzbarth¹; Günther Kempe¹; Jianru Stahl-Zeng²; Alexander Eilfeld²; ¹LUA Sachsen, Chemnitz; ²AB Sciex, Leipzig, Germany
- WP 368 **Determination of 68 Veterinary Drugs in Marine Products by Ultra High Performance Liquid Chromatography/Triple Quadrupole Mass Spectrometry;** Lingling Shen; Jinting Yao; Caiyong Lin; Xiongqiong Qiu; Qisheng Zhong; Song Zhan; Taohong

- Huang; Shimadzu Global COE, Shimadzu (China) Co., Ltd., Guangzhou, China
- WP 369 **Analysis of Multiclass Veterinary Drug Residues in Baby Food by Ultra Fast Chromatography with High Performance Triple Quadrupole Mass Spectrometry;** Charles T. Yang; Mary Blackburn; Dipankar Ghosh; Thermo Fisher Scientific, San Jose, CA
- WP 370 **Multi-residue Screening and Confirmation of Veterinary Drugs in Tissue Samples by LC-MS/MS with New Triggered MRM Acquisition;** Guenther Kempe²; Thomas Glauner¹; Franzika Spitzbarth²; ¹Agilent Technologies GmbH, Waldbronn, Germany; ²LUA Saxony, Chemnitz, Germany
- WP 371 **Automated Solid Phase Extraction (SPE)-LC/MS/MS Method for the Determination of Acrylamide in Brewed Coffee Samples;** Fred Foster; John Stuff; Edward Pfannkoch; Gerstel, Inc., Linthicum, MD
- WP 372 **Organizing the Masses;** Daniel L. Sweeney; MathSpec, Inc., Arlington Heights, IL
- H/D Exchange, Software and Hardware, 373 – 385**
- WP 373 **Peptide-Dependent Amide Back Exchange Rates Limit the Utility of Subtractive Analysis as a Method for Increased HDX-MS Resolution;** Joey Sheff; University of Calgary, Calgary, Canada
- WP 374 **Assessing Lab-to-lab Reproducibility of Deuterium Measurement in Hydrogen Deuterium Exchange Mass Spectrometry Analysis;** Barbara Sullivan; Waters, Beverly, MA
- WP 375 **Online SCX and RP extraction method for H/D Exchange Mass Spectrometry of Samples Containing Macromolecular Crowding Agents;** Farai Rusinga; David Weis; University of Kansas, Lawrence, KS
- WP 376 **An Improved HDX Platform Workflow for Enhanced Separation, Digestion, and Data Analysis;** Joomi Ahn¹; Michael Eggertson¹; Keith Fadgen¹; Han Joo Lee¹; John Engen²; ¹Waters Corp, Milford, MA; ²Northeastern University, Boston, MA
- WP 377 **Applications of an Automated Hydrogen Deuterium Exchange Platform to Epitope Mapping of Antibody-Antigen Complexes;** Jon Fitchett; Kai Zhang; Bryan E Jones; Lilly Biotech Center-San Diego, San Diego, CA
- WP 378 **Overcoming Peak Capacity Limitations Imposed by Hydrogen Exchange Quench Conditions;** Bradley B. Stocks¹; Thomas E. Wales¹; Martha Stapels²; Keith Fadgen²; Michael Eggertson²; Geoff Gerhardt²; John R. Engen¹; ¹Northeastern University, Boston, MA; ²Waters Corporation, Milford, MA
- WP 379 **A Single-Droplet Digital Microfluidics System for Hydrogen-Deuterium Exchange Mass Spectrometry;** Huijiang Ding; Puneet Souda; Christopher M. Ryan; Kym Faull; Julian Whitelegge; University of California, Los Angeles, CA
- WP 380 **Fully Automated HDX-MS on a Microfluidic Platform – Solving Problems Related to Small Volume Sample Preparation, Protein Adsorption, and Carryover;** Yunan Miao¹; Gregory Staples²; Reid A. Brennen²; Hongfeng Yin²; Kevin Killeen²; Terry Lee¹; ¹City of Hope, Duarte, CA; ²Agilent Laboratories, Santa Clara, CA
- WP 381 **Software for Automated HDX-MS Data Analysis and Visualization;** Seungjin Na¹; Jae-Jin Lee²; Kong-Joo Lee²; Eunok Paek¹; ¹Hanyang University, Seoul, Korea; ²Ewha Womans University, Seoul, Korea
- WP 382 **How to Obtain Conformational Structures of Protein in Solution from Higher Charge States in HDX and Top-Down ECD ESI MS?** Teerapat Rojsajakul; Fred King; Department of Chemistry, West Virginia University, Morgantown, WV
- WP 383 **H/D Exchange Mass Spectrometry in Atmospheric Pressure ESI-MS Interface for Enumeration of Labile Hydrogens in Complex Mixtures;** Yury Kostyukevich^{1,4}; Alexey Kononikhin^{1,2}; Igor Popov^{2,4}; Oleg Kharybin^{1,3}; Eugene Nikolaev^{1,3}; ¹Institute for Energy Problems of Chemical Physics, Moscow, Russia; ²Emanuel Institute of Biochemical Physics, Moscow, Russia; ³Orehovich Institute of Biomedical Chemistry, Moscow, Russia; ⁴Moscow Institute of Physics and Technology, Moscow, Russia
- WP 384 **Improvements to the HDX Workbench Software for High Throughput Analysis of HDX MS Data;** Bruce D. Pascal; Michael J. Chalmers; Graham M. West; Scott Novick; Devrishi Goswami; David Marciano; Patrick R. Griffin; The Scripps Research Institute, Scripps Florida, Jupiter, FL
- WP 385 **Binomial Fitting Provides a Powerful Method for the Analysis of H/D Exchange Data;** Miklos Guttman; Kelly Lee; University of Washington, Seattle, WA
- H/D Exchange: Protein Structure/Function II, 386 – 400**
- WP 386 **Structural Confirmation of Potential Cancer Therapeutic: Pyruvate Kinase Activator Restores Active Conformation to M2 Isoform;** Graham M West¹; Dimitrios Anastasiou²; Bruce Pascal¹; Michael Chalmers¹; Lewis Cantley³; Patrick Griffin¹; ¹Scripps Research Institute, FL, Jupiter, FL; ²Division of Physiology and Metabolism, MRC-NIMR, London, UK; ³Dpt of Systems Biology, Harvard Medical School, Boston, MA
- WP 387 **Using Hydrogen-Deuterium Exchange to Probe the Structure of Phosphorylase Kinase, a Complex with 325 kDa of Unique Sequence;** Mary Ashley Rimmer; Antonio Artigues; Maria T. Villar; Gerald M. Carlson; University of Kansas Medical Center, Kansas City, KS
- WP 388 **Substrate Channeling in Phosphodiesterase-Protein Kinase A Interactions Mediates cAMP Signal Termination: Monitoring Transient Ternary Complexes by HDXMS;** Srinath Krishnamurthy; NUS, Singapore
- WP 389 **Structural Dynamics and Ligand Depended Activation of IDH1 R132H Probed by HDX-MS;** Devrishi Goswami¹; Michael Chalmers¹; Carlos Perez²; Stephen Antonyamsy²; Bruce Pascal¹; Jeffrey Dodge²; Patrick Griffin¹; ¹The Scripps Research Institute, Jupiter, FL; ²Lilly Research Laboratories, Eli Lilly and company, Indianapolis, IN
- WP 390 **H/DX Mass Spectrometry Reveals Features of SecA Dimeric Interface and a Conformational Change from Open to Closed Forms upon Dimerization;** Yuetian Yan¹; Andy Wowor²; Jun Zhang³; James Cole⁴; Debra Kendall⁵; Michael Gross¹; ¹Dept of Chemistry, Washington University, Saint Louis, MO; ²Dept of Chem and Biochem, Colorado College, Colorado Springs, CO; ³Department of Drug Product Development, Amgen Inc, Seattle, WA; ⁴Department of Chemistry, University of Connecticut, Storrs, CT; ⁵Dept of Pharmaceutical Sciences, U. of Connecticut, Storrs, CT
- WP 391 **Thermodynamic Stability of Protective Antigen Measured by His-HDX-MS;** Vennela Mullangi^{1,3}; James Bann²; David Anderson¹; Masaru Miyagi³; ¹Cleveland State University, Cleveland, OH; ²Wichita State University, Wichita, KS; ³Case Western Reserve University, Cleveland, OH
- WP 392 **Characterizing Protein Dynamics and Higher Order Structure in a Conformer-Specific Fashion with Top-Down HDX MS/MS: A Case of Ubiquitin;** Guanbo Wang; Rinat R. Abzalimov; Igor A. Kaltashov; University of Massachusetts, Amherst, MA
- WP 393 **Effect of Ligand binding on Conformational Dynamics of DAHP Synthase Using Microfluidics Enabled Hydrogen/ Deuterium Exchange;** Tamanna Rob¹; Naresh Balachandran²; Paul Berti²; Derek Wilson¹; ¹York University, Toronto, Canada; ²McMaster University, Hamilton, ON, Canada

- WP 394 **HDX-MS in Pharmaceutical Analysis: Defining the Epitopes of Drug-Bound Proteins;** [Rebecca Rose](#); Hannah Maple; John Porter; Richard Taylor; Rachel Garlish; *UCB, Slough, UK*
- WP 395 **Pinpointing Conformational Differences between Protein Variants by HDX-MS and ETD (HDX-ETD);** Signe T. Seger^{1,2}; Mette D. Andersen²; Jens Breinholt²; Christine B. Schjødt²; Johan Faber²; [Kasper D. Rand](#)¹; ¹*University of Copenhagen, Copenhagen, Denmark*; ²*Novo Nordisk A/S, Biopharmaceuticals Research Unit, Måløv, Denmark*
- WP 396 **Solution-Phase H/D Exchange for Charge State +12 and +13 Ions of Bovine Ubiquitin Revealed by Top-down ECD ESI FTICR MS;** [Xiaqing Xu](#); Teerapat Rojsajakul; Fred King; *Department of Chemistry, West Virginia University, Morgantown, WV*
- WP 397 **Analysis of cGMP/cAMP Binding to the PKGI Beta Regulatory Domain by HDX Using High Resolution Orbitrap Mass Spectrometer;** [Sheng Li](#); Bryant Kou; Virgil Woods, Jr; Darren E. Casteel; *UCSD, La Jolla, CA*
- WP 398 **Probing Inhibition of Insulin Fibrillation by 1, 2-Bis[4-(3-sulfonatopropoxyl)phenyl]-1,2-Diphenylethane with Hydrogen/Deuterium Exchange – Mass Spectrometry;** [Matthew Cummings](#); Teerapat Rojsajakul; Fred King; *Department of Chemistry, West Virginia University, Morgantown, WV*
- WP 399 **A HDX/MS Analysis of the Interaction between Human Tumor Necrosis Factor-Alpha (TNF-alpha) and anti-TNF-alpha Agents;** [Shiori Nakazawa](#)^{1,2}; Noritaka Hashii²; Nana Kawasaki^{1,2}; ¹*Hokkaido Univ., Sapporo, Japan*; ²*Natl. Inst. Health Sci., Tokyo, Japan*
- WP 400 **Suicide Inhibition of Oncogenic K-Ras G12C Proceeds via Shift to the Inactive Conformation;** [Rane Harrison](#)¹; Sang Min Lim^{2,3}; Kenneth Westover⁴; Nathanael Gray^{2,3}; John Engen¹; ¹*Northeastern University, Boston, MA*; ²*Harvard Medical School, Boston, MA*; ³*Dana-Farber Cancer Institute, Boston, MA*; ⁴*University of Texas Southwestern Medical Center, Dallas, TX*
- Proteins: Non-Covalent Interactions, 401 – 421**
- WP 401 **Assembly of the Bacteriophage T7 Replisome Probed by Native Electrospray Ionization Top-Down Mass Spectrometry;** [Hao Zhang](#); Jamie R. Wallen; [Weidong Cui](#); Robert E. Blankenship; Thomas E. Ellenberger; Michael L. Gross; *Washington University, St. Louis, MO*
- WP 402 **Probing the Molecular Mechanism of Photoprotective Quenching in Cyanobacteria by Native Mass Spectrometry and Protein Cross-linking;** [Hao Zhang](#); Haijun Liu; Mindy Prado; Michael L. Gross; Robert E. Blankenship; *Washington University, Saint Louis, MO*
- WP 403 **Nanodiscs Can Fly: Investigating the Ionization and Dissociation Mechanisms of Lipoprotein Macromolecules;** [Michael Marty](#)¹; Hao Zhang²; Weidong Cui²; Robert Blankenship²; Michael Gross²; Stephen Sligar¹; ¹*University of Illinois Urbana-Champaign, Urbana, IL*; ²*Washington University St. Louis, St. Louis, MO*
- WP 404 **Binding Affinities Determination of the Norovirus P Particle with HPGA Oligosaccharides;** [Ling Han](#)¹; Elena Kitova¹; Ming Tan²; Xi Jiang²; John Klassen¹; ¹*University of Alberta, Edmonton, Canada*; ²*Cincinnati Children's Hospital Medical Center, Cincinnati, OH*
- WP 405 **Quantification of Protein Binding to Cell Receptors by Electrospray Ionization Mass Spectrometry;** [Hong Lin](#); Yixuan Zhang; Elena N. Kitova; John S. Klassen; *Department of Chemistry, University of Alberta, Edmonton, Canada*
- WP 406 **Dissociation Pathways Observed for Multisubunit Protein-Ligand Complexes in the Gas Phase;** [Yixuan Zhang](#); Lu Deng; Elena Kitova; John Klassen; *U of Alberta, Edmonton, Canada*
- WP 407 **A Novel Method for Determining the Binding Site Location of FGFR1 Kinase Inhibitors;** [Helen Beeston](#)¹; Jan Griesbach²; Jason Breed²; Richard Norman²; Julie Tucker²; Geoff Holdgate²; Alison E. Ashcroft¹; ¹*Faculty of Biological Sciences, University of Leeds, Leeds, UK*; ²*Astrazeneca UK Ltd, Macclesfield, UK*
- WP 408 **Probing Interactions of Different Glycoforms of Antithrombin-III with Heparin Octasaccharides Using Native Electrospray Ionization Mass Spectrometry ;** [Rinat Abzalimov](#); Burcu Baykal; Stephen Eyles; Paul Dubin; *UMASS, Amherst, MA*
- WP 409 **Investigation of the Interaction between Gadolinium and Transferrin by Mass Spectrometric Analysis;** [Kristina Wentker](#); Christine Brauckmann; Olga Reifschneider; Helene Faber; Christoph A. Wehe; Uwe Karst; *University of Münster, Münster, Germany*
- WP 410 **Determination of Non-Covalent Bound Ligands and Metals to Transferrin in Clinically Relevant Samples;** [Jake W. Pawlowski](#); Cedric E. Bobst; Igor A. Kaltashov; *UMASS, Amherst, MA*
- WP 411 **Mass Spectrometry Reveals Synergistic Binding of Nucleotides, Lipids and Drugs to a Multidrug Resistance Efflux Pump;** [Julien Marcoux](#)¹; Sheila Wang¹; Argyris Politis¹; Jerome Ma¹; Philip Biggin¹; Geoffrey Chang²; Nina Morgner¹; Carol V. Robinson¹; ¹*University of Oxford, Oxford, UK*; ²*Scripps Research Institute, La Jolla, CA*
- WP 412 **Pulsed and Continuous Infrared Laser Photodissociation of Soluble and Membrane Protein Complexes in a Modified QToF Mass Spectrometer;** [Victor A. Mikhailov](#)¹; Todd Mize¹; Matt Bush²; Carol Robinson¹; ¹*University of Oxford, Oxford, UK*; ²*University of Washington, Seattle, US*
- WP 413 **Improved Structural Characterization of Stable Non-Covalent Protein Complexes by Surface Induced Dissociation (SID);** Xin Ma; *The Ohio State University, Columbus, OH*
- WP 414 **Probing Protein-Ligand Interactions Involved in Neurodegenerative Disease Using Native Electrospray Ionization Top-Down Mass Spectrometry;** [Piriyā Wongkongkathep](#); Sheng Yin; Becky Chan; Madhuri Chattopadhyay; Joan Valentine; Gal Bitan; Joseph Loo; *UCLA, Los Angeles, CA*
- WP 415 **Structural Characterization of Protein Complexes by Electron Capture Dissociation and Top-Down Native Mass Spectrometry;** [Jiang Zhang](#); G. Reza Malmirchegini; Robert Clubb; Joseph Loo; *Univ. California, Los Angeles, CA*
- WP 416 **Fourier Transform Ion Cyclotron Resonance Mass Spectrometry of Protein Complexes;** [Paul Spier](#)¹; Lindsay Morrison²; Jeremy Wolff¹; Christopher Thompson¹; Vicki Wysocki²; ¹*Bruker Daltonics, Billerica, MA*; ²*Ohio State University, Columbus, OH*
- WP 417 **Native Salt-Bridge Structure of Proteins by ETD followed by CID;** [Zhe Zhang](#); Shaynah Browne; Vachet Richard; *University of Massachusetts, Amherst, MA*
- WP 418 **Direct Coupling of Ion Exchange Chromatography and Native Electrospray Mass Spectrometry for Routine Analysis of Biological Complexes at Endogenous Levels;** [Zachary Quinkert](#); Paul D. B. Olinares; Júlio C. Padovan; Brian T. Chait; *The Rockefeller University, New York, NY*

- WP 419 **Molecular Weight Analysis of Macromolecular Complexes by LiquiScan-ES**; [Elisbeth Loecken](#); Sherrie Elzey; *TSI, Inc., Shoreview, MN*
- WP 420 **Native Mass Spectrometry and Global H/D Exchange of Whole Proteins and Noncovalent Protein Complexes by Surface Acoustic Wave Nebulization**; [Lucas Monkkonen](#); J. Scott Edgar; Scott Heron; Eri Nakatani; Carlos E. Catalano; David R. Goodlett; *University of Washington, Seattle, WA*
- WP 421 **Role of Histidine Rich Epitopes in the Formation of Non-Covalent Complexes**; [Aurelie Roux](#); Ludovic M. Muller; Luciana Tovo Rodrigues; Amina S. Woods; *NIH/NIDA IRP, Baltimore, MD*
- Antibody & Antibody Drug Conjugates, 422 – 446**
- WP 422 **Native Orbitrap Mass Spectrometry Yields Higher Resolution and Potential for Relative Quantitation of Complex Antibody Mixtures**; [Natalie Thompson](#)¹; Sara Rosati¹; Linda J.A. Hendriks²; John de Kruijff²; Mark Throsby²; Albert J.R. Heck¹; ¹*Utrecht University, Utrecht, Netherlands*; ²*Merus, Utrecht, Netherlands*
- WP 423 **Using MALDI-TOF MS to Screen for Monoclonal Gammopathies in Serum and Urine**; David Barnidge¹; Tim Griffin²; Tom Krick²; [David Murray](#)¹; ¹*Mayo Clinic, Rochester, MN*; ²*University of Minnesota, St. Paul, MN*
- WP 424 **Investigating Structure/ Function Relationships of Immunoglobulin Molecules Using Shape Selective Mass Spectrometry**; [Matthew Edgeworth](#); James Scrivens; *University of Warwick, Coventry, UK*
- WP 425 **Rapid Disulfide Bond Analysis of a Recombinant Monoclonal IgG Using Electron Transfer Dissociation**; [Daniel Clark](#); Eden Go; Heather Desaire; *University of Kansas, Lawrence, KS*
- WP 426 **Development of a Peptide Affinity Column for anti-TNF-alpha Monoclonal Antibodies**; [Noritaka Hashii](#); Ryosuke Kuribayashi; Akira Harazono; Shiori Nakazawa; Nana Kawasaki; *National Institute of Health Sciences, Tokyo, Japan*
- WP 427 **Improved Characterization of the Serum Antibody Response through Selective Enrichment and 193 nm Photodissociation of IgG Heavy Chain CDR3 Peptides**; [Victoria Cotham](#); Yariv Wine; George Georgiou; Jennifer Brodbelt; *University of Texas, Austin, TX*
- WP 428 **Simultaneous Peptide Mapping, Posttranslational Modifications and Major N-glycosylation Characterization of Trastuzumab by Sheathless CE-ESI-MS/MS - Comparison to nanoLC-MS/MS**; Rabah Gahoual¹; Alicia Burr¹; Jean-Marc Busnel²; Lauriane Kuhn³; Philippe Hamman³; Alain Beck⁴; [Yannis Francois](#)¹; Emmanuelle Leize-Wagner¹; ¹*LSMIS, University of Strasbourg, Strasbourg, France*; ²*Beckman Coulter Inc., Brea, CA*; ³*BMC, University of Strasbourg, Strasbourg, France*; ⁴*Centre d'immunologie Pierre Fabre, Saint-Julien-en-Genevois, France*
- WP 429 **CE-UV/MALDI-MS: A New Platform for Proteomic and Intact Protein Characterization**; Michael Biacchi¹; Anja Resemann²; Pierre-Olivier Schmit³; Alain Beck⁴; Yannis Francois¹; [Emmanuelle Leize](#)¹; ¹*LSMIS, University of Strasbourg, Strasbourg, France*; ²*Bruker Daltonik GmbH, Bremen, Germany*; ³*Bruker Daltonique S.A, Wissembourg, France*; ⁴*Centre d'immunologie Pierre Fabre, Saint-Julien-en-Genevois, France*
- WP 430 **Complementary Glycan Quantitation Strategies Based on High Sensitivity NanoLC/MS**; [Mellisa Ly](#); Gregory Staples; Hongfeng Yin; Kevin Killeen; *Agilent Labs, Agilent Technologies, Santa Clara, CA*
- WP 431 **Identification of Pyroglutamate and O-linked Glycosylation on Anti-IL17A Peptide Anti-IL22 Antibody Bispecific Genetic Fusion**; [Eric Sousa](#)¹; Xiaotian Zhong¹; Elizabeth Kieras¹; Aaron D'Antona¹; J. Christian Baber¹; Joel Desharnais²; Lauren Wood²; Deborah Luxenberg¹; Mark Stahl¹; Ronald Kriz¹; Laura Lin¹; Will Somers¹; Lori Fitz¹; Jill Wright¹; Tao He¹; ¹*Pfizer, Cambridge, MA*; ²*CovX, San Diego, CA*
- WP 432 **Characterization of Hydrophobic Interaction Chromatography (HIC) Fractionated Antibody Bioconjugates**; [Michael Bacica](#); Ryan Preston; Robert Murphy; *Pfizer/CovX, San Diego, CA*
- WP 433 **Quantitative Profiling of NHS Drug Conjugation Sites on IgG1 Based Antibody Drug Conjugates using Data Independent Analysis**; [Dan Rock](#)¹; Kelli Jonakin²; Eric Johansen²; ¹*Amgen Inc, Seattle, WA*; ²*ABSCIEX, Foster City, CA*
- WP 434 **Optimizing the Enzymatic Subunit Generation with IdeS for High Throughput Structure Verification of Therapeutic Antibodies by Middle-Down Mass Spectrometry**; Fredrik Olsson¹; Linda Andersson¹; [Matthew Willetts](#)²; Wolfgang Jabs³; Anja Resemann³; Waltraud Evers³; Carsten Baessmann³; Detlev Suckau³; ¹*Genovis AB, Lund, Sweden*; ²*Bruker Daltonics Inc, Billerica, MA*; ³*Bruker Daltonik GmbH, Bremen, Germany*
- WP 435 **Combination of Online Fractionation and ETD-UHR QTOF to Enhance Middle-Down Monoclonal Antibodies Characterization**; [Guillaume Tremintin](#)¹; Wolfgang Jabs²; ¹*Bruker Daltonics, Fremont, CA*; ²*Bruker Daltonik, Bremen, Germany*
- WP 436 **Rapid Analysis of Intact Antibody-drug Conjugates (ADCs) by UPLC Q-TOF MS**; [Wei Jia](#)¹; ChuanFei Yu²; Kai Gao²; ¹*Waters ShangHai, Beijing, China*; ²*China National institutes for food and drug control, Beijing, China*
- WP 437 **Paired Acquisition of Spectra for Monoclonal Antibody Sequencing**; Natalie Castellana; *Digital Proteomics, LLC., San Diego, CA*
- WP 438 **Analytical Solutions for Pharmacokinetic Analysis of Antibody Drug Conjugates**; [Kan Zhu](#); Roxana Garcia Caro; Karen Wang; *Novartis, Cambridge, MA*
- WP 439 **Advanced LC-MS Methods for Characterization and Heterodimer Purity Assessment of Bispecific Antibodies**; [Jeremy Woods](#)¹; Thomas Spreter von Kreudenstein²; Gordon Ng²; Surjit B. Dixit²; Hongwei Xie¹; ¹*KBI Biopharm, Durham, North Carolina*; ²*Zymeworks, Inc., Vancouver, BC, Canada*
- WP 440 **FC antibody Fragments Analysis Using MALDI ISD**; [Sega Ndiaye](#)^{1,2}; Angélique Boedec¹; François Gray²; Florence Lhospice¹; Claude Villard²; Rima Ait-Belkacem²; Christian Belmont¹; Daniel Lafitte²; ¹*Innate Pharma, Marseille, Fr*; ²*Aix-Marseille Université, Marseille, France*
- WP 441 **Direct Coupling of Protein-A HPLC with Mass Spectrometry: A Useful Approach to Analyze Monoclonal IgG Antibody-Maytansinoid Conjugates from Complex Matrices**; [Megan Ellis](#); Lintao Wang; Alexandru C. Lazar; *ImmunoGen, Inc., Waltham, MA*
- WP 442 **Intact Mass Analysis of Monoclonal Antibody (MAb) Charge Variants Separated Using Linear pH Gradient**; [Shanhua Lin](#); Zhiqi Hao; Wim Decrop; Julia Baek; Udayanath Aich; Patrick Bennett; Srinivasa Rao; Yury Agroskin; Chris Pohl; *Thermo Fisher Scientific, Sunnyvale, CA*
- WP 443 **Rapid Peptide Mapping via Automated Integration of On-line Digestion, Separation and Mass Spectrometry for the Analysis of Therapeutic Proteins**; [Esther Lewis](#); Zhiqi Hao; Patrick Bennett; *Thermo Fisher Scientific, San Jose, CA*

- WP 444 **Characterization of Monoclonal Antibody Glycoforms Using a Novel Glycan Column Technology and Bench-Top Orbitrap LC-MS/MS;** Zhiqi Hao¹; Udayanath Aich²; Julian Saba¹; Rosa Viner¹; Xiaodong Liu²; Srinivasa Rao²; Chris Pohl²; Andreas Hühmer¹; Patrick Bennett¹; ¹Thermo Fisher Scientific, San Jose, CA; ²ThermoFisher Scientific, Sunnyvale, CA
- WP 445 **Characterization of Disulfide-linked and Glycosylated Intact Monoclonal Antibodies by Ultrahigh Resolution ETD with LC-MS Topdown Approach;** Shiaw-Lin Wu¹; Zhiqi Hao²; David Horn²; Andreas FR Hühmer²; Barry L. Karger¹; ¹Northeastern University, Boston, MA; ²Thermo Fisher Scientific, San Jose, CA
- WP 446 **IgG1 Thioether Bond Formation *in vivo*;** Qingchun Zhang; Matthew R. Schenauer; John D. McCarter; Amgen, Thousand Oaks, CA
- Analysis of Biosimilars, 447 – 452**
- WP 447 **Applying Multiple Orthogonal Analytical Methodologies for Comprehensive Biosimilar Comparability Assessment;** Henry Shion; Vera Ivleva; Ying Qing Yu; Tom Wheat; Weibin Chen; Waters Corp., Milford, MA
- WP 448 **N-linked Glycan Profile Comparison between the Innovator and a Biosimilar Etanercept;** Ying-Qing Yu; Waters Corporation, Milford, MA
- WP 449 **Determination of O-Glycosylation Site and O-glycan Profile at the Site on Etanercept Using UPLC-MS/MS;** Jung-Keun Suh¹; Hyong-Ha Kim²; ¹Korean German Institute of Technology, Seoul, South Korea; ²Korea Research Institute of Standards and Science, Seoul, Korea
- WP 450 **Qualitative and Quantitative Characterization of Therapeutic Antibody Using High Speed and High Resolution Mass Spectrometry;** Byung-Hee Shin¹; Eric Johansen²; Justin Lim³; Jason Neo³; ¹AB Sciex Korea Ltd, Seoul, South Korea; ²AB Sciex, Foster City, CA; ³AB Sciex Ltd., Singapore
- WP 451 **Utilizing a Novel Compact Mass Spectrometer (CMS) in the Real-Time Monitoring of a Continuous Solution Phase Peptide Synthesis;** Daniel Eikel¹; Shahnaz Ghassemi²; Simon Prosser¹; ¹Advion Inc., Ithaca, NY; ²Synpure LLC, Charlottesville, VA
- WP 452 **Optimization of Qualitative and Quantitative Follicle Stimulating Hormone Analyses by High Performance Mass Spectrometry;** Dipankar Malakar; Annu Uppal; Faraz Rashid; Manoj Pillai; AB Sciex, India, Gurgaon, India
- Biomarkers: Discovery, 453 – 475**
- WP 453 **Utilizing Mass Spectrometry-Based Profiling System to Identify Cellular Response Proteins Induced by Silk Fibroin Surface-Modified Biomaterials;** Ming-Hui Yang¹; Tze-Wen Chung¹; Yu-Chang Tyan²; ¹National Yunlin University of Science & Technology, Yunlin, Taiwan; ²Kaohsiung Medical University, Kaohsiung, Taiwan
- WP 454 **Aptamer-Based Tool for Lung Cancer Biomarker Discovery;** Yury Glazyrin¹; Olga Kolovskaya¹; Galina Zamay¹; Anna Zamay¹; Evgeny Erkaev¹; Alexey Krat²; Maxim Berezovskiy³; Yaroslav Lyutvinskiy⁴; Roman Zubarev⁴; Tatyana Zamay¹; ¹Krasnoyarsk State Medical University, Krasnoyarsk, Russia; ²Krasnoyarsk Regional Clinical Oncological Center, Krasnoyarsk, Russia; ³University of Ottawa, Ottawa, Canada; ⁴Karolinska Institutet, Stockholm, Sweden
- WP 455 **Comparison of Pancreas-Specific Proteins Using an Accurate Mass and Time Tag Approach in Hu-14 Depleted and Un-Depleted Pancreatic Juice;** Jana Rocker¹; Lee Thompson²; Dean Billheimer³; Lewis Pannell¹; ¹Mitchell Cancer Institute, Mobile, AL; ²Mobile Infirmary Medical Center, Mobile, AL; ³University of Arizona, Tucson, AZ
- WP 456 **Development of Methods for Information-Driven MS/MS (ID-MS/MS) for Increased Identification Rates in Bottom-Up Proteomics of Human Blood Serum;** Peter Brechlin¹; Stuart Pengelley¹; Pierre-Olivier Schmit²; Ow Sawyen³; Dirk Wunderlich¹; ¹Bruker Daltonik GmbH, Bremen, Germany; ²Bruker Daltonique S.A., Wissembourg, France; ³Bruker Daltonics Inc, Beijing, China
- WP 457 **Detection of Cellular Response to an *in vitro* Challenge with Bacterial Gram-Negative Lipopolysaccharides (LPS) in Peripheral Blood Mononuclear Cells (PBMCs);** David A Sarracino¹; Jennifer Sutton¹; Maryann Vogelsang¹; Bryan Krastins¹; Gregory Byram¹; Amol Prakash¹; Gouri Vadali¹; Vineet Gupta²; Mary F Lopez¹; ¹Thermo Fisher Scientific, Cambridge, MA; ²Rush University Medical Center, Chicago, IL
- WP 458 **Proteomics Analysis of Leishmania exosomes;** Brajesh Singh; Jason Weirather; Patrick Kelly; Yalan Li; R. Marshall Pope; Mary Wilson; University of Iowa, Iowa City, IA
- WP 459 **Quantitative and Facile Analysis of the ATP-binding Proteome of *Mycobacterium tuberculosis*: Disease State Biomarkers and Novel Therapeutic Targets;** Lisa Wolfe^{1,2}; Jessica Prenni²; Karen Dobos¹; ¹Colorado State University, Fort Collins, CO; ²Proteomics and Metabolomics Facility, Fort Collins, CO
- WP 460 **LC-MS Based Detection and Quantification of N-glycans in Human Serum Samples;** Tsung-Heng Tsai¹; Minkun Wang¹; Cristina Di Poto¹; Yi Zhao¹; Yunli Hu²; Shiyue Zhou²; Yehia Mechref²; Habtom Resson¹; ¹Georgetown University, Washington, DC; ²Texas Tech University, Lubbock, TX
- WP 461 **Quantification of the Airway Mucin-Interactome in the Beta ENaC-transgenic Mouse Using Mass Spectrometry;** Rui Cao; Alessandra Livraghi-Butrico; Tiffany Wang; Wanda O'Neal; Mehmet Kesimer; University of North Carolina, Chapel Hill, NC
- WP 462 **Comparative Analysis of the Proteomic Changes of Amniotic Fluid in Different Gestational Age for Lung Development;** Jingxin Wang¹; Shigetoshi Yokoyama²; Robert Cunningham³; Xin Sun²; Lingjun Li³; ¹Neuroscience Training Program, UW, Madison, WI; ²Laboratory of Genetics, UW, Madison, WI; ³School of Pharmacy, UW, Madison, WI
- WP 463 **Probing Phosphatidylcholine Metabolites and Diagnostic Biomarkers for Early Stage Lung Cancer Using nanoMate-FTICR MS;** Yumei Guo; Zhili Li; IBMS, CAMS&PUMC, Beijing, China
- WP 464 **Quantitative Proteomics in Non-Case versus Control Studies;** Lauren Devine¹; Ingo Ruczinski²; Keith West²; Kerry Schulze²; Robert Cole¹; ¹Johns Hopkins Mass Spec and Proteomics Facility, Baltimore, MD; ²Johns Hopkins School of Public Health, Baltimore, md
- WP 465 **An Adductomic Approach to Measure and identify Hemoglobin Adducts of Possible Genotoxic Compounds Using LC-MS;** Henrik Carlsson; Hans von Stedingk; Ulrika Nilsson; Margareta Törnqvist; Stockholm University, Stockholm, Sweden
- WP 466 **Altered Expression of Sialylated Glycoproteins in Ovarian Cancer Using a Lectin Array and LC-MS/MS;** Jing Wu¹; Xiaolei Xie²; Song Nie¹; Ronald Buckanovich¹; David Lubman¹; ¹University of Michigan, Ann Arbor, MI; ²Caprion Proteomics US LLC, Menlo Park, CA
- WP 467 **Potential Lipid Biomarker Identification in Hepatocellular Carcinoma;** Guangxiang Wu¹; Yiyun (Sherry) Wang²; Nicholas J. Skill³; Mary A. Maluccio³; Patrick L. Love²; ¹Biomarker Center of Excellence, Covance, Greenfield, IN; ²In Vivo Pharmacology-Receptor Occupancy, Covance, Greenfield, IN; ³Indiana University School of Medicine, Indianapolis, IN

- WP 468 **Discovery of Glyco-Biomarkers of Complications in Diabetes;** Di Wu¹; Helen Colhoun²; Michael Ferguson¹; ¹College of Life Sciences, University of Dundee, Dundee, UK; ²Medical Research Institute, University of Dundee, Dundee, UK
- WP 469 **Mass-Spectrometry Based Analysis of Human Blood Sera Peptidome for a Search of Socially Significant Disease Biomarkers;** Georgy Arapidi^{1,2}; Rustam Ziganshin¹; Sergey Kovalchuk¹; Igor Azarkin¹; Olga Ivanova¹; Nikolay Anikanov¹; Dmitry Kamaev¹; Vadim Govorun¹; Vadim Ivanov¹; ¹Institute of Bioorganic Chemistry, RAS, Moscow, Russian Federation; ²Moscow Institute of Physics and Technology, Moscow, Russian Federation
- WP 470 **A Novel Quantification Model for Discovering Glycopeptide Biomarkers;** Anoop Mayampurath¹; Ehwang Song²; Chuan-yih Yu¹; Yehia Mechref²; Haixu Tang¹; ¹Indiana University, Bloomington, IN; ²Texas Tech University, Lubbock, TX
- WP 471 **Biomarker Discovery for Radiation Induced Tissue Damage Via Un-Targeted Mass Spectrometry Based Metabolomics;** Jace W. Jones; Alexander Bennett; Ann M. Farese; Thomas J. MacVittie; Maureen A. Kane; University of Maryland, Baltimore, MD
- WP 472 **Metformin Decreases Glyco-Oxidation Markers: A Study Utilizing Multiple Reaction Monitoring;** Owen Kinsky^{1,6}; Michael Kimzey^{1,6}; Serena Allred^{2,6}; Tarun Anumol^{3,6}; Hussein Yassine^{4,6}; Craig Stump^{4,6}; George Tsapralis^{1,6}; Shane Snyder^{3,6}; Dean Billheimer^{5,6}; Terrence Monks^{1,6}; Serrine Lau^{1,6}; ¹SWEHSC, Dept. of Pharm/Tox, College of Pharmacy, Tucson, AZ; ²Division of Epidemiology and Biostatistics, Tucson, AZ; ³Dept. of Chemical & Environmental Engineering, Tucson, AZ; ⁴College of Medicine, Tucson, AZ; ⁵AZ Stat. Cons. Lab, Dept. of Ag. and Biosys. Eng., Tucson, AZ; ⁶University of Arizona, Tucson, AZ
- WP 473 **MALDI TOF/TOF Determination of Serum Plasminogen Sialylation Profile from Patients with Gastric Precancerous Lesions;** Catarina Gomes¹; Andreia Almeida²; Alexandre Ferreira²; Celso Reis^{1,3}; Hugo Osorio^{1,3}; ¹IPATIMUP, Porto, Portugal; ²Department of Chemistry, University of Aveiro, Aveiro, Portugal; ³Faculty of Medicine, University of Porto, Porto, Portugal
- WP 474 **Integrating Targeted Strategies for Characterization and Quantification Using Orbitrap Technology and Novel Software for Targeted Glycoprotein/Peptide Studies;** Sucharita Dutta¹; Julian Saba²; Scott Peterman²; Sergei Snovidia²; Lifang Yang¹; Julius Nyalwidhe¹; Oliver Semmes¹; ¹Leroy T. Canoles Cancer Center - EVMS, Norfolk, VA; ²Thermo Fisher Scientific, San Jose, CA; ³Thermo Fisher Scientific -Rockford, Rockford, IL
- WP 475 **Biomarker Screening for Drug-Induced Nephrotoxicity in Rats Using UPLC-MS^E;** Liuxi Chen¹; Brad Williams²; Jonathan Phillips¹; Scott Geromanos²; Vladimir Papov¹; ¹Boehringer Ingelheim Pharmaceuticals, Inc, Ridgefield, CT; ²Waters Corporation, Milford, MA
- Biomarker Quantitation: New Methods, 476 – 489**
- WP 476 **Application of DiLeu Isobaric Tandem-Mass Tags to Quantitative Proteomic Analyses of Cerebrospinal Fluid from Alzheimer's Disease Patients;** Dustin Frost; Jingxin Wang; Robert Cunningham; Cynthia Carlsson; Lingjun Li; University of Wisconsin, Madison, WI
- WP 477 **Extraction and Quantitation of Biomarkers from Human Plasma in the Low Nanogram Range with a Rapid and Economical Method;** Jun Wang¹; Lingjun Li²; Zong-Ping Zhang¹; ¹PPD, Middleton, U.S.; ²University of Wisconsin, Madison, WI
- WP 478 **Utilizing MFLC/MS/MS for Large Molecule Quantitative Bioanalysis;** Casey Johnson; Jennifer Zimmer; Chad Christianson; Shane Needham; Alturas Analytics, Moscow, ID
- WP 479 **Improved Throughput and Reproducibility for Targeted Protein Quantification Using a New High Performance Triple Quadrupole Mass Spectrometer;** Reiko Kiyonami; Mary Blackburn; Andreas Hühmer; ThermoFisher Scientific, San Jose, CA
- WP 480 **Ulthroughput Multiple Reaction Monitoring Mass Spectrometry for Protein Biomarker Validation in Nondepleted Serum;** Mary Joan Castillo; Adam Jay McShane; Xudong Yao; University of Connecticut, Storrs, CT
- WP 481 **Defining Expectations for iTRAQ Analysis of Urinary Proteins by a Common, Cost-Conscious Approach;** Yun Jiang¹; Matthew Wroblewski¹; Yan Zhang²; Gary Nelsestuen¹; ¹University of Minnesota, Minneapolis, MN; ²University of Rochester, Rochester, NY
- WP 482 **TMTcalibrator – A Novel Method Delivering Low ng/ml Sensitivity for Targeted MS Assays in Biological Fluids;** Ian Pike¹; Emma Lahert¹; Claire Russell¹; Christopher Lösner²; Stephan Jung²; Sasa Koncarevic²; Malcolm Ward¹; ¹Proteome Sciences plc, London, UK; ²Proteome Sciences R&D GmbH & Co. KG, Frankfurt, Germany
- WP 483 **Effective Coupling of CITP/CZE with nanoESI-MS Using Advanced Interface Technologies for High Sensitivity Sample Quantification;** Keqi Tang¹; Chengcheng Wang²; Cheng S. Lee²; Richard D. Smith¹; ¹Pacific NW National Laboratory, Richland, WA; ²University of Maryland, College Park, MD
- WP 484 **Targeted Mass Spectrometric Approach Coupled with Long Gradient Separation Enables Highly Sensitive, Large Scale Protein Quantification in a Single Analysis;** Tujin Shi¹; Thomas L. Fillmore²; Rui Zhao²; Athena A. Schepmoes¹; Carrie D. Nicora¹; Yuqian Gao¹; Ronald J. Moore¹; Tao Liu¹; Karin D. Rodland¹; Keqi Tang¹; Richard D. Smith¹; David G. Camp¹; Wei-Jun Qian¹; ¹PNNL, Richland, WA; ²Environmental Molecular Sciences Laboratory, PNNL, Richland, WA
- WP 485 **Metal-tag Labeling Coupled with Multiple Reaction Monitoring-Mass Spectrometry for Absolute Quantitation of Proteins;** Yangjun Zhang; Xueying Wang; Xin Wang; Hongjun Lin; Xiaohong Qian; Beijing Proteome Research Ctr, Beijing, China
- WP 486 **Evaluating the Ruggedness of Nanospray on a Curtain Gas-Triple Quadrupole MS Equipped with Emitter Rinsing;** Amanda Berg; Helena Svobodova; Ben Ngo; Gary Valaskovic; New Objective, Inc., Woburn, MA
- WP 487 **Automation of Immunoprecipitation via Magnetic Beads on the Perkin Elmer Janus Platform for Biomarker Analyses;** Richard Wong; Baomin Xin; Timothy Olah; Bristol-Myers Squibb, Pennington, NJ
- WP 488 **Targeted Protein Quantification for Human Plasma Samples by MRM and MRM-HR;** Xiaomin Song¹; Thiri Zaw¹; Ardeshir Amirkhani¹; Chris Hodgkins²; Mark Molloy¹; ¹APAF, Macquarie University, Sydney, Australia; ²ABSCIEX, Sydney, Australia
- WP 489 **A High-Throughput and Reproducible Workflow for MRM Analysis of Biological Samples;** Qin Fu¹ (equal contribution); Michael Kowalski² (equal contribution); Weihua Ji¹; Jie Zhu¹; Graham Threadgill³; Christie Hunter⁴; Jennifer Van Eyk¹; ¹Johns Hopkins University, Baltimore, MD; ²Beckman Coulter Life Sciences, Indianapolis, IN; ³Beckman Coulter, Inc., Fullerton, CA; ⁴AB Sciex, Foster City, CA

Proteins: Complexes and Aggregation, 490 – 514

- WP 490 **Development of an Online Size Exclusion Chromatography-Mass Spectrometry Method for Characterization of Highly Heterogeneous Protein Samples;** [Khaja Muneeruddin](#); Rinat Abzalimov; Igor A. Kaltashov; *University of Massachusetts, Amherst, MA*
- WP 491 **Online- Bioaffinity- Mass Spectrometry for “Top-Down” Structure and Affinity Determination of α -Synuclein Aggregation;** [Michael Przybylski](#)¹; Stefan Slamnoi¹; Mihaela Stumbaum^{1,2}; Camelia Vlad^{1,2}; Kathrin Lindner¹; Christiaan Karreman¹; Marcel Leist¹; Bastian Hengerer³; ¹*Universitat Konstanz, Konstanz, Germany*; ²*SAW-Instruments GmbH, Bonn, Germany*; ³*Boehringer Ingelheim GmbH & Co KG, ZNS Research, Biberach, Germany*
- WP 492 **Phosphorylation of the Sae2 Endonuclease Regulates Its Solubility and Activity in DNA Repair;** Qiong Fu; Chia-fang Lee; Julia Chow; [Maria D. Person](#); Tanya T. Paull; *The University of Texas, Austin, TX*
- WP 493 **Mapping synphilin-1 Binary Interactions Using Isotopically Tagged Cross-Linking and Mass Spectrometry;** [Xiaobin Xu](#)¹; Han Hu²; Anatoli B. Meriin²; Nava Zaarur²; Nancy Leymarie²; Yi Pu¹; Mark E. McComb²; Michael Y. Sherman²; Catherine E. Costello^{1,2}; ¹*Boston University, Boston, MA*; ²*Boston University School of Medicine, Boston, MA*
- WP 494 **Mapping Protein-DNA Interactions Using UV Cross-linking and Mass Spectrometry;** [Fiona Flett](#)¹; David Clarke²; Pat Langridge Smith²; Logan Mackay²; Heidrun Interthal¹; ¹*School of Biology, University of Edinburgh, Edinburgh, UK*; ²*School of Chemistry, University of Edinburgh, Edinburgh, UK*
- WP 495 **Protein Structures and Protein-Protein Interactions: Identifying Links;** [James Bruce](#); Juan Chavez; Chunxiang Zheng; Chad Weisbrod; Arti Navare; Xia Wu; Jimmy Eng; Sayaka Shibata; Shaday Michan; Richard Harkewicz; *University of Washington, Seattle, WA*
- WP 496 **A Combination of CHIP Seq and Mass Spectrometry Methods Provides Complementary Proteomic and Genomic Data;** [Clive S. D'Santos](#)¹; Hisham Mohammed²; Christopher Taylor¹; Aurelian Serandour²; Gordon D. Brown²; H. Raza Ali²; Kelly Holmes²; Jessica Robinson²; Amel Saadi²; John Stingl^{2,3}; Carlos Caldas^{2,3}; Jason S. Carroll^{2,3}; ¹*Proteomic Core Facility, CRUK Cambridge Institute, Cambridge, CB20RE*; ²*CRUK Cambridge Institute, Cambridge, UK*; ³*Department of Oncology, University of Cambridge, Cambridge, UK*
- WP 497 **Protein Cross-Linking of Multi-Protein Complex of S100A8 and S100A9 with TLR4/MD2: Considerations Regarding Chemistry and Efficiency;** Alena Dreiling; Thomas Vogl; Johannes Roth; [Simone Koenig](#); *University of Muenster, Muenster, Germany*
- WP 498 **Identification of Stress-Dependent Interactors of the MAP Kinase Sty1 in *Schizosaccharomyces pombe*;** [Guadalupe Espadas](#)¹; Esther Paulo²; Francesco M. Mancuso¹; Elena Hidalgo²; Eduard Sabidó¹; ¹*Proteomics Unit CRG/UPF, Barcelona, Spain*; ²*Universitat Pompeu Fabra, Barcelona, Spain*
- WP 499 **Topology of the Anaphase Promoting Complex/Cyclosome Studied by CBDPS (cyanurbiotindipropionylsuccinimide) Crosslinking;** [Nicole Sessler](#)¹; Taka-Aki Ichu²; Evgeniy Petrotchenko¹; Christoph Borchers^{1,3}; ¹*University of Victoria-Genome BC Proteomics Centre, Victoria, Canada*; ²*University of Victoria, Victoria, Canada*; ³*Dept of Biochemistry and Microbiology, U Victoria, Victoria, Canada*
- WP 500 **Determination of Outer Dynein Arm Protein Complex Topology using Chemical Crosslinking and LC/MS/MS Analysis;** Kevin Blackburn¹; Andrew Argo¹; Lawrence Ostrowski²; [Michael B. Goshe](#)¹; ¹*North Carolina State University, Raleigh, NC*; ²*University of North Carolina, Chapel Hill, NC*
- WP 501 **Chaperones Identified from Affinity Purification-MS/MS Facilitate Epilepsy-Associated Mutant GABA_A Receptor Folding in the Endoplasmic Reticulum;** [Yajuan \(Megan\) Wang](#); Xiao-Jing Di; Mark R. Chance; Ting-Wei Mu; *Case Western Reserve University, Cleveland, OH*
- WP 502 **Fluorescence Complementation Affinity Proteomics to Study Kinase Substrate Interactions;** [Lingfei Zeng](#); Chih-Chao Hsu; Chang-Deng Hu; Andy Tao; *Purdue University, West Lafayette, IN*
- WP 503 **Applications of the Fc-III Tagged Protein Expression System for Studying Protein Complexes;** [Shan Feng](#); Gulishana Adeljiang; Yiyi Gong; Lixiao Gu; Haiteng Deng; *Tsinghua University, Beijing, China*
- WP 504 **Magic Lysis Buffer Improves the Efficiency of Immunoprecipitation-LC/MS/MS (IP-MS) with Less Non-Specific Interactions and Stronger Retention of Binding Protein Partners;** Susanne Breitkopf¹; Min Yuan¹; [John Neveu](#)³; John M Asara^{1,2}; ¹*Beth Israel Deaconess Medical Center, Boston, MA*; ²*Harvard Medical School, Boston, MA*; ³*ESI Source Solutions, Woburn, MA*
- WP 505 **iTRAQ Stable Isotope Labeling and Multiple Immunoaffinity Matrices for Enhanced Mass Spectrometric Identification of Protein Complex Constituents;** [Sricharan Bandhakavi](#)¹; Michael Early¹; Jonathan Kohn¹; Ebbing de Jong²; Timothy Griffin²; ¹*Bio-Rad Laboratories, Hercules, CA*; ²*University of Minnesota, MN*
- WP 506 **ARL13B, PDE6D, and CEP164 Form a Functional Network for INPP5E Ciliary Targeting;** Melissa Humbert; [R. Marshall Pope](#); Yalan Li; Val C. Sheffield; Seongjin Seo; *University of Iowa, Iowa City, IA*
- WP 507 **Single-step Affinity Isolation and Rapid Non-Denaturing Elution of Endogenous Protein Complexes with Subsequent LC-MS Characterization;** [Paul Dominic B. Olinares](#); Zachary T. Quinkert; Amelia D. Dunn; Julio C. Padovan; Brian T. Chait; *The Rockefeller University, New York, NY*
- WP 508 **An Improved MS Strategy for Probing Protein-Protein Interaction and Its Application in the Study of Tumor Cell Chemotaxis;** [Ruibing Chen](#); Yanping Wang; Ning Zhang; *Tianjin Medical University, Tianjin, China*
- WP 509 **A High-Throughput, Mass-Spectrometry-Based Platform for Rapid Profiling of Human Protein Interaction Networks;** [Edward L. Huttlin](#)¹; Lily Ting¹; Raphael Bruckner¹; Melanie Gygi¹; Robert Obar¹; Virginia Guarani-Pereira¹; Ramin Rad¹; Deepak Kolippakkam¹; Bo Zhai¹; Stanley Tam¹; Fana Gebreab¹; Myriam Boukhalil¹; Joao Paulo¹; Timothy Harris²; Spyros Artavanis-Tsakonas¹; Mathew Sowa¹; J. Wade Harper¹; Steven P. Gygi¹; ¹*Harvard Medical School, Boston, MA*; ²*Biogen, Cambridge, MA*
- WP 510 **Defining DNA Sensing Mechanisms during Host Innate Immunity and Viral Immunosuppression;** [Benjamin Diner](#); Tuo Li; John Fuesler; Ileana M. Cristea; *Princeton University, Princeton, NJ*
- WP 511 **Quantitation of Proteins in Ribosomes and Ribosome Assembly Complexes by LC-MS^E;** [Romel Dator](#); Kirk Gaston; Patrick Limbach; *University of Cincinnati, Cincinnati, OH*
- WP 512 **Evolution of the Protein Stoichiometry in the L12 Stalk of Bacterial and Organellar Ribosomes;** [Ingo Wohlgemuth](#)¹; Iakov Davydov I.²; Irena I. Artamonova³;

- Alexander G. Tonevitsky⁴; Marina V. Rodnina¹; Henning Urlaub^{1,5}; ¹*MPI for Biophysical Chemistry, Goettingen, Germany*; ²*SRC Bioclinicum, Moscow, Russia*; ³*Russian Academy of Science, Moscow, Russia*; ⁴*Lomonosov Moscow State University, Moscow, Russia*; ⁵*University Medical Center Göttingen, Göttingen, Germany*
- WP 513 **Mass Spectrometric Binding Study on Novel Anticancer Agents as Tubulin Depolymerizer**; Sool Yeon Cho¹; Benjamin S. Hoffman²; Amol Padgaonkar¹; Stephen C. Cosenza¹; Venkat Palella³; Muralidhar R. Mallireddigari³; D.R.C. Venkata Subbaiah¹; Revathi Patti³; M. V. Ramana Reddy¹; E. Premkumar Reddy¹; John Roboz¹; ¹*Ichan School of Medicine at Mount Sinai, New York, NY*; ²*The Fels Cancer Institute, Temple University, Philadelphia, PA*; ³*Onconova Therapeutics, Inc., Newtown, PA*
- WP 514 **Role of Lysine Residues in the Interaction of Blood Coagulation Factor VIII with Its Clearance Receptor Low-Density Lipoprotein Receptor-Related Protein**; Maartje Van Den Biggelaar¹; Johan H Faber²; Marleen Zuurveld¹; Carmen van der Zwaan¹; Jesper J Madsen³; Ole H Olsen²; Henning R Stennicke²; Koen Mertens¹; Alexander B Meijer¹; ¹*Sanquin Research, Amsterdam, Netherlands*; ²*Novo Nordisk, Copenhagen, Denmark*
- Proteins PTM I, 515 – 539**
- WP 515 **A Suitability Study of Commonly-Used Isolation Techniques for Microtubule Associated Protein Tau by LC-MS**; Robert Pelot^{1,2}; Jon Reed¹; Gogce Crynen¹; Corbin Bachmeier¹; James Evans¹; Laila Abdullah¹; Fiona Crawford¹; ¹*Roskamp Institute, Bradenton, FL*; ²*The Open University, Milton Keynes, UK*
- WP 516 **Oxidative Post-Translational Modifications of Amyloidogenic Light Chain Proteins from a Patient with Amyloid Light Chain Amyloidosis**; Yanyan Lu; Yan Jiang; Tatiana Prokaeva; Yang Mao; Lawreen Connors; Catherine Costello; *Boston University, Boston, MA*
- WP 517 **Analysis of PTM Crosstalk in Photosynthetic Model Organisms Using a 2D Gel-Based Approach**; Silas Rodrigues; Leslie Hicks; *Donald Danforth Plant Science Center, Saint Louis, MO*
- WP 518 **Analysis of Protein Isoform in HEK293T Using New N-terminome Strategy**; Jeonghun Yeom^{1,2}; Cheolju Lee^{1,2}; ¹*Korea institute science and technology, Seoul, Korea*; ²*University of Science and Technology, Daejeon, Korea*
- WP 519 **a-N-methylation of DDB2 and Its Function in Nucleotide Excision Repair**; Qian Cai; Yinsheng Wang; *University of California, Riverside, CA*
- WP 520 **Identification of indole-3-acetic Acid Modified Proteins of Arabidopsis**; Peng Yu¹; Jutta Ludwig-Müller²; Adrian Hegeman¹; Jerry Cohen¹; ¹*University of Minnesota, Falcon Heights, MN*; ²*TU-Dresden, Dresden, Germany*
- WP 521 **Characterization of Triose Phosphate Isomerase in *Drosophila* Presenilin Mutant**; Jong Bok Seo¹; Soo Young Kim¹; Young Ho Koh²; ¹*Korea Basic Science Institute, Seoul, South Korea*; ²*Hallym University, Anyang, Republic of Korea*
- WP 522 **Probing the Transmural Molecular Heterogeneity of the Heart Using High-Resolution Top-Down Mass Spectrometry**; Zachery Gregorich; Wei Guo; Timothy Hacker; Ying Ge; *UW, Madison, WI*
- WP 523 **Qualitative Examination of the Diversity of Protein Post-Translational Modifications Present in Model Prokaryotic and Eukaryotic Organisms**; Ritin Sharma²; Rachel Adams²; Paul Abraham²; Robert Hettich¹; ¹*Oak Ridge National Laboratory, Oak Ridge, TN*; ²*University of Tennessee, Knoxville, TN*
- WP 524 **Characterization of Extensive Post-translational Modification of Endogenous Human p53**; Caroline DeHart¹; Jasdave S. Chahal²; S. J. Flint¹; David H. Perlman³; ¹*Dept. of Molecular Biology, Princeton University, Princeton, NJ*; ²*Whitehead Institute for Biomedical Research, MIT, Cambridge, MA*; ³*Proteomics and Mass Spec. Core, Princeton Univ., Princeton, NJ*
- WP 525 **Discovering the Role of Post-translational Modifications in Regulation of Protein Activities in Diabetes using an *in vivo* SILAC approach**; Soraya Hoelper; Hendrik Nolte; Thomas Braun; Marcus Krüger; *Max-Planck-Institute for Heart and Lung Research, Bad Nauheim, Germany*
- WP 526 **Comparative Analysis of RNA Polymerase II Reveals Potential Evolutionary Conserved Posttranslational Modified Sites Amongst *Schizosaccharomyces pombe* and *Saccharomyces cerevisiae***; Selene Swanson¹; Charles Banks¹; Zhihui Wen¹; Brad Groppe¹; Laurence Florens¹; Michael Washburn^{1,2}; ¹*Stowers Institute for Medical Research, Kansas City, MO*; ²*University of Kansas Medical Center, Kansas City, KS*
- WP 527 **Deep Characterization of Combinatorial Post-Translational Modifications in a Natural Microbial Community**; Zhou Li^{1,2}; Yingfeng Wang²; Nicholas Justice³; Tae-Hyuk Ahn²; Robert Hettich^{1,2}; Jillian Banfield³; Chongle Pan^{1,2}; ¹*University of Tennessee, Knoxville, TN*; ²*Oak Ridge National Laboratory, Oak Ridge, TN*; ³*University of California, Berkeley, CA*
- WP 528 **Calorie Restriction and SIRT3 Trigger Global Reprogramming of the Mitochondrial Protein Acetylome**; Kristin Dittenhafer-Reed¹; Alex Hebert¹; Wei Yu¹; Derek Bailey²; Ebru Selin Selen³; Joshua Carson³; Melissa Boersma¹; Michael Westphal⁵; David Pagliarini³; Tomas Prolla⁷; Fariba Assadi-Porter^{3,6}; Sushmita Roy⁴; Joshua Coon^{1,5}; John Denu¹; ¹*Department of Biomolecular Chemistry, Madison, WI*; ²*Department of Chemistry, Madison, WI*; ³*Department of Biochemistry, Madison, WI*; ⁴*Dept of Biostatistics and Medical Informatics, Madison, WI*; ⁵*Genome Center of Wisconsin, Madison, WI*; ⁶*National Magnetic Resonance Facility at Madison, Madison, WI*; ⁷*Department of Genetics and Medical Genetics, Madison, WI*
- WP 529 **Radical Acetylation: Possible Routes of Epigenetic Modifications of Proteins**; Atecla Nunciata Lopes Alves¹; Sheila Barreto Guterres¹; Emanuel Carrilho²; Maria Aparecida Juliano¹; Etelvino Jose Henriques Bechara¹; Nilson Antonio Assunção¹; ¹*Unifesp, Sao Paulo, Br*; ²*Universidade de Sao Paulo, Sao Paulo, Br*
- WP 530 **Comprehensive Profiling of Protein Lysine Acetylation in *Escherichia coli***; Kai Zhang¹; Shuzhen Zheng¹; Jeong Soo Yang²; Yingming Zhao²; Yue Chen²; Zhongyi Cheng²; ¹*Nankai University, Tianjin, China*; ²*The University of Chicago, Chicago, IL*
- WP 531 **Quantitative Profiling of Lysine Acetylation in Mouse Tissues by AcetylScan**; Hongbo Gu¹; Matthew Stokes¹; Ailan Guo¹; Kimberly Lee¹; Jianmin Ren¹; Xiaoying Jia¹; Meghan Duncan²; Vipin Suri²; Jeffrey Silva¹; ¹*Cell Signaling Technology, Danvers, MA*; ²*Sirtris, A GSK Company, Cambridge, MA*
- WP 532 **Enhanced Ionization Efficiency in ESI by Dimethylation of Amines Compared to Acetylation of Amines**; Kyungcho Cho; Jeongwon Kang; JiHye Hong; KwangPyo Kim; *Konkuk university, Seoul, Korea*
- WP 533 **Distinct Lysine Methylation Profiles of Outer Membrane Protein B in Virulent and Avirulent *Rickettsiae* Revealed by LCMS**; Guanghai Wang¹; Amila Abeykoon²; Chien-Chung Chao³; Wei-Mei Ching³; David Yang²; Marjan Gucek¹; ¹*NHLBI, NIH, Bethesda, MD*; ²*Georgetown University, Washington, DC*; ³*Naval Medical Research Center, Silver Spring, MD*

- WP 534 **A Dual-Enzyme and Dual-Activation Strategy for Comprehensive and Accurate Characterization of Protein Arginine-Methylation in *Trypanosoma burcei* Mitochondrion**; Jun Li; Chengjian Tu; Bo An; Jun Qu; *University at Buffalo, Buffalo, NY*
- WP 535 **Proteome-Wide Screening of Lysine Succinylation in *Escherichia coli* Reveals Its Broad Roles in Cellular Metabolism**; Minjia Tan^{1,2}; Yue Chen¹; Zhongyu Xie¹; Zhike Lu¹; Yingming Zhao¹; ¹*University of Chicago, Chicago, IL*; ²*Shanghai Institute of Materia Medica, Shanghai, China*
- WP 536 **The First Mammalian Succinylome Analysis Reveals SIRT5-mediated Lysine Desuccinylation and Its Roles in Diverse Cellular Pathways**; Yue Chen¹; Chao Peng¹; Minjia Tan^{1,2}; Lunzhi Dai¹; Zhongyu Xie¹; Yingming Zhao¹; ¹*University of Chicago, Chicago, IL*; ²*Shanghai Institute of Materia Medica, Shanghai, China*
- WP 537 **Statistical Approaches to Infer Kinase Pathway Activation from Mass Spectrometry-Based Phosphoproteomics Data**; Pedro R. Cutillas; *Imperial College London, London, UK*
- WP 538 **In-gel Visualization and Identification of Phosphoproteomes**; Linna Wang; Weiguo Andy Tao; *Purdue University, West Lafayette, IN*
- WP 539 **Low pH Differential Thiol Labeling Agents for Studying Cellular Redox-based Regulation Using MS**; Christopher A Bonham; Aaron J Steevensz; Qiudi Geng; Panayiotis O Vacratsis; *Dept. of Chem. and Biochem., University of Windsor, Windsor, ON, Canada*
- Peptides: PTM Identifications, 540 – 574**
- WP 540 **Highly Efficient Ionization of Phosphopeptides at Low pH by Desorption Electrospray Ionization Mass Spectrometry**; Ning Pan¹; Pengyuan Liu¹; Weidong Cui²; Bo Tang³; Jingmin Shi³; Hao Chen¹; ¹*Ohio University, Athens, OH*; ²*Washington University, St. Louis, MO*; ³*Shandong Normal University, Jinan, China*
- WP 541 **Electron-Transfer and Higher-Energy Collision Dissociation, ETHcD, Provides for Full Peptide Sequence Coverage and Unambiguous Phosphosite Localization**; Christian Frese¹; Dirk Nolting Nolting²; Jens Griep-Raming²; Henk van den Toorn¹; Houjiang Zhou¹; Thomas Taus³; Karl Mechtler³; Maarten Altelaar¹; Albert J. R. Heck¹; Shabaz Mohammed¹; ¹*Utrecht University, Utrecht, Netherlands*; ²*Thermo Fisher Scientific, Bremen, Germany*; ³*IMP - Research Institute of Molecular Pathology, Vienna, Austria*
- WP 542 **Extending the Phosphoproteomics Toolkit**; Amanda Patrick; Nicolas Polfer; *University of Florida, Gainesville, FL*
- WP 543 **Data Independent Analysis – A New Strategy for Discovery of Phosphopeptides in Complex Proteome Samples**; Joerg Dojahn; Christian Baumann; *AB SCIEX, Darmstadt, Germany*
- WP 544 **Investigation and Characterization of Potential Dimetallic Tags for the Selective Recognition and Protection of Phosphate Ester Groups in CAD Activation**; Simon Svane; Christine J. McKenzie; Frank Kjeldsen; *University of Southern Denmark, Odense M, Denmark*
- WP 545 **Coupling Immobilized Alkaline Phosphatase-based Automated Diagonal Capillary Electrophoresis to Tandem Mass Spectrometry for Phosphopeptide Analysis**; Si Mou; Liangliang Sun; Norman Dovichi; *University of Notre Dame, Notre Dame, IN*
- WP 546 **Nucleus Phosphoproteome Reveals that EGF Regulates Alternative Splicing through mTORC1 Pathway in MDA-MB-468 Cells**; Xianwei Chen¹; Dan Guo¹; Xiaomin Lou¹; Ju Zhang¹; Jin Zi²; Jun Zhang¹; Quanhui Wang^{1,2}; Haidan Sun¹; Zhaohui Wang¹; Yuan Wang¹; Weixin Guo¹; Jiao Guo¹; Feng Xian¹; Jia Zhang³; Yang Li³; Yusheng Dong³; Liang Lin²; Siqi Liu^{1,2}; ¹*Beijing Institute of Genomics, CAS, Beijing, China*; ²*BGI-Shenzhen, Shenzhen, China*; ³*Beijing Protein Innovation, Beijing, China*
- WP 547 **Optimization of Lectin Enrichment of Glycopeptides for Identification of Site-Specific Core-Fucosylation in Human Serum**; Zhijing Tan; *University of Michigan, Ann Arbor, MI*
- WP 548 **Quantitative Site-Specific Glycosylation on HIV-1 Envelope Glycoprotein**; Tsung-Ping Lin; Chein-Hung Chen; Jennifer M. Lo; Che Alex Ma; Chung-Hsuan Chen; *Genomics Research Center, Academia Sinica, Taipei, Taipei, Taiwan*
- WP 549 **Automatic Glycopeptide Sequencing by Y1 Ion (AGSY)**; Chein-Hung Chen¹; Hsin-Yu Hsieh¹; Pang-Hung Hsu²; Chung-Hsuan Chen¹; ¹*Academia Sinica, Taipei, Taiwan*; ²*National Taiwan Ocean University, Keelung, Taiwan*
- WP 550 **Identification of Prostate Specific Antigen Glycosylation in Clinical Urine Samples by Mass Spectrometry**; Chun-Jen Hsiao^{1,2}; Chein-Hung Chen¹; Hsin-Yu Hsieh¹; Wen Horng Yang³; Tzong-Shin Tzai³; Chung Hsuan (Winston) Chen^{1,2}; ¹*Academia Sinica, Taipei, Taiwan*; ²*National Yang-Ming University, Taipei, Taiwan*; ³*National Cheng Kung University Hospital, Tainan, Taiwan*
- WP 551 **Characterization of Sialylated Glycopeptides in Caseinoglycomacropeptide by Tandem Mass Spectrometry with Electron Transfer Dissociation and High Energy Collision Dissociation**; Haiying Li; Finn Kirpekar; *University of Southern Denmark, Odense, Denmark*
- WP 552 **Modifications of Cysteine and MS Data Complexity**; Jens T Vanselow; Andreas Schlosser; *Rudolf-Virchow-Zentrum, University Wuerzburg, Wuerzburg, Germany*
- WP 553 **Improvements in the Mass Spectrometric Detection of S-Glutathionylated Peptides Using Multiple Fragmentation Approaches**; Susana Comte-Walters; Jennifer Rutherford Bethard; Lauren Ball; Joachim Uys; *Medical Univ of S Carolina, Charleston, SC*
- WP 554 **Capturing Reversibly Oxidized Cysteines in the Myocardium Using Thiol-Disulfide Exchange**; Jana Paulech; Nestor Solis; Max Puckeridge; Kiersten Liddy; Melanie White; Stuart Cordwell; *The University of Sydney, Sydney, Australia*
- WP 555 **Defining Novel Redox-Regulated Targets of Growth Factor Signaling Using Differential Alkylation, Thiopropyl Sepharose Enrichment, and Label-Free Quantitative Proteomics**; Jason Held; Tara Srinivasan; Alexandria D'Souza; Birgit Schilling; Gary Scott; Christopher Benz; Bradford Gibson; *Buck Institute for Age Research, Novato, CA*
- WP 556 **Characterization of a Post-translational Oxidative Modification in a Fetal Hemoglobin (γ -V68M \rightarrow D) Associated with the Blue Baby Syndrome**; Michael Strader¹; Wayne Hicks¹; Ah-Lim Tsai²; Gang Wu²; John Olson³; Mitchell Weiss⁴; Todd Mollan¹; Abdu Alayash¹; ¹*FDA/CBER, Rockville, Md, MD*; ²*University of Texas-Houston Medical School, Houston, TX*; ³*Rice University, Houston, TX*; ⁴*The Children's Hospital of Philadelphia, Philadelphia, PA*
- WP 557 **Stable Isotope Labeling with ¹⁸O to Examine Oxidative Processes in Fetal Hemoglobin with a Met to Asp Conversion**; Wayne Hicks; Michael Strader; Todd Mollan; Abdu Alayash; *Food and Drug Administration, Gaithersburg, MD*

- WP 558 **Mass Spectrometry Characterization of Acrolein Protein Targets in the Liver: Focus On Site-Specific Analysis;** Yiyang Zhu; Carthene Bazemore-Walker; *Brown University, Providence, RI*
- WP 559 **A Simple Work Flow for Identification of Acylated Proteins by LC MS/MS Using Sequentially Connected C4 and C18 Columns;** Wei Chen; Colin Gottlieb; Maurine Linder; Robert Sherwood; Hong Jiang; Hening Lin; Sheng Zhang; *Cornell University, Ithaca, NY*
- WP 560 **Mass Spectral Enhanced Detection of UbIs Using SWATH Acquisition: MEDUSA™ -Utilizing the Chemical Derivatization Dependent Generation of Isopeptide Diagnostic Ions;** Navin Chicooree^{1,2}; John Griffiths¹; Yvonne Connolly¹; Thomas Knapman³; Christie Hunter⁴; Duncan Smith¹; ¹*Paterson Institute for Cancer Research, Manchester, UK*; ²*School of Chemistry, University of Manchester, Manchester, UK*; ³*AB SCIEX, Phoenix House, Warrington, UK*; ⁴*AB SCIEX, Foster City, CA*
- WP 561 **Identification of Ubiquitinated Synaptic Proteins and Discovery of Lys29 Poly-Ubiquitin Function Using Ubiquitin K29R Mutant Cells;** Chan-Hyun Na; Drew Jones; Yanling Yang; Xusheng Wang; Yanji Xu; Junmin Peng; *St Jude Children's Research Hospital, Memphis, TN*
- WP 562 **Large-scale Global Identification of Protein Lysine Methylation *in vivo*;** Xing-Jun Cao¹; Anna M. Arnaudo^{1,2}; Benjamin A. Garcia¹; ¹*University of Pennsylvania, Philadelphia, PA*; ²*Princeton University, Princeton, NJ*
- WP 563 **Pitfalls in Identification of Lysine/Arginine Methylation by MS - Influence of Sample Preparation;** Bettina Sarg¹; Shadab Allipour Birgani²; Gerald Brosch²; Klaus Faserl¹; Leopold Kremser¹; Herbert Lindner¹; ¹*Div. of Clin. Biochemistry, Biocenter Innsbruck, Innsbruck, Austria*; ²*Division of Molecular Biology, Biocenter, Innsbruck, Austria*
- WP 564 **Differentiation of Symmetric/Asymmetric Dimethylated Arginine-containing Peptides Using MALDI Tandem Mass Spectrometry;** Matthew Openshaw¹; Yuzo Yamazaki²; Omar Belgacem¹; Takeshi Kawamura³; ¹*Kratos Analytical, Manchester, UK*; ²*Shimadzu Corporation, Kyoto, Japan*; ³*University of Tokyo, Tokyo, Japan*
- WP 565 **Identifying Citrullinated Peptides in Complex Mixtures: Comparison of Label-Free and Chemical Modification Methods;** Manolo D. Plasencia¹; Henry W. Rohrs²; Michael L. Gross²; Emil R. Unanue¹; ¹*Washington University School of Medicine, St. Louis, MO*; ²*Washington University, St. Louis, MO*
- WP 566 **Direct Identification of Tyrosine Sulfation in Peptide Anions using 193 nm Ultraviolet Photodissociation;** Michelle Robinson; Jennifer Brodbelt; *University of Texas at Austin, Austin, TX*
- WP 567 **Side-Chain Losses in Electron Capture Dissociation Improves the Identification of Pt(II)-modification Sites on Peptides and Proteins;** Huilin Li; Jonathon Snelling; Mark Barrow; James Scrivens; Peter Sadler; Peter O'Connor; *University of Warwick, Coventry, UK*
- WP 568 **S- to N-palmitoyl Migration during Proteomic Sample Preparation;** Yuhuan Ji; Catherine E. Costello; Cheng Lin; *Biochem Dept, Boston University School of Medicine, Boston, MA*
- WP 569 **Sensitive Peptide Identification with Multiple Unexpected Modifications;** June Snedecor; Nuno Bandeira; *UCSD, La Jolla, CA*
- WP 570 **Posttranslational Modifications in Human Synaptic Microdomains of Human Brain Tissue Discovered Utilizing ABSciex Protein Pilot;** Guy Uechi; Matthew MacDonald; Mani Balasubramani; Robert Sweet; Nathan Yates; *University of Pittsburgh, Pittsburgh, PA*
- WP 571 **Identification of Phosphorylation Sites in Chk2 Kinase;** Henry W. Rohrs¹; Ilan Geerlof-Vidavskiy²; Manolo Plasencia¹; Hao Zhang¹; Alan Davis¹; Petra Erdmann-Gilmore¹; Anurag Agarwal¹; Reid Townsend¹; Helen Piwnicka-Worms¹; ¹*Washington University, St Louis, MO*; ²*FDA, St. Louis, MO*
- WP 572 **A large Synthetic Phosphopeptide Library for Mass Spectrometry Based Proteomics;** Harald Marx¹; Simone Lemeer¹; Jan Schliep¹; Lucrece Matheron²; Shabaz Mohammed²; Juergen Cox³; Matthias Mann³; Albert Heck²; Bernhard Kuster¹; ¹*Technical University Munich, Freising, Germany*; ²*Utrecht University, Utrecht, NL*; ³*Max-Planck Institute for Biochemistry, Munich, DE*
- WP 573 **Elucidation of Direct Substrates of Abelson Tyrosine Kinase in Cancer Cells Through Multiple Drug Treatments and Sensitive Kinase Assay Linked-Phosphoproteomics;** Justine Arrington; Liang Xue; W. Andy Tao; *Purdue University, West Lafayette, IN*
- WP 574 **Titanium Dioxide Photocatalytic Oxidation of Phosphopeptides for Simulation of *in vivo* Oxidation Reactions;** Miina Ruokolainen; Elisa Ollikainen; Tiina Sikanen; Risto Kostiaainen; Tapio Kotiaho; *University of Helsinki, Helsinki, Finland*
- Informatics: Peptide Identification/Characterization I,
575 – 596**
- WP 575 **Improved Recovery of Information from Mass Spectrometric Data When the Amount of Sample is Severely Limited;** Himanshu Grover¹; Sarah Keegan¹; Jonathan Giuffrida¹; Siyang Li²; Vladimir Brusic³; Shashi Murthy²; Barry L. Karger²; Alexander R. Ivanov²; David Fenyo¹; ¹*New York University, New York, NY*; ²*Northeastern University, Boston, MA*; ³*Dana-Farber Cancer Institute, Boston, MA*
- WP 576 **Untargeted Peptide Identification in SWATH™-MS Using Spectral Library Search;** Jian Wang¹; Monika Tuchosilka²; Brett Larsen²; Stephen Tate³; Anne-Claude Gingras²; Nuno Bandeira¹; ¹*UCSD, La Jolla, CA*; ²*Samuel Lunenfeld Research Institute at Mount Sinai, Toronto, Canada*; ³*AB-SCIEX, Concord, Canada*
- WP 577 ***De novo* Sequencing of Toxins from Predatory Sea Snails;** Yong Kil¹; Wilfred Tang¹; Chris Becker¹; Marshall Bern¹; Julita Imperial²; Baldomera Olivera²; David Fenyo³; Beatrix Ueberheide³; ¹*Protein Metrics Inc., San Carlos, CA*; ²*University of Utah, Salt Lake City, UT*; ³*New York University, New York, NY*
- WP 578 **Comprehensive Characterization of Porcine and Bovine Trypsin Digestion;** Scott Walmsley¹; Paul Rudnick²; Yuxue Liang²; Qian Dong²; Stephen Stein²; Alexey Nesvizhskii¹; ¹*University of Michigan, Ann Arbor, MI*; ²*National Institute of Standards and Technology, Gaithersburg, MD*
- WP 579 **Peptide *de novo* Sequencing Result Validation;** Lian Yang¹; Baozhen Shan¹; Bin Ma²; ¹*Bioinformatics Solutions Inc., Waterloo, Ontario*; ²*University of Waterloo, Waterloo, Canada*
- WP 580 **Whole Protein *de novo* Sequencing with LC-MS/MS;** Lian Yang¹; Baozhen Shan¹; Mingjie Xie¹; Bin Ma²; ¹*Bioinformatics Solutions Inc., Waterloo, ON*; ²*University of Waterloo, Waterloo, Canada*
- WP 581 **Computational Methods for Untargeted Protein Identification Using Data Independent SWATH Acquisition;** Chih-Chiang Tsou¹; Monika Tucholska²; Brett Larsen²; Anne-Claude Gingras²; Alexey Nesvizhskii¹; ¹*University of Michigan, Ann Arbor, MI*; ²*Samuel Lunenfeld Research Institute, Toronto, Canada*

- WP 582 **Hypothesis-driven Analysis: An Alternative Approach to Handle Data-Independent Acquisition Data of Peptides from a Novel Hybrid Orbitrap (Q-OT-qIT) Mass Spectrometer;** Ying Sonia Ting¹; Jarrett D. Egerton¹; Gennifer E. Merrihew¹; Richard S. Johnson¹; Lukas Käll²; Jesse D. Canterbury³; Reiko Kiyonami³; Michael Senko³; Vlad Zabrouskov³; Brendan MacLean¹; William Stafford Noble¹; Michael J. MacCoss¹; ¹University of Washington, Seattle, WA; ²Royal Institute of Technology, Solna, Sweden; ³Thermo Fisher Scientific, San Jose, CA
- WP 583 **Fragmentation Patterns of EThcD Spectra of Phosphopeptides and Glycopeptides;** Marshall Bern¹; Yong J. Kil¹; Wilfred Tang¹; Chris Becker¹; Christian Frese²; Maarten Altelaar²; Shabaz Mohammed²; Albert Heck²; John Syka³; Ryan Bomgardner³; Rosa Vine³; ¹Protein Metrics Inc., San Carlos, CA; ²Utrecht University, Utrecht, Netherlands; ³Thermo Fisher Scientific, San Jose, CA
- WP 584 **Annotating the R. norvegicus Genome Using Mass Spectrometry;** Jennifer Teubl¹; Manor Askenazi³; Meera Prasad¹; Peter Lobel²; David Fenyó¹; ¹NYU Langone Medical Ctr, NY, NY; ²Rutgers University, Piscataway, NJ; ³The Ionomix Initiative, Arlington, MA
- WP 585 **Identifying Proteins in Zebrafish Embryos Using Spectral Libraries Generated from Dissected Adult Organs and Tissues;** Suzanne J. van der Plas-Duivesteijn¹; Yassene Mohammed¹; Hans Dalebout¹; Annemarie H. Meijer²; Alex A. Henneman¹; André M. Deelder¹; Herman P. Spink²; Magnus Palmblad¹; ¹Leiden University Medical Center, Leiden, The Netherlands; ²Leiden University, Leiden, The Netherlands
- WP 586 **Integrative Genome, Transcriptome and Proteome Analysis of Rat Livers from Two Different Genetic Backgrounds;** Teck Yew Low¹; Sebastian van Heesch²; Henk van den Toorn¹; Piero Giansanti¹; Alba Cristobal¹; Bas van Breukelen¹; shabaz Mohammed¹; Victor Guryev³; Edwin Cuppen²; Albert J.R. Heck¹; ¹University of Utrecht, Utrecht, Netherlands; ²Hubrecht Institute, Utrecht, Netherlands; ³University of Groningen, Groningen, Netherlands
- WP 587 **iPRG-2013: Proteome Informatics Research Group Study: Using RNA-Seq Data to Refine Proteomic Data Analysis;** Robert Chalkley¹; Nuno Bandeira²; Matthew Chambers³; John Cottrell⁴; Eric Deutsch⁵; Eugene Kapp⁶; Henry Lam⁷; Thomas Neubert⁸; Rui-Xiang Sun⁹; Olga Vitek¹⁰; Susan Weintraub¹¹; ¹UCSF, San Francisco, CA; ²University of California, San Diego, CA; ³Vanderbilt University Medical Center, Nashville, TN; ⁴Matrix Science Ltd, London, UK; ⁵Institute for Systems Biology, Seattle, WA; ⁶Walter & Eliza Hall Institute of Medical Research, Melbourne, Australia; ⁷University of Science and Technology, Hong Kong, China; ⁸New York University School of Medicine, New York, NY; ⁹Chinese Academy of Sciences, Beijing, China; ¹⁰Purdue University, West Lafayette, IN; ¹¹University of Texas Health Science Center, San Antonio, TX
- WP 588 **Impact of Amino Acid Substitutions on Peptide Fragmentation Pattern in Tandem Mass Spectrometry;** Chao Ji; Randy Arnold; Haixu Tang; Predrag Radivojac; Indiana University, Bloomington, IN
- WP 589 **A Proteogenomic Workflow to Enhance the Annotation of Novel Microbial Genomes: Case Study of T. thermohydrosulfuricus WC1;** Tobin J. Verbeke; Vic Spicer; Richard Sparling; David Levin; Oleg V. Krokhnin; University of Manitoba, Winnipeg, Canada
- WP 590 **Using Orthogonal Techniques for Protein-Peptide Separation to Generate Comprehensive HDMSe Mass Spectral Libraries from an E. coli Model System;** Justin D. Topp³; Michael Nold⁵; Ezra S. Abrams²; Charles L. Farnsworth¹; Scott Geromanos⁵; Manor Askenazi⁴; Jeffrey C. Silva¹; ¹Cell Signaling Technology, Danvers, MA; ²Sage Science Inc., Beverly, MA; ³Gordon College, Wenham, MA; ⁴The Ionomix Initiative, Arlington, MA; ⁵Waters Corporation, Milford, MA
- WP 591 **Importing Data into Protein Prospector's MS-Viewer;** Peter R Baker; Alma Burlingame; Robert Chalkley; UCSF, San Francisco, CA
- WP 592 **Development of High Resolution MS/MS Library of Peptides from Protein Digestion;** Xiaoyu Yang; Pedatur Neta; Lisa Kilpatrick; Yuri Mirokhin; Yuxue Liang; Dmitrii Tchekhovskoi; Jeri Roth; Stephen Stein; NIST, Gaithersburg, MD
- WP 593 **Combining Demultiplexing and Label-free Quantification for High-resolution Data-independent Acquisition LC-MS/MS Analyses;** Aivett Bilbao^{1,2}; Ying Zhang¹; Dario Bottinelli¹; Bandar Alghanem¹; Frédéric Nikitin²; Jeremy Luban³; Caterina Strambio De Castillia³; Markus Mueller²; Frédérique Lisacek²; Emmanuel Varesio¹; Gérard Hopfgartner¹; ¹University of Geneva, Geneva, Switzerland; ²Swiss Institute of Bioinformatics, Geneva, Switzerland; ³University of Massachusetts, Worcester, MA
- WP 594 **Optimization of MS/MS Spectral Library Searching for High Mass Accuracy Spectra of Peptides;** Kan Zhu; Wenguang Shao; Yingwei Hu; Henry Lam; The Hong Kong University of Science and Technology, Hong Kong, China
- WP 595 **OpenSWATH: Automated, Targeted Analysis of Mass Spectrometric Data Generated by Data-Independent Acquisition;** Hannes Roest¹; George Rosenberger¹; Pedro Navarro¹; Ludovic Gillet¹; Sasa Miladinovic^{1,2}; Olga Schubert¹; Witold Wolski⁴; Johan Malmstroem³; Lars Malmstroem¹; Ruedi Aebersold¹; ¹ETH Zurich, Zurich, Switzerland; ²Biognosys AG, Schlieren, Switzerland; ³Department of Immunotechnology, Lund University, Lund, Sweden; ⁴SyBIT project of SystemsX.ch, Zurich, Switzerland
- WP 596 **Software for Integrated and Interactive Visualization of LC-MS Data and Peptide Identification Results;** Zefeng Zhang; Bioinformatics Solutions Inc., Waterloo, Canada
- Informatics: Post-Translational Modifications, 597 – 607**
- WP 597 **Identification of Putative PTM Cross-Talk Motifs from Large-Scale Experimental Datasets;** Mao Peng; Arjen Scholten; Albert J.R. Heck; Bas van Breukelen; Utrecht University, Utrecht, Netherlands
- WP 598 **GlycoMap_Align: An Application for Annotation of Glycoproteins through Alignment of Glycomaps;** Abhinav Mathur¹; Anoop Mayampurath¹; Chuan-Yih Yu¹; Ehwang Song²; Yehia Mechref²; Haixu Tang¹; ¹Indiana University, Bloomington, IN; ²Texas Technical University, Lubbock, TX
- WP 599 **Characterization of a-N-methylation of Centromere Protein CENP-B;** Xiaoxia Dai¹; Zi Wang¹; Koichiro Otake²; Changjun You¹; Qian Cai¹; Hiroshi Masumoto²; Yinsheng Wang¹; ¹University of California, Riverside, CA; ²Kazusa DNA Research Institute, Kisarazu, Japan
- WP 600 **Synthesis, Fragmentation and RPLC Separation of S-Palmitoyl Peptides;** Zhiyu Li; Vikas Pejaver; Randy Arnold; Suchetana Mukhopadhyay; David Clemmer; Predrag Radivojac; Indiana University - Bloomington, Bloomington, IN
- WP 601 **An Informatics Workflow for the Analysis of the Heavily N-glycosylated gp120;** Audra Hargett¹; Milan Raska^{1,2}; Stacy Hall¹; Qing Wei¹; Katerina Zachova²; Zhi-Qiang Huang²; Lydie Czernekova²; Zina Moldoveanu¹; Jan Novak¹; Amol Prakash³; Chris Becker⁴; Marshall Bern⁴; Scott Peterman³; Matthew B. Renfrow¹; ¹University of Alabama at Birmingham, Birmingham, AL; ²Palacky University in Olomouc, Olomouc, Czech Republic; ³ThermoFisher Scientific, San Jose, CA; ⁴Protein Metrics, San Carlos, CA

- WP 602 **A Phospho-peptide Spectrum Library for Improved Targeted Assays;** [Barbara Frewen](#)¹; Scott Peterman¹; Bryan Krastins¹; Gregory Byram¹; David Sarracino¹; John Sinclair²; Claus Jorgensen²; Amol Prakash¹; Mary Lopez¹; ¹Thermo Fisher Scientific, BRIMS, Cambridge, MA; ²The Institute of Cancer Research, London, UK
- WP 603 **Sipros/ProRata: A Software Package for Identification and Quantification of Proteins, Modifications and Stable Isotope Incorporation in Microbial Communities;** Yingfeng Wang; Tae-Hyuk Ahn; Zhou Li; [Chongle Pan](#); Oak Ridge National Lab, Oak Ridge, TN
- WP 604 **Detecting Drug Induced Protein Adducts with Tandem Mass Spectrometry;** Markus Muller¹; Paola Antinori Malaspina^{2,3}; Adelina Acosta Martin^{2,3}; Youssef Daali⁴; Denis Hochstrasser⁴; Pierre Lescuyer^{2,4}; [Alexandre Scherl](#)^{2,3}; ¹SIB, Geneva, Switzerland; ²Biomedical Proteomics Research Group, Geneva, Switzerland; ³Swiss Center of Applied Human Toxicology, Geneva, Switzerland; ⁴Geneva University Hospitals, Geneva, Switzerland
- WP 605 **STRAP PTM: Differential Characterization by PTM Counting and Much More;** [Jean L. Spencer](#); Vivek N. Bhatia; Stephen A. Whelan; [Christian F. Heckendorf](#); Catherine E. Costello; Mark E. McComb; Boston University School of Medicine, Boston, MA
- WP 606 **A Robust Mechanism to Capture Protein Evidences and PTMs in UniprotKB;** [Pierre-Alain Binz](#)¹; Edouard de Castro¹; Nicole Redaschi¹; Delphine Baratin¹; Severine Duvaud¹; Lydie Bougueleret¹; Ioannis Xenarios¹; Alan Bridge¹; The UniProt Consortium^{1,2}; ¹Swiss Institute of Bioinformatics, Geneva 4, Switzerland; ²EBI and PIR, Hinxton and Washington, UK and DC
- WP 607 **Unbiased Phosphopeptide Analysis Using the Distributions of All Theoretically Possible Peptides;** Rovshan Sadygov; University of Texas, Galveston, TX
- Peptides: Quantitative Analysis II, 608 – 643**
- WP 608 **NeuQuant: An Open-Access Software Toolbox for Neutron Encoded (NeuCode) Quantification Technologies;** [Anna E. Merrill](#); Alexander S. Hebert; Derek J. Bailey; Michael S. Westphall; Joshua J. Coon; University of Wisconsin, Madison, WI
- WP 609 **Direct Comparison of Metabolic Labeling by SILAC and Chemical Labeling by Stable Isotope Dimethyl Labeling in Single Runs;** [Ho-Tak Lau](#); Hyongwon Danny Suh; Shao-En Ong; Univ of Washington, Seattle, WA
- WP 610 **Absolute Quantification of Cellular Ras Isoform Abundance Using PSAQ and Dynamic SILAC Coupled with SRM;** [Craig Mageean](#)¹; John Griffiths²; Yvonne Connolly²; Michael Clague¹; Duncan Smith²; Ian Prior¹; ¹University of Liverpool, Crown Street, UK; ²Paterson Institute for Cancer Research, Manchester, UK
- WP 611 **SILAC Labeling and Mass Spectral Analysis Reveals Temporal Changes in Nbn Protein Interactions and PTMs in Response to DNA Damage;** [Andrea Matlock](#)¹; Philip Compton²; Dina Bai³; Jeffrey Shabanowitz³; Patrick Concannon⁴; Donald Hunt³; ¹UCLA, Los Angeles, CA; ²Northwestern, Evanston, IL; ³University of Virginia, Charlottesville, VA; ⁴University of Florida, Gainesville, FL
- WP 612 **Study on the Mechanism of Palmitate-Induced Insulin Resistance in C2C12 Myoblasts Using SILAC Based Quantitative Proteomic Analysis;** [Xiulan Chen](#); Shasha Wei; Fuquan Yang; Institute of Biophysics, CAS, Beijing, China
- WP 613 **Incorporation Rate of Heavy Isotope-labeled Lysine in Non-Generational Metabolic Labeling in Mice;** [Tasha Agreste](#)¹; Michael Ford²; Richard Jones²; Kevin Millis¹; John C. Rogers³; ¹Cambridge Isotope Laboratories, Andover, MA; ²MS Bioworks, Ann Arbor, MI; ³Thermo Fisher Scientific, Rockford, IL
- WP 614 **Quantitative Dimethyl Labeling Strategy for the Investigation of the Global Effects of Aneuploidy on the Proteome;** [Leigh Weston](#)¹; Kerry Bauer¹; Darawalee Wangsa²; Thomas Ried²; Amanda Hummon¹; ¹University of Notre Dame, Notre Dame, IN; ²National Institutes of Health, Bethesda, MD
- WP 615 **Cross Validation of MALDI-TOF MS Label Free Profiling and LC/MS Based Stable Isotopic Labeling Strategies for Peptide Quantitation;** [Sarah Dowd](#); Elena Romanova; Jonathan Sweedler; University of Illinois at Urbana-Champaign, Urbana, IL
- WP 616 **Development of Novel 8-plex N,N-dimethylated Leucine (DiLeu) Isobaric Labels for Quantitative Proteomics and Peptidomics;** [Tyler Greer](#); Dustin Frost; Feng Xiang; Zhidan Liang; Lingjun Li; University of Wisconsin, Madison, WI
- WP 617 **Improving High Throughput in Relative Protein Quantitation from 6 to 10 Plex;** [Rosa Viner](#)¹; Ryan Bomgarden²; Michael Blank¹; John Rogers²; ¹ThermoFisher Scientific, San Jose, CA; ²Thermo Fisher Scientific, Rockford, IL
- WP 618 **Assessing Non-Mitotic Pathways of an Aurora Kinase Inhibitor Using Chemical Labelling and Label-Free MS Approaches;** [Matthew McKay](#); Judith Nicholson; Mark Molloy; APAF, Macquarie University, Sydney, Australia
- WP 619 **Application of Microbore Hollow Fiber Enzymatic Reactor (mHFER)-based ¹⁸O-labeling Approach to Quantitative Proteomics;** [Sun Young Lee](#); So-Young Kim; Dukjin Kang; Korea Research Institute of Standards and Science, Daejeon, South Korea
- WP 620 **ABRF-sPRG 2013 Study: Development and Characterization of a Stable Isotope Labeled Peptide Standard for Quantitative Proteomics Applications;** [Christopher Colangelo](#)¹; Craig Dufresne²; Alexander Ivanov³; Antonius Koller⁴; Brett Phinney⁵; Kristie Rose⁶; Paul Rudnick⁷; Brian Searle⁸; Scott Shaffer⁹; ¹Yale University, New Haven, CT; ²Thermo Fisher Scientific, West Palm Beach, FL; ³Northeastern University, Boston, MA; ⁴Stony Brook University, Stony Brook, NY; ⁵University of California, Davis, CA; ⁶Vanderbilt University, Nashville, TN; ⁷National Institute of Standards and Technology, Gaithersburg, MD; ⁸Proteome Software, Portland, OR; ⁹University of Massachusetts Medical School, Worcester, MA
- WP 621 **Trimethylation Enhancement using Diazomethane (TrEnDi): Rapid On-Column Methylation of Peptides and Proteins to Permit Quantitative Analysis Using Tandem Mass Spectrometry;** [Karl Wasslen](#); Stephen Wood; Jeffrey Manthorpe; Jeffrey C. Smith; Carleton University, Department of Chemistry, Ottawa, Canada
- WP 622 **Intestinal Proteome Study in Insulin-Resistant Patients by a Combination of iTRAQ, MRM and SWATH;** [Sylvie Bourassa](#)¹; Isabelle Kelly¹; Benjamin Nehmé¹; Frédéric Fournier¹; André J. Tremblay²; Benoit Lamarche²; Patrick Couture²; Arnaud Droit^{1,3}; ¹CHU de Quebec Research Center, Laval University, Quebec, Canada; ²INAF, Laval University, Quebec, Canada; ³Department of Molecular Medicine, Laval University, Quebec, Canada
- WP 623 **Quantitative Assessment of Differential Protein Expression in the Hemicellulolytic Bacterium *Clostridium stercorarium* Using iTRAQ and SWATH approaches;** [Peter D. McQueen](#)^{1,2}; John Schellenberg¹; Vic Spicer¹; Richard Sparling¹; David Levin¹; John Wilkins^{1,2}; Oleg Krokhin^{1,2}; ¹University of Manitoba, Winnipeg, Canada; ²Manitoba Centre for Proteomics and Systems Biology, Winnipeg, Canada

- WP 624 **Highly Sensitive Determination of Therapeutic Peptides in Human Plasma Using Orthogonal HILIC-RP Column Switching and Tandem Mass Spectrometric Detection;** Eric W. Ma; Moucun Yuan; Michael Tingler; William Mylott Jr; Bruce Hidy; Rand Jenkins; *PPD, Richmond, VA*
- WP 625 **Improved Identification and Relative Quantification of Sites of Oxidation in Model Peptides and Protein Systems by Electron-Transfer Dissociation (ETD);** Xiaoyan Li; Joshua S. Sharp; *Complex Carbohydrate Research Center, UGA, Athens, GA*
- WP 626 **Comparison of Peptide Fragmentation and Bioanalysis among Different LC/MS Approaches for the Quantification of Glucagon and Its Analogs in Plasma;** Hang Zeng¹; Zhenmin Liang¹; Catherine Bentzley²; David Moore¹; ¹*HL Roche, Inc., Nutley, NJ*; ²*University of the Sciences, Philadelphia, PA*
- WP 627 **An Augmented Label-Free Differential Analysis Workflow Enhances Peptide Identifications and Understanding of Alcohol Preference;** Scott Goulding¹; Nicholas Bateman²; Nicholas Shulman³; Michael MacCoss³; Karen Szumlanski⁴; Christine Wu²; ¹*University of Colorado Anschutz Medical Campus, Aurora, CO*; ²*University of Pittsburgh, Pittsburgh, PA*; ³*University of Washington, Seattle, WA*; ⁴*University of California, Santa Barbara, CA*
- WP 628 **Proteomics Profiling of Cancer Cell Lines Using High Flow Chromatography and Electrospray Ionization Technique;** Vadiraja B. Bhat¹; Dawn Stickle¹; Anne E. Blackwel¹; Umesh T. Sankpal²; ¹*Agilent Technologies, Wilmington, DE*; ²*MD Anderson Cancer Center Orlando, Orlando, FL*
- WP 629 **Liver Mitochondria Proteomics Employing High Resolution MS Technology;** Jenny T.C. Ho¹; Loïc Dayon²; John Corthésy²; Umberto De Marchi²; Antonio Núñez²; Andreas Wiederkehr²; Rosa Viner³; Michael Blank³; Steven Danielson³; Madalina Oppermann¹; Martin Hornshaw¹; Martin Kussmann^{2,4}; ¹*Thermo Fisher Scientific, Hemel Hempstead, UK*; ²*Nestlé Institute of Health Sciences, Lausanne, Switzerland*; ³*ThermoFisher Scientific, San Jose, CA*; ⁴*Ecole Polytechnique Fédérale Lausanne (EPFL), Lausanne, Switzerland*
- WP 630 **Method Optimization for Cardiovascular Proteomic Mass Spectrometry Analysis of Reversible Cysteine Oxidation in CatTG Mice;** Chunxiang Yao^{1,2}; Jessica Behring²; Deborah A. Siwik³; Catherine E. Costeool¹; Wilson Colucci³; Richard A. Cohen²; Mark E. McComb^{1,2}; Markus M. Bachschmid^{1,2}; ¹*CPC and CBMS, BUSM, Boston, MA*; ²*Visceral Biology Section, BUSM, Boston, MA*; ³*Myocardial Biology Unit, BUSM, Boston, MA*
- WP 631 **Large Molecule Quantification by HRMS: "Sensitive Calcitonin Bioanalysis Using Targeted Selected Ion Monitoring and High Resolving Power";** Jean-Nicholas Mess¹; Louis-Philippe Morin¹; Gene Ciccimaro²; Maroun El Khoury³; Fabio Garofolo¹; ¹*Algorithme Pharma Inc., Laval, Quebec, Canada*; ²*Thermo Scientific, Sommerset, NJ*; ³*Thermo Scientific, Montreal, Quebec, Canada*
- WP 632 **Comprehensive Cancer Cell Proteomics: Providing a Global Counterpoint to Genomic Approaches;** Corey Bakalarski¹; Richard Neve¹; Mamie Yu¹; Suresh Selvaraj¹; Anthony Possemato²; Sean Beausoleil²; Peng Yue¹; David Dornan¹; Richard Bourgon¹; William Forrest¹; Donald Kirkpatrick¹; ¹*Genentech, South San Francisco, CA*; ²*Cell Signaling Technology, Danvers, MA*
- WP 633 **Reduced Abundance of Protein Phosphatase 1 Regulatory Subunit 12B in Diabetes Revealed by Targeted Proteomics;** Monique Lewis; Danjun Ma; Michael A. Caruso; Xiangmin Zhang; Zhengping Yi; *Wayne State University, Detroit, MI*
- WP 634 **The Analysis of Human Parathyroid Hormone 1-34 (Teriparatide) by LC-MS/MS: Challenges and Lessons Learned;** Erin E. Chambers¹; Mary Lame¹; Jon Bardsley²; Eileen Collins²; Sally Hannam²; Elizabeth Thomas²; Kenneth J. Fountain¹; ¹*Waters Corporation, Milford, MA*; ²*ICON PLC, Manchester, UK*
- WP 635 **Identification and Quantification of Peptide Hormones in Sea Lamprey Brain Tissues by Electrospray Ionization Tandem Mass Spectrometry;** Huiyong Wang; Yu-Wen Chung-Davidson; Ke Li; Weiming Li; *Michigan State University, East Lansing, MI*
- WP 636 **Casein Kinase I δ Substrates Associated with Migraine;** Huan Kang; Emily Bates; John Prince; *Brigham Young University, Provo, Utah*
- WP 637 **A Detergent Free, Label Free Quantification Method with High Sensitivity and Throughput for CYP Enzymes via LC/MS/MS;** Ji Zhang; Jimmy Li; Bingli Ma; Cindy Xia; Jing-Tao Wu; Matt Jones; *Millennium :The Takeda Oncology Company, Cambridge, MA*
- WP 638 **Proteomic Analysis of Rhizome Specificity across Plant Kingdom;** Fernanda Salvato; *University of Missouri, Columbia, MO*
- WP 639 **Quantitation of Low Levels of Heat Shock Protein 90 in Serum of Cervical Cancer Patients by Selected Reaction Monitoring;** Coskun Guzel¹; Natalia I. Govorukhina²; Klaske A. ten Hoor³; Lennard J.M. Dekker¹; Harry Hollema³; Harry G. Klip³; Ate G.J. van der Zee³; Alexander Boichenko¹; Boichenko²; Rainer Bischoff²; Theo M. Luider¹; ¹*Erasmus Medical Center, Rotterdam, the Netherlands*; ²*University of Groningen, Groningen, the Netherlands*; ³*University Medical Centre Groningen, Groningen, the Netherlands*
- WP 640 **Challenge in Trying to Reach Femtogram per Milliliter (fg/mL) Sensitivity in Plasma for the Quantification of a Cyclic Peptide: Desmopressin;** Louis-Philippe Morin¹; France Landry¹; Jean-Nicholas Mess¹; Kelli Jonakin²; Mauro Aiello²; Xavier Misonne²; Gary Impey²; Johnny Cardenas²; Fabio Garofolo¹; ¹*Algorithme Pharma Inc., Laval, Quebec, Canada*; ²*AB Sciex, Concord, Ontario, Canada*
- WP 641 **Absolute Quantitation of Yeast Kinases by Means of LC-MS/MS Using QconCat and SRM Technologies;** Philip J Brownridge¹; Victoria Harman¹; Simon Cubbon²; Johannes PC Vissers²; Craig Lawless³; Simon J Hubbard³; Robert J Beynon¹; ¹*Protein Function Group, University of Liverpool, Liverpool, UK*; ²*Waters Corporation, Manchester, UK*; ³*Faculty of Life Sciences, University of Manchester, Manchester, UK*
- WP 642 **Detection of HIV Peptides Using Selective Reaction Monitoring Mass Spectrometry: An *in vitro* Study;** Xiaolin Li; John C Tilton; Daniela M Schlatzer; *Case Western Reserve University, Cleveland, OH*
- WP 643 **Glucagon Bioanalysis by LC-MS: "Unprecedented Level of Sensitivity (10pg/mL) for a Novel Formulation";** Jean-Nicholas Mess¹; Louis-Philippe Morin¹; Mauro Aiello²; Xavier Misonne²; Gary Impey²; Johnny Cardenas²; Josee Michon¹; Fabio Garofolo¹; ¹*Algorithme Pharma Inc., Laval - Quebec, Canada*; ²*AB SCIEX, Concord - Ontario, Canada*

Phosphopeptides: Enrichment Methods, 644 – 668

- WP 644 **Application of Immobilized Metal Ion Affinity Chromatography (IMAC) Enrichment for Bacterial Phosphopeptide Analysis;** Yi Qu; Si Wu; Rui Zhao; Erika Zink; Daniel Orton; Ronald Moore; Da Meng; Therese Clauss; Joshua Aldrich; Mary Lipton; Ljiljana Paša-Tolić; *PNNL, Richland, WA*

- WP 645 **Differentiation of Ion Exchange Materials for Phosphopeptide Fractionation;** [Qing-Run Li](#); Qing-Qing Wu; Rong Zeng; *Shanghai Institutes for Biological Sciences, Shanghai, China*
- WP 646 **The Phosphopeptide Shootout: A Study of Reproducibility in IMAC Phosphopeptide Enrichment;** [Nicholas M. Riley](#); Gregory K. Potts; Michael S. Westphall; Joshua J. Coon; *University of Wisconsin, Madison, WI*
- WP 647 **An Enzyme Assisted RP-RPLC Approach for In-Depth Human Liver Phosphoproteome Analysis;** Yangyang Bian¹; Chunxiao Song¹; Mingming Dong¹; [Wenhai Jin](#)²; Lihai Guo²; Yongming Xie²; Mingliang Ye¹; Hanfa Zou¹; ¹*Dalian Institute of Chemical Physics, Dalian, Liaoning Province, China*; ²*Asia Pacific Application Support Center, AB SCIEX, Shanghai, China*
- WP 648 **Reducing Sample Size and Improving Numbers of Identified Proteins: Phosphoproteomic Studies with SCX-IMAC and IMAC-RP Methods;** [Xiaoshan Yue](#); Amanda Hummon; *Notre Dame, Notre Dame, IN*
- WP 649 **Comparison of Resins for Metal Oxide Affinity Chromatography with Mass Spectrometry Detection for the Determination of Phosphopeptides;** [Ales Tichy](#)¹; Barbora Salovska²; Ivo Fabrik¹; Jirina Vavrova¹; ¹*University of Defence, Hradec Kralove, Czech Republic*; ²*Faculty of Medicine, Hradec Kralove, Czech Republic*
- WP 650 **Dimetal Phosphate Ester Stabilization and Strong-Cation Exchange Chromatography (DIMPES-SCX): A Novel Approach for Phosphopeptide Enrichment;** [Thiago Verano-Braga](#); Simon Svane; Christine McKenzie; Frank Kjeldsen; *University of Southern Denmark, Odense, Denmark*
- WP 651 **A Streamlined Protocol for High Content Phosphoproteomics;** [Francesca Zappacosta](#); Gilbert Scott; Michael Huddleston; Dean McNulty; Timothy Sikorski; Roland Annan; *GlaxoSmithKline, Collegeville, PA*
- WP 652 **Enhanced Phosphopeptide Identification in Bacteria by Stepwise Hydroxy Acid-Modified Metal Oxide Chromatography with Elevated Sample Loading Capacity;** [Miao-Hsia Lin](#); Yasushi Ishihama; *Kyoto university, Kyoto, Japan*
- WP 653 **Highly Specific Phosphopeptide Enrichment Using a Novel Tantalum-based Sol-gel for MALDI-MS Applications;** [Ömür Çelikkıçak](#); Mehmet Atakay; Ülkü Güler; Bekir Salih; *Hacettepe University, Department of Chemistry, Ankara, Turkey*
- WP 654 **A Mild Phosphopeptide Desorption Strategy in Anion Exchange Based Enrichment Applications for Mass Spectrometry Analysis;** [Mehmet Atakay](#); Ömür Çelikkıçak; Bekir Salih; *Hacettepe University, Department of Chemistry, Ankara, Turkey*
- WP 655 **Close Examination of Tyrosine Phosphopeptide Enrichment and Its Application to Syk and Lyn Signaling Pathways;** [Keerthi Jayasundera](#); Anton Iliuk; Shenrui Mahorney; Liang Xue; Andrew Nguyen; Robert Geahlen; W. Andy Tao; *Purdue University, West Lafayette, IN*
- WP 656 **Improved Identification of Akt Substrate Motif Phosphorylation in LC-MS/MS with a Tandem Affinity Enrichment Approach;** Taylur Ma; Victoria Pham; Jennie Lill; [Kebing Yu](#); *Genentech, Inc., South San Francisco, CA*
- WP 657 **Targeted Phosphoproteomics Analysis of Immunoaffinity Enriched Tyrosine Phosphorylation in Mouse tissue;** [Ravi Kumar Krovvidi](#)¹; Leo Bonilla¹; Charles L Farnsworth²; Jeffrey C Silva²; ¹*Agilent Technologies India Pvt. Ltd, Bangalore, India*; ²*Cell Signaling Technology, Inc, Danvers, CT*
- WP 658 **Complementation of Ti, Zr and Fe-based PolyMAC for In-Depth Phosphoproteome Analysis of B cell Signaling;** [Anton Iliuk](#)¹; Keerthi Jayasundera²; Wen-hong Wang²; Robert Geahlen²; Weiguo Andy Tao²; ¹*Tymora Analytical Operations, West Lafayette, IN*; ²*Purdue University, West Lafayette, IN*
- WP 659 **Quantitative Profiling of Signaling Pathways Using Immunoaffinity Purification and LC-MS/MS;** [Matthew P. Stokes](#); Jian Min Ren; Kimberly A. Lee; Xiaoying Jia; Jeffrey C. Silva; *Cell Signaling Technology, Danvers, MA*
- WP 660 **A Novel Strategy Employing a Phosphatase Trapping Mutant for the Enrichment of Phosphoarginine, an Unconventional Type of Protein Phosphorylation;** [Débora Broch Trentini](#); Tim Clausen; Karl Mechtler; *Institute of Molecular Pathology (IMP), Vienna, AUSTRIA*
- WP 661 **Sunny-side Up: First UV MALDI-ToF-MS Phosphopeptide Analysis Using a Solidified Ionic Liquid Matrix (SILM);** Gargee Mukherjee¹; Claudia Röwer¹; Manuela Russ¹; Chris Protzel²; Oliver Hakenberg²; [Cornelia Koy](#)¹; Michael O. Glocker¹; ¹*Proteome Center Rostock, Rostock, Germany*; ²*Urology Clinic and Polyclinic, University Medicine, Rostock, Germany*
- WP 662 **Old Tools in a New Jacket: Phosphopeptide Enrichment by TiO₂ and IMAC Columns;** [Simone Lemeer](#); Benjamin Ruprecht; Heiner Koch; Max Mundt; Bernhard Kuster; *Technische Universität München, Freising, Germany*
- WP 663 **The Phosphoproteome of *Chlamydomonas reinhardtii* Determined by TiO₂-HILIC and HILIC-PolyMAC Workflows Coupled to nanoLC-MS/MS;** [Brian Gau](#); Hongxia Wang; Leslie Hicks; *Donald Danforth Plant Science Center, St. Louis, MO*
- WP 664 **Optimization of the β -Elimination/Michael Addition Chemistry on Reversed-Phase Supports for Comprehensive Phosphoprotein Characterization by Mass Spectrometry;** Heinz Nika¹; [David H. Hawke](#)²; Ruth Hogue Angeletti¹; ¹*Albert Einstein College of Medicine, Bronx, NY*; ²*UT- M.D. Anderson Cancer Center, Houston, TX*
- WP 665 **Robust Enrichment Methods for Single-Shot Phosphoproteomics of Cancer Cell Lines Enable Signaling Network Analysis;** [Sander Piersma](#); Koen van der Mij; Bharath Sampadi; Inge de Reus; Jaco Knol; Richard de Haas; Thang Pham; Henk Broxterman; Henk Verheul; Connie Jimenez; *VU University Medical Center, Amsterdam, Netherlands*
- WP 666 **Comprehensive Phosphorylation Site Analysis of α -S2 Casein Using Microwave-Assisted Acid Hydrolysis and Phosphopeptide Enrichment;** [Zhendong Li](#); Nan Wang; Liang Li; *UofA, Edmonton, Canada*
- WP 667 **Maximizing Phosphoproteome Profiling Using Mascot, PEAKS Studio, Proteome Discoverer and OMSSA Software Packages;** [Jayme Wiederin](#)¹; Melinda Wojtkiewicz¹; Pawel Olszowy²; Pawel Ciborowski¹; ¹*University of Nebraska Medical Center, Omaha, NE*; ²*Nicolaus Copernicus University, Torun, Poland*
- WP 668 **Motif Antibody Enrichment Enables the Identification of a Large Discrete and Complementary Set Of Phosphorylation Sites ;** [Anthony Possemato](#)¹; Sean Beausoleil¹; Mike Aguiar¹; Kim Lee¹; Steven Gygi²; ¹*Cell Signaling Technology, Danvers, MA*; ²*Harvard Medical School, Boston, MA*
- Advances in Separation Techniques for Proteomic Applications, 669 – 684**
- WP 669 **Detection of Biomarker of Oxidative Stress by Using HPLC-MS/MS and a Microfluidic Electrochemical Array;** [Boya Song](#); Shenmin Pan; Chi Tang; Dandan Li; James Rusling; *University of Connecticut, Storrs, CT*

- WP 670 **Improved Sensitivity in Proteomics Experiments Using DMSO in nanoESI-LC-MS/MS**; Hannes Hahne¹; Guillaume Medard¹; Stefan K. Maier¹; Dominic Helm¹; Matthias Wilm²; Bernhard Kuster¹; ¹*Technische Universitaet Muenchen, Freising, Germany*; ²*University College Dublin, Dublin, Ireland*
- WP 671 **Zeptomole-level Proteomic Analysis of Limited Availability Clinical Samples Using Monolithic and Porous Layer Open Tubular Columns in Ultralow Flow LC/MS**; Alexander R. Ivanov; Siyang Li; Xianzhe Wang; Barry L. Karger; *Barnett Institute, Northeastern University, Boston, MA*
- WP 672 **A Comparison of Proteomic Data Sets Obtained from Varied Experimental Approaches**; Susan Slade¹; James Langridge³; Nisha Patel²; Joanne B. Connolly³; James Scrivens¹; ¹*Univ of Warwick, Coventry, UK*; ²*Department of Chemistry, University of Oxford, Oxford, UK*; ³*Waters Corporation, Manchester, UK*
- WP 673 **Proteomic Studies on Enriched Cell Populations by Linking Cell Sorting with Microfluidic Online Sample Preparation and LC/MS**; Jeffrey Martin; Tomas Rejtar; Stephen Martin; *Novartis Institutes for Biomedical Research, Cambridge, MA*
- WP 674 **The BluePippin Automated Size-Fractionation System for Proteins**; Ezra Abrams; Chris Boles; *Sage Science, Inc., Beverly, MA*
- WP 675 **Comprehensive Genome-Wide Proteomic Analysis of Human Placental Tissue for the Chromosome-Centric Human Proteome Project**; Hyoung-Joo Lee¹; Seul-Ki Jeong¹; Keun Na¹; Min Jeong Lee¹; Sun Hee Lee¹; Jong-Sun Lim¹; Hyun-Jeong Cha¹; Jin-Young Cho¹; Ja-Young Kwon²; Hoguen Kim²; Si Young Song²; Jong Shin Yoo³; Young Mok Park³; Hail Kim⁴; William S. Hancock⁵; Young-Ki Paik¹; ¹*Yonsei Proteome Research Center, Seoul, South Korea*; ²*Yonsei University College of Medicine, Seoul, South Korea*; ³*Korea Basic Science Institute, Ochang, South Korea*; ⁴*Korea Advanced Institute of Science and Technology, Daejeon, South Korea*; ⁵*Northeastern University, Boston, MA*
- WP 676 **High Sensitivity Microproteomic Analysis of Rare Samples by Porous Layer Open Tubular (PLOT) Columns Coupled with Mass Spectrometry**; Siyang Li; Xianzhe Wang; Somak Ray; Barry L. Karger; Alexander R. Ivanov; *Barnett Institute, Northeastern University, Boston, MA*
- WP 677 **Comparison of Gas-Phase Fractionation and Data-Dependent Acquisition for Identification of Post-translational Modifications in Glioma-Derived Stem-Like Cells**; Cheryl F. Licht¹; Huiling Liu¹; Erick P. Sulman²; Frederick F. Lang²; Charles A. Conrad²; Carol L. Nilsson¹; ¹*UTMB-Galveston, Galveston, TX*; ²*The University of Texas MD Anderson Cancer Center, Houston, TX*
- WP 678 **Bottom-up Proteomics by Capillary Electrophoresis and Mass Spectrometry**; Antonius A.M. Heemskerk; Guinevere S.M. Kammeijer; Ekaterina Mostovenko; Bart Schoenmaker; Rico J.E. Derks; André M. Deelder; Magnus Palmblad; Oleg A. Mayboroda; *Leiden University Medical Center, Leiden, Netherlands*
- WP 679 **Fully Automatable Multidimensional Liquid Chromatography Systems for Shotgun Proteomics**; Yun Zhao¹; C. H. Law¹; Ricky P. W. Kong^{1,3}; Guohui Li¹; Herman C. Lam¹; Jason Neo⁴; Simon M. Y. Lee²; C.Y. Ma¹; Ivan K. Chu¹; ¹*The University of Hong Kong, Hong Kong, China*; ²*The University of Macau, Macau, China*; ³*AB SCIEX Hong Kong, Hong Kong, China*; ⁴*AB SCIEX Singapore, Singapore, Singapore*
- WP 680 **Bottom-Up Proteome Analysis of E. coli Using Capillary Zone Electrophoresis-Tandem Mass Spectrometry with an Electrokinetic Sheath-Flow Electrospray Interface**; Xiaojing Yan; David Essaka; Liangliang Sun; Guijie Zhu; Norman Dovichi; *University of Notre Dame, Notre Dame, U.S.*
- WP 681 **Single-Shot Capillary Zone Electrophoresis Electrospray Ionization-Tandem Mass Spectrometry Produces More Than 1,250 E. coli Peptide Identifications in a 50-Minute Separation**; Guijie Zhu; Liangliang Sun; Xiaojing Yan; Norman Dovichi; *University of Notre Dame, Notre Dame, IN*
- WP 682 **Integrated CZE-ESI-MS/MS System with Immobilized Trypsin Microreactor for Picogram of RAW 264.7 Cell Lysate Analysis**; Liangliang Sun; Guijie Zhu; Norman J. Dovichi; *University of Notre Dame, South Bend, IN*
- WP 683 **Precise Column Temperature Control Enables Improved Protein Identifications in Proteomics Shotgun Sequencing Applications**; Xiaoyue Jiang; Yi Zhang; Andreas Huhmer; *Thermo Fisher Scientific, San Jose, CA*
- WP 684 **CE-ESI-MS for Top Down Proteomics**; Yihan Li; John C. Tran; Ioanna Ntai; Kenneth R. Durbin; Adam D. Catherman; Philip D. Compton; Paul M. Thomas; Neil L. Kelleher; *Northwestern University, Evanston, IL*
- Interactions and Pathway Analysis, 685 – 706**
- WP 685 **Rapid Identification of Differential Interactomes by Affinity Purification Coupled with Data Independent Mass Spectrometry Acquisition (AP-SWATH™)**; Jean-Philippe Lambert¹; Amber L. Couzens¹; Gordana Ivosev²; Brett Larsen¹; Mikko Taipale³; Zhen-Yuan Lin¹; Quan Zhong⁴; Susan Lindquist³; Marc Vidal⁴; Ruedi Aebersold⁵; Tony Pawson¹; Ron Bonner²; Stephen Tate²; Anne-Claude Gingras¹; ¹*Samuel Lunenfeld Research Institute, Mount Sinai H, Toronto, Canada*; ²*AB Sciex, Concord, Canada*; ³*Whitehead Institute for Biomedical Research, Cambridge, MA*; ⁴*Dana-Farber Cancer Institute, Boston, MA*; ⁵*Institute of Molecular Systems Biology, ETH, Zurich, Switzerland*
- WP 686 **Temporal Proteomics Unveils *Ignicoccus hospitalis*'s Response to the Superficial Attachment and Growth Progression of Its Commensal Partner, *Nanoarchaeum equitans***; Richard J. Giannone; Louie L. Wurch; Mircea Podar; Robert L. Hettich; *Oak Ridge National Laboratory, Oak Ridge, TN*
- WP 687 **High-Resolution Interactome of the HSP90 Machinery Reveals Specificity for Targets**; Brett Larsen¹; Mikko Taipale²; Zhen-Yuan Lin¹; George Tucker³; Guoci Teo⁴; Hyungwon Choi⁴; Susan Lindquist^{2,3}; Anne-Claude Gingras^{1,5}; ¹*SLRI, Toronto, Canada*; ²*Whitehead Institute for Biomedical Research, Cambridge, MA*; ³*MIT, Cambridge, MA*; ⁴*National University of Singapore, Singapore, Singapore*; ⁵*Mount Sinai Hospital, Toronto, Canada*
- WP 688 **Towards a Deep and Temporal Representation of Protein Interaction Networks via AP-SWATH**; Ben C. Collins¹; Ludovic C. Gillet¹; George Rosenberger¹; Hannes L. Röst¹; Matthias Gstaiger¹; Ruedi Aebersold^{1,2}; ¹*ETH Zurich, Zurich, Switzerland*; ²*University of Zurich, Zurich, Switzerland*
- WP 689 **Dynamic Analysis of HIV-Human Protein-Protein Interactions During Infection**; Jeffrey Johnson¹; Shannon Eliuk²; Amnon Golan¹; Tasha Johnson¹; Vlad Zabrouskov²; Nevan Krogan¹; ¹*UCSF, San Francisco, CA*; ²*Thermo Fisher Scientific, San Jose, CA*
- WP 690 **Quantitative Analysis of 6-Thioguanine-Induced Changes in the Proteome of Jurkat-T Human Leukemia Cells**; Fan Zhang; Yinsheng Wang; *University of California, Riverside, CA*

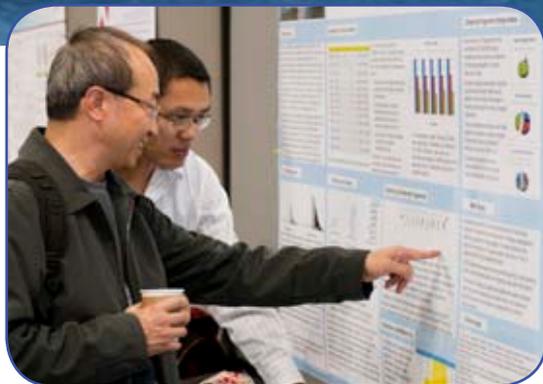
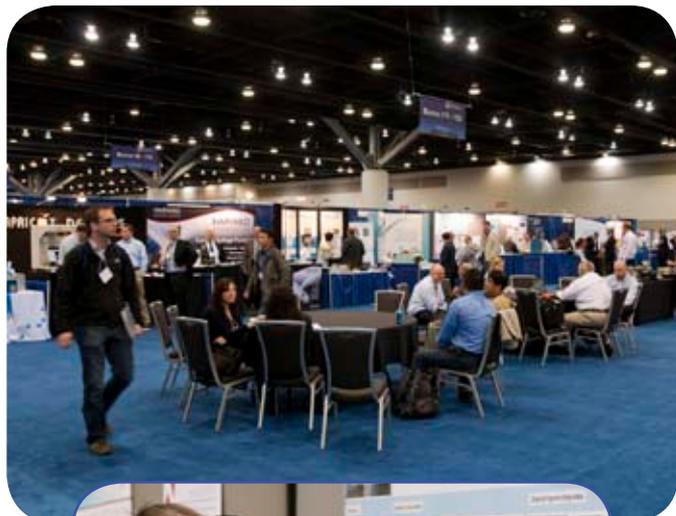
- WP 691 **Quantitative Proteomic Analysis Reveals Chromium-induced Perturbation of Multiple Cellular Pathways in GM00637 Human Skin Fibroblast Cells;** Lei Guo; Yinsheng Wang; *University of California, Riverside, CA*
- WP 692 **Sphingosine-1-Phosphate Mediated Chemotaxis of Osteoclast Precursors Investigated Using Targeted Proteomics via Mass Spectrometry;** Nathan Manes; Eunkyung An¹; Virginie Sjoelund¹; Jing Sun¹; Bastian Angermann¹; Masaru Ishii²; Martin Meier-Schellersheim¹; Ronald Germain¹; Aleksandra Nita-Lazar¹; ¹NIH, Bethesda, MD; ²Osaka University, Osaka, Japan
- WP 693 **Dynamic Pathways in Acute Autophagy Elucidated by Quantitative Label-free and SILAC-based Proteomics;** Robin Mathew^{1,2}; Saw Kyin²; Henry Shwe²; Eileen White¹; David H. Perlman²; ¹The Cancer Institute of New Jersey, New Brunswick, NJ; ²Princeton University, Princeton, NJ
- WP 694 **Towards a Comprehensive Understanding of Platelet Activation and Platelet-Monocyte Interaction: Multiple Proteomic Approaches in the Study of Atherosclerosis;** Jiqing Huang; Chengcheng Zhang; Ru Li; Juergen Kast; *BRC, Univ. of British Columbia, Vancouver, Canada*
- WP 695 **Using Label-Free Mass Spectrometry Workflows to Quantitatively Model Signal Transduction Pathways in Cellular Systems and Clinical Samples;** Jordy J. Hsiao; Brandon H. Ng; Melinda M. Smits; Jiahui Wang; Michael E. Wright; *University of Iowa, Iowa City, IA*
- WP 696 **MS-based Quantitative Analysis of RanBP2 in Nucleocytoplasmic Transport;** Samir Karaca¹; Ketan Thakar²; Ralph Kehlenbach²; Henning Urlaub¹; ¹Max Planck Institute for Biophysical Chemistry, Goettingen, Germany; ²Georg-August-University of Goettingen, Goettingen, Germany
- WP 697 **Defining the Role for miR-27a in the Regulation of Adipogenesis;** Rebecca Leon; Bruce D. Pascal; Caitlin Steckler; Patrick R. Griffin; Michael J. Chalmers; *Scripps, Jupiter, FL*
- WP 698 **Quantitative Analysis of Changes in Ubiquitination, Protein Synthesis and Degradation Caused by Protein Folding Stress Due to Inhibition of Hsp90;** Manfredo Quadroni¹; Alexandra Potts¹; Ivo Fierro-Monti¹; Celine Hernandez^{1,2}; Patrice Waridel¹; Pablo Echeverria³; Didier Picard³; ¹University of Lausanne, Epalinges, Switzerland; ²Swiss Institute of Bioinformatics, Lausanne, Switzerland; ³University of Geneva, Geneva, Switzerland
- WP 699 **Investigation of Hepatocytes Transfected with Cytochrome P450: Data Independent LC-MS Approach to Identify and Quantify on a Multi-omic Scale;** Suzanne Geenen¹; Lee A Gethings²; Cristian Cojocariu²; Janet Hammond²; Giorgis Isaac³; Lucy Fernandes²; Robert Tonge²; Johannes P.C. Vissers²; James Langridge²; Ian Wilson¹; Mark McDowall²; ¹AstraZeneca, Macclesfield, UK; ²Waters, Manchester, UK; ³Waters Corp, Milford, MA
- WP 700 **Understanding Oncoprotein Networks in Cancer Cells Using Knock-In and Knock-Out AP-MS;** Jing Song; Zhenghe Wang; Rob Ewing; *Case Western Reserve University, Cleveland, OH*
- WP 701 **Integrative Systems Approach towards Elucidation of Action Mechanism for a Novel, First-In-Class ERK/AKT Dual Inhibitor Anti-Cancer Drug;** Giridharan Gokulrangan¹; Daniela Schlatter¹; Neil Dhawan²; Eric Yuan³; Sahar Mazhar³; Avi Ma'ayan²; Michael Ohlmeyer²; Mark Chance¹; Goutham Narla³; ¹Center for Proteomics and Bioinformatics, CWRU, Cleveland, OH; ²Mount Sinai School of Medicine, New York, NY; ³Case Comprehensive Cancer Center, Cleveland, OH
- WP 702 **Unraveling Metabolic Regulation by Real-Time Mass Spectrometry of Living Cells;** Tobias Fuhrer; Hannes Link; Andreas Kühne; Uwe Sauer; Nicola Zamboni; *ETH Zürich, Zürich, Switzerland*
- WP 703 **Proteome-Wide Analysis of Stress Response in E. coli Using Super-SILAC Approach;** Boumediene Soufi; Andreas Harst; Karsten Krug; Boris Macek; *Proteome Center Tuebingen, Tuebingen, Germany*
- WP 704 **Simple Quantitative Secretome Analysis of Conditioned Media from Human Endothelial Stromal Cells Under Hypoxic Conditions Characterizing Synthetic Progesterone Effects;** John Shapiro³; Philip Gafken¹; Michael Freitas²; Ozlem Kayisli³; Umit Kayisli³; Saeed Faramarzi³; Murat Basar³; Frederick Schatz³; Charles Lockwood³; ¹Fred Hutchinson Cancer Research Center, Seattle, WA; ²Ohio State University, Columbus, OH; ³Ohio State University College of Medicine, Columbus, OH
- WP 705 **Development and Application of a Multiplexed Active Small GTPase Pull-down Assay Using Multiple Reaction Monitoring;** Chengcheng Zhang; Juergen Kast; *University of British Columbia, Vancouver, Canada*
- WP 706 **Global Remodelling of Cellular Microenvironment Due to Loss of Collagen VII;** Victoria Kuettner¹; Leena Bruckner-Tuderman²; Joern Dengjel¹; ¹Freiburg University, Freiburg, Germany; ²University Freiburg Medical Center, Freiburg, Germany
- Ambient Ionization: Applications II, 707 – 734**
- WP 707 **Rapid Screening of Plasticisers in Gaskets for Glass Food Jar Lids Using Atmospheric Pressure Solids Analysis Probe-High Resolution Mass Spectrometry;** Malcolm Driffield¹; Dennis Speck¹; Mita Parmar¹; Jennifer Leak¹; Liam Lister¹; Emma Bradley¹; Dominic Roberts²; Sara Stead²; ¹Food and Environmental Research Agency (Fera), York, UK; ²Waters Corporation, Manchester, UK
- WP 708 **ASAP-HRMS: A Convenient Technique for Characterizing Unexpected Insoluble Materials Observed during the Development of Cosmetic Formulae;** Natali Budimir; Georges Hussler; *L'Oréal France, Aulnay Sous Bois, France*
- WP 709 **Forensic Analysis Using Rapid Ambient Ionization Techniques with High Resolution Mass Spectrometers;** Eshwar Jagerdeo; Jay Clark; Louis Reda; Jeffrey Leibowitz; *FBI, Springfield, VA*
- WP 710 **Rapid Detection of Pomegranate Juice Adulteration with Grape and Apple Juice Using DSA/TOF with Minimal Sample Preparation and No Chromatography;** Avinash Dalmia; George Perkins; Craig Whitehouse; *PerkinElmer, Shelton, CT*
- WP 711 **Tunable Desorption/Ionization with Plasma-based Ambient Mass Spectrometry: Unraveling Mysteries of Lithium-Ion Battery Degradation;** Jake Shelley; Christopher Kuhlmann; Britta Vortmann; Sascha Nowak; Carsten Engelhard; *University of Muenster, Muenster, Germany*
- WP 712 **Fast Quantitation of bisphenol-A (BPA) in Plastic Materials Using Desorption Corona Beam Ionization and Probe Tip Column Electrospray Ionization Sources;** Chao Gao¹; Yanjiao Wang²; Xiaoqiang Zhang¹; Xiang Li²; Wenjian Sun¹; ¹Shimadzu Research Laboratory (Shanghai) Co., Ltd., Shanghai, China; ²Fudan University, Shanghai, China
- WP 713 **Overcoming Matrix effects: Quantitation of Explosives via Ambient Ionization with Direct Sample Analysis;** Joshua A. Wilhide; Laura M. Nevin; Gregory T. Winter; William R. LaCourse; *Univeristry of Maryland Baltimore County, Baltimore, MD*

- WP 714 **Analysis of Additives in Biodegradable Polymers Using Direct Sampling Analysis (DSA) Time-of-Flight Mass Spectrometry**; Sharanya Reddy¹; Rafael Auras²; Sergey Rakov¹; Craig Whitehouse¹; George Perkins¹; ¹PerkinElmer, Shelton, CT; ²Michigan State University, East Lansing, MI
- WP 715 **Rapid Screening of Parabens in Personal Care Products using DSA/TOF with No Sample Preparation**; Avinash Dalmia; Thomas White; Fabian Oteiza; Carl Schwarz; Blas Cerda; George Perkins; *PerkinElmer, Shelton, CT*
- WP 716 **Rapid Measurement of Olive Oil Adulteration with Soybean Vegetable Oil with Minimal Sample Preparation Using DSA/TOF**; Avinash Dalmia; Nicola Vosloo; George Perkins; Blas Cerda; Craig Whitehouse; *PerkinElmer, Shelton, CT*
- WP 717 **Rapid Differentiation Between Natural and Artificial Vanilla Flavorings Using DSA/TOF with no Sample Preparation**; Avinash Dalmia; George Perkins; Craig Whitehouse; *PerkinElmer, Shelton, CT*
- WP 718 **Use of Sorbent Coated Metal Probes with Direct Analysis in Real Time (DART) Ionization for Rapid Analysis of Herbal Supplements**; Joseph LaPointe; Robert Goguen; Brian Musselman; *Ionsense Inc., Saugus, MA*
- WP 719 **Characterizing Toothpastes: Direct Fingerprinting of Key Volatile Flavor and Marker Non-volatile Compounds by DART QToF Mass Spectrometry**; Elizabeth Crawford¹; Brian Musselman²; Jerry Zweigenbaum³; ¹Institute of Chemical Technology Prague, Prague, Czech Republic; ²IonSense, Inc., Saugus, MA; ³Agilent Technologies, Wilmington, DE
- WP 720 **Pyrolysis for Rapid Screening of Contaminated Heparin by DART Mass Spectrometry**; Peter Nemes¹; William Hoover¹; David Keire²; ¹US FDA, CDRH, Silver Spring, MD; ²US FDA, CDER, St. Louis, IL
- WP 721 **Rapid Screening of 'White Powders' for Unknown Agents Using a DART-Equipped Compact Mass Spectrometer**; Jack Henion¹; Brian Musselman²; Nigel Sousou¹; ¹Advion, Inc., Ithaca, NY; ²IonSense, Saugus, MA
- WP 722 **High Resolution Accurate Mass (HRAM) Phthalate Screening Using Direct Analysis in Real Time (DART) Ambient Ionization**; Catharina Crone¹; Elizabeth Crawford²; Yue Xuan¹; Markus Kellmann¹; ¹Thermo Fisher Scientific, Bremen, Germany; ²IonSense Inc., Saugus, MA
- WP 723 **Sensitive Screening of Abused Drugs in Raw Urine and Blood by Direct Analysis in Real Time Triple Quadrupole Mass Spectrometry**; Wenfang Zhang¹; Zong Yang²; Ping Li³; Yong Chen⁴; Dazhou Chen²; Charles C. Liu⁵; ¹Forensic Science Service Public Security Bureau, Beijing, China; ²National Institute of Metrology, Beijing, China; ³Lumtech Technologies Limited, Beijing, China; ⁴Labcare Solutions, Shanghai, China; ⁵ASPEC Technologies Limited, Beijing, China
- WP 724 **Quantitation by DART-Orbitrap Mass Spectrometer: Preliminary Analysis of Pesticides in Water by Internal Standards**; Jaewon Choi; Wonseok Choi; Jeheon Jang; Yunduck Kim; *Kwater, Daejeon, South Korea*
- WP 725 **Exact and Quantitative Analysis of Deuterated Pyrene: New Method for the Rapid, Convenient Hydrogen-Deuterium Exchange of Polycyclic Aromatic Hydrocarbons**; Mark Domin; *Boston College, Chestnut Hill, MA*
- WP 726 **Rapid Quantitative Analysis of Trimethyl Phosphate in Water with Direct Analysis in Real Time Mass Spectrometry**; Xiaowei Wang¹; Liping Liu¹; Bing Shao¹; Jingfu Liu²; Charles C. Liu³; ¹Beijing Center for Disease Control and Prevention, Beijing, China; ²Chinese Academy of Sciences, Beijing, China; ³ASPEC Technologies Limited, Beijing, China
- WP 727 **Desorption Atmospheric Pressure Photoionization-Mass Spectrometry for the Direct Analysis of Atmospheric Aerosols Collected on Quartz Filters**; Jevgeni Parshintsev¹; Anu Vaikkinen¹; Vladimír Vrkoslav²; Josef Cvacka²; Risto Kostianen¹; Tapio Kotiaho¹; Marja-Liisa Riekkola¹; Tiina J. Kauppila¹; ¹University of Helsinki, Helsinki, Finland; ²Czech Academy of Sciences, Prague, Czech Republic
- WP 728 **Implementation of Reactive Transmission Mode Desorption Electrospray Ionization – Ketone and Aldehyde Derivatization with Girard's T Reagent**; Alex Bishop; Jennifer Brodbelt; *University of Texas, Austin, TX*
- WP 729 **Normal Phase Liquid Chromatography Coupled to Continuous Flow – Extractive Desorption Electrospray Ionization – Mass Spectrometry for Phospholipid Analysis**; Li Li; Kevin Schug; *Univ of Texas, Arlington, TX*
- WP 730 **Coupling Free-Flow Electrophoresis with Desorption Electrospray Ionization Mass Spectrometry (DESI-MS) for Proteomic Analysis**; Sarah Ancliaux; Michael Bowser; *University of Minnesota, Minneapolis, MN*
- WP 731 **Using Desorption Electrospray Ionization Mass Spectrometry to Detect Specific Decomposition Pathways of Ruthenium Catalysts during C-H Activation Reactions**; Cornelia Flender; Jennifer Roizen; Eric McNeill; Justin Du Bois; Richard Zare; *Stanford University, Stanford, CA*
- WP 732 **Detection of Explosive Molecular Adduct Ions with Flowing Atmospheric-Pressure Afterglow Mass Spectrometry**; G. Asher Newsome^{1,2}; Lauryn E. DeGreeff³; Christopher J. Katilie^{1,2}; Kevin J. Johnson²; ¹Nova Research, Inc., Alexandria, VA; ²U.S. Naval Research Laboratory, Washington, DC; ³National Research Council, Washington, DC
- WP 733 **Analysis of Organic Light-Emitting Diodes (OLED) Using an Atmospheric Pressure MALDI Source Coupled to an Orbitrap-based Mass Spectrometer**; Maxie Kohler¹; Kerstin Strupat²; Thorsten Umbach¹; Heike Klesper¹; Klaus Meerholz¹; ¹University of Cologne, Cologne, Germany; ²Thermo Fisher Scientific, Bremen, Germany
- WP 734 **ESI and MALDI Sample Introduction, Preparation Unified By Electric Induction?** Drew Sauter¹; Andrew Sauter III¹; Alexander Scheeline²; Andrew Grange³; Gary Groenewold⁴; ¹Nanoliter, LLC, Henderson, NV; ²University of Illinois, Urbana, IL; ³USEPA, Las Vegas, NV; ⁴Idaho National Lab, Idaho Falls, ID

Ion Mobility Fundamentals, 735 – 754

- WP 735 **Separation of Isomeric Nitro-PAH by TWIM-MS Using Polarizable Drift Gases: The Effects of Ion Charge Distribution on the Resolution**; Maira Fasciotti¹; Caroline Franco²; Gabriel Heerdt³; Annibal D. Perreira Netto²; Nelson H. Morgon³; Romeu J. Daroda¹; Marcos N. Eberlin⁴; ¹INMETRO, Rio de Janeiro, BR; ²Federal Fluminense University, Niterói, Brazil; ³UNICAMP, Campinas, BR; ⁴Thomson Mass Spectrometry Laboratory, Campinas, BR
- WP 736 **Structure of Polyphenol Clusters – An Ion Mobility Study**; Frédéric Poussiguet^{1,2}; Arnaud Vernier^{1,3}; Jérôme Lemoine^{1,2}; Philippe Dugourd^{1,3}; Fabien Chiro^{1,2}; ¹Université Lyon 1, Villeurbanne, France; ²CNRS, UMR 5280 ISA, Villeurbanne, France; ³CNRS, UMR 5306 ILM, Villeurbanne, France
- WP 737 **Ion Mobility Mass Spectrometry of Small Molecule, Polymer, and Native Protein Complex Anions**; Samuel J. Allen; Alicia M. Schwartz; Matthew F. Bush; *University of Washington, Seattle, WA*

- WP 738 **Travelling Wave Ion Mobility Calibration with Phosphoric Acid Clusters;** Helene Lavanant; Vincent Tognetti; Carlos Afonso; *Normandie Univ UMR 6014, FR 3038; Univ Rouen; CNRS, Mont St Aignan, France*
- WP 739 **Ion Mobility-Mass Spectrometry of Iodide Salt Cluster Ions in Air and Comparison to Density Functional Theory Structural Predictions;** Chris Hogan; Hui Ouyang; Carlos Larriba-Andaluz; Derek Oberreit; *University of Minnesota, Minneapolis, Minnesota*
- WP 740 **Determination of Collision Cross Sections for Ion Standards using a New Commercial Drift Tube for IM-MS using Nitrogen Bath Gas;** Peter Backlund¹; Stephanie Colonna¹; Christopher Crutchfield¹; Christian Klein²; Ruwan Kurulugama²; Ed Darland²; Alex Mordehai²; Alfred L. Yergey¹; ¹NIH, Bethesda, MD; ²Agilent Technologies, Santa Clara, CA
- WP 741 **Towards Predicting Differential Mobility Based Upon Molecular Structure;** Brad Schneider¹; Erkinjon Nazarov²; Goran Ristic¹; Thomas Covey¹; ¹AB SCIEX, Concord, Canada; ²Draper Laboratories, Tampa, FL
- WP 742 **Calculations of Ion Mobilities for Biological Macromolecules Using the Electronic Surface Representation;** Yuri Alexeev¹; Dmitri G. Fedorov²; Alexandre A. Shvartsburg³; ¹Argonne National Laboratory, Argonne, IL; ²Nanosystem Research Institute, Tsukuba, Japan; ³Pacific Northwest National Laboratory, Richland, WA
- WP 743 **A New Paradigm for Electrospray Ion Mobility-Mass Spectrometry of Proteins;** Kent Gillig; Yu-Ling Chang; Chung-Hsuan Chen; *Academia Sinica, Taipei, Taiwan*
- WP 744 **Multiplexed High Pressure Ion Mobility-TOFMS: High Resolution, Sensitivity and Structural Information in One Package;** Richard Knochenmuss; Stephan Graf; Katrin Fuhrer; Marc Gonin; *Tofwerk, Seftigen, Switzerland*
- WP 745 **Selected Accumulation Ion Mobility Spectrometry (SAIMS) Hyphenated with a Fourier Transform Mass Spectrometer (FTMS);** Melvin A. Park; Desmond Kaplan; Mark Ridgeway; *Bruker Daltonics, Inc., Billerica, MA*
- WP 746 **Maximizing Gas Phase Peak Capacity while Minimizing Analysis Time through DIMS/TIMS/MS;** Mark Ridgeway; Desmond Kaplan; Kevin Dixon; Melvin Park; *Bruker Daltonics, Billerica, MA*
- WP 747 **Development of a Spatially Multiplexed 8-Channel Ion Mobility-Mass Spectrometer: Vacuum System, Ion Source, and Interfacing Ion Funnel Arrays;** Katrina L. Leaptrot; Jody C. May; John A. McLean; *Vanderbilt University, Nashville, TN*
- WP 748 **Electrical Mobilities of Near-Spherical, Multiply-Charged Ionic Liquid Nanodrops in Air: Influence of Drift-Gas Temperature and Ion-Induced Dipole Interactions;** Juan Fernández García; Juan Fernández de la Mora; *Yale University, New Haven, CT*
- WP 749 **Measuring Reduced Ion Mobilities of Tetraalkylammonium Cations in Intermediate Field Using a Double Slit Differential Mobility Analyzer (DMA);** John van Nostrand; Udo Verkerk; K. W. Michael Siu; *York University - CRMS, Toronto, Canada*
- WP 750 **The Inability of Hard Sphere Specular Scattering to Predict Ion Mobility in Diatomic Gases in the 5-100kDa Range;** Carlos Larriba Andaluz; Christopher Hogan; *University of Minnesota, Minneapolis, MN*
- WP 751 **Distance Geometry: A Time Efficient Approach for Sampling Conformational Space in Support of Ion Mobility Structural Mass Spectrometry;** Sarah M. Stow¹; Cody R. Goodwin¹; Michal Kliman¹; Ruwan Kurulugama²; Ed Darland²; Brian O. Bachmann¹; Terry P. Lybrand¹; John A. McLean¹; ¹Department of Chemistry at Vanderbilt University, Nashville, TN; ²Agilent Technologies Inc., Santa Clara, CA
- WP 752 **Imaging the Ion Beam Inside a Drift Tube Ion Mobility Spectrometer Using a Pixelated Detector;** Harikrishnan Sukumar¹; Stephen Davila¹; John Stone²; Gary Eiceman¹; ¹New Mexico State University, Las Cruces, NM; ²Queen's University, Kingston, Ontario, Canada
- WP 753 **Development of a New Ion Mobility-Quadrupole Time-of-Flight Mass Spectrometer for High-Resolution and High-Throughput Biological Sample Analyses;** Ruwan Kurulugama¹; Alexander Mordehai¹; Nathan Sanders¹; Christian Klein¹; Yehia Ibrahim²; Erin Baker²; Richard Smith²; George Stafford¹; John Fjeldsted¹; ¹Agilent Technologies, Santa Clara, CA; ²Pacific Northwest National Laboratory, Richland, WA
- WP 754 **Reduced Ion Mobilities: A Need for Parameterization of Chemical Analyte Properties?** Philipp Cochems¹; Walter Wissdorf²; Yessica Brachthaeuser²; Christine Polaczek²; Thorsten Benter²; Stefan Zimmermann¹; ¹Leibniz University Hannover, Hannover, Germany; ²University of Wuppertal, Wuppertal, Germany



7:30-8:00 am Set up all Thursday posters
 10:30 am-1:00 pm Odd-numbered posters present
 12:00-2:30 pm Even-numbered posters present
 2:30-3:00 pm Remove all Thursday posters

Ion Mobility – FAIMS.....001-021
 Imaging MS: Large Molecules.....022-025
 Imaging MS: Quantitative Analysis.....026-030
 Imaging MS: Method Development II.....031-051
 Imaging MS: Instrumentation.....052-072
 Instrumentation: General.....073-107
 LC-MS Instrumentation.....108-120
 LC-MS Sample Preparation (Proteins & Peptides).....121-139
 Advances in Sample Preparation Methods for Improved
 Protein Identification and Quantification.....140-169
 High Throughput Analysis/Robotics.....170-185
 GCMS: Instrumentation & Applications.....186-214
 High Mass Accuracy/High Performance MS: Instrumentation.....215-229
 High Mass Accuracy/High Performance Applications.....230-249
 Peptides: General.....250-262
 Peptidomics.....263-271

Peptides: Sequence Analysis.....272-278
 Phosphopeptides: Quantitative Analysis.....279-306
 Protein: PTM II.....307-328
 Glycoproteins II.....329-357
 Carbohydrates II.....358-383
 Biomarker Quantitation: Glycans, Lipids & Metabolites.....384-410
 Biomarker Discovery: Cancer and Neuroscience.....411-442
 Proteomics: Clinical Applications.....443-476
 Proteins: Membrane.....477-485
 Microorganisms: Identification and Characterization.....486-519
 Homeland Security.....520-527
 Food Safety - Pesticides.....528-558
 Lipids: Profile Analysis.....559-591
 Small Molecules: Quantitative Analysis IV.....592-619
 Ambient Ionization: Fundamentals.....620-633
 Ionization Mechanisms.....634-651
 Energy: Biofuels.....652-664
 Informatics: Pathway Analysis.....665-668
 Informatics: Peptide Identification/Characterization II.....669-693
 Ion Spectroscopy.....694-710
 Ion Structure / Energetics.....711-727

Ion Mobility – FAIMS, 001 -021

- ThP 001 **Parameters Characterization and Optimization in Differential Mobility Spectrometer Relative to Uses of LDTD Ion Source;** Sarah Demers¹; Réal Paquin¹; Gregory Blachon²; Pierre Picard²; Serge Auger²; ¹Université Laval, Quebec City, Canada; ²Phytonix Technologies, Quebec City, Canada
- ThP 002 **Performance Characterization of a Differential Ion Mobility Spectrometer Operated in Laminarized Low-Pressure Subsonic Flows;** Dimitris Papanastasiou¹; Ioannis Orfanopoulos¹; Diamantis Kounadis¹; Alexander Lekkas¹; Ioannis Nikolas²; Roger Giles³; Andrew Entwistle³; Emmanouel Raptakis¹; ¹Fasmatech, Athens, GR; ²Technical University of Crete, Chania, GR; ³Shimadzu Research Laboratory, Manchester, UK
- ThP 003 **Application of Differential Ion Mobility Technology to Improve the Quantitation of Small Molecules by LC-MS/MS;** Richard Grater; Naveed Shaik; Ellen Rohde; Lawrence Gan; *BiogenIdec, Cambridge, MA*
- ThP 004 **Identification of Compounds in Organic Aerosols Using Differential Ion Mobility Spectrometry and High Mass Accuracy Tandem Mass Spectrometry;** Sandra Spencer; Samantha Isenberg; Gary Glish; *University of North Carolina, Chapel Hill, NC*
- ThP 005 **Investigation of Vitamin K2 Structures Using Differential Ion Mobility Spectrometry and DFT Calculations;** David Crizer; Samantha Isenberg; Beth Marbois; Gary Glish; *University of North Carolina, Chapel Hill, NC*
- ThP 006 **Comparison of Electrospray, Nano-electrospray, and Low Temperature Plasma Ionization for Use with Differential Ion Mobility Spectrometry;** Brandon Santiago; Gary Glish; *University of North Carolina, Chapel Hill, NC*
- ThP 007 **Differential Mobility Separation Pre-filtration on an Agilent ESI Mass Spectrometer;** Theresa Evans-Nguyen; Spiros Manolakas; Francly Sinatra; James Alberti; Kevin Hufford; *Draper Laboratory, Tampa, FL*
- ThP 008 **Improving the LC-MS/MS Selectivity of Hexabromocyclododecane Diastereomers with Differential Mobility Spectrometry;** Changqing Lin¹; YI Pan¹; Chen Zheng²; Yongming Xie²; ¹Shanghai Putuo Environmental Monitoring Station, Shanghai, China; ²Shanghai AB Sciex Analytical Instrument Trading Co, Shanghai, China

- ThP 009 **A Sensitive and Selective LC-Differential Mobility-Mass Spectrometric Analysis of Allopregnanolone and Its Isomers in Human Plasma;** Wen Jin¹; Michael Jarvis¹; Michal Weinstock¹; Margaret Altemus²; ¹AB SCIEX, Concord, Canada; ²New York Presbyterian Hospital and Cornell University, New York, NY
- ThP 010 **Improving Protein and Peptide Detection by Combining Differential Mobility and Atmospheric Proton Transfer Reaction;** J.C. Yves Leblanc; J. Larry Campbell; Igor Chernushevich; Stephen Tate; *AB SCIEX, Concord, On, Canada*
- ThP 011 **Improving Speed and Selectivity of Targeted Peptide Quantification Using FAIMS;** Susan E. Abbatiello¹; Lindsay Pino¹; Michael Belford²; Eric Kuhn¹; Nathan Yates³; Steven A. Carr¹; ¹The Broad Institute of Harvard and MIT, Cambridge, MA; ²Thermo Fisher Scientific, San Jose, CA; ³University of Pittsburgh, Pittsburgh, PA
- ThP 012 **High-Throughput Analysis of Drugs in Biological Matrices with Enhanced Selectivity for Quantitation Using FAIMS SPE/MS/MS;** Michael Ugarov¹; Yuqin Dai¹; Kari Schlicht²; Vaughn Miller²; ¹Agilent Technologies, Santa Clara, CA; ²Agilent Technologies, Wakefield, MA
- ThP 013 **Faster Reaction Monitoring of Reductive Amination Using Chip-Based FAIMS-MS;** Lauren Brown¹; Celine Laine¹; Danielle Toutoungi¹; Shelly Li²; Gilles Goetz²; Guilong Cheng²; ¹Owlstone Ltd, Cambridge, UK; ²Pfizer Global R&D, Groton, CT
- ThP 014 **Separation of Isomers Using Modifier Gases on Chip-based FAIMS / Triple Quadrupole MS;** Christopher Beekman¹; Timothy J. Garrett¹; Michael Ugarov²; George Stafford²; Richard A. Yost¹; ¹University of Florida, Gainesville, FL; ²Agilent Technologies, Santa Clara, CA
- ThP 015 **Electrospray/ High-field Asymmetric Waveform Ion Mobility Spectrometry/ Mass Spectrometry of Transition Metals: Potential for Environmental and Nuclear Applications;** Jared Boock; Richard Yost; *University of Florida, Gainesville, FL*
- ThP 016 **Using Gas Additives to Improve Signal Intensity and Selectivity of a Cylindrical FAIMS Device;** Randy W. Purves¹; Allison R. Ozog¹; Stephen J. Ambrose¹; Michael Belford²; Satendra Prasad²; Jean-Jacques Dunyach²; ¹National Research Council, Saskatoon, Canada; ²Thermo Fisher, San Jose, CA

- ThP 017 **Ion Mobility Separations of Protein Conformers with Resolving Power up to 400 Using Hydrogen-Rich Gas Buffers**; [Alexandre A. Shvartsburg](#); Richard D. Smith; *Pacific Northwest National Laboratory, Richland, WA*
- ThP 018 **Effect of Electrode Geometry on FAIMS Gas Flow With Regard to Sensitivity and Resolution**; [Michael Belford](#); Satendra Prasad; Jean-Jacques Dunyach; *Thermo Fisher Scientific, San Jose, CA*
- ThP 019 **Exploring the Effects of Carrier Gas Modifiers Using Chip-Based Field Asymmetric Waveform Ion Mobility Spectrometry Combined with Mass Spectrometry**; [Robert Smith](#)¹; Danielle Toutoungi²; James Reynolds¹; Ashley Sage³; Billy Boyle²; Colin Creaser¹; ¹*Loughborough University, Loughborough, UK*; ²*Owlstone Ltd, Cambridge, UK*; ³*Agilent Technologies, Stockport, UK*
- ThP 020 **Identification of Amino-Sulfonamide Isomers Using Chip-Based FAIMS-MS Approaches**; Danielle Toutoungi¹; Lauren Brown¹; [Billy Boyle](#)¹; Samantha J Barry²; Jean-Claude Wolff²; ¹*Owlstone Ltd, Cambridge, UK*; ²*GlaxoSmithKline, Stevenage, UK*
- ThP 021 **Analysis of Intact Protein Ions by Chip-Based-FAIMS-MS**; [Lauren Brown](#)¹; Danielle Toutoungi¹; Billy Boyle¹; Colin Creaser²; ¹*Owlstone Ltd., Cambridge, UK*; ²*Loughborough University, Loughborough, UK*
- Imaging MS: Large Molecules, 022 – 025**
- ThP 022 **DESI Detection of Surface Proteins with MS Imaging and MVA Analysis**; [Wei Rao](#); Adam Celiz; David Scurr; Morgan Alexander; David Barrett; *University of Nottingham, Nottingham, UK*
- ThP 023 **Quantitation of Peptides by MALDI Imaging Using Labeled Peptide**; [Guillaume Hochart](#); David Bonnel; Gregory Hamm; Raphael Legouffe; Fabien Pamelard; Jonathan Stauber; *ImaBiotech, MS Imaging Department, Lille, France*
- ThP 024 **Imaging of Nanoparticle Biodistributions *in vivo* Using Laser Desorption/Ionization Mass Spectrometry**; [Bo Yan](#); Sung Tae Kim; Chang Soo Kim; Krishnendu Saha; Daniel F. Moyano; Vincent M. Rotello^{*}; Richard W. Vachet^{*}; *University of Massachusetts, Amherst, MA*
- ThP 025 **MALDI Imaging and In Source Decay Identification of Glioma Biomarkers up to 80kDa**; Rima Ait-Belkacem¹; Caroline Berenguer¹; Claude Villard¹; Sega Ndiaye¹; L'Houcine Ouafik¹; Dominique Figarella-Branger¹; Olivier Chinot²; [Daniel Lafitte](#)¹; ¹*AIX Marseille Universite, Marseille, France*; ²*Assistance publique hopitaux de Marseille, Marseille, France*
- Imaging MS: Quantitative Analysis, 026 – 030**
- ThP 026 **Grid Method: A Novel Workflow for Dissection and LC-MS/MS Analysis to Study Ocular Drug Distribution**; [Josh Rowe](#); Julie Whitcomb; Chris Huntington; Jinsong Ni; *Allergan, Inc., Irvine, CA*
- ThP 027 **Quantitative Bioimaging of Drugs in Thin Tissue Sections**; [Olga Reifschneider](#)¹; Christoph A. Wehe¹; Michael Sperling^{1, 2}; Uwe Karst¹; ¹*University of Münster, Münster, Germany*; ²*European Virtual Institute for Speciation Analysis, Münster, Germany*
- ThP 028 **A Quantitative Study of Peptide Release by Mass Spectrometry Imaging of Microfluidic Microchannels**; [Callie Croushore](#)^{1, 2}; Stanislav Rubakhin^{1, 2}; Jonathan Sweedler^{1, 2}; ¹*Beckman Institute, UIUC, Urbana, IL*; ²*Department of Chemistry, UIUC, Urbana, IL*
- ThP 029 **Quantitative DESI & MALDI Imaging Applied on Ophthalmic Related Compound Distribution Study**; [Raphael Legouffe](#)¹; Joseph H Kennedy²; Gregory Hamm¹; Fabien Pamelard¹; Justin Wiseman²; Jonathan Stauber¹; ¹*ImaBiotech, MS Imaging Department, Lille, France*; ²*Prosolia, Inc., Indianapolis, IN*
- ThP 030 **Spatially-Aware Feature-Sparse Clustering for Mass Spectrometry Imaging**; [Kyle Bemis](#)¹; Livia Eberlin²; Christina Ferreira¹; R. Graham Cooks¹; Olga Vitek¹; ¹*Purdue University, West Lafayette, IN*; ²*Stanford University, Palo Alto, CA*
- Imaging MS: Method Development II, 031 – 051**
- ThP 031 **MALDI Imaging MS of Intact Pollen Grains and Pollen Mixtures**; [Steffen M. Weidner](#)¹; Bernd Enthaler²; Benjamin C. Krause³; ¹*Federal Inst. for Materials Research & Testing, 1.3, Berlin, Germany*; ²*University of Hamburg, Institute of Food Chemistry, Hamburg, Germany*; ³*Humboldt-University, Physical Chemistry, Berlin, Germany*
- ThP 032 **Development of the Technique for Visualizing the Plant Metabolites Distribution Using MALDI-MS Imaging**; [Junya Nakamura](#)¹; Maiko Kaku²; Yoshinori Fujimura²; Katsutoshi Takahashi³; Daisuke Miura²; Hiroyuki Wariishi⁴; ¹*Grad. Sch. Biores. Bioenviron. Sci., Kyushu Univ., Fukuoka, Japan*; ²*ICMRN, Kyushu Univ., Fukuoka, Japan*; ³*AIST, Tokyo, Japan*; ⁴*Fac. Arts and Sci., Kyushu Univ., Fukuoka, Japan*
- ThP 033 **Pre-coated Targets with Matrix and Trypsin for *in-situ* Protein Digestion in Imaging Mass Spectrometry**; [Faizan Zubair](#); Junhai Yang; Jeremy L. Norris; Richard M. Caprioli; Paul E. Laibinis; *Vanderbilt University, Nashville, TN*
- ThP 034 **The Challenge of On-Tissue Digestion for MALDI-IMS a Comparison of Different Protocols to Improve Imaging Experiments**; [Hanna Diehl](#)¹; Julian Elm¹; Judith Baronner¹; Dennis Trede²; Herbert Thiele²; Helmut E. Meyer¹; Corinna Henkel¹; ¹*Medizinisches Proteom-Center, Ruhr-University, Bochum, Germany*; ²*Steinbeis Innovation Center SCiLS, Bremen, Germany*
- ThP 035 **High Resolution MALDI Imaging at 25 µm Pixel Size for Peptides after On-Tissue Digestion**; [Andreas Roempp](#); Katharina Huber; Yvonne Schober; Thorsten Schramm; Bernhard Spengler; *Justus Liebig University, Giessen, Germany*
- ThP 036 **Acquisition and Analysis of 3D MALDI Imaging Data Sets**; [Shannon Cornett](#)¹; Janina Oetjen²; Dennis Trede^{3, 4}; Michaela Aichler⁵; Jan Strehlow⁶; Stefan Heldmann⁷; Judith Berger⁸; Michael Gottschalk⁹; Klaus Steinhors⁹; Jan Hendrik Kobarg^{3, 4}; Stefan Wirtz⁶; Stefan Schiffler^{3, 4}; Herbert Thiele³; Axel Walch⁵; Peter Maass^{3, 4}; Theodore Alexandrov^{3, 4}; Detlev Suckau⁹; Michael Becker⁹; ¹*Bruker Daltonics, Billerica, MA*; ²*University of Bremen, MALDI Imaging Lab, Bremen, Germany*; ³*Steinbeis Innovation Center SCiLS, Bremen, Germany*; ⁴*Univ. Bremen, Center for Industrial Mathematics, Bremen, Germany*; ⁵*Helmholtz-Zentrum München, Dept. of Pathology, Munich, Germany*; ⁶*Fraunhofer MEVIS Inst. for Medical Image Computing, Bremen, Germany*; ⁷*Fraunhofer MEVIS Project Group Image Registration, Lübeck, Germany*; ⁸*Bruker Biospin MRI GmbH, Ettlingen, Germany*; ⁹*Bruker Daltonik GmbH, Bremen, Germany*
- ThP 037 **Polyhydroxyflavonoids as a Novel Family of Matrices for MALDI Tissue Imaging**; [Xiaodong Wang](#)¹; Jun Han¹; Albert Chou¹; Juncong Yang¹; Jingxi Pan¹; Christoph Borchers^{1, 2}; ¹*University of Victoria-Genome BC Proteomics Centre, Victoria, Canada*; ²*Dept of Biochemistry and Microbiology, U Victoria, Victoria, Canada*
- ThP 038 **2D Graphene as a MALDI IMS Matrix for Brain Tissue**; [William Friesen](#); Brian Schultz; Joe Steet; Sarbajit Banerjee; Troy Wood; *SUNY at Buffalo, Buffalo, NY*

- ThP 039 **Imaging MALDI Mass Spectrometry in Microscope Mode with Infrared Lasers – Breaking the Diffraction Limit on Biological Samples;** Jens Soltwisch; Julia Jungmann; Donald F. Smith; Andras Kiss; Shane Ellis; Ron Heeren; *FOM Institute AMOLF, Amsterdam, the Netherlands*
- ThP 040 **Correlated Imaging Mass Spectrometry and Raman Spectroscopy for Oncology and Drug Resistance;** Dorothy Ahlf; Eric Weaver; Rachel Masyuko; Haohang Li; Paul Bohn; Amanda Hummon; *University of Notre Dame, Notre Dame, IN*
- ThP 041 **Silver Assisted LDI for High Spatial Resolution Imaging MS of Olefins from Thin Tissue Sections;** Martin Dufresne¹; Aurelien Thomas¹; Julien Breault-Turcot²; Jean-François Masson²; Pierre Chaurand¹; ¹*Pierre Chaurand Group, Montréal, Canada*; ²*Jean-François Masson, Montreal, Canada*
- ThP 042 **Novel Bioinformatics Platform for Interactive Interrogation of DESI-mass Spectrometry Imaging Datasets in Clinical Research Settings;** Kirill Veselkov¹; Reza Mirnezami¹; Nicole Strittmatter¹; James Kinross¹; Robert Goldin¹; Abigail Speller¹; Tigran Abramov²; Ara Darzi¹; Zoltan Takats¹; *Imperial College London, London, UK*; ²*Sevastopol National Technical University, Streletskaaya Bay, Crimea, Ukraine*
- ThP 043 **Characterizing and Imaging Glycerophosphocholine Lipids by Lithiation and C60-SIMS;** Anita Durairaj; Lauren M. Jackson; Nicholas Winograd; *The Pennsylvania State University, University Park, PA*
- ThP 044 **Blotting Assisted by Heating and Solvent Extraction for DESI-MS Imaging of Biological Tissues;** Elaine Cristina Cabral¹; Mario Francesco Mirabelli²; Consuelo J. Perez¹; Demian Rocha Iba¹; ¹*York University, Toronto, Canada*; ²*University of Calabria, Cosenza, Italy*
- ThP 045 **The Evolution of 3D Biological Imaging to FIB-TOF Tomography;** Gregory L Fisher; John S Hammond; Scott R Bryan; *Physical Electronics, Chanhassen, MN*
- ThP 046 **High-Sensitivity Bio-Molecular Imaging and Protein Identification with a C₆₀ Ion Microprobe;** John Hammond¹; Gregory Fisher¹; Mark Jansen²; Luke MacAleese²; Ron Heeren²; ¹*Physical Electronics, Chanhassen, MN*; ²*FOM/AMOLF, Amsterdam, The Netherlands*
- ThP 047 **Molecular Imaging and Analysis of Drugs by Laser Ablation Atmospheric Pressure Chemical Ionization Mass Spectrometry (LA/APCI-MS);** Christina Herdering; Christoph A. Wehe; Olga Reifschneider; Michael Sperling; Uwe Karst; *University of Münster, Münster, Germany*
- ThP 048 **Visualization of Lipid Species on Human Retina Using Mass Microscope;** Takahiro Hayasaka¹; Naoko Goto-Inoue²; Noritaka Masaki¹; Mitsutoshi Setou¹; ¹*Hamamatsu University School of Medicine, Hamamatsu, Japan*; ²*Tokyo Metropolitan University, Hachioji, Japan*
- ThP 049 **Mass Spectrometry Analysis and Imaging of Lipids and Proteins in Human Liver via MALDI and Liquid Extraction Surface Analysis;** Joscelyn Sarsby; Rian L. Griffiths; Rory Steven; Alan Race; Emily Guggenheim; Trish Lalor; Helen J. Cooper; Josephine Bunch; *University of Birmingham, Birmingham, UK*
- ThP 050 **Microscope Mode Mass Spectrometry – An Approach for Improved Imaging over Multiple Mass Ranges;** Benjamin Winter; Edward Halford; Simon-John King; Alexandra Lauer; Claire Vallance; Mark Brouard; *University of Oxford, Oxford, UK*
- ThP 051 **Laserspray Ionization on an Orbitrap Exactive : Performing Imaging Mass Spectrometry at Ultra High Mass Resolution;** Andrew F. Harron; Khoa Hoang; Charles McEwen; *USP, Philadelphia, PA*
- Imaging MS: Instrumentation, 052 – 072**
- ThP 052 **Robotic Plasma Probe Ambient Ionization Mass Spectrometry Imaging of Non-Planar Surfaces;** Ezequiel M. Morzan^{1,2}; Rachel V. Bennett²; Facundo M. Fernandez²; ¹*Universidad de Buenos Aires, Buenos Aires, Argentina*; ²*Georgia Institute of Technology, Atlanta, GA*
- ThP 053 **Near-Field Laser Ablation for Mass Spectrometry of Single Cells;** Yonathan Merid; Kermit K. Murray; *Louisiana State University, Baton Rouge, LA*
- ThP 054 **Rapid Imaging of Unprocessed Chicken Bone Marrow by LAESI-MS with T-Wave Ion Mobility Separation Using a Synapt G2-S;** Emmanuelle Claude¹; Michel W.F Nielen^{2,3}; Brent R. Reschke⁴; Hilary Major¹; ¹*Waters Corporation, Manchester, UK*; ²*RIKILT, Wageningen, The Netherlands*; ³*Wageningen University, Lab of Organic Chemistry, Wageningen, The Netherlands*; ⁴*Protea Biosciences, Morgantown, US*
- ThP 055 **Mass Imaging Analysis of Oligonucleotides and Peptides Microarrays by Using Microscopic MALDI Imaging Mass Spectrometry;** Joo Yeon Oh¹; Sohee Yoon¹; Jeong Hee Moon²; Sang Yun Han¹; Tae Geol Lee¹; ¹*Korea Res. Inst. of Standards and Science, Daejeon, South Korea*; ²*Korea Res. Inst. of Bioscience and Biotechnology, DaeJeon, South Korea*
- ThP 056 **Fast Survey Scan Acquisition and Multiple Detector Utilization for Elemental Mass Spectrometric Bioimaging;** Christoph Alexander Wehe¹; Olga Reifschneider¹; Ann-Christin Bülter¹; Michael Kieshauer¹; Michael Sperling^{1,2}; Uwe Karst¹; ¹*University of Münster, Münster, Germany*; ²*European Virtual Institute for Speciation Analysis, Münster, Germany*
- ThP 057 **A Method For Rapid Matrix Sublimation for MALDI Lipid Ion Imaging;** Vijanaka Fernando²; Vladimir Collado¹; Victor Spicer¹; Werner Ens¹; ¹*University of Manitoba, Winnipeg, Canada*; ²*The Open University of Sri Lanka, Colombo, Sri Lanka*
- ThP 058 **Atmospheric Pressure MALDI Imaging Mass Spectrometry with High Spatial Resolution;** Berk Oktem; Konstantin Novoselov; Jianhua Tang; Vladimir Doroshenko; *MassTech Inc., Columbia, MD*
- ThP 059 **The Implementation of the Time-Stamping, Multi-Hit PimMS Sensor in Combination with a Commercially Available Time-Of-Flight Mass Spectrometer;** Edward Halford¹; Samuel Coles¹; Alexandra Lauer¹; Benjamin Winter¹; Jason W. L. Lee¹; Mark Mills²; Steve Thompson²; Claire Vallance¹; Mark Brouard¹; ¹*University of Oxford, Oxford, UK*; ²*SAI, Manchester, UK*
- ThP 060 **Fundamental Characterization of Infrared Matrix-Assisted Laser Desorption Electrospray Ionization (IR-MALDESI) for Mass Spectrometry Tissue Imaging Using Ice as a Matrix;** Guillaume Robichaud; Jeremy A. Barry; David C. Muddiman; *North Carolina State University, Raleigh, NC*
- ThP 061 **Protein and Lipid Tissue Imaging at 5 μm Spatial Resolution, Using Commercial Bruker MALDI TOFMS Instrument with Gaussian Laser Beam;** Andre Zavalin¹; Junhai Yang¹; Andreas Haase²; Armin Holle²; Richard Caprioli³; ¹*Vanderbilt University, Nashville, TN*; ²*Bruker Daltonik GmbH, Bremen, Germany*; ³*Vanderbilt University School of Medicine, Nashville, TN*
- ThP 062 **Differential Mobility-Enhanced Ambient Mass Spectrometry Imaging;** Chaminda M. Gamage¹; Rachel V. Bennett¹; Asiri S. Galhena²; Facundo M. Fernandez¹; ¹*Georgia Institute of Technology, Atlanta, GA*; ²*The Coca-Cola Company, Atlanta, GA*

- ThP 063 **Rapid Prototyping of a Low-Temperature Plasma Mass Imaging System (LTP-MSI) by Using Phidgets and OpenMZxy**; Mauricio Maldonado-Torres; Pedro Jiménez-Sandoval; Robert Winkler; *CINVESTAV Unidad Irapuato, Irapuato, Mexico*
- ThP 064 **Ion Microscopy with the Timepix Active Pixel Detector: Ultrahigh Spatial Resolution SIMS and MALDI Analysis of Complex Surfaces**; Julia H. Jungmann¹; Andras Kiss¹; Donald F. Smith¹; Luke MacAleese²; Ron M. A. Heeren¹; ¹*FOM-Institute Amolf, Amsterdam, The Netherlands*; ²*Institut Lumiere Matiere, Universite Lyon 1-CNRS, Villeurbanne Cedex, France*
- ThP 065 **Tissue Imaging with Scanning Probe Electrospray Ionization**; Yoichi Otsuka¹; Junpei Naito¹; Masafumi Kyogaku¹; Ryuichi Arakawa²; Hiroyuki Hashimoto¹; ¹*Frontier Research Center, Canon Inc., Tokyo, Japan*; ²*Kansai University, Osaka, Japan*
- ThP 066 **Development of New Stigmatic Imaging Mass Spectrometer and Its Application to Metal Cation Distribution in Fish**; Jun Aoki; Hisanao Hazama; Kunio Awazu; Michisato Toyoda; *Osaka University, Osaka, Japan*
- ThP 067 **Pushing the Limits of Secondary Ion Mass Spectrometry by FT-ICR MS**; Donald F. Smith¹; Andras Kiss¹; Franklin E. Leach²; Errol W. Robinson²; Ljiljana Paša-Tolić²; Ron M.A. Heeren¹; ¹*FOM Institute AMOLF, Amsterdam, Netherlands*; ²*Environmental Molecular Sciences Laboratory, PNNL, Richland, WA*
- ThP 068 **The Pixel Imaging Mass Spectrometry (PIMMS) Sensor – A Versatile High-Speed Position-Sensitive Detector for Imaging Mass Spectrometry**; Jason Lee¹; Andrew Clark²; Jamie Crooks²; Iain Sedgwick²; Jaya John John¹; James Bull¹; Edward Wilman¹; Laura Hill¹; Andrei Nomerotski¹; Renato Turchetta²; Richard Nickerson¹; Mark Brouard¹; Claire Vallance¹; ¹*University of Oxford, Oxford, UK*; ²*Rutherford Appleton Laboratory, Harwell, UK*
- ThP 069 **Imaging of Biological Systems Using Laser Ablation and a “Flying Droplet” Interface for Analyte Capture**; Jonathan Brauer; Jan Sunner; *University of Oklahoma, Norman, OK*
- ThP 070 **Laser Ablation-Based Bioimaging with Simultaneous Elemental and Molecular MS: Towards Spatially Resolved Speciation Analysis**; Uwe Karst; Christina Herdering; Christoph A. Wehe; Olga Reifschneider; Franziska Blaske; Ann-Christin Bülter; Michael Sperling; *University of Münster, Münster, Germany*
- ThP 071 **Variable Magnification Mass Microscope Image of Multi-mode Mass Chemical Microscopic Molecular Imaging System**; Sohee Yoon¹; Jeong Hee Moon²; Joo Yeon Oh¹; Tae Geol Lee¹; ¹*KRISS, Daejeon, South Korea*; ²*KRIBB, Daejeon, South Korea*
- ThP 072 **Infrared Laser Ablation for Electrospray Ionization Tissue Imaging**; Sung-Gun Park; Kermit K. Murray; *Louisiana State University, Baton Rouge, Louisiana*
- Instrumentation: General, 073 – 107**
- ThP 073 **3D Simulation of Quadrupole Mass Filter Performance with Realistic Ion Input Conditions**; David Langridge; *Waters, Manchester, UK*
- ThP 074 **Simulation of Resonant Excitation in Quadrupole Linear Ion Traps Using a High Accuracy FDM Field Solver**; Matthew Gill; Roger Giles; *Shimadzu Research Laboratory (Europe), Manchester, UK*
- ThP 075 **The Effective Potential of a Linear Quadrupole Ion Trap Calculated from Ion Displacements Caused by Applied Dipole DC**; Cong Gao; Donald Douglas; *University of British Columbia, Vancouver, Canada*
- ThP 076 **Design and Performance of Quadrupole Mass Filter Operating in Stability Zones 1 and 3**; Sarfaraz Uddin Ahmed Hashmi Syed; Simon Maher; Thomas J Hogan; Mariya Juno Antony Joseph; Stephen Taylor; *University of Liverpool, Liverpool, UK*
- ThP 077 **Mitigation of High Pressure Effects in Miniature Toroidal Ion Trap for Improved Quantitative Performance**; Steve Lammer¹; Ed Lee¹; Joe Oliphant¹; Jeff Jones¹; Randy Waite¹; Rich Prunier²; Steve Ritzau²; ¹*Torion Technologies, Inc, American Fork, UT*; ²*Photonis, USA, Sturbridge, MA*
- ThP 078 **Electro-Hydrodynamic Simulations for Mass Spectrometers in Transitional Flow Regime**; Xiaoyu Zhou; Ouyang Zheng; *Biomedical Engineering School, Purdue University, West Lafayette, IN*
- ThP 079 **Ion Tracing in Gas Dynamic Flow Fields: A Case Study on the Ion Funnel**; Athanasios Zacharos¹; Alexander Lekkas¹; Michael Sudakov¹; Dimitris Papanastasiou¹; Diamantis Kounadis¹; Ioannis Nikolos²; Emmanuel Raptakis¹; ¹*Fasmatech, Athens, Greece*; ²*Technical University of Crete, Chania, GR*
- ThP 080 **Ion Carpets for Large Mass Ions**; Staci Anthony; Deven Shinholt; Martin Jarrold; *Indiana University, Bloomington, IN*
- ThP 081 **New Ion Source, Ion Transfer, and Ion Accumulation for a 9.4 Tesla FT-ICR Mass Spectrometer**; Yu Chen¹; Franklin E. Leach III²; John P Quinn¹; Nathan K Kaiser¹; Gregory T. Blakney¹; Tong Chen³; Steven C Beu¹; Yehia Ibrahim²; Randolph Norheim²; Gordon Anderson²; Richard D Smith²; Christopher L Hendrickson^{1,3}; Alan G Marshall^{1,3}; ¹*National High Magnetic Field Laboratory, Tallahassee, FL*; ²*Pacific Northwest National Laboratory, Richland, WA*; ³*Florida State University, Tallahassee, FL*
- ThP 082 **Observation of Fine Structure in Isotopic Peak Distributions in 4.7T Magnet FT-ICR Mass Spectra Obtained by Using Dynamically Harmonized Cell**; Konstantin Nagornov¹; Gleb Vladimirov¹; Yury Kostyukevich^{1,4}; Igor Popov^{2,4}; Eugene Nikolaev^{1,3}; ¹*Institute for Energy Problems of Chemical Physics, Moscow, Russia*; ²*Emanuel Institute of Biochemical Physics, Moscow, Russia*; ³*Orekhovich Institute of Biomedical Chemistry, Moscow, Russia*; ⁴*Moscow Institute of Physics and Technology, Moscow, Russia*
- ThP 083 **Multiplexed Electrospray System for the Chemical Patterning of Surfaces Under Ambient Conditions**; Zane Baird; Michael Wleklinski; Hsu-Chen Hsu; R. Graham Cooks; *Purdue University, West Lafayette, IN*
- ThP 084 **Evaluation of Sensitivity Improvements of a Tandem Mass Analyzer**; Satendra Prasad¹; Eloy Wouters¹; Jean-Jacques Dunyach¹; Alexander Makarov²; ¹*Thermo Fisher Scientific, San Jose, CA*; ²*Thermo Fisher Scientific (Bremen) GmbH, Bremen, Germany*
- ThP 085 **Effect of Electroosmotic Flow on the Function of Liquid-Junction Electrospray Interface between Capillary Electrophoresis and Mass Spectrometry**; Karel Kleparnik; Jaroslav Luksch; Anna Tarantova; Frantisek Foret; *Institute of Analytical Chemistry ASCR, Brno, Czech Republic*
- ThP 086 **Optimization of Electrospray Ionization (ESI) Parameters Using Design of Experiment in LC-ESI-TOF Analysis of Analytes in Various Matrices**; Jana Rousova; Richard Cochran; Nagaraju Dongari; Paige Kuplic; Kari Kusler; Kacie Lundgren; Eric Nelson; Alena Kubatova; *University of North Dakota, Grand Forks, ND*
- ThP 087 **Probing the High Mass Transmission Characteristics of a Conjoined Ion Guide Enabled Quadrupole / Ion Mobility / Time-of Flight Instrument**; Kevin Giles; Jason Wildgoose; Jonathan Williams; Martin De Cecco; *Waters Corporation, Manchester, UK*

- ThP 088 **Improvement of MALDI-TOFMS Ion Source for Higher Resolving Power over Wider Mass Range;** Kei Kodera; Sadanori Sekiya; Makoto Hazama; Shinichi Iwamoto; Koichi Tanaka; *Shimadzu Corporation, Kyoto, Japan*
- ThP 089 **Novel Acquisition Strategies for TOF and IMS-TOF Mass Spectrometers;** Keith Richardson¹; Jason Wildgoose¹; Martin Green¹; Stephen Platt¹; Martin Palmer¹; Mark Wrona²; Asish Chakraborty²; Arkadiusz Grzyb³; ¹Waters Corporation, Manchester, UK; ²Waters Corporation, Milford, MA; ³Inquiry Software, Bialogard, Poland
- ThP 090 **Preliminary Tests of an ESI QqTOF Mass Spectrometer Prototype;** Vladimir Montero Collado; Victor Spicer; Ken Standing; *University of Manitoba, Dept. of Physics, Winnipeg, Canada*
- ThP 091 **Factorial Experimental Designs Elucidate Significant Factors Affecting Data Acquisition on a Quadrupole Orbitrap Mass Spectrometer;** Shan M. Randall¹; Helene L. Cardasis²; David C. Muddiman¹; ¹North Carolina State University, Raleigh, NC; ²Thermo Fisher Scientific, San Jose, CA
- ThP 092 **GPU Based Ion Cloud Dynamics Simulation in Orbitrap with Accounting for Space Charge Shielding by the Inner Electrode;** Pavel Ryumin; Gleb Vladimirov; Eugene Nikolaev; *The Institute for Energy Problems of Chemical Phys, Moscow, Russian Federation*
- ThP 093 **Robustness and System-Health Study on Triple Quadrupole Mass Spectrometers;** Mary L. Blackburn; Harald Oser; Jean-Jacques Dunyach; Philip M. Remes; Michael W. Belford; Josh Maze; *Thermo Fisher Scientific, San Jose, CA*
- ThP 094 **Advances in Sensitivity, Robustness, Speed, and Dynamic Range on a Newly Developed Triple Quadrupole Mass Spectrometer;** Harald Oser; Ethan Chan; Oleg Silivra; Joshua Maze; Satendra Prasad; Jean-Jacques Dunyach; Michael Belford; Eloy Wouters; Huy Nguyen; Terry Olney; *Thermo Fisher Scientific, San Jose, CA*
- ThP 095 **Mass and Resolution Calibration Method For New Quadrupole Mass Spectrometers;** Rob Grothe; *Thermo Fisher Scientific, San Jose, CA*
- ThP 096 **High-Speed Mass Measurement of Nanoparticle and Virus;** Huan-Chang Lin^{1,2}; Jung-Lee Lin¹; Jia-Tsong Jan¹; Chung-Hsuan Chen^{1,2}; ¹GRC, Academia Sinica, Taipei, Taiwan; ²BIME, National Taiwan University, Taipei, Taiwan
- ThP 097 **Quantitative Analysis of Protein Adsorption on Porous Polymer Particles by Using Ion Trap Particle Mass Spectrometry;** Zongxiu Nie; Caiqiao Xiong; *Institute of Chemistry Chinese Academy of Sciences, Beijing, China*
- ThP 098 **Design, Installation and Validation of a Nitrogen Generation System in a Clinical LC-MS/MS Lab;** Brett Holmquist; Donald Walt Chandler; *Esoterix, a LabCorp Company, Calabasas Hills, CA*
- ThP 099 **New Optimization Scheme for Ion Stalling Devices;** Byungchul Cha; Joshua Maze; Oleg Silivra; Harald Oser; *Thermo Fisher Scientific, San Jose, CA*
- ThP 100 **Comparison of Dipolar Direct Current and Orifice Voltage Induced Collision Induced Dissociation in a Linear Ion Trap System;** Kilyoung Kim; Cong Gao; Donald Douglas; *Univ of British Columbia, Vancouver, Canada*
- ThP 101 **Implementation of a Multipurpose Glow Discharge Ion Source for the Introduction of Reagent/Calibrant Ions into a Hybrid Mass Spectrometer;** Lee Earley¹; John Syka¹; Christopher Mullen¹; Jean-Jacques Dunyach¹; Don Hunt²; Jeffrey Shabonowitz²; Michelle English²; Philip Compton³; ¹Thermo Fisher Scientific, San Jose, CA; ²University Of Virginia, Charlottesville, VA; ³Northwestern University, Evanston, IL
- ThP 102 **An Advanced Detection System for Ion Trap Mass and Quadrupole Mass spectrometers;** Raman Mathur; Michael Senko; Philip M. Remes; Robert A. Grothe; Jean Jacques Dunyach; Harald Oser; Satendra Prasad; Eloy R. Wouters; *Thermo Fisher Scientific, San Jose, CA*
- ThP 103 **Chemical Analysis of Functionalized Fullerenes and Detection of Stable Giant Fullerenes by Extreme Ultraviolet Laser Ablation Mass Spectrometry;** G.L. Gasper¹; I.Y. Kuznetsov¹; C. Oster¹; D. Carlton³; W. Chao³; E.H. Anderson³; E.R. Bernstein^{1,2}; D.C. Crick^{1,4}; J.J. Rocca¹; C.S. Menoni¹; ¹NSF ERC for EUV Science, Colorado State University, Fort Collins, CO; ²Department of Chemistry, Colorado State University, Fort Collins, CO; ³Lawrence Berkeley National Laboratory, Berkeley, CA; ⁴CVMB, Colorado State University, Fort Collins, CO
- ThP 104 **High-Pressure CIT Mass Spectrometry with a Solid-State CTIA Detector;** Derek W. Wolfe¹; Travis M. Falconer^{1,2}; Roger P. Sperline³; M. Bonner Denton³; J. Michael Ramsey¹; ¹University of North Carolina, Chapel Hill, NC; ²Forensic Chemistry Center, U.S. FDA, Cincinnati, OH; ³University of Arizona, Tucson, AZ
- ThP 105 **Preparative Scale Mass Spectrometry: A Modernized Electromagnetic Isotope Separator;** Kevin Hart; Brian Egle; W. Scott Aaron; *Oak Ridge National Laboratory, Oak Ridge, TN*
- ThP 106 **A Mathematica 3D-Histogram for Improved Energy and Charge State Determinations from STJ Cryodetector MS Data;** Fan Wang; Dave M. Sipe; Mark E. Bier; *Carnegie Mellon University, Pittsburgh, PA*
- ThP 107 **Online ESI-MS Analysis of HPTLC-Separated Compounds with a New Compact Single Quadrupole Mass Spectrometer;** Frank Porbeck²; Ines Klingelhofer¹; Mark Allen²; Gertrud Morlock¹; ¹Justus-Liebig-University, Giessen, Germany; ²Advion Ltd., Harlow, UK

LC-MS Instrumentation, 108 – 120

- ThP 108 **SFC-APLI-TOF(MS) - A Novel Hyphenation to Atmospheric Pressure Laser Ionization Mass Spectrometry;** Dennis Klink¹; Oliver J. Schmitz²; ¹University of Wuppertal, Wuppertal, Germany; ²University of Duisburg-Essen, Essen, Germany
- ThP 109 **Hybrid Microfluidic Electrospray Interfacing for CE-MS;** Frantisek Foret; Jana Krenkova; Jan Partyka; Jakub Grym; *Institute of Analytical Chemistry ASCR, v.v.i., Brno, Czech Republic*
- ThP 110 **Development of a Novel Geometry API Source Probe Capable of both HESI and APCI;** Joshua Maze; Belford Michael; Terry Olney; *Thermo Fisher Scientific, San Jose, CA*
- ThP 111 **Evaluating the Dynamic Range of Quantitation of a Novel Hybrid, Q-OT-qIT Mass Spectrometer;** Mark E. Hardman; *Thermo Fisher Scientific, Sunnyvale, CA*
- ThP 112 **A Comparison of Two Different LC-MS/MS Technologies for the Determination of Peptides in Biological Fluids;** Floriane Pailleux^{1,2}; Arnaud Salvador¹; Francis Beaudry²; Jérôme Lemoine¹; ¹Université de Lyon, Villeurbanne, France; ²Université de Montréal, Saint-Hyacinthe, Canada
- ThP 113 **Electrospray Inlet Ionization (ESII): A Highly Sensitive Ionization Technique for Liquid Chromatography-Mass Spectrometry;** Shubhashis Chakraborty; Vincent S. Pagnotti; Sarah J. Saylor; Charles N. McEwen; *University of the Sciences, Philadelphia, PA*
- ThP 114 **Comparison between Mechanisms Occurring in Paper Spray Ionization (PSI), Liquid Extraction Surface Analysis (LESA) and Desorption Electrospray Ionization (DESI);** Wejdan Alsaggaf; Rob O'Brien; *Chemistry Department, Kelowna, Canada*

- ThP 115 **Development and Evaluation of NanoESI Coupled to a Triple Quadrupole Mass Spectrometer for Quantitative Proteomics Research;** Shannon Cook¹; Hideki Yamamoto²; Tairo Ogura²; Yusuke Osaka²; Ichiro Hirano²; ¹*Shimadzu Scientific Instruments, Inc., Columbia, MD*; ²*Shimadzu Corp., Kyoto, Japan*
- ThP 116 **Strategies for Structure Elucidation Using Ultrafast Mass Spectrometry (UFMS): Using nMS² as an Alternative to MS³;** Paul Wynne^{1,2,3}; Nigel Grieves^{1,2,3}; Bruce Fraser^{1,2,3}; ¹*Shimadzu Australasia, Sydney, Australia*; ²*Shimadzu Australasia, Palmerston North, New Zealand*; ³*Shimadzu Australasia, Melbourne, Australia*
- ThP 117 **On-Chip LC Separations for Inlet Ionization Based Mass Spectrometry Detection;** Berk Oktem¹; Vladimir M. Doroshenko¹; Eric L. Kendall²; Don L. DeVoe²; ¹*MassTech Inc., Columbia, MD*; ²*University of Maryland, College Park, MD*
- ThP 118 **An Integrated LC/MS Platform for Microscale Applications;** Angela Doneanu; Jim Murphy; Jay Johnson; Steve Cohen; Giuseppe Astarita; *Waters Corp., Milford, MA*
- ThP 119 **Maximizing Triple Quadrupole Mass Spectrometry Productivity Through the Automated Use of an Expanded Dual-Channel HPLC System with Online Sample Cleanup;** Kevin McCann; Sameer Nene; Doug McIntyre; Edmond Neo; Dennis Nagtalon; Dorothy Yang; *Agilent Technologies, Santa Clara, CA*
- ThP 120 **Extension of REXIC Ion Preselection to Low-Resolution Ion Trap MudPIT Chromatography;** Peter Leopold¹; Samantha Peacock²; Tahmid Hassan²; Keith Rivera²; Darryl Pappin²; Cristian I. Ruse²; ¹*BioAnalyte Inc., Portland, ME*; ²*Cold Spring Harbor Laboratory, Cold Spring Harbor, NY*
- LC-MS Sample Preparation (Proteins & Peptides), 121 – 139**
- ThP 121 **The Effect of Protein Extraction Bias on the Biological Interpretation of Biofilm Metaproteomes;** Dagmar Hajkova Leary²; William Judson Hervey IV.¹; Gary Vora¹; ¹*Naval Research Laboratory, Washington, DC*; ²*National Research Council, Washington, DC*
- ThP 122 **Specific and Efficient N-propionylation of histones with Propionic acid N-hydroxysuccinimide Ester for Histone Marks Characterization by LC-MS;** Rijing Liao¹; Yanyan Yu¹; shaolian zhou¹; wei yi¹; huili zhai²; ¹*China Novartis Institutes for Biomedical Research, Shanghai, China*; ²*Novartis Institutes for Biomedical Research, Inc., Boston, MA*
- ThP 123 **A New Sample Preparation Method for Tissue Proteomics;** Ying-Hua Chang¹; Albert Chen¹; Wei Guo¹; Qiang Xiong²; Jianyi Zhang²; Ying Ge¹; ¹*University of Wisconsin, Madison, WI*; ²*University of Minnesota Medical School, Minneapolis, MN*
- ThP 124 **An Optimized Method for Preparing Yeast and Human Protein Extracts for Mass Spectrometry Method Development and Instrument Validation;** Sergei Saveliev; Ethan Strauss; Mike Rosenblatt; Marjeta Urh; *Promega Corporation, Madison, WI*
- ThP 125 **The Use of An Acid and Heat-Labile Surfactant for Several Mass Spectrometry Sample Preparation Methods;** Michael Rosenblatt; Sergei Saveliev; Marjeta Urh; *Promega Corp, Madison, WI*
- ThP 126 **Enhanced Protein Mass Spectrometry Analysis with Trypsin/Lys-C Mix;** Marjeta Urh¹; Sergei Saveliev¹; Ethan Strauss¹; Mike Rosenblatt¹; Richard Jones²; Michael Ford²; Dave Allen²; ¹*Promega, Madison, WI*; ²*MSBioworks LLC, Ann Arbor, MI*
- ThP 127 **Recovery and Identification of High pI-High Charge Peptides Separated from Proteins on Spin Filters Using Elevated Organic Elution;** Tatiana N. Boronina¹; AeRyon Kim²; Yuri Poluektov²; Nelson Song²; Robert N. Cole¹; ¹*MSF, Johns Hopkins School of Medicine, Baltimore, MD*; ²*Pathology, Johns Hopkins School of Medicine, Baltimore, MD*
- ThP 128 **Electroelution for Sample Preparation Enabling Top Down Proteomics of Native and Denatured Proteins;** Luis Henrique Ferreira Do Vale¹; Adam Catherman¹; John Tran¹; Philip Compton¹; Paul Thomas¹; Edivaldo Ximenes Filho²; Marcelo Valle de Sousa²; Neil Kelleher¹; ¹*Northwestern University, Evanston, IL*; ²*Universidade de Brasilia, Brasilia, Brazil*
- ThP 129 **Proteomic Analysis of the Murine Presynaptic Active Zone by Fractionation at High pH and nLC-ESI-MS/MS;** Benjamin F. Mueller¹; Melanie Lassek²; Marion Rohmer¹; Dominic Baeumlisberger³; Jens Weingarten²; Walter Volknandt²; Michael Karas¹; ¹*Goethe-University, Institute of Pharm. Chemistry, Frankfurt am Main, Germany*; ²*Goethe-University, Institute of Neuroscience, Frankfurt am Main, Germany*; ³*SunChrom GmbH, Friedrichsdorf, Germany*
- ThP 130 **Effects of Matrix Age on Protein Binding Results Extracted with a Prototype Phospholipid Removal Plate and Analyzed Using MFCL-MS/MS;** Chad Christianson; Casey Johnson; Sharon Cox; Shane Needham; *Alturas Analytics, Moscow, ID*
- ThP 131 **Critical Evaluation of the Effects of Various Sample Clean Up Approaches for Micro Fluidic LC/MS in Bioanalysis;** Paul Rainville; Jim Murphy; Catalin Doneanu; *Waters, Milford, MA*
- ThP 132 **Fast "Load-Wash-Elute" SPE Method with No Dry Down Steps for Peptide Extraction from Plasma and Serum Prior to LC-MS/MS Analysis;** Victor Vandell¹; Frank Kero¹; Wendy Hartsock¹; Lee Williams²; Adam Senior²; Rhys Jones²; Geoff Davies²; Alan Edgington²; Steve Jordan²; ¹*Biotage, Charlotte, NC*; ²*Biotage GB Limited, Cardiff, UK*
- ThP 133 **Robust Targeted Protein Quantification by LC-MS Enabled by a Versatile Sample Preparation Platform for Automated Protein Digestion and Cleanup;** Jason Russell; Michael Bovee; Zachary Van Den Heuvel; Scott Fulton; Steve Murphy; *Agilent Technologies, Inc., Madison, WI*
- ThP 134 **A Robust Human Plasma IgG1 Assay Using a microLC-MS/MS System with Online Digestion;** Hao Yang¹; Nicole Hebert¹; David Neyer¹; Tina Settineri¹; Remco van Soest¹; Christie Hunter²; ¹*Eksigent, part of AB SCIEX, Dublin, CA*; ²*AB SCIEX, Foster City, CA*
- ThP 135 **An Optimized Sample Preparation Procedure for Shotgun Proteomic Analyses of Complex Samples by Mass Spectrometry;** Babu Antharavally¹; Xiaoyue Jiang²; Robert Cunningham¹; Ryan Bomgarden¹; Yi Zhang²; Rosa Viner²; John C. Rogers¹; ¹*ThermoFisher Scientific, Rockford, IL*; ²*Thermo Fisher Scientific, San Jose, CA*
- ThP 136 **Needle-and-Frit-Aided In-Gel Digestion: An Improved and More Reliable Method for Protein Identification in Gel Approaches;** Keding Cheng; Angela Sloan; Robert Vendramelli; Stuart McCorrister; Lisa Podhorodecki; Kristen M Avery; Lise Lamoureux; Garrett Westmacott; Sharon Simon; Debra Godal; David Knox; *Public Health Agency of Canada, Winnipeg, Canada*
- ThP 137 **Integrated Bead Elution to FASP Digestion Protocol for Increased Protein Identification and Time Savings in Affinity Enrichment Experiments;** Anna Okumu¹; Yujie Tang²; Toshie Saito²; Allis Chien¹; Chris Adams¹; ¹*Stanford University Mass Spectrometry, Stanford, CA*; ²*Stanford University, Stanford, CA*

- ThP 138 **Appropriate Digestion Protocol Ensures High Accuracy and Precision in Protein Quantitation;** [Cristina Chiva](#); Mireia Ortega; Eduard Sabidó; *Proteomics Unit CRG/UPF, Barcelona, Spain*
- ThP 139 **Comparison of Protein Extraction, Digestion, and Fractionation Methods for Discovery-Based, Bottom-Up Proteomics;** [Kerry Bauer](#); Leigh Weston; Amanda Hummon; *University of Notre Dame, Notre Dame, IN*
- Advances in Sample Preparation Methods for Improved Protein Identification and Quantification, 140 – 169**
- ThP 140 **Surface-Modified Nanoparticles as a Proteomics-Based Diagnostic Tool;** [Carly N. Ferguson](#); Rolando E. Yanes; Angela A. Hwang; Courtney R. Thomas; Jeffrey I. Zink; Fuyuhiko Tamanoi; Joseph A. Loo; *University of California, Los Angeles, CA*
- ThP 141 **Development of an On-line SDS Removal Platform Using Asymmetrical Field-Flow Fractionation for GELFrEE and Direct Analysis with Mass Spectrometry;** [Ki Hun Kim](#)¹; John C. Tran¹; Ryan T. Fellers¹; Philip D. Compton¹; Paul M. Thomas¹; Myeong Hee Moon²; Neil L. Kelleher¹; ¹*Northwestern University, Evanston, IL*; ²*Yonsei University, Seoul, South Korea*
- ThP 142 **Proteomic Analysis of Redox-Sensitive Cysteine Residues Using Novel Chemical Probes;** [Yeon-seung Park](#); Seulki Ha; Heejeung Kim; Kong-Joo Lee; *College of Pharmacy, Ewha Womans Univ., Seoul, South Korea*
- ThP 143 **“Gel-Aided Sample Preparation” (GASP) and “Charge State Separation” (CSS) Enable Robust Sample Generation and Data Acquisition for Deep Proteome Coverage in Proteomics;** [Roman Fischer](#); Benedikt Kessler; *University of Oxford, UK, Oxford, UK*
- ThP 144 **Optimizing Experimental Parameters for *de-novo* Target Identification of Bioactive Molecules by Chemoproteomics;** Jason Murphy; Jason Thomas; David Schwalb; Jane Nagel; Scott Brittain; [Markus Schirle](#); *Novartis Institutes for BioMedical Research, Inc., Cambridge, MA*
- ThP 145 **New Proteomics Approaches by Direct MALDI-MS Analysis from Dry Polyacrylamide Gels and PVDF Membranes Using Stain-Free Protein Detection;** [Stefan Slamnoi](#)¹; Christopher Schneider¹; Bogdan Bernevic¹; Bernd Müller- Zülw²; Heinrich Spiecker²; Michael Przybylski¹; ¹*University of Konstanz, Konstanz, Germany*; ²*LaVision-Biotec GmbH, Bielefeld, Germany*
- ThP 146 **Primary Amine Modification with Sulfophenyl Isothiocyanate for Negative Mode Peptide Charge Enhancement and Enhanced 193 nm UV Photodissociation;** Joe R. Cannon; [Sylvester M. Greer](#); Jennifer S. Brodbelt; *Univ. of Texas at Austin, Austin, TX*
- ThP 147 **An Integrated Microfluidic Device for On-Line Trypsin Digestion and LC/MS Analysis of Proteins;** [Roger Moore](#)¹; Denise Keen¹; Gabriel Gugiu¹; Terry Lee¹; Gregory Staples²; Hongfeng Yin²; Reid Brennen²; Kevin Killeen²; ¹*City of Hope, Duarte, CA*; ²*Agilent Technologies, Santa Clara, CA*
- ThP 148 **Aminoethylation of Hair Protein Cysteines in Parallel with Carbamidomethylation for Improved Proteomic Coverage;** [Richard A. Eigenheer](#); Robert H. Rice; Brett S. Phinney; *UC Davis, Davis, CA*
- ThP 149 **Orthogonal-Specificity Proteases Double Proteome Coverage;** [Jesse Meyer](#); Nuno Bandeira; Elizabeth Komives; *University of California, San Diego, CA*
- ThP 150 **Fast and Efficient Proteolysis of Proteins by Pepsin-encapsulated Magnetic Sol-Gel for Mass Spectrometry Based Proteomics Applications;** H. Mehmet Kayılı; [Selim Gerişlioğlu](#); Ömür Çelikkıçak; Bekir Salih; *Hacettepe University, Department of Chemistry, Ankara, Turkey*
- ThP 151 **Global Proteomic Screening of Photocleavable Bead-Arrays Using Synchronized MALDI-MS and Fluorescent Imaging;** [Mark Lim](#); Ziying Liu; Karen Braunschweiger; Amayn Awad; Kenneth Rothschild; *AmberGen, Watertown, MA*
- ThP 152 **Streamlining Bottom-up Protein Identification Based on Selective UVPD of Chromophore Tagged Histidine and Tyrosine Containing Peptides;** [Julia Aponte](#); Lisa Vasicek; Jagannath Swaminathan; Jennifer Brodbelt; *University of Texas, Austin, TX*
- ThP 153 **Development of an Optimized Metaproteomic Approach for Unraveling Inter-Individual Variation in the Premature Infant Gut Microbiome;** [Weili Xiong](#)²; Jacque Young²; Paul Abraham²; Richard Giannone¹; Robert Hettich¹; ¹*Oak Ridge National Laboratory, Oak Ridge, TN*; ²*Univ. of Tennessee, Knoxville, TN*
- ThP 154 **Tissue Sample Preparation Procedures for Low Scale Shotgun Proteomics and MALDI Profiling;** [Rémi Longuespée](#); Gabriel Mazzucchelli; David Calligaris; Nicolas Smargiasso; Marie Alice Meuwis; Edwin De Pauw; *Mass Spectrometry Laboratory, 4000 Liège (Sart Tilman), Belgium*
- ThP 155 **Novel Aqueous Two-Phase Systems for Extraction of Membrane Proteins in Human Embryonic Stem Cells;** [James Mccord](#); Emine Gokce; Shuang Liang; Shan Randall; David C. Muddiman; Morteza Khaledi; *NC State University, Raleigh, NC*
- ThP 156 **An Improved Stable-Isotope N-ter-labeling Approach with Light/Heavy TMPP to Automate Proteogenomics Data Validation;** [Diego Bertaccini](#); Sebastien Vaca; Christine Carapito; Alain Van Dorsselaer; Christine Schaeffer-Reiss; *LSMBO, Strasbourg, France*
- ThP 157 **Use of Iron Oxide Nanoparticle Pellicles for Enrichment of Plasma Membrane Proteins from Suspended Cells;** [Waeowalee Choksawangkam](#)¹; Sung-Kyoung Kim¹; Lauren Graham¹; Nathan Edwards²; Sang Bok Lee^{1, 3}; Suzanne Ostrand-Rosenberg⁴; Catherine Fenselau¹; ¹*University of Maryland, College Park, MD*; ²*Georgetown University Medical Center, Washington, DC*; ³*Korea Advanced Institute of Science and Technology, Daejeon, Korea*; ⁴*University of Maryland, Baltimore County, Baltimore, MD*
- ThP 158 **A Novel Enrichment Strategy for N-terminal-oriented Proteogenomics Challenges Dogma Related to the Conservation of Translation Initiation amongst Closely Related Species;** [Celine Bland](#); Bernard Fernandez; Jean-Charles Gaillard; Jean Armengaud; *CEA, Bagnols Sur Ceze, France*
- ThP 159 **Development and Applications of In-Gel Microwave-Assisted Acid Hydrolysis (MAAH) of Proteins for Mapping Protein Sequences;** [Difei Sun](#); Nan Wang; Liang Li; *University of Alberta, Edmonton, Canada*
- ThP 160 **A Novel Method of the Enzyme Immobilization for the Biological Applications;** [He-Hsuan Hsiao](#)¹; Henning Urlaub²; ¹*NCHU, Department of Chemistry, Taichung, Taiwan*; ²*MPIBpc, Bioanalytical Mass Spectrometry Group, Göttingen, Germany*
- ThP 161 **iFASP: Combining Isobaric Mass Tagging with Filter-Aided Sample Preparation;** [Gary McDowell](#); Hanno Steen; *Boston Children's Hospital, Boston, MA*
- ThP 162 **Digestion and Depletion of Abundant Proteins Improves Proteome Coverage and Quantitation;** [Bryan Fonslow](#); Jeffrey Savas; Navin Rauniyar; John Yates III; *The Scripps Research Institute, La Jolla, CA*
- ThP 163 **Genetic Modification of the Urease Activity Enables Full Compatibility of Fission Yeast with SILAC Labeling;** [Alejandro Carpy Gutierrez Cirlos](#)¹; Avinash Patel²; Tay Ye Dee²; Iain Hagan²; Boris Macek¹; ¹*Proteome Center*

- Tuebingen, Tuebingen, Germany; ²Paterson Institute for Cancer Research, Manchester, UK
- ThP 164 **Novel Approach for the Absolute Quantification and Multiplexing of Histone Post-Translational Modifications (PTM) by Mass Spectrometry (MS);** Leila Afjehi-Sadat^{1,2}; Benjamin A Garcia^{1,2}; ¹University of Pennsylvania, Philadelphia, PA; ²Department of Biochemistry and Biophysics, Philadelphia, PA
- ThP 165 **Sequential Acetyl Lysine Immunoprecipitation Platform to Quantitatively Assess the p300 Dependent Acetylome;** Timothy Sikorski; Roland Annan; GlaxoSmithKline, Collegeville, PA
- ThP 166 **A Mass Spectrometry-Based Approach for Mapping and Quantitation of Both Nitrosation and Oxidation of the Cysteome;** Sujeewa C. Piyankarage; Yue-Ting Wang; Shuai Wang; Gregory R. J. Thatcher; Dept. of Medicinal Chemistry and Pharmacognosy, Chicago, IL
- ThP 167 **Comparative Metaproteomics for the Canine Gut Microbiome;** Seijin Park; Cadie Tillotsen; Ryan Elizabeth; Kenneth Reardon; Colorado State University, Fort Collins, CO
- ThP 168 **Exploring Nucleotide-Binding Proteins in Human Cell Proteome with an Affinity-Labeled Nucleotide Probe;** Yongsheng Xiao; Yinsheng Wang; University of California, Riverside, CA
- ThP 169 **Comparison of Proteins Bound to the Yeast UAS_{GAL} Region Under Different Growth Conditions Using GENCAP Technology;** Prahlad Rao^{1,2}; Avinash Jadhav^{1,2}; Hector Ahlers^{1,2}; Amy Ludwig-Kubinsky^{1,2}; Regina Cole^{1,2}; Yuan Yuan^{1,3}; Mark Levenstein^{1,3}; Michael Shortreed^{1,3}; Lloyd Smith^{1,3}; Michael Olivier^{1,2}; ¹Wisconsin Center of Excellence in Genomics Science, Milwaukee, WI; ²Medical College of Wisconsin, Milwaukee, WI; ³University of Wisconsin, Madison, WI
- High Throughput Analysis/Robotics, 170 – 185**
- ThP 170 **High-Throughput Validated Method for the Quantitation of 10, 11-dihydro-10-hydroxycarbamazepine in Serum Using Ultra Fast SPE-MS/MS;** Matthew Bjergum; Darlington Danso; Eric Korman; Robert Enger; Paul Jannetto Ph.D.; Loralie Langman Ph.D.; Mayo Clinic, Rochester, MN
- ThP 171 **High- Throughput Validated Method for the Quantitation of Voriconazole in Serum Using Ultra-fast SPE-MS/MS;** Darlington Danso; Matthew Bjergum; Eric Korman; Robert Enger; Paul Jannetto Ph.D.; Loralie Langman Ph.D.; Mayo Clinic, Rochester, MN
- ThP 172 **Reducing Matrix Effect in Double-Sink PAMPA Analysis by LC-MS/MS;** Xianmei Cai; Chris Mayer; Anthony Paiva; Ying.W. Li; John Herbst; Harold Weller; Wilson Shou; Bristol-Myers Squibb.Co, Wallingford, CT
- ThP 173 **High-Throughput Validated Method for the Quantification of Lamotrigine in Serum Using Ultra Fast SPE-MS/MS;** Matthew Bjergum; Darlington Danso; Eric Korman; Robert Enger; Loralie Langman Ph.D.; Paul Jannetto Ph.D.; Mayo Clinic, Rochester, MN
- ThP 174 **High-Throughput Validated Method for the Quantification of Felbamate in Serum Using Ultra Fast SPE-MS/MS;** Matthew Bjergum; Darlington Danso; Eric Korman; Robert Enger; Loralie Langman Ph.D.; Paul Jannetto; Mayo Clinic, Rochester, U.S
- ThP 175 **Laser Ablation Transfer with a Remote Sampling Arm;** Chinthaka A. Seneviratne; Kermit K. Murray; Louisiana State University, Baton Rouge, LA
- ThP 176 **Fast Separation Method Development for Scale-Up Preparative Two-Dimensional (2D) SFC/SFC/MS Separations;** Yinong Zhang; Catherine Pham; Lu Zeng; Takeda California, Inc., San Diego, CA
- ThP 177 **New Extraction Tips Technique for Direct Elution on Plate used in LDTD-MS/MS Analysis;** David Dube¹; Serge Auger²; Veronique Marceau¹; Alex Birsan²; Annick Dion²; Pierre Picard²; ¹Silicycle, Quebec, Canada; ²Phytronix Technologies, Quebec, Canada
- ThP 178 **Fast Compound Optimization and High-Throughput Analysis Workflow by LDTD-MS/MS;** Annick Dion; Serge Auger; Pierre Picard; Phytronix Technologies, Quebec City, Canada
- ThP 179 **A Fully Automated Method for High Throughput Draft Level Protein Interactomics;** Lola Fagbami¹; Jinal Patel¹; Yashaswi Shrestha¹; Jesse S. Boehm¹; Zachary Van Den Heuvel²; Steve Murphy²; Steven A. Carr¹; Jacob D. Jaffe¹; ¹Broad Institute of MIT and Harvard, Cambridge, MA; ²Agilent Technologies, Inc., Santa Clara, CA
- ThP 180 **Rapid detection and Quantitation of Perchlorate in Human Urine by Nanoelectrospray-Tandem Mass Spectrometry;** Amanda Woods; Chris Nixon; Shane Wyatt; Commonwealth of Virginia Division of Consolidated, Richmond, VA
- ThP 181 **Continuously Stirred Tank Reactor as a Flow Injection Analysis Device for Non-covalent Binding Determinations with ESI-MS;** Kevin Schug¹; Hui Fan¹; Petr Fryčák²; Sabra Ramirez¹; ¹University of Texas Arlington, Arlington, TX; ²Palacký University, Olomouc, Czech Republic
- ThP 182 **Mass Spectrometry Based Hit Triage: A Case Study on a Protease Using RapidFire Mass Spectrometry;** Junca Meng¹; Gregory Adam¹; Keith Rickert¹; Anthony Kreamer¹; Daniel Stugan¹; Justin Murray¹; Edward Hudak¹; Robert Liehr¹; Alex Wolicki¹; Ming-Tain Lai³; Jay Grobler³; Paul Zuck¹; Eric Johnson²; Victor Uebele¹; Jeffrey Hermes¹; ¹Screening and Protein Sciences, Merck, North Wales, PA; ²In Vitro Pharmacology, Merck, West Point, PA; ³Infectious Disease, Merck, West Point, PA
- ThP 183 **High Through-put HPLC-MS Using Active Flow Technology Chromatography Columns;** Ross Shalliker; Danijela Kocic; Arianne Soliven; University of Western Sydney, North Paramatta, Australia
- ThP 184 **Facile Modifications to Commercially Available HPLC System Enabling Medium Throughput Mass Spectrometry Based Screening;** Stefan Thibodeaux; David Yurek; Rebecca Butler; Ming-Shang Kuo; Eli Lilly, Indianapolis, IN
- ThP 185 **Chromatographic Optimization, Storage, and re-Use in a combined High-Throughput Compound Optimization Workflow Using a Dual Arm Autosampler;** Wayne Lootsma¹; Nick Levitt²; Brendon Kapinos³; Veronica Zelesky³; ¹Sound Analytics, LLC, Niantic, CT; ²TwoCenter Technologies LLC, Cambridge, MA; ³Pfizer Inc., Groton, CT
- GCMS: Instrumentation & Applications, 186 – 214**
- ThP 186 **Classification of Conventional and Organic Basils Using Gas Chromatography/Mass Spectrometry and Chemometric Analysis;** Zhengfang Wang¹; Pei Chen²; Liangli Yu³; Peter Harrington¹; ¹Ohio University, Athens, OH; ²United States Department of Agriculture, Beltsville, MD; ³University of Maryland, College Park, MD
- ThP 187 **Development of an Expedited Field Study Method for PCBs in Sediments and Soils Using Portable GC/MS;** Mengliang Zhang¹; Peter Harrington¹; Natalie Kruse¹; Jennifer Bowman¹; Stephen Lammert²; Edgar Lee²; Glen Jackson^{1,3}; ¹Ohio University, Athens, OH; ²Torion Technologies Inc, American Fork, UT; ³West Virginia University, Morgantown, WV

- ThP 188 **Sample Identification by GC-MS and How to Improve it;** Aviv Amirav^{1,2}; Alexander Fialkov¹; Tal Alon^{1,2}; ¹*Tel-Aviv University, Tel-Aviv, Israel*; ²*Aviv Analytical LTD, Tel Aviv, Israel*
- ThP 189 **Determination of 55 Residual Pesticides in Onion and Leek Samples Using GC-MS/MS;** Feifei Tian; Peng Gao; Furong Wang; Jun Fan; *Shimadzu Global COE, Shimadzu (China) Co., Ltd, Beijing, China*
- ThP 190
- ThP 191 **Applications of Accurate Mass Gas Chromatography/APCI/Mass Spectrometry on a Quadrupole Time-of-Flight Instrument;** Jeffrie Godbey; Jeffrey Gilbert; Brita McNew; Mary Evenson; Ayanna Jackson; *Dow AgroSciences, Indianapolis, IN*
- ThP 192 **Flavor Profiles of Imported and Domestic Beers over Time by Purge and Trap Thermal Desorption GC/MS;** Ronald Shomo; Robert Frey; Christopher Baker; John Manura; *Scientific Instrument Services, Ringoes, NJ*
- ThP 193 **Determination of Aromatic Amines in Mainstream Smoke from Major US Brand Cigarettes Using SPE-GC-MS/MS;** Bryan Hearn¹; Yanfeng Chen^{1,2}; Jennye Ward¹; Jacki Janecek¹; Yan Ding¹; Clifford Watson¹; ¹*Centers for Disease Control and Prevention, Atlanta, GA*; ²*Battelle, Atlanta, GA*
- ThP 194 **Enhanced Method Development Capability with Automated SPME Extraction Optimization;** Roger Pearson¹; Douglas Doster¹; Tom Flug²; Guenter Boehm²; ¹*Aspen Research Corporation, Maple Grove, MN*; ²*CTC Analytics, Geneva, Switzerland*
- ThP 195 **Coupling Post-Column Cryogenic Trapping with Conventional GC/MS for the Analysis of Volatile Organic Compounds;** Abayomi Olaitan¹; Behrooz Zekavat¹; David LaBrecque²; Touradj Solouki¹; ¹*Baylor University, Waco, TX*; ²*University of Maine, Orono, ME*
- ThP 196 **Gas Chromatography Tandem Mass Spectrometry of Odor-Active Pyrazines in Wine;** Anna K. Hjelmeland^{1,3}; Phillip L. Wylie²; Susan E. Ebeler^{1,3}; ¹*Department of Viticulture and Enology, UC Davis, Davis, CA*; ²*Agilent Technologies, Wilmington, DE*; ³*Food Safety and Measurement Facility, UC Davis, Davis, CA*
- ThP 197 **Spectral Accuracy Approach to Counting Sulfurs in Unknown Compounds by Unit Mass Resolution Single Quadrupole Systems;** Hongliang (Leo) Xu; Yongdong Wang; Ming Gu; *Cerno Bioscience, Norwalk, CT*
- ThP 198 **Nitrogen as an Alternative GC/MS Carrier Gas;** Adam J. Patkin; Andrew Tipler; Ruben Garnica; *PerkinElmer, Shelton, CT*
- ThP 199 **Method Development for Fast, Automated Home-Made Explosives Identification following Sample Introduction on a Man Portable GC/MS;** Gareth Dobson; Edward Kissel; Michael Mark; Nickesha Chung; Eric Diken; *Smiths Detection, Danbury, CT*
- ThP 200 **Analysis of Residual Ethylene Oxide in Intraocular Lenses Using HS-GCMS;** Dheeraj Handique; Durvesh Sawant; Ankush Bhone; Prashant Hase; Sanket Chiplunkar; Jitendra Kelkar; Ajit Datar; Pratap Rasam; *Shimadzu Analytical (India) Pvt. Ltd., Andheri (E), Mumbai, Maharashtra, India*
- ThP 201 **Determination of Fatty Acids in Foods Using Gas Chromatography with Positive-ion Chemical Ionization Tandem Mass Spectrometry;** Shuichi Kawana¹; Yukihiko Kudo¹; Yuki Sakamoto¹; Katsuhiko Nakagawa¹; Laura Chambers²; Richard Whitney²; Haruhiko Miyagawa¹; ¹*Shimadzu, Kyoto, Japan*; ²*Shimadzu Scientific Instruments, Columbia, MD*
- ThP 202 **Comparison of Performance between Photoionization and Field Ionization by Using GC-HRTOFMS;** Koji Okuda¹; Kiyotaka Konuma¹; Jun Onodera¹; Tetsuo Higuchi¹; Yukinori Yahata¹; Jonathon Bunn²; Akihiko Kusai¹; ¹*JEOL Ltd., 1-2 Musashino 3-Chome Akishima, Japan*; ²*JEOL USA, Inc., Peabody, MA*
- ThP 203 **Automated Sample Preparation for the Analysis of Estrone by GC Triple Quadrupole Mass Spectrometry;** Peter Mrozinski¹; Selene Hernandez-Ruiz²; Anthony Macherone¹; ¹*Agilent Technologies, Wilmington, DE*; ²*University of Arizona, Tucson, AZ*
- ThP 204 **Microfabricated Multi-layered Columns for 2D Gas Chromatography Mass Spectrometry;** Sangwoo Kim; Sung Min Lim; *Korea Basic Sci. Institute, Seoul, South Korea*
- ThP 205 **Quantitation of Pyrethroids in Rat Plasma and Tissues Using Gas Chromatography Negative Chemical Ionization Mass Spectrometry;** Darren Gullick; *University of Georgia, Athens, GA*
- ThP 206 **Identification of Errors in EI Mass Spectral Databases and Their Potential Impact on the Identification of Unknowns Using Mass Spectrometry;** O. David Sparkman; Ryan Moffett; Mathew Curtis; Patrick Batoon; *University of the Pacific, Stockton, CA*
- ThP 207 **Characteristics of Charge Exchange Chemical Ionization (CI) in an Atmospheric Pressure Gas Chromatography (APGC) Source and Applied Uses;** Steven Lai¹; Rhys Jones²; David Douce²; Jody Dunstan²; Douglas Stevens³; ¹*Waters Corporation 1, Beverly, MA*; ²*Waters Corporation 2, Manchester, UK*; ³*Waters Corporation 3, Milford, MA*
- ThP 208 **Development of a High-Sensitivity GC-MS/MS Method for the Absolute Quantitation of TMS-Derivatized Steroids;** Matt Sweeney; Karolina M. Krasinska; Allis S. Chien; *SU Mass Spectrometry, Stanford University, Stanford, CA*
- ThP 209 **Optimizing GCMS Performance for Lowest Detection Limits and Highest Dynamic Range;** Barbara Bolton; Brian Hom; Jim Oppenheimer; *Agilent Technologies, Santa Clara, CA*
- ThP 210 **Testing the Limits of a New, Extremely Accurate Retention Prediction Methodology for GC (www.retentionprediction.org);** Michael Wilson; Brian Barnes; Paul Boswell; *University of Minnesota, Saint Paul, MN*
- ThP 211 **A Fast, Easy Way to Measure Your GC Instrument and Column Suitability with a Mass Spectrometer (www.checkyourgc.org);** Joe Kell; Mike Wilson; Paul Boswell; *University of Minnesota, St. Paul, MN*
- ThP 212 **Isotope Analysis in Reforming Reaction to Verify the Carbon Source;** Hyokeun Park; WooSung Jeon; SeungJae Lee; InHyuk Son; *Samsung Advanced Institute of Technology, Yongin, South Korea*
- ThP 213 **An Unusual Fragmentation Mechanism Deduced in the Process of Identifying an Unknown from Its EI Mass Spectrum;** Dazhou Xang; Patrick Batoon; Liang Xue; O. David Sparkman; Mathew Curtis; *University of the Pacific, Stockton, CA*
- ThP 214 **On-line Micro-Reactors for Gas Chromatography Isotope Ratio Mass Spectrometry;** Herbert Tobias; Calvin Patten; J. Thomas Brenna; *Cornell University, Ithaca, NY*

High Mass Accuracy / High Performance MS: Instrumentation, 215 – 229

- ThP 215 **In-Cell Accumulation of Ions for Control of TOF Mass Discrimination in External Source FT-ICR Mass Spectrometry**; Steve Beu¹; Nathan Kaiser²; Chris Hendrickson^{2,3}; Alan Marshall^{2,3}; ¹*S C Beu Consulting, Austin, TX*; ²*National High Magnetic Field Laboratory, Tallahassee, FL*; ³*Florida State University, Tallahassee, FL*
- ThP 216 **Experimental Evaluation of Current State of the Art FT-ICR Cell Technology**; Nathan Kaiser¹; Tong Chen¹; John Quinn¹; Steve Beu²; Christopher Hendrickson¹; Alan Marshall^{1,3}; ¹*National High Magnetic Field Laboratory, Tallahassee, FL*; ²*S C Beu Consulting, Austin, TX*; ³*Florida State University, Tallahassee, FL*
- ThP 217 **Advanced Experimental Event Sequences and Hardware for Highest Mass Accuracy of Complex Mixtures by FT-ICR MS**; Greg T. Blakney¹; Nathan Kaiser¹; Brian Ruddy²; Ryan P. Rodgers^{1,2}; Alan G. Marshall^{1,2}; ¹*National High Magnetic Field Laboratory, Tallahassee, FL*; ²*Florida State University, Tallahassee, FL*
- ThP 218 **A Simplifying Strategy for Tuning High-Order Compensation Traps in FTMS**; Don L. Rempel; Sergio Castro; Michael L. Gross; *Washington University, St Louis, MO*
- ThP 219 **Advanced Signal Processing Methods for FTMS: Implementation and Characterization**; Anton N. Kozhinov¹; Tagir Aushev²; Yuri O. Tsybin¹; ¹*Ecole Polytechnique Fédérale, Lausanne, Switzerland*; ²*Institute for Theoretical and Experimental Physics, Moscow, Russia*
- ThP 220 **Improved Sensitivity and Resolution for Two-dimensional FT-ICR MS**; Maria van Agthoven¹; David Kilgour¹; Lionel Chiron²; Marie-Aude Coutouly³; Marc-André Delsuc^{2,3}; Mark Barrow¹; Peter O'Connor¹; ¹*Department of Chemistry, University of Warwick, Coventry, UK*; ²*IGBMC, Illkirch-Graffenstaden, France*; ³*NMRTEC, Illkirch-Graffenstaden, France*
- ThP 221 **Enabling Accurate Mass Elemental Composition Determination on a New Compact Mass Spectrometer – Application to Detection and Identification of Radiopharmaceuticals**; Simon J. Prosser¹; Daniel Eikel¹; Thien Dinh¹; Frederick Chin²; Ming Gu³; YongDong Wang³; ¹*Advion, Inc., Ithaca, NY*; ²*Stanford University Medical Center, Stanford, CA*; ³*Cerno Biosciences, Norwalk, CT*
- ThP 222 **An Induced Dual-Nanospray Internal Calibration Ion Source for Mass Calibration with Simultaneously Detected Reference Ions and Analyte Ions**; Yafeng Li^{1,3}; Yiming Zhang²; Ning Zhang^{1,3}; Jianing Wang^{1,3}; Yueming Zhou^{1,3}; Caiqiao Xiong^{1,3}; Suming Chen^{1,3}; Zongxiu Nie^{1,4}; Li Zhou²; Xiang Pan²; Zhaogui Liu²; ¹*Institute of Chemistry Chinese Academy of Sciences, Beijing, China*; ²*Jiangsu Skyray Instrument Co., Ltd, Kunshan, Suzhou, China*; ³*Beijing National Laboratory for Molecular Sciences, Beijing, China*; ⁴*Beijing Center for Mass Spectrometry, Beijing, China*
- ThP 223 **Radical Directed Dissociation of Peptides and Proteins by UV Photodissociation and High Resolution FT-ICR MS**; Xing Zhang¹; Benjamin Moore¹; Piriya Wongkongkathep²; Jiang Zhang²; Shijun Cheng¹; Zhong Chen¹; Rachel Loo²; Joseph Loo²; Daniel Gallie¹; Ryan Julian¹; ¹*University of California, Riverside, CA*; ²*University of California, Los Angeles, CA*
- ThP 224 **Taking High Resolution Data LC/MS Reduction to the Next Level for Reduced False Positive Detection and Increased Mass Accuracy**; Mark A. Bayliss¹; Stephane Murphy¹; Joseph Simpkins¹; Ann Knolhoff²; Timothy Croley²; John Callahan²; ¹*Virscidian Inc, Cary, NC*; ²*FDA, Center for Food Safety & Applied Nutrition, College Park, MD*
- ThP 225 **Compound ID and Structure Elucidation in Drug Discovery - Medicinal Chemistry by Automated FTICR, Accurate Mass Measurement, and MSⁿ Methodologies**; Charles W. Ross III; Vincent Van Nostrand; *Merck & Co. Inc., West Point, PA*
- ThP 226 **Evaluation of a Hybrid Quadrupole-Orbitrap Mass Spectrometer (Q Exactive) for Quantitative Bioanalytical Support of *in vitro* Screening Assays**; Jennifer Maloney¹; Keeley Murphy²; Jeremy Stewart¹; John Herbst¹; Dieter Drexler¹; Harold Weller¹; Wilson Shou¹; Jun Zhang¹; ¹*Bristol-Myers Squibb, Wallingford, CT*; ²*ThermoFisher Scientific, San Jose, CA*
- ThP 227 **Maximizing Spectrum Identification Rate in Shotgun Proteomics on the Q Exactive Mass Spectrometer**; Yue Xuan; Eugen Damoc; Andreas Kuehn; Catharina Crone; Markus Kellmann; *ThermoFisherScientific, Bremen, Germany*
- ThP 228 **A High Resolution Accurate Mass Approach for Ultra High Throughput Screening Plasma Protein Binding**; Keeley Murphy^{1,2,3}; Patrick Bennett^{1,2,3}; Maciej Bromirski^{2,3}; Francois Espourteille^{1,2,3}; ¹*Thermo Fisher Scientific, Bremen, Germany*; ²*Thermo Fisher Scientific, San Jose, CA*; ³*Thermo Fisher Scientific, Franklin, MA*
- ThP 229 **Data Independent Acquisition (DIA) Analysis on the Q Exactive Mass Spectrometer**; Yue Xuan¹; Reiko Kiyonami³; Jarrett Egertson²; Michael MacCoss²; Andreas Kühn¹; Andreas Hühmer³; Markus Kellmann¹; ¹*ThermoFisherScientific Bremen, Bremen, Germany*; ²*University of Washington, Seattle, CA*; ³*ThermoFisherScientific San Jose, San Jose, CA*

High Mass Accuracy / High Performance Applications, 230 – 249

- ThP 230 **Mass Spec Quantification of a Steroid Hormone that Regulates Development and Aging in *C. elegans***; Tie-Mei Li^{1,3}; Jie Chen²; Xiangke Li¹; Xiao-Jun Ding¹; She Chen¹; Xiaoguang Lei^{1,2}; Meng-Qiu Dong¹; ¹*National Institute of Biological Sciences, Beijing, China*; ²*Tianjin University, Tianjin, China*; ³*Beijing Normal University, Beijing, China*
- ThP 231 **Neutron-Encoded Signatures to Distinguish N and C-terminal Product Ions**; Alicia Richards; Catherine E. Vincent; Christopher M. Rose; Michael S. Westphall; Joshua J. Coon; *University of Wisconsin, Madison, WI*
- ThP 232 **Increased SILAC Multiplexing via Neutron Encoding (NeuCode) Tracks Proteome Remodeling during Murine Myogenic Differentiation**; Timothy W. Rhoads; Alexander S. Hebert; Anna E. Merrill; Amelia J. Still; David J. Pagliarini; Michael S. Westphall; Joshua J. Coon; *University of Wisconsin, Madison, WI*
- ThP 233 **Comparison of HRMS to Triple Quadrupole Mass Spectrometer: Quantitation of Monatin and Its Metabolite Using Q Exactive and API 4000**; Hui Tao; Changyu Quang; Brett Dunbar; Spencer Carter; *WIL Research, Ashland, OH*
- ThP 234 **HPLC-Q/TOF Screening for Substituted Cathinones in Legal Highs - The Case of 3,4-methylenedioxy Derivatives**; Emilia Fornal; *The John Paul II Catholic University of Lublin, Lublin, Poland*
- ThP 235 **Enhanced Occupational Drug Screening Using High Resolution Accurate Mass LCMS**; Jeremy Cook²; Bob Gray¹; Simon Hudson¹; ¹*HFL Sport Science, Fordham, UK*; ²*LGC, Teddington, UK*
- ThP 236 **Identification of Shikimate Kinase (*MtSK*) Inhibitors among anti-*Mycobacterium tuberculosis* Compounds by LC-MS**; Johayra Simithy¹; Nathaniel Reeve¹; Judith Hobrath²; Robert Reynolds²; Angela Calderon¹; ¹*Auburn University, Auburn, AL*; ²*Southern Research Institute, Birmingham, AL*

- ThP 237 **Identification, Quantification and Confirmation of Non-targeted Potato Glycoalkaloid Contaminants in Dog Food Using a High Resolution/Accurate Mass LC/MS;** Jack J. Lohne; Sherri B. Turnipseed; Wendy C. Andersen; Mark Madson; *US Food and Drug Administration, Denver, CO*
- ThP 238 **Elucidation of MS/MS Ion Fragments of Veterinary Drugs for Qualitative Regulatory Purposes Using ESI-Q-TOF;** Alberto Nuñez¹; Lucía Geis-Asteggiane²; Steven Lehotay¹; ¹USDA-ARS-ERRC, Wyndmoor, PA; ²University of Maryland, College Park, MD
- ThP 239 **Examination of Urinary Biochemical Complexation with Hg(II) by Electrospray Ionization FT-ICR and Tandem Mass Spectrometry;** Troy Wood; Zachary Fine; *University at Buffalo, Buffalo, NY*
- ThP 240 **Chelomics: Discovery and Identification of Organic Metal Chelating Compounds in Natural Samples and Biological Media by High Resolution LC-MS;** Oliver Baars; David H. Perlman; Francois M. M. Morel; *Princeton University, Princeton, NJ*
- ThP 241 **Identification of the Interaction of Trivalent Arsenicals with Metallothionein by Use of Ultrahigh Resolution Mass Spectrometry;** Shanshan Feng¹; Shi-Jian Ding¹; Puttappa R Dodmane¹; Jenna Scotcher²; Lora L Arnold¹; Nicolas L. Young²; Alan G. Marshall²; Samuel M Cohen¹; ¹Univ of Nebraska Med Center, Omaha, NE; ²Florida State University, Tallahassee, FL
- ThP 242 **Middle-down Proteomics Workflow Targeting 3-7 kDa peptides for Clinical Applications;** Ünige A. Laskay¹; Kristina Srzentić¹; Anna A. Lobas²; Tanja Panić-Janković³; Michel Monod⁴; Mikhail V. Gorshkov²; Goran Mitulović³; Yury O. Tsybin¹; ¹Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; ²Institute for Energy Problems of Chemical Physics, Moscow, Russia; ³Medical University of Vienna, Vienna, Austria; ⁴Centre Hospitalier Universitaire Vaudois, Lausanne, Switzerland
- ThP 243 **Screening and Characterization of Reactive Compounds with *in vitro* Peptide-Trapping and Liquid Chromatography-High Resolution Accurate Mass Spectrometry (LC-HRMS);** Cong Wei; Louis S. Chupak; Thomas Philip; Benjamin M. Johnson; Robert Gentles; Dieter M. Drexler; *Research&Development, Bristol-Myers Squibb Company, Wallingford, CT*
- ThP 244 **Application of Differential Mobility Spectrometry Technology and HR/AM Quadrupole-Orbitrap and Quadrupole-TOF Mass Spectrometry in High-throughput Quantitative Bioanalysis;** Yao Shi¹; Keeley Murphy²; Patrick Bennett²; Xiangyu Jiang¹; Douglas Fast¹; ¹Covance Inc., Madison, WI; ²Thermo Fisher Scientific, San Jose, CA
- ThP 245 **High Throughput Quantitative Analysis for LogD Determination: Comparison of High Resolution LCMS to LCMSMS;** Joseph Pease¹; Baiwei Lin¹; Kate Comstock²; ¹Genentech, Inc., South San Francisco, CA; ²Thermo Fisher Scientific, San Jose, CA
- ThP 246 **A Benchtop High Resolution Mass Spectrometry System for Rapid Identification of Pharmaceutical Impurities;** Baiwei Lin¹; Kate Comstock²; Joseph Pease¹; ¹Genentech, South San Francisco, CA; ²Thermo Fisher Scientific, San Jose, CA
- ThP 247 **Sensitive Quantification of Key Oxysterols in Biological Matrix Using Liquid Chromatography with High Resolution Accurate Mass Spectrometry;** Daniel Arndt; *Philip Morris International R&D, Neuchatel, Switzerland*
- ThP 248 **Employing Advanced High Resolution Mass Spectrometry Techniques to Study Metabolism of Crop Protection Products, Actives, and Leads without Radio-Labels ;** Yelena A. Adelfinskaya; Jesse L. Balcer; Jeffrey R Gilbert; Gerrit DeBoer; Olena Castello; *Dow AgroSciences, Indianapolis, IN*
- ThP 249 **Ultrahigh Mass Accuracy and Mass Resolution FT-ICR MS: Identification of All Possible C_cH_nN_nO_sS_s¹³C_{cc}³⁴S_{ss} Compositions in Complex Mixtures;** Yuan Mao¹; Nicolas L. Young²; Christopher L. Hendrickson²; Alan G. Marshall^{1,2}; ¹Florida State University, Tallahassee, FL; ²National High Magnetic Field Laboratory, Tallahassee, FL
- Peptides: General, 250 – 262**
- ThP 250 **Enhancement of Protonation for ESI on Non-Basic Peptides;** Changgeng Feng; Carolyn Cassidy; *The University of Alabama, Tuscaloosa, AL*
- ThP 251 **MALDI-MS Based Identification of Proteins and Peptides in Fingermarks;** Ekta Patel¹; Peter Marshall²; Andy West²; Malcolm Clench¹; Simona Francese¹; ¹Biomedical Research Centre, Sheffield, UK; ²GlaxoSmithKline, Stevenage, UK
- ThP 252 **In-a-tip Omics Using Mass Spectrometer with a Nano-Electrospray Ionization;** Ai Fujita¹; Iwao Sakane²; Tsutomu Masujima¹; ¹Riken, Suita, Japan; ²Itoen, Makinohara, Japan
- ThP 253 **A Post-Column Solvent Make-Up Device in LC-ESI-MS for Increasing the Detection Number of Proteotypic Peptides;** Hao-Lun Huang; Shin-Ying Dai; Sheng-Huang Wu; Kuo-Lung Ku; *National Chiayi University, Chiayi City, Taiwan*
- ThP 254 **Translating Retention Times of Target Peptides Across LC-MS Proteomic Platforms;** James J Walters; Kevin Ray; *Sigma-Aldrich, St. Louis, MO*
- ThP 255 **Identification and Quantification of Carbohydrate Binding Epitope Structures in Galectins by CREDEX-MS and HDX-MS;** Frederike Eggers¹; Adrian Moise¹; Claudia S. Maier²; Michael Przybylski¹; ¹University of Konstanz, Konstanz, Germany; ²Oregon State University, Corvallis, OR
- ThP 256 **Collision Induced Dissociation of Protonated and Metalated Beta-Peptides;** Nicole Burke¹; Samuel Gellman²; Timothy Zwier¹; Scott McLuckey¹; ¹Purdue University, Lafayette, IN; ²University of Wisconsin, Madison, WI
- ThP 257 **Proton Affinity of Short Oligopeptides Containing Lysine and Lysine Homologs;** Patrickhenry Batoon; Robert Harper; Jianhua Ren; *University of the Pacific, Stockton, CA*
- ThP 258 **MSⁿ Characterization of Peptide Prodrugs Containing Fully Protected, Esterase-labile Phosphothreonine;** Christopher Lai; Wen-Jian Qian; Terrence Burke, Jr; James Kelley; *National Cancer Institute, NIH, FNLCR, Frederick, MD*
- ThP 259 **Sequence Tag and *de novo* Approaches for Peptide Matching and Protein Identification for the Burmese Python;** LeeAnn Higgins¹; Charles Determan²; Todd Markowski¹; Gregory Beilman³; ¹University of Minnesota TC-StP, St. Paul, MN; ²University of Minnesota D, Duluth, MN; ³University of Minnesota TC-MPLS, Minneapolis, MN
- ThP 260 **Improving Peptide Detection with Precise Nanofluidic Control and Mixing of Solution Additive Post-Column;** Nicole Hebert²; J.C. Yves Leblanc¹; Stephen Tate¹; Thomas Covey¹; ¹AB SCIEX, Concord, On, Canada; ²Eksigent, a part of AB Sciex, Dublin, CA
- ThP 261 **Characterizing D-Amino Acid-Containing Peptides in *Aplysia californica*;** Itamar Livnat; Stanislav S. Rubakhin; Elena V. Romanova; Jonathan V. Sweedler; *University of Illinois at Urbana-Champaign, Urbana, IL*
- ThP 262 **Automation of Metal-Ion Binding Site Localization Procedure in Peptides;** Maria Indeykina^{1,2}; Dmitry Podgrudkov⁴; Igor Popov^{1,3}; Alexey Kononikhin^{1,2}; Eugene Nikolaev^{1,2}; ¹Emanuel Institute of Biochemical Physics, Moscow, Russia; ²Institute for Energy Problems of Chemical Physics, Moscow, Russia; ³Moscow Institute of Physics and Technology, Moscow, Russia; ⁴Lomonosov Moscow State University, Moscow, Russia

Peptidomics, 263 – 271

- ThP 263 **Modern-day MS Based Unlabeled Secretome Analysis of conditioned Culture Media Reveals Novel Aspects of Cell Biology, from Microorganisms to Human**; Martijn W. Pinkse; Peter D. Verhaert; *Delft University of Technology, Delft, Netherlands*
- ThP 264 **Analysis of the Plasma Peptidome-Degradome Using Phospholipid Extraction Plates and Mass Spectrometry**; Tony Tegeler; Michael Syring; Konstantinos Petritis; *Translational Genomics Research Institute, Phoenix, AZ*
- ThP 265 **Extensive Identification and Quantitation of Milk Endogenous Peptides by Mass Spectrometry**; Andres Guerrero¹; Dave C. Dallas²; Nora Khaldi³; Daniela Barile²; J. Bruce German²; Carlito B. Lebrilla¹; ¹*UC Davis, Chemistry Department, Davis, CA*; ²*UC Davis, Food Science Department, Davis, CA*; ³*Food for Health Ireland, University College Dublin, Belfield, Ireland*
- ThP 266 **The Hunt for Novel Proteins Encoded by Small Open Reading Frames**; Amanda Nouwens; Nur Zainal; Wai Ning Ng; Lexie Friend; Sumaya Al-Mansoori; Joe Rothnagel; *The University of Queensland, St Lucia, Australia*
- ThP 267 **The Investigation of Neuropeptides in Crustacean to Reveal the Neurotoxicity of Nanoparticles by MALDI-MS**; Chuanzi OuYang¹; Hui Ye²; Grover Chang²; Lingjun Li^{1,2}; ¹*Department of Chemistry, UW, Madison, WI*; ²*School of Pharmacy, UW, Madison, WI*
- ThP 268 **Data Independent Acquisition and Quantitation of Isotopically Labeled Neuropeptides in Low Temperature Stressed Cancer *irroratus***; Kevin Hayes; Claire Schmerberg; Lingjun Li; *University of Wisconsin, Madison, WI*
- ThP 269 **Mass Spectral Characterization of the Neuropeptidome of the Crayfish *Orconectes rusticus***; Zhidan Liang; Claire Schmerberg; Lingjun Li; *UW, Madison, WI*
- ThP 270 **Mass Spectrometric Characterization of the Neuropeptidome in the Dungeness Crab (*Cancer magister*)**; Qing Yu; Chenxi Jia; Lingjun Li; *University of Wisconsin, Madison, WI*
- ThP 271 **A Multi-scale Strategy for Quantitative Neuropeptidomic Analysis of Food Intake**; Chenxi Jia; Qing Yu; Christopher Lietz; Lingjun Li; *UW, Madison, WI*

Peptides: Sequence Analysis, 272 – 278

- ThP 272 **ISD High-Throughput Platform for the Sequencing of Animal Toxins**; Michel Degueldre¹; Loïc Quinton¹; Nicolas Smargiasso¹; Gabriel Mazzucchelli¹; Pierre Escoubas²; Eric Opsomer³; Nicolas Vandewalle³; Edwin De Pauw¹; ¹*Laboratory of Mass Spectrometry, ULg, Liège, Belgium*; ²*VenomeTech, Valbonne, France*; ³*GRASP, ULg, Liège, Belgium*
- ThP 273 **Rapid Protein Sequencing Using TripleTOF™ 5600 System with MRMPilot™ and ProteinPilot™ Software**; Yan Ke; Nicole Roenker; Elise Snider; Yong-Xi Li; *Medpace, Cincinnati, OH*
- ThP 274 **Reversed-phase HPLC and Mass-Spectrometry Analysis of Cyclolinopeptides**; Ying W. Lao¹; Kim MacKenzie²; William Vincent²; Oleg V. Krokhin¹; ¹*University of Manitoba, Winnipeg, Canada*; ²*Shape Foods Inc., Brandon, Canada*
- ThP 275 **Identification of Mutated Peptides/Proteins Driving Cancer Phenotype Utilizing Improved Shotgun Proteomics and Data Analysis Approaches**; Gurkan Bebek; Giridharan Gokulrangan; Hua Xu; Mark Chance; *Case Western Reserve University, Cleveland, OH*
- ThP 276 **Mass Spectrometric Deconvolution of Nonribosomally Synthesized Microbial Microheterogeneous Lipopeptide Library**; Khyati Pathak¹; Hareshkumar Keharia²; Kallol Gupta¹; ¹*Molecular Biophysics Unit, IISC, Bangalore, India*; ²*BRD School of Biosciences, S.P.University, Vallabhvidyanagar, India*

- ThP 277 **Utilization of a2b2 Ions as a Filter of Peptide Candidates Prior to Database Searching**; Fedor Kryuchkov; Thiago Verano-Braga; Frank Kjeldsen; *University of Southern Denmark, Odense, Denmark*
- ThP 278 **SS bonds Oxidation for the Efficient *de novo* ESI-MS/MS Sequencing of Non-Tryptic Disulfide-Containing Peptides**; Tatiana Samgina¹; Yegor Vorontsov¹; Vladimir Gorshkov¹; Konstantin Artemenko²; Konstantin Karandashev¹; Albert T. Lebedev¹; ¹*Moscow State University, Moscow, Russian Federation*; ²*Uppsala University, Uppsala, Sweden*

Phosphopeptides: Quantitative Analysis, 279 – 306

- ThP 279 **Electron Capture Dissociation Can Quantify the Relative Concentration of Phosphopeptides in a Solution**; Soeren Bak¹; Kim F. Haselmann²; ¹*Analytical Biosciences; Department of Pharmacy, Fa, København Ø, Denmark*; ²*Department of Chemistry, Univ of Southern Denmark, Odense, Denmark*
- ThP 280 **Quantitative Global Phosphoproteomics of a MAPK-AKT Dual Pathway Inhibitor Anti-Cancer Drug**; Daniela M. Schlatter¹; Giridharan Gokulrangan¹; Neil Dhawan²; Michael Ohlmeyer²; Avi Ma'ayan²; Sahar Mazhar¹; Mark R. Chance¹; Goutham Narla¹; ¹*Case Western Reserve University, Cleveland, OH*; ²*Mount Sinai School of Medicine, New York City, New York*
- ThP 281 **Identification of Downstream mTORC1/2 Activity Markers in Breast Cancer by Means of Label-Free Phosphoproteomics**; Edmund Wilkes^{1,2}; Pedro Cutillas^{1,2}; ¹*MRC Clinical Sciences Centre, London, UK*; ²*Barts Cancer Institute, London, UK*
- ThP 282 **Mass Spectrometry Reveals Alternative *in vivo* Auto-Activation Mechanisms of the S Phase Checkpoint Kinase Rad53**; Eric Sheng-Wen Chen¹; Nicolas Hoch²; Shun-Chang Wang¹; Achille Pelliccioli³; Jörg Heierhorst²; Ming-Daw Tsai¹; ¹*Academia Sinica, Taipei, Taiwan*; ²*St. Vincent's Institute, Melbourne, Australia*; ³*University of Milan, Milan, Italy*
- ThP 283 **New Strategy for Selective ¹⁸O labeling of Phosphopeptides**; Waleed Alghamdi²; Simon Gaskell¹; Jill Barber³; ¹*Queen Mary University, London, UK*; ²*King Abdulaziz City for Science and Technology, Riyadh, Sudi Arabia*; ³*University of Manchester, Manchester, UK*
- ThP 284 **Site-Specific Kinetic Analysis of Wildtype Sic1 Phosphorylation by Liquid Chromatography Fourier Transform-Ion Cyclotron Resonance Mass Spectrometry**; Wendi A. Hale; Lian Zhu; Xiaoxia Nina Lin; Kristina Hakansson; *University of Michigan, Ann Arbor, MI*
- ThP 285 **Sheathless Capillary Electrophoresis Electro-spray Mass Spectrometry (CESI-MS): An Alternative Method for Quantitative Phosphoproteomics**; Klaus Faserl; Martin Müller; Leopold Kremser; David Teis; Bettina Sarg; Herbert Lindner; *Biocenter, Innsbruck Medical University, Innsbruck, Austria*
- ThP 286 **Mass Spectrometry-based Quantitative Phosphoproteomics Identifies Insulin Signaling Components in *C. elegans***; James Moresco¹; Andrew Dillin²; John R Yates 3rd¹; ¹*The Scripps Research Institute, La Jolla, CA*; ²*University of California, Berkeley, CA*
- ThP 287 **Use of TIQUAS Label-Free Phosphoproteomic Technology in Drug Profiling and Biomarker Discovery in Primary Breast Tissue**; Iolanda Vendrell¹; Marcus Dawson¹; Heather Turner¹; Louise Jones²; Bart Vanhaesebroeck¹; Pedro Cutillas¹; Neil Torbett¹; ¹*Activomics Ltd., London, UK*; ²*Barts Cancer Institute, London, UK*
- ThP 288 **Discovery of Colon Cancer Metastasis Biomarkers by Quantitative Phosphoproteomics**; Alissa Schunter; Amanda B Hummon; *University of Notre Dame, South Bend, IN*

- ThP 289 **Label-free Quantification of Phosphorylation Dynamics in PDGF Stimulated NIH 3T3 Wild Type and MEK1 Depleted Cell Lines;** Laura Edwards; Kyle Grant; Kevin Blackburn; Jason Haugh; Michael Goshe; *North Carolina State University, Raleigh, NC*
- ThP 290 **Quantitative Phosphoproteomics Analysis of Alzheimer's Disease Brains by Multiplexed Isobaric Labeling;** Haiyan Tan; Zhiping Wu; Bing Bai; Xusheng Wang; Yanji Xu; Junmin Peng; *St. Jude Children's Research Hospital, Memphis, TN*
- ThP 291 **A Mass Spectrometry Based View at the Origin and Role of Tyrosine Phosphorylation in Multi-Cellularity;** A.F. Maarten Altelaar¹; Jeffrey Ringrose¹; Henk van den Toorn¹; Michael Eitel²; Harm Post¹; Pieter Neerinx¹; Bernd Schierwater²; Albert Heck¹; ¹*Utrecht University, Utrecht, Netherlands*; ²*Tierärztliche Hochschule, Hannover, Germany*
- ThP 292 **Fuelling the Knowledge of Blood Coagulation Signaling with Time Resolved Quantitative Phosphoproteomics of Thrombin-Stimulated Endothelial Cells;** Maartje Van Den Biggelaar¹; Juan-Ramon Hernandez²; Alexander B Meijer¹; Koen Mertens¹; Sara Zanivan²; ¹*Sanquin Research, Amsterdam, The Netherlands*; ²*Beatson Institute for Cancer Research, Glasgow, UK*
- ThP 293 **Tyrosine Phosphoproteomics Analysis of Human Skeletal Muscle;** Danjun Ma¹; Michael Caruso¹; Monique Lewis¹; Xiangmin Zhang¹; Zaher Msallaty¹; Berhane Seyoum¹; Jeffrey Horowitz²; Zhengping Yi¹; ¹*Wayne State University, Detroit, MI*; ²*Division of Kinesiology, University of Michigan, Ann Arbor, MI*
- ThP 294 **Elucidation and Validation of Cell Signaling Activated by Ischemic Preconditioning in the Rat Myocardium by Phosphoproteomics: The Role of mTOR;** Kiersten Liddy; Melanie White; Benjamin Parker; Nestor Solis; Brett Hambly; Stuart Cordwell; *The University of Sydney, Sydney, Australia*
- ThP 295 **Impact of the Degree of Peptide Phosphorylation on Quantitation by Liquid Chromatography ICP- and ESI-MS;** Guillaume Ballihaut; W. Clay Davis; *NIST, Charleston, SC*
- ThP 296 **Triple SILAC Phosphoproteomics Reveals Drug Targets in Multiple Myeloma Cells: A Case for CID over HCD Using the Orbitrap Elite;** Susanne Breilkopf¹; Min Yuan¹; John M Asara^{1,2}; ¹*Beth Israel Deaconess Medical Center, Boston, MA*; ²*Harvard Medical School, Boston, MA*
- ThP 297 **Global Phosphorylation Profiling Reveals Pathways in Cardio-Protective Signaling Induced by Fibroblast Growth Factor 2 (FGF2) during Cardiac Ischemia/Reperfusion Injury;** Aruna Wijeratne; Janet Manning; Jo El Schultz; Ken Greis; *University of Cincinnati, Cincinnati, OH*
- ThP 298 **Implementing Multiplexed SID-MRM-MS Assays to Quantify Phosphorylated Peptides in the DNA Damage Response Pathway;** Jacob Kennedy; Richard Ivey; Jeffrey Whiteaker; ChenWei Lin; Uliana Voytovich; Amanda Paulovich; *Fred Hutchinson CRC, Seattle, WA*
- ThP 299 **Parallel Reaction Monitoring Assays for Phosphorylation Sites of AKT Isoforms in Patient-Derived Breast Cancer Xenografts with PI3K-AKT Pathway Aberrations;** Matthew Meyer¹; Petra Erdmann-Gilmore¹; Kelly V. Ruggles²; Jeanne Rumsey¹; Jeremy Hoog¹; Jacqueline Snider¹; Robert Kitchens¹; Shunqiang Li¹; Sherri R. Davies¹; David Fenyó²; Brigitte Simons³; Jason Held⁴; Matthew J. Ellis¹; R. Robert Townsend¹; ¹*Washington University School of Medicine, St. Louis, Missouri*; ²*New York University, New York, NY*; ³*AB Sciex, Toronto, CA*; ⁴*Buck Institute, Novato, CA*
- ThP 300 **A SILAC-based Phosphoproteomic Analysis of Human Cervical Cancer Cells upon Staurosporine-induced Apoptosis;** Weitao Jia^{1,2}; Armann Andaya²; Julie Leary²; ¹*Campus Mass Spectrometry Facilities, U.C.Davis, Davis, CA*; ²*Dept. of Molecular and Cellular Biology, U.C.Davis, Davis, CA*
- ThP 301 **Quantification of Phosphorylation on Eukaryotic Initiation Factors;** Armann Andaya; Nancy Villa; Nick Mahoney; Weitao Jia; Christopher Fraser; Julie Leary; *Dept. of Molecular and Cellular Biology, UC, Davis, CA*
- ThP 302 **Profiling the Phosphoproteome of Healthy Mouse Brain: From Discovery to Targeted Quantitation;** Jenny M Armenta¹; Brad J. Williams¹; Erik J. Soderblom²; Brenna M. Richardson²; Meredith E. Turner²; J. Will Thompson²; M. Arthur Moseley²; LeRoy Martin¹; Michael J. Nold¹; ¹*Waters, Beverly, MA*; ²*Duke University Medical Center, Durham, NC*
- ThP 303 **Discovering Immediate-early Events of Hedgehog Signal Transduction in Tumorigenesis and Cerebellar Development;** Teresa Purzner; *Stanford University, Stanford, CA*
- ThP 304 **Capturing Native Protein States in Real-Time Using a Novel MS Compatible Phosphatase and Protease Inhibitor Formulation;** Jeff Turner; Gordon Nicol; Tina Kornmeier; Lillian Vickery; Pegah Jalili; John Dapron; Henry Duewel; *Sigma-Aldrich Corporation, St. Louis, MO*
- ThP 305 **Mass Spectrometry Analysis of c-Jun N-Terminal Kinase-Mediated Mitochondrial Protein Phosphorylation in Liver Injury;** Li-Rong Yu¹; Sehwan Jang²; Mohamed Abdelmegeed²; Yuan Gao¹; Atrayee Banerjee²; Byoung-Joon Song²; ¹*National Center for Toxicological Research, FDA, Jefferson, AR*; ²*National Institute on Alcohol Abuse and Alcoholism, Bethesda, MD*
- ThP 306 **PITRAQ, a Strategy to Simultaneously Correlate Protein Expression and Phosphorylation Stoichiometry between Different Samples: Evaluation on Different Mass Spectrometers;** Pieter Glibert¹; Maarten Dhaenens¹; Filip Van Nieuwerburgh¹; Lennart Martens^{2,3}; Dieter Deforce¹; ¹*Pharmaceutical Biotechnology, Ghent University, Ghent, Belgium*; ²*Department of Medical Protein Research, VIB, Ghent, Belgium*; ³*Department of Biochemistry, Ghent University, Ghent, Belgium*

Protein: PTM II, 307 – 328

- ThP 307 **Characterization of Mitochondrial Ubiquitin Substrates of Parkin and USP30 by Mass Spectrometry;** Lilian Phu; Joy Tea; Christian Cunningham; Daisy Bustos; Corey E. Bakalarski; Qinghua Song; William F. Forrest; Jacob Corn; Morgan Sheng; Baris Bingol; Donald S. Kirkpatrick; *Genentech, South San Francisco, CA*
- ThP 308 **Characterization of a Segmentally ¹⁵N-Labeled Branched Ubiquitin Trimer;** Yan Wang; Emma Dixon; Carlos Castaneda; Tanuja Kashyap; David Fushman; *University of Maryland, College Park, MD*
- ThP 309 **Quantitative Assessment of Proteome and Ubiquitinome Regulation of Skeletal Muscle following Denervation-Induced Atrophy Using *in vivo* SILAC;** Sriram Aravamudhan; Thomas Braun; Marcus Krüger; *Max Planck Institute for Heart and Lung Research, Bad Nauheim, Germany*
- ThP 310 **A Proteomic Investigation of Proteasome Malfunctioning in *Drosophila*;** Karen Sap; Karel Bezstarosti; Dick Dekkers; Olaf Voets; Erikjan Rijkers; Peter Verrijzer; Jeroen Demmers; *Erasmus University Medical Center, Rotterdam, Netherlands*
- ThP 311 **Novel Mass Spectrometry Approach to Reveal Oxidation-Derived Carbonyl-Groups *in vivo*;** Ralf Hoffmann; *Universität Leipzig, Leipzig, Germany*

- ThP 312 **Development of Mass Spectrometry Sample Preparation Methods for Localization and Quantitation of Protein Carbonyls in Biological Matrices;** David Simpson; Suresh Narayanasamy; Lara Lewellyn; Mike Grotewiel; Scott Gronert; *VA Commonwealth University, Richmond, VA*
- ThP 313 **Investigation of Protein Carbonylation in Human Plasma Collected from Patients with Chronic Kidney Disease on Dialysis;** Chelsea Coffey; Scott Gronert; *Virginia Commonwealth University, Richmond, VA*
- ThP 314 **Streptavidin Affinity Enrichment and Mass Spectrometric Quantitation of Oxidatively Modified *Drosophila melanogaster* Proteins;** Suresh Narayanasamy¹; David Simpson¹; Lara Lewellyn²; Michael Grotewiel²; Scott Gronert¹; ¹*Department of Chemistry, Virginia Commonwealth University, Richmond, VA*; ²*Department of Human & Molecular Genetics, VCU, Richmond, VA*
- ThP 315 **Protein Ascorbylation of Human Glutaredoxin-1 by a Reactive Degradation Product of Oxidized Ascorbate;** Klaus Klarskov¹; Aurore Flandrin²; Francois-Olivier McDuff¹; Richard J. Wagner¹; ¹*University of Sherbrooke, Sherbrooke, Canada*; ²*ENSIAC, Toulouse, France*
- ThP 316 **Mass Spectrometry Based Quantitative Redox Proteomics in Hypoxic Cardiomyocyte;** Kuan-Ting Pan¹; Yi-Yun Chen²; Chun-Yi Yang¹; Tzu-Ching Meng^{1,2}; Kay-Hooi Khoo^{1,2}; ¹*IBS, National Taiwan University, Taipei, Taiwan*; ²*Institute of Biological Chemistry, Academia Sinica, Taipei, Taiwan*
- ThP 317 **Enhanced Protein/Peptide Characterization Using Electrochemically Assisted Disulfide Bond Reduction;** Jean-Pierre Chervet; Agnieszka Kraj; Hendrik-Jan Brouwer; Nico Reinhoud; *Antec, Zoeterwoude, The Netherlands*
- ThP 318 **Unraveling Modifications of Human Skeletal Muscle Troponin by Top-down Mass Spectrometry;** Yi-Chen (Ivy) Chen¹; Marius Sumandea²; Ying Ge¹; ¹*University of Wisconsin, Madison, WI*; ²*Eli Lilly and Company, Indianapolis, IN*
- ThP 319 **Identification and Quantitation of Cysteine Sulfoxidation Sites;** Chia-Fang Lee; Tanya Paull; Maria Person; *The University of Texas, Austin, TX*
- ThP 320 **Site-specific Quantitation Strategy for Characterizing the Dynamic Change of S-nitrosoproteome and Glutathionylome;** Yi-Ju Chen¹; Sheng-Huang Lin²; Wen-Ying Shen²; Yu-Ju Chen¹; Chun-Hung Lin²; ¹*Institute of Chemistry, Academia Sinica, Taipei City, Taiwan*; ²*Institute of Biological Chemistry, Academia Sinica, Taipei City, Taiwan*
- ThP 321 **Iodo-based Labeling Reagent: Permanent Quantitative Labeling of S-nitrosylation Coupled with Mass Spectrometry;** Heaseung Sophia Chung¹; Christopher Murray¹; Ryan Bomgardner²; Vidya Venkatraman¹; John Rogers²; Jennifer Van Eyk¹; ¹*School of Medicine, Johns Hopkins University, Baltimore, MD*; ²*Thermo Fisher Scientific, Rockford, IL*
- ThP 322 **A Novel Method to Detect Protein S-nitrosothiols;** Jaimeen Majmudar; Brent Martin; *University of Michigan, Ann Arbor, Michigan*
- ThP 323 **Post-Translational Nitration and Nitrosylation of Salivary Proteins Identified by Immunoprecipitation Coupled with NanoLC-NSI/MS/MS;** Wen-Peng Lin; Hauh-Jyun Candy Chen; *Natl. Chung Cheng Univ., Chia-Yi, Taiwan*
- ThP 324 **Impact of Histone Modifications on Global Protein Expression in *Saccharomyces cerevisiae*;** Linan Wang; Neha Rastogi; Mark Parthun; Michael A. Freitas; *Ohio State University, Columbus, OH*
- ThP 325 **CID and ETD Based Profiling of Posttranslational Modifications of Histones in Human Monocyte Derived Macrophages;** Pawel Olszowy^{1,2}; Pawel Ciborowski¹; ¹*University of Nebraska Medical Center, Omaha, NE*; ²*Nicolaus Copernicus University, Torun, Poland*
- ThP 326 **Novel Language for the Histone Code: Glutamine Polyamination;** Chi-Chi Chou¹; Cheng-Han Yu²; Geen-Dong Chang²; Kay-Hooi Khoo^{1,2}; ¹*Academia Sinica, Taipei, Taiwan*; ²*National Taiwan University, Taipei, Taiwan*
- ThP 327 **Decipher the Histone Code in the Induced Pluripotent Stem Cell Reprogramming Process;** Miao Liu; Changhai Tian; Hong Peng; Shi-Jian Ding; *Univ of Nebraska Med Center, Omaha, NE*
- ThP 328 **Precursor Ion Scanning for Identification of ADP-Ribosylation Sites of CD38 Mutants;** Robert Sherwood; Hong Jiang; Xuling Zhu; Qun Liu; Hening Lin; Sheng Zhang; *Cornell University, Ithaca, NY*

Glycoproteins II, 329 – 357

- ThP 329 **MALDI Mass Spectrometry Analysis of Sialylated Glycoprotein by in Gel Derivatization for Sialic Acids;** Kaoru Kaneshiro; Chikako Hamana; Takashi Nishikaze; Shin-ichirou Kawabata; Koichi Tanaka; *Shimadzu Corporation, Kyoto, Japan*
- ThP 330 **Enzymatic Sialylation of IgA1 Hinge-Region: Toward the Understanding of Pathogenic Role of Sialic Acid in IgA Nephropathy;** Kazuo Takahashi¹; Milan Raska²; Milada Horynova-Stuchlova²; Alena Kasperova²; Stacy D. Hall³; Yoshiyuki Hiki¹; Yukio Yuzawa¹; Zina Moldoveanu³; Bruce A. Julian³; Matthew B. Renfrow³; Jan Novak³; ¹*Fujita Health University School of Medicine, Toyoake, Japan*; ²*Palacky University in Olomouc, Olomouc, Czech Republic*; ³*University of Alabama, Birmingham, AL*
- ThP 331 **Glycoform Determination of a Recombinant IgG Prepared from Transgenic Silkworms;** Junko Amano; Kazuko Hachisu; Takashi Shirai; *The Noguchi Institute, Itabashi, Japan*
- ThP 332 **Anti-citrullinated Protein Antibodies Show IgG-type Specific Changes Compared to Matched Controls in Human Serum and Synovial Fluid;** Susanna Lundström; Cátia Cerqueira; Elena Ossipova; Karin Lundberg; Lars Klareskog; Roman Zubarev; *Karolinska Institutet, Stockholm, Sweden*
- ThP 333 **Characterization of N-linked Glycosylation Sites of Human Clusterin in Renal Cell Carcinoma Plasma Samples Using Nano-LC-MS/MS Based Platform;** Francisca Gbormittah¹; Fateme Tousi¹; Marina Hancapie¹; Shiao-Lin Wu¹; William Hancock¹; Othon Iliopoulos^{2,3}; ¹*Barnett Institute, Northeastern University, Boston, MA*; ²*Harvard Medical School, Boston, MA*; ³*Cancer Center, Massachusetts General Hospital, Boston, MA*
- ThP 334 **Glycoproteomics of Hepatic Metastasis in Colorectal Cancer;** Sheng-Ta Tsai¹; Chein-Hung Chen¹; Hsin-Yu Hsieh¹; Wei-Chao Chang²; Chung-Hsuan Chen¹; ¹*Genomics Research Center, Taipei, Taiwan*; ²*China Medical University, Taichung, Taiwan*
- ThP 335 **Quantitative N-linked Glycoproteomic Profiling of Human Induced Pluripotent Cells, Embryonic Stem Cells, and Somatic Cells;** Putty-Reddy Sudhir; Madireddy Pavana Kumari; Hung-Chih Kuo; Chung-Hsuan Chen; *Genomics Research Center, Academia Sinica, Taipei, Taiwan*
- ThP 336 **Cell Surface Chemoproteomics for Capturing States of Cardiac Differentiation from Pluripotent Stem Cells;** Subarna Bhattacharya; Sandra Chuppa; Rebekah Gundry; *Medical College of Wisconsin, Milwaukee, WI*

- ThP 337 **Mass Spectrometry Characterization of a Novel Form of the Retinoic Acid Receptor Responder Protein-1;** Haeri Seol; Kristy Brown; Joseph Devaney; Brennan Harmon; Roger Packer; Yetrib Hathout; *Children's National Medical Center, Washington, DC*
- ThP 338 **MALDI MS Analysis of N-glycan Structures of a Cell Adhesion Molecule, CADM1, in Various Cancer Cells;** Mika Sakurai-Yageta¹; Tomoko Maruyama¹; Kaoru Kaneshiro²; Sadanori Sekiya²; Shinichi Iwamoto²; Koichi Tanaka²; Yoshinori Murakami¹; ¹*The University of Tokyo, Tokyo, Japan*; ²*Shimadzu Corporation, Kyoto, Japan*
- ThP 339 **Qualitative and Quantitative Investigation of Glycans Attached to Prostate-specific Antigen (PSA) Glycoprotein of Healthy and Cancer Samples;** Ulrike Schweiger-Hufnagel¹; Kristina Marx¹; Daniel Kolarich²; Wolfgang Jabs¹; Anja Resemann¹; ¹*Bruker Daltonik GmbH, Bremen, Germany*; ²*Max Planck Institute of Colloids and Interfaces, Berlin, Germany*
- ThP 340 **Glycosylation Analysis of Cucumicin, a Subtilisin-Like Serine Protease from *Cucumis melo* L. Using MALDI-QIT-TOF MS;** Shuuichi Nakaya¹; Ami Sotokawauchi³; Yohei Kamijyo³; Kazutaka Murayama²; Kazunari Arima³; ¹*Application Development Center, Shimadzu Corp., Kyoto, Japan*; ²*Tohoku University, Sendai, Japan*; ³*Kagoshima University, Kagoshima, Japan*
- ThP 341 **Determination of Extensive Glycosylation on Glycoproteins and Glycolipids in High-density Lipoprotein;** Jincui Huang; Hyeyoung Lee; Angela Zivkovic; Jennifer Smilowitz; Bruce German; Carlito Lebrilla; *UC, Davis, CA*
- ThP 342 **Large Scale Characterization of Intact Sialylated Glycopeptides Reveals Extensive Plasma Sialylation and Modulation of Surface Sialylation upon EGF Stimulation;** Peter Højrup; Sara Eun Lendal; Giuseppe Palmisano; Martin R. Larsen; *Univ. Southern Denmark, Odense, Denmark*
- ThP 343 **MRM Quantification of Site-Specific Core-Fucosylation of Potential Biomarkers in Liver Diseases;** Haidi Yin; Zhenxin Lin; Andy Lo; Jianhui Zhu; David M. Lubman; *University of Michigan, Medical School, Ann Arbor, MI*
- ThP 344 **Label-free Quantification of Site-Specific Core-Fucosylation of alpha-2-macroglobulin in Pancreatic Diseases;** Zhenxin Lin; Haidi Yin; Andy Lo; David M. Lubman; *University of Michigan, Ann Arbor, MI*
- ThP 345 **Mass Spectrometry Identification of Co-Immunoprecipitated N-linked Glycoproteins from Rat Brain *in vivo*;** Norelle Wildburger^{1,2}; Cheryl Lichti¹; Mark Emmett^{3,4}; Carol Nilsson^{1,3}; ¹*Department of Pharmacology & Toxicology, Galveston, TX*; ²*Neuroscience and Cell Biology, Galveston, TX*; ³*Sealy Cancer Center, Galveston, TX*; ⁴*Department of Biochemistry and Molecular Biology, Galveston, TX*
- ThP 346 **Targeted Glycoproteomic Analysis of Serum Glycoproteins Enables Site-Specific Glyco-Biomarker Discovery;** Serenus Hua¹; Injung Ji¹; Myung Jin Oh¹; Sung-Hyeon Lee²; Rudolf Grimm^{1,3}; Jung Hoe Kim²; Hyun Joo An¹; ¹*Chungnam National University, Daejeon, Korea*; ²*Korea Advanced Institute of Science and Technology, Daejeon, Korea*; ³*Agilent Technologies, Santa Clara, CA*
- ThP 347 **HCD Product Ion Triggered ETD MS/MS Facilitates the Detection of O-GlcNAc Modified Residues of Insulin Receptor Substrate 2;** Lashanda Waller; Jennifer Rutherford Bethard; Mary Berkaw; Lauren Ball; *Medical Univ of S Carolina, Charleston, SC*
- ThP 348 **High Efficiency LC/MS Analysis of O-GlcNAc Modified Synthetic Peptides;** Barry Boyes^{1,2}; Alex Harvey³; Ron Orlando²; ¹*Advanced Materials Technology Inc, Wilmington, DE*; ²*Complex Carbohydrate Research Center, Athens, GA*; ³*Glycoscientific, Athens, GA*
- ThP 349 **Analysis of GalNAc-transferase Site-Specificity by ETD Tandem Mass Spectrometry;** Tyler Stewart; Kazuo Takahashi; Koshi Yamada; Milan Raska; Milada Stuchlova Horynova; Jan Novak; Matthew Renfrow; *UAB, Birmingham, AL*
- ThP 350 **Entamoeba O-phosphodiester-linked Glycans and Phosphopeptides Studied with Mass Spectrometry;** Edwin M. Motari¹; John R. Haserick^{1,3}; Andrea Carpentieri²; Catherine E. Costello^{3,4}; Philips W. Robbins¹; John Sameulson¹; ¹*Boston University School of Dental Medicine, Boston, MA*; ²*Università di Napoli Federico II, Napoli, Italy*; ³*Boston University School Medicine, Boston, MA*; ⁴*Boston University, Boston, MA*
- ThP 351 **MS-based Characterization of Site-specific Protein O-glycosylations by Combining Glycan Release and Non-release Methods;** Shu-Hui Chen; Li-Juan Huang; *National Cheng Kung University, Tainan, Taiwan*
- ThP 352 **Simultaneous Mapping of N- and O-linked Glycosylation Sites in Renal Cell Carcinoma Cells;** Xiaoying Ye; DaRue A. Prieto; Josip Blonder; *SAIC-Frederick, Inc., Frederick, MD*
- ThP 353 **High Performance Ultraviolet Photodissociation of O-Linked Glycopeptide Anions in an Orbitrap Mass Spectrometer;** Scott A. Robotham; Jennifer S. Brodbelt; *University of Texas, Austin, TX*
- ThP 354 **MS3 (MRM3) Quantitative O-glycopeptide Analysis;** Miloslav Sanda; Julius Benicky; Radoslav Goldman; *Georgetown University, Lombardi Cancer Center, Washington, DC*
- ThP 355 **O-linked Glycopeptide Analysis by Automated Scoring of ETD Mass Spectra;** Zhikai Zhu; Eden Go; David Hua; Heather Desaire; *Chemistry Department, University of Kansas, Lawrence, KS*
- ThP 356 **Comprehensive Study of O-linked Glycans of Erythropoietin;** Nannan Tao; Ulrike Schweiger-Hufnagel; Kristina Marx; Stephanie Kaspar; Anja Resemann; *Bruker Daltonics Inc., Billerica, MA*
- ThP 357 **LC-MS/MS Identification of the O-Glycosylation and Hydroxylation of Amino Acid Residues of Collagen α -1 (II) chain from Bovine Cartilage;** Ehwang Song; Yehia Mechref; *Texas Tech University, Lubbock, TX*

Carbohydrates II, 358 – 383

- ThP 358 **Improved Sensitivity and Sulfate Stability in Mass Spec Analysis of Highly Sulfated GAGs Using a Procainamide Label;** David Fischler; Joshua S. Sharp; *Complex Carbohydrate Research Center, UGA, Athens, GA*
- ThP 359 **Automated Identification of MS/MS Spectra from Heparan Sulfate (HS) Glycosaminoglycan;** Yulun Chiu; Rongrong Huang; Ron Orlando; Joshua S. Sharp; *CCRC, University of Georgia, Athens, GA*
- ThP 360 **Separation and Sequencing of a Synthesized Heparin-Like Tetramers Library Using Chemical Derivatization and LC-MS/MS with an In-House Developed Sequencing Program;** Rongrong Huang; Yulun Chiu; Ron Orlando; Joshua S. Sharp; *CCRC, University of Georgia, Athens, GA*
- ThP 361 **A Simple Method for Early Age Phenotype Confirmation Using Toe Tissue from a Mouse Model of MPS IIIA;** Paul J. Trim; Stephen K. Duplock; Adeline A. Lau; Kim M. Hemsley; John J. Hopwood; Marten F. Snel; *Lysosomal Diseases Research Unit, SA Pathology, North Adelaide, Australia*
- ThP 362 **Optimization of Tissue Surface Digestion by Glycosidase Enzymes;** Lilla Turiak; Chun Shao; Joseph Zaia; *Boston University School of Medicine, Boston, MA*

- ThP 363 **Development of a Chemical Inkjet Printer and Liquid Microjunction Extraction Strategy for Improving Mass Spectrometric Profiling of Glycosaminoglycans on Tissue Sections;** Chun Shao; Lilla Turiak; Yu Huang; Joseph Zaia; *CBMS, Boston University, Boston, MA*
- ThP 364 **Determination of the Effect of Depolymerization Methods on Highly-Sulfated HS Domains Using LC/MS;** Yang Mao; Yu Huang; Joseph Zaia; *Boston University School of Medicine, Boston, MA*
- ThP 365 **Efficient Electron Detachment Dissociation (EDD) of Highly Sulfated Heparin Oligosaccharides on an LC Time Scale;** Yu Huang; Xiang Yu; Yang Mao; Cheng Lin; Joseph Zaia; *Boston University School of Medicine, Boston, MA*
- ThP 366 **Structural Characterization of Chemoenzymatically Synthesized Longer (dp5-dp11) Heparan Sulfate Glycosaminoglycans Using Electron Detachment Dissociation;** Yuejie Zhao¹; Isaac Agyekum¹; John Muchena¹; Yongmei Xu²; Jian Liu²; Lingyun Li³; Robert Linhardt³; Jon Amster¹; ¹*University of Georgia, Athens, GA*; ²*University of North Carolina, Chapel Hill, NC*; ³*Rensselaer Polytechnic Institute, Troy, NY*
- ThP 367 **ESI-MS Analysis of Sulfated Glycans Using Ionic Liquid;** Tianjiao Yang; Yehia Mechref; *Texas Tech University, Lubbock, Texas*
- ThP 368 **Confirming the Presence of "Charge-localization isomers" in the Disulfated GAG-Type Disaccharide;** Yoko Ohashi¹; Yuya Otsuka²; Toshikazu Minamisawa²; Takashi Hirano¹; ¹*The University of Electro-Communications, Chofu, Tokyo, Japan*; ²*Seikagaku Corporation, Tokyo, Japan*
- ThP 369 **Polysaccharide Structures, Containing Charged Polysulfated/Polycarboxylated Moieties, Elucidated Using the MASSPEC Algorithm for Analysis of Exact-Mass ESI Negative Ionization MSMS Data;** Marshall M. Siegel¹; Gary Walker¹; Lingyun Li²; Robert J. Linhardt²; ¹*MS Mass Spec Consultants, Fair Lawn, NJ*; ²*Rensselaer Polytechnic Institute, Troy, NY*
- ThP 370 **Quantitative Analysis of Oligosaccharides Derived from Sulfated Glycosaminoglycans by Affinity Purification and MALDI MS;** Chih-Che Wu; *Department of Applied Chemistry, National Chi Nan, Puli, Taiwan*
- ThP 371 **Biomimetic Reagents for Selective Free Radical and Acid-Base Chemistry of Glycans: Application to Glycan Structure Determination by Mass Spectrometry;** Jinshan Gao; Daniel Thomas; Chang Ho Sohn; J. L. Beauchamp; *CCE at Caltech, Pasadena, CA*
- ThP 372 **Charge Carrier Effect to the Ionization and Fragmentation Efficiency of Glycans;** Yaping Lin¹; Chia-Lin Wu¹; Chein-Hung Chen¹; Jung-Lee Lin¹; Pang-Hung Hsu²; Chung-Hsuan Chen¹; ¹*Academia sinica, Taipei, Taiwan*; ²*National Taiwan Ocean University, Keelung, Taiwan*
- ThP 373 **Statistical Analysis Model for Classifying Stereo Structures of Oligosaccharides;** Y. Melodie Du; Chiharu Konda; Yu Xia; Zheng Ouyang; *Purdue University, West Lafayette, IN*
- ThP 374 **Collision-Induced Dissociation of Reducing-End Modified Small Oligosaccharides;** Chiharu Konda¹; Tammy Fang²; Jia Ren¹; Brad Bendiak²; Yu Xia¹; ¹*Purdue University, West Lafayette, IN*; ²*University of Colorado Denver, Aurora, CO*
- ThP 375 **Glycan Structural Elucidation On A Novel Quadrupole Dual Cell Linear Ion Trap Orbitrap Hybrid Mass Spectrometer;** Julian Saba¹; Shannon Eliuk¹; Sergei Snovidat²; ¹*Thermo Fisher Scientific, San Jose, CA*; ²*ThermoFisher Scientific, Rockford, IL*
- ThP 376 **Novel Bioinformatics Approaches to Glycan Profiling in Liquid Chromatography-Mass Spectrometry;** Chuan-Yih Yu¹; Yunli Hu²; Anoop Mayampurath¹; Yehia Mechref^{1, 2}; Haixu Tang¹; ¹*Indiana University, Bloomington, IN*; ²*Texas Tech University, Lubbock, TX*
- ThP 377 **Detailed Structural Investigation of Beta-Glucans from Yeast Cell Walls by Electron-Transfer Dissociation;** Liang Han¹; Catherine E. Costello²; ¹*Boston University, Boston, MA*; ²*Boston University School of Medicine, Boston, MA*
- ThP 378 **Comparison of ETD and ECD for Analysis of Permethylated Glycans;** Mengdi Fan¹; Yi Pu¹; Catherine E Costello^{1, 2}; ¹*Boston University, Boston, MA*; ²*Boston University School of Medicine, Boston, MA*
- ThP 379 **Structural Characterization of Singly Charged Glycan Anions via Electronic Excitation Tandem Mass Spectrometry;** Jordan C. Ernst; Di Gao; Kristina Hakansson; *University of Michigan, Ann Arbor, MI*
- ThP 380 **Ion fragility of Permethylated Glycans and Glycoconjugates in Hybrid Ion Trap-Fourier Transform Mass Spectrometers;** Ming-Yi Ho; Kay-Hooi Khoo; *Institute of Biological Chemistry, Academia Sinica, Taipei, Taiwan*
- ThP 381 **Linkage and Anomeric Differentiation in Oligosaccharides by Sequential Fragmentation and Variable-wavelength Infrared Photodissociation Fingerprints;** Yanglan Tan; Nicolas Polfer; *Department of Chemistry, University of Florida, Gainesville, FL*
- ThP 382 **Determination of Isomeric Oligosaccharides by Photo Dissociation with Visible Light;** Andrea Hahn; Jurgen Grotemeyer; *Christian-Albrechts-Univ, Kiel, Germany*
- ThP 383 **Computer Assisted Algorithm for the Automated Annotation of Glycosaminoglycan MS/MS;** Jiana Duan; Jon Amster; *University of Georgia, Athens, GA*

Biomarker Quantitation: Glycans, Lipids & Metabolites, 384 – 410

- ThP 384 **Isobaric Protein-Level Labeling for Serum Glycoprotein Quantification Analysis on an Orbitrap Elite;** Song Nie; Andy Lo; Jianhui Zhu; David M. Lubman; *Department of Surgery, University of Michigan, Ann Arbor, MI*
- ThP 385 **Targeted Quantification of O-Linked Glycosylation Site for Glycan Distribution Determination;** Scott Peterman¹; Amol Prakash¹; Julian Saba²; Mary Lopez¹; Jennifer Cushing³; Audra Ann Harget³; Matthew Renfrow³; ¹*Thermo Fisher Scientific BRIMS, Cambridge, MA*; ²*Thermo Fisher Scientific, San Jose, CA*; ³*University of Alabama Birmingham, Birmingham, AL*
- ThP 386 **Identification and Absolute Quantification of Amadori-peptides in Human Plasma as Potential Diabetes Type 2 Biomarkers;** Andrej Frolov; *Universität Leipzig, Leipzig, Germany*
- ThP 387 **Evaluation of Lyso-Gb₃ Analogues as Novel Biomarkers for Fabry Disease;** Pamela Lavoie; Michel Boutin; Christiane Auray-Blais; *Université de Sherbrooke/CRC-CHUS, Sherbrooke, Canada*
- ThP 388 **A Sensitive HILIC-MS/MS Method for Simultaneously Measuring Carnitine, PalmitoylCarnitine and StearoylCarnitine as Potential Biomarkers of Fatty Acid β -Oxidation in Mice;** Xiaolin Zhang; Xiao Ding; Georgia Hatzivassiliou; Mark Merchant; Kirsten Messick; Brian Dean; *Genentech, South San Francisco, CA*
- ThP 389 **Quantification of DNA Interstrand Crosslinks Induced by CENUs in L1210 Cells Using Liquid Chromatography Electrospray Ionization Tandem Mass Spectrometry;** Lili Li; Xuechai Chen; Guohui Sun; Lijiao Zhao; Rugang Zhong; *Beijing University of Technology, Beijing, China*

- ThP 390 **Quantitation of 8-iso-PGF2 α in Human Urine Using UHPLC-MS-MS;** [Yongchao Li](#)²; Jeff Dahl¹; Jerry White²; Richard B. van Breenen²; ¹*Shimadzu, Columbia, MD*; ²*University of Illinois College of Pharmacy, Chicago, IL*
- ThP 391 **Detection of Low Levels of Estradiol with the Use of Micro Flow LC Coupled to a Sensitive Mass Spectrometer System;** [Alexandre Wang](#); Jesse Seegmiller; Hua-fen Liu; *AB SCIEX, Foster City, CA*
- ThP 392 **Monitoring Steroidal Analogues in Clinical and Environmental Chemistry: One Model for Exposomics;** Anthony Macherone; [Melissa Churley](#); *Agilent Technologies, Wilmington, DE*
- ThP 393 **Determination of 1,25-Dihydroxylvitamine D3(DHD3) and 1,25-Dihydroxyvitamine D2 (DHD2) in Human Plasma by Immunoaffinity Extraction, Diels-Alder Derivatization and Methylamine Adduction LC/MS/MS;** [Xiaohua Li](#); Vincent Windisch; Allan Xu; *Keystone Bioanalytical, North Wales, PA*
- ThP 394 **Quantification of 25-hydroxyvitamin D3 in Rat Serum Using Derivatization to Enhance LC-MS/MS Sensitivity;** [Yinghe Li](#); Yifan Shi; Meng Fang; Pamela Rogers; *Alliance Pharma, Inc., Malvern, PA*
- ThP 395 **A Quantitative Stable Isotope LC-MS/MS Method to Measure Niacin in Blood and Plasma;** [Lulu Yang](#); Ann Qin; Allan Jaochico; Justin Ly; YuZhong Deng; Brian Dean; Xiaorong Liang; *Genentech Inc., South San Francisco, CA*
- ThP 396 **Measurement of Serotonin Concentration Changes in a Rat Osteoporosis Model after Dosing a Bone Growth Promoter;** [Elizabeth A. Mahan](#); Suzie Yeh; Emily Adarayan; Rena Zhang; Scott Fauty; Han Gerrits; Freek Bourgoudien; Benno Ingelse; *Merck & Co., West Point, PA*
- ThP 397 **Development of a High Throughput Multi-analyte Assay for the Quantification of Green Tea – Derived Catechins in Human Plasma;** [John Bannister](#); Deborah Mawson; Keon Jeffery; Phillip Teale; Bob Gray; Phillip Grace; *LGC Health Sciences, Teddington, UK*
- ThP 398 **LC-MS/MS Quantification of Free Desmosines in Plasma;** [Tasso Miliotis](#)¹; Sven Kjellström²; ¹*AstraZeneca R&D Molndal, Molndal, Sweden*; ²*Biochemistry and Structural Biology, Lund, Sweden*
- ThP 399 **Development of an *in vivo* Quantitative Assay for Covalently Modified Serum Albumin: Monitoring Acetaminophen Toxicity;** [André LeBlanc](#); Souade Ben Haddou; Tze Chieh Shiao; René Roy; Lekha Sleno; *UQAM, Montréal, Canada*
- ThP 400 **Screening Serum Albumin Adducts of Carcinogenic Arylamines under Different Proteolytic Digestion Systems;** [Lijuan Peng](#); Robert Turesky; *Wadsworth Center, NYS Department of Health, Albany, NY*
- ThP 401 **Simultaneous Profiling of Sixteen Biomarkers of Occupational Exposure and Endogenous Metabolites in Urine;** [Lucie Rimnacova](#)¹; Petr Simek¹; Petr Husek¹; Jaroslav Mraz²; ¹*Biology Centre, Czech Academy of Sciences, Ceske Budejovice, Czech Republic*; ²*National Institute of Public Health, Prague, Czech Republic*
- ThP 402 **A LC-MS/MS Method for Determination of 1-Hydroxypyrene, 3-hydroxybenzo[a]pyrene and 3-hydroxybenz[a]anthracene: Application to Biomonitoring of Human Smoke Polycyclic Aromatic Hydrocarbon Exposure;** [Hongwei Hou](#); Xiaotao Zhang; Wei Xiong; Qingyuan Hu; *China National Tobacco Quality Supervision & Test, Zhengzhou, China*
- ThP 403 **HPLC-ESI-MS/MS Quantification of Urinary Metabolites of 1,3-butadiene in Smokers to Identify Ethnic Differences in Metabolism;** [Srikanth Kotapati](#)¹; Lani Park²; Amanda Esades¹; Loic Le Marchand²; Natalia Tretyakova¹; ¹*University of Minnesota, Minneapolis, MN*; ²*University of Hawai'i, Honolulu, HI*
- ThP 404 **Characterization of Aromatic Amine Exposure in U.S. Smokers and Non-Smokers: NHANES 2005-2006;** [Tiffany Seyler](#); Elizabeth Cowan; Jenny Kim; Rey DeCastro; Benjamin Blount; Lanqing Wang; *CDC, Atlanta, GA*
- ThP 405 **Human Exposure Assessment to the Plasticizer di(isononyl)cyclohexane-1,2-dicarboxylate (DINCH) Using Urinary Metabolites Identified in Rats;** [Manori Silva](#); Ella Samandar; James Preau; Antonia Calafat; *Centers for Disease Control and Prevention, Atlanta, GA*
- ThP 406 **Comparative Analysis of Acid, Base and Beta-Glucuronidase Hydrolysis of Conjugated 4-aminobiphenyl in Fortified Urine;** [Jenny G. Kim](#)^{1,2}; Elizabeth A. Cowan¹; Tiffany H. Seyler¹; Lanqing Wang¹; Benjamin Blount¹; ¹*Centers for Disease Control and Prevention, Atlanta, GA*; ²*ORISE, Oak Ridge, TN*
- ThP 407 **Long Term Stability of Volatile Nitrosamines in Human Urine;** [James Hodgson](#)^{1,2}; Tiffany Seyler²; Lanqing Wang²; ¹*Oak Ridge Institute for Science and Education, Oak Ridge, TN*; ²*Centers for Disease Control and Prevention, Atlanta, GA*
- ThP 408 **LC-MS/MS Analysis of Mercapturic Acids: Addressing Selectivity and Matrix Effect Issues;** [Alan Dzerk](#); Veniamin Lapko; Ridha Nachi; Kirk Newland; Curtis Sheldon; *Celerion, Inc, Lincoln, NE*
- ThP 409 **Rapid Quantitation of Diastereomeric CEDG-A Potential Biomarker for Diabetes in Human Urine by LC-MS/MS;** Jing Ke¹; Kelly Lam¹; [Yijin Xiao](#)¹; Harry Zhao¹; Zhongping (John) Lin¹; Daniel Tamae²; Gerald E. Wuenschell²; John Termini²; ¹*Frontage Laboratories, Inc, Exton, PA*; ²*City of Hope Medical Center, Duarte, CA*
- ThP 410 **Validation of a Method of Measuring Amino Acids Composition of Peptides and Proteins by Gas Chromatography/Mass Spectrometry;** [Ayat H. BaniRashaid](#); Peter de B. Harrington; Glen P. Jackson; *Ohio University, Athens, OH*

Biomarker Discovery: Cancer and Neuroscience, 411 – 442

- ThP 411 **Label-free Shotgun Proteomic Characterization of Laser Capture Microdissected Formalin Fixed Paraffin Embedded Melanoma Biopsies;** [Owen E. Branson](#); John P. Shapiro; Joseph Markowitz; Sara B. Peters; William E. Carson III; Michael A. Freitas; *Ohio State University, Columbus, OH*
- ThP 412 **Novel Diagnostic and Prognostic Biomarker Candidates of Hepatocellular Carcinoma Revealed by a Quantitative 2D-DIGE and Label-Free Proteome Analysis;** [Wael Naboulsi](#)¹; Dominik Megger¹; Thilo Bracht Bracht¹; Kristin Rosowski Rosowski¹; Birgit Korte¹; Stephanie Tautges¹; Don Marvin Voß¹; Michael Kohl¹; Maïke Ahrens¹; Sacha Hagemann²; Frank Weber⁴; Hideo Baba²; Jörg F Schlaak³; Martin Eisenacher¹; Christian Stephan¹; Helmut Meyer¹; Barbara Sitek¹; ¹*MPC, Ruhr-Universität Bochum, Bochum, Germany*; ²*Pathologie, Universitätsklinikum Essen, Essen, Germany*; ³*Hepatologie, Universitätsklinikum Essen, Essen, Germany*; ⁴*Universitätsklinikum Essen, Essen, Germany*
- ThP 413 **A Study Combining Label-Free Proteomics and 2D-DIGE Revealed Novel Biomarker Candidates for Cholangiocellular Carcinoma;** [Juliet Padden](#)¹; Dominik Megger¹; Thilo Bracht¹; Stephanie Tautges¹; Don Marvin Voss¹; Kristin Rosowski¹; Birgit Korte¹; Michael Kohl¹; Martin Eisenacher¹; Hideo A. Baba²; Jörg F. Schlaak³; Christian Gerges⁴; Brigitte Schumacher⁴; Horst Neuhaus⁴; Helmut E. Meyer¹; Barbara Sitek¹; ¹*Medizinisches Proteom-Center, Ruhr-Universität Bochum, Germany*; ²*Institut für Pathologie, Universitätsklinikum Essen, Germany*; ³*Klinik*

- für Gastroenterologie und Hepatologie, Universitätsklinikum Essen, Germany; ⁴Evangelisches Krankenhaus Düsseldorf, Düsseldorf, Germany*
- ThP 414 **Metabolic Profiling of Hepatocellular Carcinoma and Hepatitis C Using GC-MS, LC-TOF-MS and LC-MS/MS methods;** Hamid Baniyasadi¹; G. A. Nagana Gowda³; Siwei Wei¹; Jeremiah Bowers¹; Nicholas Skill²; Mary Maluccio²; Daniel Raftery^{1,3}; ¹Department of Chemistry, Purdue University, West Lafayette, IN; ²Department of Surgery, Indiana University, Indianapolis, IN; ³University of Washington, Seattle, WA
- ThP 415 **Investigation into the Mechanisms of Prostate Cancer Androgen Independence Using Label-Free Data-Independent Quantitative LC-IM-DIA-MS and Pathway Analysis;** Brian Morrissey¹; Robert Tonge²; Lee A Gethings²; Johannes PC Vissers²; Stephen Pennington¹; ¹UCD Conway Institute, University College Dublin, Dublin, Ireland; ²Waters Corporation, Manchester, UK
- ThP 416 **Development of a 4 Protein Signature that Predicts Outcome to Tamoxifen Treatment in Recurrent Estrogen Receptor Positive Breast Cancer;** Tommaso De Marchi¹; Ning Qing Liu¹; Christoph Stingl¹; Marcel Smid¹; Maxime Look¹; Rene Braakman¹; Mark Opdam²; Sabine Linn²; Fred Sweep³; Paul Span³; John Martens¹; John Foekens¹; Arzu Umar¹; ¹Erasmus University Medical Center, Rotterdam, The Netherlands; ²Netherlands Cancer Institute, Amsterdam, The Netherlands; ³Radboud University Nijmegen Medical Center, Nijmegen, The Netherlands
- ThP 417 **A Proteomics Profile Associated with Neoadjuvant Chemotherapy Sensitivity in Triple-Negative Breast Cancer;** Rene Braakman^{1,3}; Christoph Stingl¹; Lennart Mulder^{2,3}; Marcel Smid¹; Esther Lips^{2,3}; John Martens^{1,3}; Theo Luiders¹; Sjoerd Rodenhuis^{2,3}; John Foekens^{1,3}; Arzu Umar^{1,3}; ¹Erasmus Medical Center, Rotterdam, The Netherlands; ²Netherlands Cancer Institute, Amsterdam, The Netherlands; ³Center for Translational Molecular Medicine, Eindhoven, The Netherlands
- ThP 418 **Genome Wide Proteomics of ERBB2 and EGFR Pathways in Inflammatory Breast Cancer;** Yue Zhang¹; Massimo Cristofanilli²; Fredika Robertson³; James Reuben³; Zhaomei Mu²; Hogune Im⁴; Michael Snyder⁴; Matan Hoffree⁵; Trey Ideker⁶; Gilbert Omenn⁶; Susan Fanayan⁷; Seul-Ki Jeong⁸; Young-ki Paik⁸; Shiao-Lin Wu¹; William Hancock¹; ¹Barnett Institute, Northeastern University, Boston, MA; ²Thomas Jefferson University, Philadelphia, PA; ³M D Anderson Cancer Center, Houston, TX; ⁴Department of Genetics, Stanford University, Stanford, CA; ⁵University of California, La Jolla, CA; ⁶University of Michigan, Ann Arbor, MI; ⁷Macquarie University, Sydney, Australia; ⁸Yonsei University, Seoul, Korea
- ThP 419 **A Novel Proteomic Approach for the Routine Screening for Ovarian Cancer Using PAP samples;** Lewis Pannell¹; Lindsay Schambeau¹; Meghan Tanner¹; Dean Billheimer²; Rodney Rocconi¹; Michael Finan¹; ¹Mitchell Cancer Institute, Mobile, AL; ²University of Arizona, Tucson, AZ
- ThP 420 **Comparison of Label-Free and SILAC Quantitative Analysis of Breast Cell Lines Glycoproteomes;** Ten-Yang Yen; Alejandro Corona; Roger Yen; Chris Alleyne-Chin; Leslie Timpe; Bruce Macher; *San Francisco State University, San Francisco, CA*
- ThP 421 **Large-Scale Comparative Proteomic Analysis of Colon Cancer Cells Isolated from Multiple Patients Using an Extensive Ion Current –Based Approach;** Chengjian Tu; Jun Li; Shichen Shen; Eslam Nouri-Nigjeh; Wilfrido Mojica; Jun Qu; *University at Buffalo, Buffalo, NY*
- ThP 422 **Validation of Early Serum Biomarkers of Colorectal Cancer Using Selective Reaction Monitoring Mass Spectrometry;** Melanie M. Ivancic; Amy A. Irving; Jennifer K. Pleiman; Linda Clipson; William F. Dove; Michael R. Sussman; *University of Wisconsin, Madison, WI*
- ThP 423 **Proteomic Analysis of Perineural Invasion in Pancreatic Adenocarcinoma Reveals Up-regulation of Neurosecretory Protein VGF in Invaded Nerves;** Richard Jones¹; Wasfi Alrawashdeh²; Ravi Amunugama¹; Michael Ford¹; David Allen¹; Nilukshi Wijesuriya³; Pedro Cutillas²; Tatjana Crnogorac-Jurcevic²; ¹MS Bioworks, LLC, Ann Arbor, MI; ²Barts Cancer Institute, QMUL, London, UK; ³Department of Pathology, Royal London Hospital, London, UK
- ThP 424 **Target Proteomic Profiling of Frozen Pancreatic CD24+ Adenocarcinoma Tissues by Immuno-Laser Capture Microdissection and Nano-LC-MS/MS;** Jianhui Zhu; Song Nie; Jing Wu; David M. Lubman; *University of Michigan Medical Center, Ann Arbor, MI*
- ThP 425 **Global Analysis of the Phosphoproteome of Human Blasts Reveals Predictive Phosphorylation Markers for the Treatment of Acute Myeloid Leukemia with AC220;** Christoph Schaab^{1,2}; Felix Oppermann¹; Martin Klammer¹; Heike Pfeifer³; Andreas Tebbe¹; Thomas Oellerich³; Jürgen Krauter⁴; Mark Levis⁵; Alexander E. Perl⁶; Henrik Daub¹; Björn Steffen³; Klaus Godl¹; Hubert Serve³; ¹Evotec Munich, Martinsried, Germany; ²Max Planck Institute of Biochemistry, Martinsried, Germany; ³Department of Medicine, Goethe University, Frankfurt, Germany; ⁴Medizinische Hochschule Hannover, Hannover, Germany; ⁵Sidney Kimmel Comprehensive Cancer Center, Baltimore, MD; ⁶Abramson Cancer Center, PA
- ThP 426 **Identification of SLPI as a Progression-Associated Protein in Oral Pre-Cancerous Lesions by Quantitative Proteomics of Non-Invasively Collected Brushed Biopsies;** Ya Yang¹; Nelson Rhodus²; Frank Ondrey³; Patricia Fernandes³; YaQin Zhu¹; Timothy Griffin⁴; ¹9th People's Hospital, Shanghai JiaoTong University, Shanghai, China; ²School of Dentistry, University of Minnesota, Minneapolis, MN; ³Dept of Otolaryngology, University of Minnesota, Minneapolis, MN; ⁴Department of BMBB, University of Minnesota, Minneapolis, MN
- ThP 427 **Rapid Phenotyping Renal Cell Carcinoma from Fine Needle Aspirates Using DESI-MS;** Joseph H Kennedy¹; Matthew T Olson²; Justin M Wiseman¹; ¹Prosolia, Inc., Indianapolis, IN; ²The John Hopkins Hospital, Baltimore, MD
- ThP 428 **CD180 : A New Marginal Zone B-cell Lymphoma Biomarker Discovered by Plasma Membrane Microparticle Proteomic Analysis;** Sarah Lennon¹; Laurent Miguet²; Christine Carapito¹; Luc Fornecker¹; Laurent Mauvieux²; Alain Van Dorsselaer¹; Sarah Cianféran-Sanglier¹; ¹Laboratoire de Spectrométrie de Masse Bioorganique, Strasbourg, France; ²Institut d'hématologie et d'immunologie, Strasbourg, France
- ThP 429 **Screening Biomarkers of Thyroid Cancer by a Combination of Tissue Imaging and Serum Metabolites Profiling Using MALDI-FTICR MS;** Shuai Guo; Hui Liu; Yumei Guo; Yaping Zhang; Fang Li; Zhili Li; *IBMS, CAMS&PUMC, Beijing, China*
- ThP 430 **Selective Sampling Strategy and Quantitative Proteomic Analysis Reveals New Mechanisms of Oxygen-Regulated Solid Tumor Growth in Mouse Model;** Shujia Dai¹; Dmitriy Lukashev²; Somak Ray¹; Barry Karger¹; Michail Sitkovsky²; ¹Barnett Institute, Northeastern University, Boston, MA; ²Bouve College of Health Sciences Northeastern Univ, Boston, MA

- ThP 431 **Quantitative Proteomic Analysis Reveals a Molecular Triad Signature as Biomarker Candidates for Astrocytomas and Oligodendrogliomas;** Jose Cesar Rosa⁴; Suely Kazue Nagahashi Marie¹; Sueli Oba-Shinjo¹; João Bosco de Oliveira²; Andreia Otake³; Roger Chammas³; Clarice Izumi⁴; Anelisa Ramao⁴; Helen Julie Laure⁴; Marcela Gimenez⁴; ¹Dept. of Neurology, Medical School of Sao Paulo, Sao Paulo, Brazil; ²Dept. of Laboratory Medicine, Clinical Center, NIH, Bethesda, MD; ³Experimental Oncology, Medical School of Sao Paulo, Sao Paulo, Brazil; ⁴Cell & Molecular Biology, FMRP-Univ.Sao Paulo, Ribeirao Preto, Brazil
- ThP 432 **CSF Proteome Characterisation: Dynamics of Plasma Proteins and CNS Specific Proteins;** Jill Anette Opsahl^{1,2}; Elise Aasebø²; Yngvild Bjørlykke²; Hilde Garberg¹; Astrid Gulbrandsen²; Frode S. Berven^{1,2}; ¹Proteomics Unit at University of Bergen, Bergen, Norway; ²The KG Jebsen Centre for MS-Research, Bergen, Norway
- ThP 433 **Comparison of Cuprizone and Experimental Autoimmune Encephalomyelitis Multiple Sclerosis Models Using TMT and Label-Free Quantitative Proteomics and Translation to Patients;** Eystein Oveland^{2,3}; Stig Wergeland^{1,3}; Harald Barsnes^{1,2}; Kjell-Morten Myhr^{1,3}; Lars Bø^{1,3}; Frode Berven^{2,3}; ¹University of Bergen, Bergen, Norway; ²Proteomics Unit at University of Bergen, Bergen, Norway; ³Haukeland University Hospital, Bergen, Norway
- ThP 434 **Selection and Quantification of Neurotrauma Markers in Cerebrospinal Fluid (CSF) by Mass Spectrometry;** Sean Shen; Ina Wanner; Gregg Czerwiec; Joseph A. Loo; University of California, Los Angeles, CA
- ThP 435 **Using Neuroblastoma as an Alzheimer's Disease Model to Study the Effect of Angiotensin Converting Enzyme Inhibitors;** Yu-Chang Tyan¹; Ming-Hui Yang²; ¹Kaohsiung Medical University, Kaohsiung, Taiwan; ²National Yunlin University of Science & Technology, Yunlin, Taiwan
- ThP 436 **MALDI-TOF MS Investigation of Analyte Release from Regions of the Mammalian Peripheral Sensory-Motor System;** Stanislav Rubakhin¹; Jonathan Sweedler²; ¹Beckman Institute, UIUC, Urbana, IL; ²Department of Chemistry, UIUC, Urbana, IL
- ThP 437 **Proteomic Investigation of Saliva from Children with Autism Spectrum Disorder (ASD) and Matched Controls during Circadian Rhythmicity;** Katherine M. Beglinger¹; Armand G. Ngounou Wetie¹; Kelly L. Wormwood¹; Jarrod W. Mattingly¹; Urmi Roy¹; Jeanne P. Ryan²; Alisa G. Woods¹; Costel Darie¹; Sokolowska Sokolowska¹; ¹Clarkson University, Potsdam, NY; ²State University of New York, Plattsburgh, NY
- ThP 438 **A TransOmics study of the Saliva of Children with Autism Spectrum Disorder Using High Definition Mass Spectrometry;** Alisa G. Woods¹; Joanne B. Connolly²; Lee Gethings²; Armand G. Ngounou Wetie¹; Cristian Cojocariu²; Janet Hammond²; Jeanne P. Ryan³; Costel C. Darie¹; ¹Clarkson University, Potsdam, NY; ²Waters, Manchester, UK; ³State University of New York, Plattsburgh, NY
- ThP 439 **Proteomic Investigation of Sera and Saliva from Children with Autism Spectrum Disorder and Matched Controls;** Kelly L. Wormwood¹; Armand G. Ngounou Wetie¹; Izabela Sokolowska¹; Katherine M. Beglinger¹; Jarrod W. Mattingly¹; Urmi Roy¹; Jeanne P. Ryan²; Alisa G. Woods¹; Costel Darie¹; ¹Clarkson University, Potsdam, NY; ²State University of New York, Plattsburgh, NY
- ThP 440 **Proteomic Quantification of Characteristic Markers of Human Oligodendrocyte Differentiation;** Raghothama Chaerkady¹; Candace Kerr^{1,2}; Robert Cole¹; ¹Johns Hopkins University, Baltimore, MD; ²Department of Biochemistry, University of Maryland, Baltimore, MD
- ThP 441 **Quantitative Proteomic Techniques: Exploring Protein Pathways and Potential Biomarkers in Dorsal Region of Rat Spinal Cord Associated with Neuropathic Pain;** Ping Sui; Hiroyuki Watanabe; Georgy Bakalkin; Konstantin Artemenko; *Uppsala University, Uppsala, Sweden*
- ThP 442 **Mass Spectrometry-Based Biomarker Discovery: toward the Development of Fundamental Neurochemistry Knowledge Essential for the Development of New Pain Medicines;** Floriane Pailleux^{1,2}; Pascal Vachon¹; Jérôme Lemoine²; Francis Beaudry¹; ¹Université de Montréal, Saint-Hyacinthe, Canada; ²Université de Lyon, Villeurbanne, France
- Proteomics: Clinical Applications, 443 – 476**
- ThP 443 **miR-27b-regulated TCTP as a Novel Plasma Biomarker for Oral Cancer: From Quantitative Proteomics to Post-Transcriptional Study;** Wan-Yu Lo¹; Huang-Joe Wang¹; Chih-Wei Chiu²; Sung-Fang Chen²; ¹China Medical University, Taichung, Taiwan; ²National Taiwan Normal University, Taipei, Taiwan
- ThP 444 **Direct ESI-LC-MSMS Microorganism Identification and Monitoring in Endotracheal Samples from VAP Suspected Patient;** Chloé Bardet¹; Christelle Compagnon¹; Marie Cécile Ploy²; Jérôme Lemoine³; Marc Rodrigue¹; Tanguy Fortin¹; ¹Biomerieux, Marcy L'étoile, France; ²UMR-S 1092, INSERM Université de Limoges, Limoges, France; ³UMR 5180, CNRS Université de Lyon 1, Lyon, France
- ThP 445 **Changes in the Human Hippocampus Proteome during Alzheimer's Disease;** David C. Hondius^{1,2}; Roel C. van der Schors²; Jeroen J.M. Hoozemans¹; Pim van Nierop²; Saskia M. van der Vies¹; Ka Wan Li²; Annemieke J.M. Rozemuller¹; August B. Smit²; ¹Dept. of Pathology, VU University Medical Center, Amsterdam, NL; ²Neuroscience Campus Amsterdam, VU University, Amsterdam, NL
- ThP 446 **Creating Reference Materials for Clinically-Relevant Proteins via QconCAT Peptides;** Tyler A Zimmerman; Mark Lowenthal; Meiyao Wang; Karen Phinney; *National Institute of Standards and Technology, Gaithersburg, MD*
- ThP 447 **AUY922 Generates a Proteomic Fingerprint in Leukemia Cells that is Highly Conserved among Structurally Diverse Hsp90 Inhibitors;** Sudhakar Voruganti¹; Jeff LaCroix²; Chelsea Rogers¹; Janet Rogers¹; Liang Sun¹; Robert L. Matts¹; Steven D. Hartson¹; ¹Oklahoma State University, Stillwater, OK; ²East Central University, Ada, OK
- ThP 448 **Top-Down Proteomics of Chronic Lymphocytic Leukemia: A Pilot Project;** Emma Doud¹; Vivian Bin Liu^{2,3}; Shuo Ma^{2,3}; Steven Rosen^{2,3}; Paul Thomas¹; Neil Kelleher¹; ¹Northwestern University, Evanston, Illinois; ²Robert H. Lurie Comprehensive Cancer Center, Chicago, IL; ³Feinberg School of Medicine, Chicago, IL
- ThP 449 **Towards the Mechanism of EGFR Inhibitor Resistance in Non-Small Lung Cancer Cells;** Michael Blank¹; Ryan Bomgarden²; John Rogers²; Ryan Jacobs³; Jason Fong³; Neelu Puri³; Vlad Zabrouskov¹; Rosa Viner¹; ¹ThermoFisher Scientific, San Jose, CA; ²Thermo Fisher Scientific, Rockford, IL; ³University of Illinois at Chicago, Rockford, IL
- ThP 450 **Proteomic Analysis of Oxidative Stress-Induces Monocyte Necrosis;** Haiping Tang¹; Enbing Tian²; Shan Feng¹; Qingtao Wang²; Chongdong Liu²; Haiteng Deng¹; ¹Tsinghua University, Beijing, China; ²Chaoyang Hospital Affiliated to Capital Medical Un, Beijing, China
- ThP 451 **Oxacillin Resistance Study on Methicillin Resistant and Susceptible *Staphylococcus aureus* by Label Free Quantitative Proteomics;** Xiao-Fen Liu¹; Ying-Wei Hu¹; Pei-Jing Pai¹; Dai-Jie Chen²; Henry Lam¹; ¹Hong Kong

- University of Science and Technology, Hong Kong, China;*
²China State Institute of Pharmaceutical Industry, Shanghai, China
- ThP 452 **In-depth Characterization of the Cerebrospinal Fluid Proteome including Glycosylation Patterns and Molecular Weights as a Resource for Targeted Proteomics Assays;** Astrid Guldbrandsen; Heidrun Vethe; Yehia Farag; Hilde Garberg; Magnus Berle; Eystein Oveland; Jill Anette Opsahl; Harald Barsnes; Frode Berven; *University of Bergen, Bergen, Norway*
- ThP 453 **Comparison of Five Serum Depletion or Fractionation Methods Applied for Clinical Biomarkers Discovery Studies;** Gabriel Mazzucchelli¹; Nicolas Smargiasso¹; Dominique Baiwir²; Edouard Louis³; Edwin De Pauw¹; Marie-Alice Meuwis³; ¹*MS Lab, GIGA-R, University of Liege, Liege, Belgium;* ²*GIGA proteomic facility, Liege, Belgium;* ³*Dpmt of Gastroenterology, University Hospital, CHU, Liege, Belgium*
- ThP 454 **Skin Aging - Identification of Protein Factors Secreted by Human Dermal Fibroblasts Using a Quantitative Proteome Approach;** Daniel Waldera-Lupa¹; Gereon Poschmann¹; Faiza Khalfallah²; Fritz Boege²; Kai Stühler¹; ¹*Heinrich-Heine Universität Düsseldorf, Düsseldorf, Germany;* ²*Universitätsklinikum Düsseldorf, Düsseldorf, Germany*
- ThP 455 **Dried Blood Spot Proteomics: Automated Surface Sampling and Sample Preparation;** Nicholas J. Martin; Josephine Bunch; Helen J. Cooper; *University of Birmingham, Birmingham, UK*
- ThP 456 **Super-SILAC Based Quantitative Proteomics for Comparison of Different Acute Myeloid Leukaemia Cell Lines;** Elise Aasebø¹; Gro Gausdal²; Olav Mjaavatten¹; Arthur van der Burgh¹; Bjørn Tore Gjertsen³; Stein Ove Døskeland²; Øystein Bruserud³; Frode Selheim¹; Frode S. Berven¹; ¹*Proteomics Unit, IBM, University of Bergen, Bergen, Norway;* ²*Department of Biomedicine, University of Bergen, Bergen, Norway;* ³*Institute of Medicine, University of Bergen, Bergen, Norway*
- ThP 457 **Comparative Proteomics of Androgen and Anti-androgen Treatment in Prostate Cells;** Arum Park¹; Jiyeong Lee¹; Hee-Joung Lim²; Byung Heun Cha¹; Tag Keun Yoo³; HooKeun Lee⁴; Hee-Gyoo Kang¹; ¹*Eulji University, Seongnam, Korea;* ²*Korea University, Seoul, Korea;* ³*Department of Urology and Pathology, Eulji University, Daejeon, Korea;* ⁴*Lee Gil Ya Cancer and Diabetes Institute, Incheon, Korea*
- ThP 458 **Compare the Change of Proteome Profiling in Prostate Cells by Disulfiram and Bicalutamide Using In-gel Digestion;** Anne Seok¹; Hee-Joung Lim^{2,3}; JuHwan Lee¹; JiYeong Lee¹; Sung Hee Hyun⁴; Jong-Hoon Kim²; Kwang Ho Kim³; Hee-Gyoo Kang¹; ¹*Eulji University, Seongnam, Korea;* ²*Korea University, Seoul, Korea;* ³*Kairos Co. Ltd, Seongnam, Korea;* ⁴*Department of Biomedical Laboratory Science, Eulji University, Daejeon, Korea*
- ThP 459 **Sarcomere Protein Expression Studies Suggest Mutation-Specific Disease Mechanisms in Human Hypertrophic Cardiomyopathy;** Richard Jones¹; Michael Ford¹; Ravi Amunugama¹; David Allen¹; Frank Davis²; Adam Helms²; Sarah Bartolone²; Sharlene Day²; ¹*MS Bioworks, LLC, Ann Arbor, MI;* ²*University of Michigan, Ann Arbor, MI*
- ThP 460 **The Peptidome and the Degradome of the Juvenile Idiopathic Arthritis (JIA) Synovial Fluid;** Cristina Clement; Ginger Janow; Myrasol Callaway; Edward Nieves; Steven Porcelli; Laura Santambrogio; *Albert Einstein College of Medicine, Bronx, NY*
- ThP 461 **Cellular Senescence and an Inflammatory Senescence-Associated Secretory Phenotype in Human Preadipocytes;** Yi Zhu; *Mayo Clinic, Rochester, MN*
- ThP 462 **Top-Down Sequencing via MALDI-ISD for Clinical Determination of Protein Variants;** Roger Theberge; Christian Heckendorf; Stephen Whelan; Catherine E Costello; Mark E McComb; *Boston University School of Medicine, Boston, MA*
- ThP 463 **Smooth Muscle Cell TGF-beta Signaling Study and Multi-Target Quantification upon TGF-beta Stimulation;** Xiaoqian Liu¹; Sarah Parker¹; Harry (Hal) Dietz¹; Brigitte Simons²; Jennifer Van Eyk¹; ¹*Johns Hopkins University, Baltimore, MD;* ²*AB SCIEX, Concord, ON*
- ThP 464 **Clinical Proteomics Improves Subtyping of Pituitary Adenomas;** Jason D Theis; Surendra Dasari; Julie Vrana; Ken Johnson; Catarina Giannini; Mark Jentoft; Ahmet Dogan; *Mayo Clinic, Rochester, MN*
- ThP 465 **Optimization of Mass Spectrometry-based Detection of Beta-Amyloid Variants and the Proteome Profiles from Alzheimer's Disease Senile Plaques;** Ko-Yi Chien; Ina Caesar; Sam Gandy; Rong Wang; *Mount Sinai Medical Center, New York, NY*
- ThP 466 **Proteome Measurement Repeatability and Depth of Protein Coverage in Lymphoma Cell Lines;** Kenneth L. Johnson; Carrie J. Heppelmann; Surendra Dasari; Jason D. Theis; Roman Zenka; H. Robert Bergen, III; Andrew L. Feldman; Ahmet Dogan; *Mayo Clinic, Rochester, MN*
- ThP 467 **Preliminary Large Scale Quantitative Proteomic Analysis of Bortezomib Resistant Multiple Myeloma;** Zhiping Wu¹; Xusheng Wang¹; Haiyan Tan¹; Megan Schertzer¹; Dharminder Chauhan²; Kenneth Anderson²; Junmin Peng¹; ¹*ST. Jude, Memphis, TN;* ²*Dana-Farber Cancer Institute, Harvard Medical Sch, Boston, MA*
- ThP 468 **Quantitative Proteomics Analysis of Human Central Memory T Cells for Assessing Protein Expression Profile of HIV-Infected subjects on HAART;** Sausan Azzam; Daniela Schlatzer; Douglas Bazdar; Jill Barnholtz-Sloan; Yanwen Chen; Mark Chance; Scott Sieg; *Case Western Reserve University, Cleveland, OH*
- ThP 469 **Comparative Phosphoproteomic Analysis of 106 Human Liver Tissues by 2-dimensional Image-Converted Analysis of Liquid Chromatography and Mass Spectrometry (2DICAL);** Masaya Ono¹; Masahiro Kamita¹; Tomohiro Sakuma²; Miho Banno²; Tesshi Yamada¹; ¹*Natl Cancer Ctr Research Institute, Tokyo, Japan;* ²*Mitsui Knowledge Industry Co.,Ltd., Tokyo, Japan*
- ThP 470 **Label-free Quantitative Proteomics of Biopsy Tissue from Breast Cancer Patients Reveals Inflammatory Activation of the Tumor Microenvironment;** Michael Grossl¹; Kerstin Gloessmann²; Georg Pfeiler²; Christopher Gerner¹; ¹*University of Vienna, Vienna, Austria;* ²*Medical University of Vienna, Vienna, Austria*
- ThP 471 **Classification of MALDI-FTICR Serum Peptide and Protein Profiles of Patients with Pancreatic Cancer;** Simone Nicolardi; Berit Velstra; Bart J. Mertens; Bert A. Bonsing; Rob A.E.M. Tollenaar; André M. Deelder; Wilma E. Mesker; Yuri E.M. van der Burgt; *Leiden University Medical Center (LUMC), Leiden, Netherlands*
- ThP 472 **Development of Analytical Methods for the Measurement of Thyroglobulin by Mass Spectrometry in Human Serum;** Brittany Catron; W. Clay Davis; Stephen Long; *NIST, Charleston, SC*
- ThP 473 **Development and Application of Highly Sensitive SIM and SRM-based Phosphopeptide Immunoassays Using the Q Exactive Mass Spectrometer;** Kimberly A. Lee; Joan MacNeill; Jing Zhou; Jian Yu; Matthew P. Stokes; Jeffrey C. Silva; Ailan Guo; Michael J. Comb; *Cell Signaling Technology, Inc., Danvers, MA*

- ThP 474 **Bronchoalveolar Lavage Fluid Protein Profiling In ARDS: Early Differences Between Survivors And Non-Survivors**; Maneesh Bhargava; Trisha Becker; LeeAnn Higgins; Pratik Jagtap; Sanjoy Dey; Michael Steinbach; Baolin Wu; Vipin Kumar; Peter Bitterman; David Ingbar; Wendt Chris; *University of Minnesota, Minneapolis, MN*
- ThP 475 **Proteomic Approach for the Diagnosis of Nephropathic Cystinosis Using LC-MRM-MS**; Sunhee Jung¹; Thierry Vilboux²; William Gahl²; Si Houn Hahn^{1,3}; ¹Seattle Children's, Seattle, WA; ²NIH, Bethesda, MD; ³University of Washington, Seattle, WA
- ThP 476 **Integrating Biomarker Discovery and Evaluation Using Global Semi-Quantitative and Targeted Quantitative MS Technologies**; Elodie Duriez²; Magali Court¹; Cedric Mesmin²; Claire Adam¹; Mourad Mellal¹; Madalen Le Gorrec¹; Yves Allory³; Nuria Mallats⁴; Antonia Vlahou⁵; François Radvanyi⁶; Markus Fisher⁷; Bruno Domon²; Jérôme Garin¹; Christophe Masselon¹; ¹CEA Grenoble, Grenoble, France; ²CRP Santé, Luxembourg, Luxembourg; ³Hôpital Mondor, Créteil, France; ⁴CNIO, Madrid, SPAIN; ⁵BRFAA, Athens, Greece; ⁶Institut Curie, Paris, France; ⁷Entelechon GmbH, Regensburg, Germany
- Proteins: Membrane, 477 – 485**
- ThP 477 **A Sensitive and Reproducible Workflow for Quantification of Membrane-Associated Proteins Using Liquid Chromatography Coupled Targeted Mass Spectrometry**; Meiyao Wang^{1,2}; Hua-jun He¹; Gun-Young Heo³; Irina A. Pikuleva³; Lili Wang¹; Illarion V. Turko^{1,2}; ¹National Institute of Standards and Technology, Gaithersburg, MD; ²Institute for Bioscience and Biotech Research, UMD, Rockville, MD; ³Case Western Reserve University, Cleveland, OH
- ThP 478 **Cystic Fibrosis Transmembrane Conductance Regulator Localization Studied via Targeted Quantitative Mass Spectrometry and Isotope Labeling in Cells**; Adam McShane; Bekim Bajrami; Xudong Yao; *University of Connecticut, Storrs, CT*
- ThP 479 **Application of Stable Isotope Dilution Approach for Targeted Quantitation of Membrane Transporters**; Vahid Farrokhi; Bekim Bajrami; Adam McShane; Franz Rueckert; Reza Nemat; Barrett Wells; Xudong Yao; *University of Connecticut, Storrs, CT*
- ThP 480 **Tuning Protease Digest Conditions for Analysis of Membrane Proteins**; Lie Min^{1,2}; Kelvin H. Lee^{1,2}; ¹Delaware Biotechnology Institute, Newark, DE; ²University of Delaware, Newark, DE
- ThP 481 **Comparison of Commercial Surfactants on Membrane Protein Digestion Efficiency for MS-based Proteomic Applications**; Matthew Waas; Subarna Bhattacharya; Sandra Chuppa; Xiaogang Wu; Kathleen R. Noon; Rebekah L. Gundry; *Medical College of Wisconsin, Milwaukee, WI*
- ThP 482 **Examining Ligand Induced Conformational Changes in the Human Erythrocyte Glucose Transporter, GLUT1, through Chemical Crosslinking and Mass Spectrometry**; Kenneth Lloyd; Stephanie Maniatis; John D. Leszyk; Anthony Carruthers; Scott A. Shaffer; *University of Massachusetts Medical School, Worcester, MA*
- ThP 483 **Analysis of Cell Surface Membrane Proteins in a Metastatic Melanoma Cell Line**; Eric Stephens; Yinsheng Wang; *University of California, Riverside, CA*
- ThP 484 **Advances in ESI-MS Analysis of GPCRs**; Krzysztof Okrasa; James Errey; Robert Cheng; Kaspar Hollenstein; Harini Krishnamurthy; Oliver Schlenker; Rob Cooke; Fiona Marshall; *Heptares Therapeutics Ltd., Welwyn Garden City, UK*
- ThP 485 **Top-down Proteomics and High-resolution Mass Spectrometry of Mouse Mitochondrial Membrane Proteins**; Upendra K. Kar; Alexander Yoon; Chris Ryan; Kym F. Faull; Julian Whitelegge; *Pasarow Mass Spectrometry Laboratory, UCLA, Los Angeles, CA*
- Microorganisms: Identification and Characterization, 486 – 519**
- ThP 486 **The Characterization of Bacterial Metabolites by Atmospheric Solids Analysis Probe- Ion Mobility-Mass Spectrometry (ASAP-IM-MS) Methodologies**; Nichole M. Lareau¹; Cody R. Goodwin¹; Jody C. May¹; Ruwan Kurulugama²; Ed Darland²; Brian O. Bachmann¹; John A. McLean¹; ¹Vanderbilt University, Nashville, TN; ²Agilent Technologies Inc., Santa Clara, CA
- ThP 487 **Novel Label Free Species-Specific Quantitation Method for Mixed Proteomes - Application to Studies of Human Infectious Disease and Bacterial Endosymbionts**; Will Thompson; Laura Dubois; Arthur Moseley; *Duke University School of Medicine, Durham, NC*
- ThP 488 **SILAC Study Reveals the Significant Changes on the Cell Shape and Energy Shift after IPTG Inducing on Escherichia coli**; Ping Xu; *State Key Laboratory of Proteomics, Changping District, China*
- ThP 489 **Development of Software for Detecting and Identifying Fungal Species Using GC/MS, LC/MS and IMS Data of Microbial Volatile Organic Compounds**; Takae Takeuchi¹; Shoko Ichii¹; Yoshitaka Nakamura²; Toshiki Sugai³; Masato Kiuchi⁴; Tomohiro Akashi⁵; ¹Nara Women's University, Nara, Japan; ²DYNACOM Co.,Ltd., Chiba, Japan; ³Toho University, Funabashi, Japan; ⁴AIST, Ikeda, Japan; ⁵Nagoya University, Nagoya, Japan
- ThP 490 **Use of an Automated Software Tool for the Evaluation of β -lactamase Activity by MALDI-TOF**; Gary Kruppa¹; Katrin Spärbier²; Chistoph Lange²; Markus Kostrzewa²; Jette Jung³; Soeren Schubert³; ¹Bruker Daltonics Inc., Billerica, MA; ²Bruker Daltonik GmbH, Bremen, Germany; ³Max-von-Pettenkofer Institute, Munich, Germany
- ThP 491 **A Chemical Fingerprint Database of Marine Bacteria Based on High-Resolution LC-MS**; Liang Lu; Ji-Jie Wang; Ying Xu; Henry Lam; Pei-Yuan Qian; *Hong Kong University of Science and Technology, Hong Kong, China*
- ThP 492 **Comparasion of Different Methods of MALDI-TOF for Fast and Reliable Identification of *Saccharomyces cerevisiae* in the Sugarcane Fermentative Process**; Mariana Silva; Thaís Regiani; Carlos Labate; *Max Feffer Laboratory of Plant Genetics ESALQ/USP, Piracicaba, Brazil*
- ThP 493 **Novel Bacterial Classification Method by MALDI-TOF MS Based on Ribosomal Protein Coding in *S10-spc-alpha* Operon at Strain level**; Hiroto Tamura¹; Naomi Yamamoto¹; Yudai Hotta^{1,2}; Hiroaki Sato³; Keisuke Shima⁴; Shinji Funatsu⁴; Yuzo Yamazaki⁴; Helen Montgomery⁵; Akifumi Hosoda^{1,6}; Noriyuki Ojima⁴; ¹Meijo University, Nagoya, Japan; ²Kumiai Chemical Industry, Tokyo, Japan; ³AIST, Tsukuba, Japan; ⁴Shimadzu Corporation, Kyoto, Japan; ⁵Shimadzu UK, Manchester, UK; ⁶The Knowledge Hub[®] of AICHI, Nagoya, Japan
- ThP 494 **Parallel SIMS and MALDI MS Imaging to Visualize Biomolecule Distributions in Microbial Biofilms across Multiple Size Scales**; Eric J Lanni; Jonathan V. Sweedler; *University of Illinois at Urbana-Champaign, Urbana, IL*
- ThP 495 **Monitoring Bacteria Growth and Bacteria Toxins through Proteomics and Metabolomics Analysis**; Da Ren; Gang Xiao; Jason Richardson; Zhongqi Zhang; Pavel Bondarenko; *Amgen Inc., Thousand Oaks, CA*

- ThP 496 **Differentiation of *Borrelia* Species with MALDI-MS Using Spray Sample Deposition;** [Franco Basile](#)¹; Gwendoline Toh-Boyo¹; Shaun Wulff¹; Claudia Molins²; ¹University of Wyoming, Laramie, WY; ²Centers for Disease Control and Prevention, Fort Collins, CO
- ThP 497 **A Multiplexed MassCode PCR Assay for the Detection of Bacterial and Viral Agents on an APCI Single Quadrupole Mass Spectrometer;** [William A. Harris](#)¹; Mark D. Burton¹; Danielle N. Dickinson¹; Johnny K. Ho¹; Yvette R. Hudson¹; Kristin M. Taylor¹; Anna Kidney²; Michael J. Perry²; Christina T. Egan²; Rafal Tokarz³; Thomas Briese³; Peter Sheffield⁴; Carsten Carstens⁴; Douglas B. Henderson¹; ¹Northrop Grumman, Linthicum, MD; ²NYS DOH - Wadsworth, Albany, NY; ³Columbia University, New York, NY; ⁴Agilent Technologies, La Jolla, CA
- ThP 498 **Rapid Organism Identification by Shotgun Proteomics: A Novel, Easy to Implement Database Search Strategy;** Dobryan Tracz; Staurt McCorrister; Patrick Chong; David Lee; Cindi Corbett; [Garrett R. Westmacott](#); Public Health Agency Canada, Winnipeg, Canada
- ThP 499 **Analysis of Bacteria by Performing *in situ* Pyrolysis on a DART ID Cube™/Time-of-Flight MS;** [Yvette R. Hudson](#); Johnny K. Ho; Danielle N. Dickinson; William A. Harris; Douglas B. Henderson; Northrop Grumman, Linthicum, MD
- ThP 500 **Optimizing Soil Metaproteomic Methods to Capture *in situ* Microbial Community Expression;** [Eun-Hae Kim](#)¹; Ben Woodcroft²; Robert Jones¹; Manesh Shah⁴; Gene Tyson²; Nathan VerBerkmoes³; Virginia Rich¹; ¹University of Arizona, Tucson, AZ; ²University of Queensland, Brisbane, Australia; ³New England Biolabs, Ipswich, MA; ⁴Oak Ridge National Laboratory, Oak Ridge, TN
- ThP 501 **Advanced Deep Metaproteomics Methods Provide Unique Insights into the Diversity of the Human Proteome and Gut Microbiota in Healthy Adults;** [Lang Ho Lee](#)^{1,2}; Kristen Corrier^{1,2}; Brian Dill⁶; Manesh Shah²; Robert Hettich²; Janet Jansson³; Marcelo Sztein⁴; Nathan VerBerkmoes⁵; ¹University of Tennessee, Knoxville, Knoxville, TN; ²Oak Ridge National Laboratory, Oak Ridge, TN; ³Lawrence Berkeley National Laboratory, Berkeley, CA; ⁴University of Maryland School of Medicine, Baltimore, MD; ⁵New England Biolabs Inc., Ipswich, MA; ⁶University of Dundee, Scotland, UK
- ThP 502 **Characterizing Microbiome Stability and Metabolic Activities in Post-Surgery Crohn's Diseased Human Gut by High Performance Mass Spectrometry;** [Robert Hettich](#)¹; Alison Erickson¹; Weili Xiong¹; Brandi Cantarel²; Claire Fraser-Liggett²; Chongle Pan¹; ¹Oak Ridge National Laboratory, Oak Ridge, TN; ²University of Maryland, Baltimore, MD
- ThP 503 **MALDI MS Investigation of Mass Fingerprints Generated Directly from Whole Cell Bacteria;** [Phillippa Hart](#)¹; Emmanuel Wey²; Omar Belgacem¹; ¹Shimadzu, Manchester, UK; ²Royal Free Hospital NHS Foundation Trust, London, UK
- ThP 504 **Quantitative Proteomic Profiling of *Clostridium difficile*;** [Lu Yu](#); Laura Deakin; Trevor Lawley; Gordon Dougan; Jyoti Choudhary; Wellcome Trust Sanger Institute, Hinxton, UK
- ThP 505 **Disease Phenotype of Juvenile and Adult CFTR-Knockout Ferrets;** [T. Idil Evans](#); Yulong Zhang; Weihong Zhou; Hongshu Sui; John Engelhardt; R. Marshall Pope; University of Iowa, Iowa City, IA
- ThP 506 **Discriminating Pathogenic and Non-Pathogenic *Francisella* Strains with Three Proteogenomic Biomarkers;** [Emie Durighello](#); Alain Lorphelin; Marie-Anne Roncato; Eric Ezan; Laurent Bellanger; Jean Armengaud; CEA, Bagnols Sur Ceze, France
- ThP 507 **Quantitative Proteomic and Surface Proteomic Investigation of the *Staphylococcus aureus* Response to Oxacillin Adaptation;** [Nestor Solis](#)¹; Benjamin Parker¹; Stephen Kwong¹; Neville Firth¹; Mark Graham²; Stuart Cordwell¹; ¹The University of Sydney, Sydney, Australia; ²Children's Medical Research Institute, Sydney, Australia
- ThP 508 **Protein Analysis of Host Components within Protease-Treated Influenza A Virus Particles;** [Jie Zheng](#)¹; Debbie Huiling Ko¹; Myint Zu Myaing¹; Boon-Huan Tan²; Richard Sugrue¹; Kai Tang¹; ¹Nanyang Technological University, Singapore; ²DSO national Laboratories, Singapore
- ThP 509 **Autoacetylation Sites in the *Pseudomonas syringae* Type III Secreted Effector Protein, HopZ1a, Deduced by Liquid Chromatography-Tandem Mass Spectrometry (LC-MS/MS);** [Jacquelyn R. Jhingree](#)¹; Amy H Lee^{1,2}; Darrell Desveaux^{1,2}; David S Guttman^{1,2}; ¹CAGEF, University of Toronto, Toronto, Canada; ²Dept. of Cell and Systems Biology, University of Toronto, Toronto, Canada
- ThP 510 **Comprehensive Top-down Proteomic Analysis of the Pathogenic Bacterium *Pseudomonas aeruginosa* PAO1;** [Ioanna Ntai](#); John Tran; Archer Smith; Ryan Fellers; Bryan Early; Paul Thomas; Neil Kelleher; Northwestern University, Evanston, IL
- ThP 511 **Targeted Analysis of *Salmonella* effector Proteins Using Multiple Reaction Monitoring;** [Joost Gouw](#); Nat Brown; Leonard Foster; University of British Columbia, Vancouver, Canada
- ThP 512 **Characterization of Flagellar Hook Protein from Spirochetes Using Tandem Mass Spectrometry;** [Justin M. Hettick](#)¹; KellyAnn Miller²; Milinda James²; Nyles W. Charon²; Michael R. Miller²; ¹NIOSH, Morgantown, WV; ²West Virginia University, Morgantown, WV
- ThP 513 **Proteomics for Mycosis Vaccine Development;** [Jackson Champer](#); Diana Diaz-Arevalo; Mayyen Wong; Miriam Champer; Jason Yu; Molly Shannahoff; Karina Vega; James Ito; Markus Kalkum; City of Hope, Duarte, CA
- ThP 514 ***Syntrophus aciditrophicus* Triosephosphate Isomerase: What We Gain from MS-Deduced Protein Sequence Not Predicted from the Genome;** [Hong Hanh Nguyen](#); Yanan Yang; Robert Gunsalus; Joseph Loo; Rachel Ogorzalek Loo; UCLA, Los Angeles, CA
- ThP 515 **iTRAQ Analysis of *Campylobacter jejuni* Prophage Effects on Protein Expression Associated with the Virulence and Biology of the Organism;** [Stuart McCorrister](#); Patrick Chong; Garrett Westmacott; Clifford Clark; Public Health Agency of Canada, Winnipeg, Canada
- ThP 516 **Intact Protein Profiling and Deconvolution of Bacterial Lysates on Multiple Mass Spectrometers;** [Denis Andrzejewski](#)¹; John H. Callahan¹; Timothy Croley¹; Peter E. Leopold²; Melinda A. McFarland¹; ¹FDA-CFSAN, College Park, MD; ²BioAnalyte, Inc., Portland, ME
- ThP 517 **Top-down Proteomic Identification of Shiga Toxin 2 Variants from Shiga Toxin-Producing *Escherichia coli* (STEC) Using MALDI-TOF-TOF-MS/MS-PSD;** [Clifton K. Fagerquist](#); William J. Zaragoza; Omar Sultan; Nathan Woo; Beatriz Quinones; Michelle Swimley; Michael B. Cooley; Robert E. Mandrell; USDA, Albany, CA
- ThP 518 **Metabolomic Analysis of Marine Microalgae Using High Resolution Mass Spectrometry for Taxonomic Comparisons and Screening of Marine Biotoxins;** [Phillipp Hess](#)^{1,2}; Florence Mondeguer¹; Thomas Glauner³; Bernhard Wuest³; Manoella Sibati¹; Zita Zengdong^{1,4}; Christine Herrenknecht⁴; Veronique Sechet¹; ¹Ifremer, Nantes, France; ²IUML, Institut Universitaire Mer et Littoral, CNRS, Nantes, France; ³Agilent Technologies, Waldbronn, Germany; ⁴LUNAM, Université de Nantes, MMS EA2160, Nantes, France

- ThP 519 **Discovery and Quantitation of the Marine Microbial Metaproteome in the Central Pacific Ocean;** Mak Saito¹; Matthew McIlvin¹; Dawn Moran¹; Tyler Goepfert¹; Vlad Zabrouskov²; Justin Blethrow²; ¹Woods Hole Oceanographic Institution, Woods Hole, MA; ²Thermo Scientific, San Jose, CA
- Homeland Security, 520 – 527**
- ThP 520 **Development of a Fieldable DART-based High Performance Ruggedized Ambient Ionization Mass Spectrometer (DART-HiPR-MS);** Danielle N. Dickinson¹; William A. Harris¹; Hoon Ra¹; Johnny K. Ho¹; Yvette R. Hudson¹; Douglas B. Henderson¹; Karl A. Hanold²; Robert Tysl Jr.²; Paul Chaney²; Brian D. Musselman³; Joseph Tice³; ¹Northrop Grumman, Linthicum, MD; ²Syagen, Santa Ana, CA; ³Ionsense, Saugus, MA
- ThP 521 **A Proton-Transfer-Reaction Mass Spectrometry (PTR-MS) Instrument Designed for Sensitive and Selective Monitoring in Real-Life Threat Scenarios;** Alfons Jordan¹; Lukas Märk¹; Thomas Kassebacher^{1,2}; Jens Herbig³; Philipp Sulzer¹; Simone Jürschik¹; Matteo Lanza¹; Chris A. Mayhew⁴; Tilmann D. Märk^{1,2}; ¹IONICON Analytik GmbH., Innsbruck, Austria; ²University of Innsbruck, Innsbruck, Austria; ³IONIMED Analytik, Innsbruck, Austria; ⁴University of Birmingham, Birmingham, UK
- ThP 522 **Quantitative Detection of Botulinum Neurotoxins by MALDI-TOF Mass Spectrometry;** Dongxia Wang; Jakub Baudys; Joan Krilich; Suzanne R. Kalb; John R. Barr; Centers of Disease Control and Prevention (CDC), Atlanta, GA
- ThP 523 **Atmospheric Pressure Chemical Ionization and Secondary Electrospray Ionization for Sensitive Detection of Explosives on the Field-Deployable Compact Ion Trap;** Victor Laiko; Berk Oktem; Thomas Souli; Vladimir Doroshenko; *MassTech, Inc., Columbia, MD*
- ThP 524 **Auto-sampling Explosives Trace Detection Baggage Screener Using Mass Spectrometry;** Yuichiro Hashimoto; Hisashi Nagano; Yasuaki Takada; Yasutaka Suzuki; Hideo Kashima; Masakazu Sugaya; Yasunori Doi; Koichi Terada; Minoru Sakairi; *Hitachi, Ltd, Central Research Lab, Kokubunji, Tokyo, Japan*
- ThP 525 **A High Throughput Screen for Serine-198 Adducted Butyrylcholinesterase in Human Sera by Immunomagnetic Separation and HPLC-MS/MS Analysis;** Melissa Carter¹; Brian Crow¹; Brooke Pantazides²; Caroline Watson²; Thomas Blake¹; Rudolph Johnson¹; ¹CDC, Atlanta, GA; ²ORISE, Atlanta, GA
- ThP 526 **Proteomics for Botulism Outbreak Investigations: a Powerful Tool to Track Sources of Intoxication and Commonality of Botulism Outbreaks;** John R. Barr; Suzanne Kalb; Jakub Baudys; Jon Rees; Dongxia Wang; CDC, Atlanta, GA
- ThP 527 **Advances in Security Checkpoint Screening for Explosives and Narcotics Using Mass Spectrometry;** Garth Patterson; Phil Tackett; Brent Rardin; Mitch Wells; Dennis Barket; *FLIR Mass Spectrometry, West Lafayette, IN*
- Food Safety - Pesticides, 528 – 558**
- ThP 528 **Determination of 200 Residual Pesticides in Food by Ultra High Performance Liquid Chromatography/Triple Quadrupole Mass Spectrometry;** Hongyuan Hao¹; YiKun Deng²; Jinting Yao¹; Hengtao Dong¹; Hui Gao¹; Yueqi Li¹; Taohong Huang¹; Shin-ichi kawano¹; Yuki Hashi¹; ¹Shimadzu (China) Co.,Ltd., Shanghai, China; ²Shimadzu (Guangzhou) Analysis & Technology Service, Guangzhou, China
- ThP 529 **Identification and Quantitation of Pesticides in Food Samples Using UHPLC-MS/MS with the Enhanced Scheduled MRM Functionality and MS/MS Library Searching;** Andre Schreiber¹; Paul Yang²; David Cox¹; Yun Yun Zou¹; Jon Wong³; ¹AB SCIEX, Concord, Canada; ²Ministry of Environment, Toronto, Canada; ³U.S. Food and Drug Administration, College Park, MD
- ThP 530 **Targeted Screening and Quantification of Pesticide Residuals in Tobaccos by Ultra Fast LC/MS/MS;** Jie Xing¹; Zhi Wei Ting¹; Yin Ling Chew²; Zhaoqi Zhan¹; ¹Shimadzu (Asia Pacific) Pte Ltd, Singapore; ²Department of Chemistry, Faculty of Science, National University of Singapore, Singapore
- ThP 531 **Rapid Analysis of Pesticides in Commercial Fruit Juices and Fruit Wine by Liquid Chromatograph/High Resolution Orbitrap Mass Spectrometer;** Kai-Chih Yang; Bo-Shen Wu; Yu-Huai Chang; Min-Wei Cheng; Ying-Ru Shen; Su-Hsiang Tseng; Ya-Min Kao; Lih-Ching Chiueh; Yang-Chih Shih; *Taiwan Foods And Drugs Administration, Department, Taipei City, Taiwan*
- ThP 532 **Validation of an Accurate Mass Screening Method for Pesticide Residues in Food Using UPLC-QToF MS and Automated Data Processing Software;** Sara Stead¹; Dominic Roberts¹; Michael McCullagh¹; Ramesh Rao¹; Monica Lopez Garcia²; Richard Fussell²; ¹Waters corp, Manchester, UK; ²Food and Environment Research Agency, York, UK
- ThP 533 **Application of a Prototype Microfluidic Device with MS for the Screening of Pesticide Residues in Food Analyses;** Michael McCullagh¹; Severine Goscinny²; David Douce¹; Dominic Roberts¹; Sara Stead¹; Ramesh Rao¹; Kenneth Rosnack³; ¹Waters Corporation, Manchester, UK; ²WIV-ISP, Brussels, BE; ³Waters Corp, Milford, MA
- ThP 534 **The Use of Micro Flow UHPLC to Reduce Solvent Usage in the Pesticide Screening of Food Samples by LC-MS/MS;** Stephen J. Lock; *ABSCIEX, Warrington, UK*
- ThP 535 **High-Throughput Determination of Carbendazim in Orange Juice Using Strong Cation Exchange SPE and LDTD-MS/MS;** Serge Auger¹; Gregory Blachon¹; Vincent Bédard²; Veronique Marceau²; David Dube²; Pierre Picard¹; ¹Phytronix Technologies, Quebec, Canada; ²Silicycle, Quebec, Canada
- ThP 536 **Targeted/Non Targeted Screening of Pesticides in QuEChERS Extracts of Vegetables Using UHPLC-TOF and High Throughput Screening Software;** Sharanya Reddy; Sergey Rakov; Blas Cerda; George Perkins; *PerkinElmer, Shelton, CT*
- ThP 537 **Simultaneous Analysis of 15 Pesticides in Green tea Using ASE and LC-MS/MS;** Jin Kyoung Kim¹; Sejin Song¹; Soon-Kil Cho¹; Yangmo Jeong¹; Jong-Hyouk Park²; Jae-Han Shim²; ¹National Agricultural Products Quality Management, Gwangju, Republic of Korea; ²Chonnam National University, Gwangju, Republic of Korea
- ThP 538 **Rapid and Simple Approaches to Multi-residue Pesticide Analysis in Fruits and Vegetables on both GC-MS/MS and LC-MS/MS;** Helen (Qingyu) Sun; Zicheng Yang; Kefei Wang; *Brucker Corporation, Fremont, CA*
- ThP 539 **Analysis of Multiple Pesticide Residues in Salad Using Triple Quadrupole GCMS/MS System;** Ankush Bhone¹; Durvesh Sawant¹; Dheeraj Handique¹; Prashant Hase¹; Sanket Chiplunkar¹; Ajit Datar¹; Jitendra Kelkar¹; Pratap Rasam¹; Akshata Salve²; ¹Shimadzu Analytical (India) Pvt. Ltd., Andheri (E), Mumbai, Maharashtra, India; ²G. N. Khalsa College, Matunga, Mumbai, Maharashtra, India
- ThP 540 **Micro Flow UHPLC-MS/MS in Pesticide Analysis of Infant Foods;** David Baker¹; Neil Loftus¹; Simon Hird²; ¹Shimadzu, Manchester, UK; ²The Food and Environment Research Agency, York, UK

- ThP 541 **Accurate Mass Screening and Confirmation of Pesticides in Fruit and Vegetable Samples with New Targeted MS/MS Data Review Workflow**; Thomas Glauner¹; Guenther Kempe²; Matthieu Rault³; Vadim Kalmeyer³; Yoshimasa Tsunoi Yoshimasa Tsunoi³; Marc Tischler³; ¹Agilent Technologies GmbH, Waldbronn, Germany; ²Lua Saxony, Chemnitz, Germany; ³Agilent Technologies Inc., Santa Clara, CA
- ThP 542 **Analysis of Multiresidue Pesticides Present in Ayurvedic Medicines Like Churna Using Triple Quadrupole Gas Chromatograph Mass Spectrometer (GCMS/MS)**; Dr. Manoj Surwade; Aarti Karkhanis; Manish Kumar Deshmukh; *ThermoFisher Scientific India, Powai, Mumbai, India*
- ThP 543 **Applying High Speed Data Acquisition MS/MS to the Analysis of Pesticides Residues in Complex Spice Matrix**; Alan Barnes¹; David Baker¹; Neil Loftus¹; Simon Hird²; ¹Shimadzu MS/BU (Overseas), Manchester, UK; ²The Food and Environment Agency, York, UK
- ThP 544 **Comparison of LC and GC Triple Quadrupole MS for the Screening of 500 Pesticides in Matrix**; Juan Carmona¹; Marcus Miller²; David Steiniger¹; Jason Cole¹; Mary Blackburn²; Dipankar Ghosh²; Paul Silcock¹; Jennifer Massi²; Charles Yang²; ¹Thermo Fisher Scientific Austin, Austin, TX; ²Thermo Fisher Scientific San Jose, San Jose, CA
- ThP 545 **Broad Scope Pesticide Screening in Food Using GC Triple Quadrupole MS**; David Steiniger; Juan Carmona; Paul Silcock; Sergio Guazzotti; *Thermo Fisher Scientific, Austin, TX*
- ThP 546 **Maximising Information from GC/MS/MS Systems for Pesticide Analysis**; Bruce Peebles; Robert Trengove; *Murdoch University, Murdoch, Australia*
- ThP 547 **Evaluation of Matrix Effects for Dilute-and-Shoot LC-MS/MS Analysis of Carbendazim in Orange Juices and Wines**; Helen (Qingyu) Sun; Zicheng Yang; Kefei Wang; *Bruker Corporation, Fremont, CA*
- ThP 548 **Automated MS Optimization of a Modified Triple Quadrupole Mass Spectrometer Enabled Improved Multi-Residue Pesticide Analysis in Fruit and Vegetables**; Fandino Anabel¹; Thomas Glauner²; Bernhard Wüst¹; ¹Agilent Technologies, Inc, Santa Clara, CA; ²Agilent Technologies R&D and Marketing GmbH & Co., Waldbronn, Germany
- ThP 549 **Quantification of Phosphorothioate Pesticides in Indian Red Chilli at Sub ppb Concentrations Using Negative Ionization APCI Technique**; Arvind Thyagarajan; Saravanan Subramanian; Raman Palvannanathan; Mohan Kasi; Venkat Manohar; *IICMS, Chennai, India*
- ThP 550 **Quantitative Analysis of Trace Level Pesticides in Vegetable Foods by GC-MS/MS**; Sun Qian; Fan Jun; Gao Peng; Huang Taohong; Hashi Yuki; *Shimadzu Global COE, Shimadzu (China) Co., Ltd., Shanghai, China*
- ThP 551 **Fast Quantitation of Carbendazim and Qualitative Analysis of Pesticides in Orange Juice Using LC/TOF**; Avinash Dalmia; Courtney Phillips; George Perkins; *PerkinElmer, Shelton, CT*
- ThP 552 **Rapid Simultaneous Screening of Multiple Pesticide Residues in Food Matrices**; Joerg Riener; *Agilent Technologies, Waldbronn, Germany*
- ThP 553 **Development of a Sensitive CE-MS/MS Method for the Quantitation of Polar Pesticides and Their Metabolites in Food Samples**; Hans Brunnert; Thomas Glauner; Martin Greiner; *Agilent Technologies GmbH, Waldbronn, Germany*
- ThP 554 **Qualitative Screening for Pesticides in Fruit and Vegetable Samples with UHPLC-QTOF-MS Employing All Ions MS/MS Acquisition**; Thomas Glauner¹; Bernhard Wuest¹; Joachim Thiemann¹; Guenther Kempe²; ¹Agilent Technologies GmbH, Waldbronn, Germany; ²LUA Saxony, Chemnitz, Germany
- ThP 555 **Evaluation of the Data Processing and Multiresidue Determination of Pesticide Residues in Fruits by LC-QTOF-MS**; Renato Zanella¹; Juliana S. Munaretto¹; Mariela de S. Viera¹; Celso Blatt²; Daniela Daniel²; Manoel L. Martins¹; Martha B. Adaime¹; ¹Federal University of Santa Maria, LARP, Santa Maria - RS, Brazil; ²Agilent Technologies, Inc., Barueri - SP, Brazil
- ThP 556 **Direct Analysis of Pesticides from Food Commodities by Swab/Desorb Mass Spectrometry**; Sheng-Suan (Victor) Cai; Andrey Vilkov; Jack Syage; *Morpho Detection, Inc., Santa Ana, CA*
- ThP 557 **Software System for Automated Pesticide Screening**; Tim Croley¹; Igor Teslya²; Graham A. McGibbon²; Ann M. Knolhoff¹; Scott McDonald²; John Callahan¹; Richard Lee²; ¹FDA/CFRAN, College Park, MD; ²Advanced Chemistry Development, Toronto, Canada
- ThP 558 **Multiresidue Pesticide Analysis in Crude Food Extracts Using AOC-MEPS and LC/MS/MS**; Yuka Fujito¹; Shigeaki Shibamoto²; Kiyomi Arakawa²; Ichiro Hirano²; Yoshihiro Hayakawa²; ¹Shimadzu Analytical & Measuring Center Inc., Kyoto, Japan; ²Shimadzu Corporation, Kyoto, Japan
- Lipids: Profile Analysis, 559 – 591**
- ThP 559 **Accurate Mass Search of Candidate Individual Lipid Species from High-Resolution Mass Spectra for Shotgun Lipidomics**; Baichen Zhang¹; Miao Wang¹; Yingying Huang²; Xianlin Han¹; ¹Sanford-Burnham Medical Research Institute, Orlando, FL; ²ThermoFisher Scientific, San Jose, CA
- ThP 560 **In-vivo Tissue Identification Using Ambient Ionization Mass Spectrometry - Comparison of Different Multivariate Classification Workflows**; Julia Balog¹; Laszlo Molnar¹; Kirill Vesekov²; Zoltan Takats²; ¹Medimass Ltd, Budapest, Hungary; ²Imperial College London, London, UK
- ThP 561 **Fecal Lipidomics Profiling and Structural Identification Using High Resolution LC-MS and HCD Fragmentation**; Susan S. Bird^{1,2}; Katherine E. Gregory^{1,3}; Vera S. Gross⁴; Vasant R. Marur¹; Alexander V. Lazarev⁴; W. Allen Walker^{2,5}; Bruce S. Kristal^{1,2}; ¹Brigham and Women's Hospital, Boston, MA; ²Harvard Medical School, Boston, MA; ³Boston College, Boston, MA; ⁴Pressure BioSciences, South Easton, MA; ⁵Massachusetts General Hospital, Boston, MA
- ThP 562 **Hyphenating Size-Exclusion Chromatography with Electrospray; Using On-Line Liquid-Liquid Extraction to Study the Lipid Composition of Lipoproteins Particles**; Albert Koulman; Michael Osei; Jules Griffin; *Medical Research Council, Cambridge, UK*
- ThP 563 **A Very Fast Triple Quadrupole Mass Spectrometer as a Tool for SRM-based Phospholipidomics**; Yoshihiro Kita¹; Suzumi Tokuoka¹; Masaki Yamada^{1,2}; Takao Shimizu¹; ¹The University of Tokyo, Tokyo, Japan; ²Shimadzu Corporation, Kyoto, Japan
- ThP 564 **Comprehensive and Quantitative Lipidome Profiling of Colorectal Adenocarcinoma Cell Lines and Their Secreted Exosomes**; Cassie Fhaner¹; Hong Ji²; Richard Simpson²; Gavin Reid¹; ¹Michigan State University, East Lansing, MI; ²La Trobe University, Victoria, Australia
- ThP 565 **Effects of Long- and Short-term Caloric Restriction on Serum Triglycerides Revealed by Lipidomics Analysis via High Resolution LC-MS with HCD**; Bruce S. Kristal^{1,2}; Van S. Hubbard³; Pamela E. Starke-Reed³; Susan S. Bird^{1,2}; Vasant R. Marur^{1,2}; Matthew J. Sniatynski^{1,2}; ¹Brigham and Women's Hospital, Boston, MA; ²Harvard Medical School, Boston, MA; ³Division of Nutrition Research Coordination, NIH, Bethesda, MD

- ThP 566 **High-throughput Lipidomic Analysis of Arachidonic Acid Metabolites in Biological Fluids by Liquid Chromatography/Mass Spectrometry**; Natalia Belikova; Yasuhiro Yamashita; Jenny Lin; *JCL Bioassay USA, Inc., Hoffman Estates, IL*
- ThP 567 **Large-scale Screening of African Infant Plasma Lipidomic Phenotypes: Application of UPLC-MS in Dietary Interventional Epidemiology Studies**; María Gómez-Romero; Nikita Gandhi; Manuja R. Kaluarachchi; Caroline J. Sands; Hannah J. Lees; Elaine Holmes; Jeremy K. Nicholson; Anisha D. Wijeyesekera; *Imperial College London, London, UK*
- ThP 568 **Identification of Novel Metabolites of Docosahexaenoic Acid in Neural Stem Cells Using Stable Isotope Labeled Compounds and High-Resolution Mass Spectrometry**; Karl R. Kevala¹; Mohammed Rashid¹; Mark Sanders²; Hee-Yong Kim¹; ¹*National Institutes of Health, Bethesda, MD*; ²*Thermo Fisher Scientific, Somerset, NJ*
- ThP 569 **Effect of the Expression of the ACSL4 Enzyme on Lipid Metabolism in Cell Line Models of Human prostate and breast cancers**; Farid Jahouh²; Xinyu Wu²; Peng Lee²; Marie E. Monaco²; Rong Wang¹; ¹*Mount Sinai School of Medicine, New York, NY*; ²*New York University School of Medicine, New York, NY*
- ThP 570 **Hopanoid Containing and Intact Polar Components of the Lipidome of *Rhodospirillum rubrum* palustris TIE-1 Investigated Using UPLC-TOF-MS^E**; Nathan Dalleska¹; Cajetan Neubauer¹; Dianne Newman^{1,2}; ¹*Caltech, Pasadena, CA*; ²*Howard Hughes Medical Institute, Pasadena, CA*
- ThP 571 **Determination of Ubiquinone and Related Metabolites in Zebrafish Embryos by LC-HRMS**; Claudio Medana; Federica Dal Bello; Chiara Martano; Vera Mugoni; Massimo Santoro; Claudio Baiocchi; *University of Turin, Torino, Italy*
- ThP 572 **Lipidomic Analysis by UPLC-ESI-HRMS: Application to Lipid Homeostasis Perturbation Induced by Inhibition of Cholesterol 24-hydroxylase in Mice Brain**; Nicolas Auzeil; *Université Paris Descartes C-TAC (EA4463), Paris, France*
- ThP 573 **Lipidomic Profiling Using a Prototype Microfluidic MS Platform**; Giuseppe Astarita¹; Angela Doneanu¹; Will Thompson²; Steven Cohen¹; Giorgis Isaac¹; Jay Johnson¹; Arthur Moseley²; Jim Murphy¹; James Langridge¹; ¹*Waters Corporation, Milford, MA*; ²*Duke University, Durham, NC*
- ThP 574 **Comprehensive Profiling of Lipids Using Infusion Data Independent Strategy and Online Information Dependent Analysis Based on High Resolution Mass Spectrometry**; Xiaolin Wang¹; Xiaoling Gao¹; Liang Zhu¹; Hongzhan Chen¹; Ting Liu²; Ping Du²; Yongming Xie²; ¹*Jiao Tong University School of Medicine, Shanghai, China*; ²*AB Sciex Company, Shanghai, China*
- ThP 575 **Application of an Automated and Comprehensive Shotgun Lipidomics Approach as an Environmental Health Assessment Tool**; John Bowden¹; Jackie Bangma²; Bruce Blumberg³; Margie Peden-Adams²; Michele Schantz⁴; John Kucklick¹; ¹*NIST-Charleston, Charleston, SC*; ²*Medical University of South Carolina, Charleston, SC*; ³*University of California, Irvine, CA*; ⁴*NIST, Gaithersburg, MD*
- ThP 576 **Development of an *in situ* Derivatization and Analysis Strategy for Comprehensive Lipidome Analysis without Extraction or Sample Handling**; Kristen Reese; Cassie Phaner; Todd Lydic; Julia Busik; Reid Gavin; *Michigan State University, East Lansing, MI*
- ThP 577 **Age Correlated Quantitation of Gangliosides and the Activity of the Plasma Membrane Ca²⁺-ATPase in Neuronal Preparations**; Robert Winefield¹; Justin Douglas²; Lei Jiang³; Misty Bechtel³; Elias Michaelis³; Mary Lou Michaelis³; Todd D. Williams¹; ¹*University of Kansas Mass Spectrometry Laboratory, Lawrence, KS*; ²*University of Kansas NMR Laboratory, Lawrence, KS*; ³*Dept. of Pharm. &Tox., University of Kansas, Lawrence, KS*
- ThP 578 **LC-MS Lipidomics Analysis of a Human Osteosarcoma Cybrid with a Mitochondrial Complex I defect**; Xiaoli Gao; Lokendra K Sharma; Yidong Bai; Susan T. Weintraub; *University of Texas HSC at San Antonio, San Antonio, TX*
- ThP 579 **Live Single-cell Mass Spectrometry for Direct Cellular Phospholipid Analysis**; Hajime Mizuno¹; Naohiro Tsuyama²; Toshiki Ueda²; Sachiko Date¹; Takanori Harada²; Tsutomu Masujima^{1,2}; ¹*Quantitative Biology Center (QBiC), RIKEN, Osaka, Japan*; ²*Hiroshima Univ. BioMed., Hiroshima, Japan*
- ThP 580 **Changes in the Endoplasmic Reticulum Lipidome during Hepatitis C Infection Measured with Mass Spectrometry**; Russell Pickford¹; Mosleh Abomughaid²; Enoch Tay²; Mark Douglas^{2,3}; ¹*University of New South Wales, Sydney, Australia*; ²*Storr Liver Unit, Westmead Millennium Institute, University of Sydney at Westmead Hospital, Australia*; ³*Centre for Infectious Diseases and Microbiology, Sydney Emerging Infections and Biosecurity Inst., Australia*
- ThP 581 **Application of Sub-2µm particle CO₂-based Chromatography Coupled to Mass Spectrometry for Comprehensive and Targeted Analysis of Lipids in Cottonseed Extracts**; Vladimir Shulaev¹; Carolina Salazar¹; Michael D. Jones²; Patrick J. Horn¹; Janna Crossley¹; James Langridge³; Kent D. Chapman¹; Giorgis Isaac²; ¹*University of North Texas, Denton, TX*; ²*Waters Corporations, Milford, MA*; ³*Water Corporation, Manchester, UK*
- ThP 582 **Lipidomic Profiling of Rat Adipose Tissue after Treatment with PPAR-pan Agonist Using Sub-2µm Particle CO₂ Based Supercritical Chromatography Mass Spectrometry**; Giorgis Isaac²; Michael D. Jones²; James Langridge³; John P. Shockcor^{1,2}; Julian L. Griffin¹; ¹*Department of Biochemistry, University of Cambridge, Cambridge, UK*; ²*Waters Corporations, Milford, MA*; ³*Waters Corporation, Manchester, UK*
- ThP 583 **High-throughput and accurate Lipid Profiling System Based on Supercritical Fluid Chromatography/Orbitrap Mass Spectrometry with Lipid Search Software**; Takayuki Yamada¹; Takato Uchikata¹; Shigeru Sakamoto²; Yasuto Yokoi³; Shin Nishiumi⁴; Masaru Yoshida⁴; Eiichiro Fukusaki¹; Takeshi Bamba¹; ¹*Dept. Biotech., Grad. Sch. Eng., Osaka Univ., Suita, Japan*; ²*Thermo Fisher Scientific, Yokohama, Japan*; ³*Mitsui Knowledge Industry, Tokyo, Japan*; ⁴*Div. Gastro., Kobe Univ. Grad. Sch. Med., Kobe, Japan*
- ThP 584 **A New Workflow for the Visualization and Identification of Lipids by LC Ion Mobility Mass Spectrometry (IM-MS) Using IMS-QTOF with Fragmentation**; Crystal K. Cody; Theodore Sana; Ruwan Kurulugama; William Barry; Alex Mordehai; George Stafford; *Agilent Technologies, Santa Clara, CA*
- ThP 585 ***In situ* Analysis of Cholesterol and 7-dehydrocholesterol in Cells via Sputtered Silver Nanoparticle-Assisted LDI-IM-MS**; Libin Xu^{1,2}; Michal Kliman^{1,2}; Jay Forsythe^{1,2}; Zeljka Korade^{1,3}; Ned Porter^{1,2}; John McLean^{1,2}; ¹*Vanderbilt University, Nashville, TN*; ²*Vanderbilt Institute of Chemical Biology, Nashville, TN*; ³*Vanderbilt Kennedy Center, Nashville, TN*
- ThP 586 **Application of Differential Mobility Separations to Comprehensive Profiling of Lipids with Accurate Mass Spectrometry Techniques**; Eva Duchoslav; J. Larry Campbell; *AB Sciex, Concord, Canada*

- ThP 587 **Identification of Lipids Important in Anti-Tumor Immune Responses by Lipidomic Profiling;** Gabriel Gugiu; Heehyoung Lee; Hua Yu; Richard Jove; *City of Hope, Duarte, CA*
- ThP 588 **GC/MS SIM Evaluation of Fatty Acids in Plasma and Liver Extracts from Rats Treated with Carbon Tetrachloride;** Thomas Schmitt¹; Jinchun Sun¹; Laura Schnackenberg¹; Xi Yang¹; James Greenhaw¹; William Salminen²; Donna Mendrick¹; Richard Beger¹; ¹*National Center for Toxicological Research, Jefferson, Arkansas*; ²*PAREXEL International, Boston, MA*
- ThP 589 **A Lipidomic Imaging Analysis of Mouse Brain Using LAESI-MS in Positive and Negative Ion Modes Coupled with Ion Mobility Spectrometry;** Brent Reschke; Callee Walsh; Pamela Williams; Trust Razunguzwa; Holly Henderson; Matthew Powell; *Protea Biosciences, Inc., Morgantown, WV*
- ThP 590 **Lipid Identification and Quantification on Prostate Tumor Samples Using a Novel Software Algorithm on Orbitrap Platform;** Sucharita Dutta¹; David Peake²; Oliver Semmes¹; ¹*Leroy T. Canoles Cancer Center - EVMS, Norfolk, VA*; ²*Thermo Fisher Scientific, San Jose, CA*
- ThP 591 **A New Lipid Software Workflow for Processing Orbitrap-based Global Lipidomics Data in Translational and Systems Biology Research;** David A. Peake^{1,2}; Yasuto Yokoi²; Junhua Wang¹; Yinying Huang¹; ¹*Thermo Fisher Scientific, San Jose, CA*; ²*Mitsui Knowledge Industry, Tokyo, Japan*
- Small Molecules: Quantitative Analysis IV, 592 – 619**
- ThP 592 **Investigating Routine Use of a New Nanospray Source and New Triple Quadrupole Mass Spectrometer for Fluticasone and Salmeterol Quantitative Bioanalysis;** Min Meng²; Hongxia Wang¹; Brad Bissette²; Scott Reuschel²; Jonathan McNally¹; Patrick Bennett¹; ¹*Thermo Fisher Scientific, San Jose, CA*; ²*Tandem Labs, Salt Lake City, UT*
- ThP 593 **Development of a Gabapentin/Pregabalin (GP) Assay Using a High-Throughput RapidFire-MSMS System;** Jennifer Hitchcock; Jeffrey Enders; Ayodele Morris; Greg McIntire; *Ameritox, Ltd, Greensboro, NC*
- ThP 594 **Practical Comparison of LC-MS/MS-based Workflows for Quantitation of Desmosine and Isodesmosine in Urine - Potential Lung Damage Biomarkers in Premature Infants;** Karolina M. Krasinska¹; Carlos Milla²; Allis S. Chien¹; ¹*SUMS, Stanford University, Stanford, CA*; ²*Department of Pediatrics, Stanford University, Stanford, CA*
- ThP 595 **Rapid and Selective Measurement of Testosterone in Human Serum Using Laser Diode Thermal Desorption-Differential Ion Mobility Spectrometry-Tandem Mass Spectrometry (LDTD-DMS-MS/MS);** Michael J. Y. Jarvis¹; Evelyn McClure¹; Pierre Picard²; Serge Auger²; Gregory Blachon²; ¹*AB SCIEX, Concord, Canada*; ²*Phytronix Technologies, Inc., Quebec City, Canada*
- ThP 596 **Fast Determination of Free Bisphenol A and Triclosan in Urine by LDTD-MS/MS;** Eric Gaudreau¹; Pierre Dumas¹; Serge Auger²; Normand Fleury¹; ¹*Institut National de Santé Publique du Québec, Québec, Canada*; ²*Phytronix Technologies Inc., Québec, Canada*
- ThP 597 **Comparison of Extraction Techniques and Mass Spectrometric Platforms for the Analysis of Ethinylestradiol in Human Plasma;** Aaron Ledvina; Tom Addison; Fumin Li; *Covance Laboratories Inc., Madison, WI*
- ThP 598 **Comprehensive Investigation of the Influence in Liquid Modifiers on Pharmaceuticals Analyzed with SFC/ESI-MS for DMPK Studies;** Jennifer Simeone; Stuart Chadwick; Paul Rainville; *Waters Corporation, Milford, MA*
- ThP 599 **Metabolic Profiling of Amino Acids in Cellular Extracts via HILIC-ESI-MS/MS Analysis Employing a Uniformly ¹³C-labeled Internal Standard;** Raffaele Guerrasio²; Kristaps Klavins²; Stefan Neubauer¹; Christina Haberhauer-Troyer¹; Gunda Köllensperger¹; Stephan Hann¹; ¹*BOKU - Vienna, Vienna, Austria*; ²*Austrian Center for industrial Biotechnology ACIB, Vienna, Austria*
- ThP 600 **Nitrogen Enhanced Fluorotelomer Alcohol Positive Chemical Ionization-Gas Chromatography-Tandem Mass Spectrometry;** David Schroeder; Dennis Wesolowski; *US Environmental Protection Agency, Chicago, IL*
- ThP 601 **Human Exposure to Bisphenol-A and Triclosan: Findings from a New Specific Analytical Approach to Urinary Metabolites;** Gilles Provencher; René Bérubé; Pierre Dumas; Patrick Bélanger; Normand Fleury; *Centre de Toxicologie, INSPQ, Québec, Canada*
- ThP 602 **Comparison of Chromatography-Coupled Mass Spectrometric Techniques for the Sensitive Detection of *Trans*-4-hydroxy-2-nonenal, a Lipid Peroxidation End-Product, in Biological Samples;** Szabolcs Szarka; Balazs Blazics; Rajenda Sharma; Yogesh Awasthi; Laszlo Prokai; *University of North Texas Health Science Center, Fort Worth, TX*
- ThP 603 **A New Look at an Old Problem - Real Time VOC Analysis;** Murray J. Mcewan¹; Vaughan Langford²; Ian Graves³; ¹*University of Canterbury, Christchurch, New Zealand*; ²*Syft Technologies Ltd, Christchurch, New Zealand*; ³*Hill Laboratories, Hamilton, New Zealand*
- ThP 604 **The High-throughput Quantitation of a Diverse Small Molecule Screening Library via UPLC /Nitrogen Chemiluminescence (CLND) and Charged Aerosol (CAD) Detectors;** Jerrod Scarborough; *St Jude Children's Research Hospital, Memphis, TN*
- ThP 605 **Quantitation of Drugs of Abuse in Bioanalysis by CE-ESI-MS/MS Enhanced by On-Line Sample Preconcentration;** Isabelle Kohler¹; Julie Schappler¹; Serge Rudaz¹; Tim Schlabach²; Martin Greiner³; ¹*School of Pharmaceutical Sciences, Univ. of Geneva, Geneva, Switzerland*; ²*Agilent Technologies Inc., Santa Clara, CA*; ³*Agilent Technologies R&D and Mktg. GmbH, Waldbronn, Germany*
- ThP 606 **An Evaluation of Various High Resolution Accurate Mass Scan Modes for *in vitro* Drug Discovery Screening;** Jonathan McNally¹; Nicholas Duczak, Jr.¹; Maciej Bromirski²; Francois Espourtielle³; ¹*Thermo Fisher Scientific, San Jose, CA*; ²*ThermoFisher Scientific, Bremen, Germany*; ³*Thermo Fisher, Franklin, MA*
- ThP 607 **A Novel High Resolution Approach for Investigating Incurred Sample Reanalysis Failure;** Richard Lelacheur¹; Allysen Meymaris¹; Xin Zhang¹; Keeley Murphy²; Patrick Bennett²; Panos Hatisis³; ¹*Agilux Labs, Worcester, MA*; ²*ThermoFisher, San Jose, CA*; ³*Novartis Institutes for Biomedical Research Inc., Cambridge, MA*
- ThP 608 **Method Development and Validation of Six Bile Acids Using LC-HR/AM MS for Regulated Bioanalysis: Improving Selectivity and Sensitivity;** Troy Voelker¹; Hongxia Wang²; Mitzi Irish¹; Juan Wang¹; Stephanie Harrison¹; Scott Reuschel¹; Patrick Bennett²; Min Meng¹; ¹*Tandem Labs, Salt Lake City, UT*; ²*Thermo Fisher Scientific, San Jose, CA*
- ThP 609 **Determination of Rosiglitazone and 5-Hydroxy Rosiglitazone in Rat Plasma Using Liquid Chromatography coupled to High Resolution Accurate Mass Spectrometry;** Philip S. Wong; Jian Jiang; Christopher James; *Amgen, Thousand Oaks, CA*

- ThP 610 **Multiple Dissociation Techniques for Comprehensive API Impurity Profiling by Velos Pro Dual-Pressure Liner Trap Mass Spectrometer**; [Theresa Lynch](#)¹; Kate Comstock²; ¹*Gilead Sciences, Inc., Foster City, CA*; ²*ThermoFisher Scientific, San Jose, CA*
- ThP 611 **High Resolution Mass Spectrometry (HRMS) and Differential Mobility Separation (DMS) to Increase Selectivity of the Valproic Acid Bioanalytical Assay**; [Nikolay Youhnovski](#); [Mathieu Lahaie](#); Louis-Philippe Morin; [Milton Furtado](#); [Fabio Garofolo](#); *Algorithme Pharma Inc., Laval, Quebec, Canada*
- ThP 612 **Criteria for Performing a Scientifically Meaningful Lipemic Plasma Test during LC-MS/MS Bioanalytical Method Validation (BMV): Which Type to Choose?**; [Laurence Mayrand-Provencher](#); [Jean-Nicholas Mess](#); [Milton Furtado](#); [Josée Michon](#); [Annik Bergeron](#); [Isabelle Dumont](#); [Mireille Nohra](#); [Fabio Garofolo](#); *Algorithme Pharma Inc., Laval, Quebec, Canada*
- ThP 613 **Effective Approach to Reduce the major Impact of Glucuronide Metabolites In-Source/Interface Conversion in Regulated Bioanalysis: Raloxifene Case Study**; [Eugénie-Raphaëlle Bérubé](#); [Sylvain Latour](#); [Milton Furtado](#); [Fabio Garofolo](#); *Algorithme Pharma Inc., Laval, Quebec, Canada*
- ThP 614 **Use of High Resolution Mass Spectrometry (HRMS) to Solve Severe Issues Due to Isotopic Distribution in Regulated Bioanalysis**; [Richard Lavallée](#); [Nicolaos Soilis](#); [Jean-Nicholas Mess](#); [Fabio Garofolo](#); *Algorithme Pharma Inc., Laval, Quebec, Canada*
- ThP 615 **Separation of Pravastatin from Its Two Isobaric Metabolites Using Differential Ion Mobility to Increase Throughput in Bioanalysis by LC-MS/MS**; [Daniel Villeneuve](#); [Milton Furtado](#); [Fabio Garofolo](#); *Algorithme Pharma Inc., Laval, Quebec, Canada*
- ThP 616 **Importance of Performing Incurred Sample Stability (ISS) for Having a Rugged and Accurate Omega-3 Bioanalytical Method**; [Catherine Dicaire](#); [Jean-Nicholas Mess](#); [Milton Furtado](#); [Fabio Garofolo](#); [Christopher Perkin](#); *Algorithme Pharma Inc., Laval, Quebec, Canada*
- ThP 617 **Discovery of an Unknown/Unstable Trimebutine Metabolite and its Significant Impact on Reproducibility/Accuracy of N-desmethyltrimebutine Quantification**; [Catherine Dicaire](#)¹; [Eugénie-Raphaëlle Bérubé](#)¹; [Maxime Ranger](#)²; [Patrick Colin](#)²; [Jean-Nicholas Mess](#)¹; [Milton Furtado](#)¹; [Fabio Garofolo](#)¹; ¹*Algorithme Pharma Inc., Laval, Québec, Canada*; ²*Glcare pharma, Montréal, Québec, Canada*
- ThP 618 **How to Reduce LC-MS Chemical Noise and Increase S/N by MRM³, Ion Mobility and In-source CID**; [Mathieu Lahaie](#); [Milton Furtado](#); [Fabio Garofolo](#); *Algorithme Pharma Inc., Laval, Quebec, Canada*
- ThP 619 **Using Polarity Switching to Allow a Single Assay for two Analytes (mebeverine/DMAC) with a 2000-fold Difference in Concentration**; [Mélanie Bergeron](#)¹; [Milton Furtado](#)¹; [Peter Van Amsterdam](#)²; [Fabio Garofolo](#)¹; ¹*Algorithme Pharma Inc., Laval, Quebec, Canada*; ²*Abbott Healthcare Products, Weesp, The Netherlands*
- Ambient Ionization: Fundamentals, 620 – 633**
- ThP 620 **Super-Atmospheric Pressure Chemical Ionization Mass Spectrometry**; [Lee Chuin Chen](#); [Md. Matur Rahman](#); [Kenzo Hiraoka](#); *University of Yamanashi, Kofu, Japan*
- ThP 621 **Visualization and Optimization of Various Ambient Ionization Source, Direct Sample Analysis, Conditions Using Schlieren Photography**; [Gregory T. Winter](#); [Joshua A. Wilhide](#); [William R. LaCourse](#); *UMBC Department of Chemistry and Biochemistry, Baltimore, MD*
- ThP 622 **Molecular Mass Determination Using Collision-Induced Dissociation of Negative Atmospheric Ion Adducts Generated in Ambient Corona Discharges**; [Kanako Sekimoto](#); [Mitsuo Takayama](#); *Yokohama City Univ., Yokohama, Japan*
- ThP 623 **Kinetic Control of Protonation in Atmospheric Pressure Chemical Ionization**; [Yunfeng Chai](#); [Yuanjiang Pan](#); *Zhejiang University, Hangzhou, China*
- ThP 624 **Modeling Temperature Changes in the Electrospray Plume**; [Stephen Gibson](#)¹; [Charles Feigerle](#)¹; [Kelsey Cook](#)^{1,2}; ¹*University of Tennessee, Knoxville, TN*; ²*National Science Foundation, Arlington, VA*
- ThP 625 **Effects of Ammonium Bicarbonate on the ESI Mass Spectra of Proteins**; [Jason Hedges](#); [Siavash Vahidi](#); [Xuan-Feng Yue](#); [Lars Konermann](#); *UWO, London, Canada*
- ThP 626 **Particle Size Selection in Atmospheric Pressure Matrix-Assisted Inlet Ionization**; [Thabiso Musapele](#); [Sung-Gun Park](#); [Kermit K. Murray](#); *Louisiana State University, Baton Rouge, LA*
- ThP 627 **Internal Standard Coated Capillary Dispenser for Quantitative Ambient Ionization Mass Spectrometry**; [Jiangjiang Liu](#); [R. Graham Cooks](#); [Zheng Ouyang](#); *Purdue University, West Lafayette, IN*
- ThP 628 **Atmospheric Pressure Infrared MALDI Mass Spectrometry from Liquids: Effects of Local Electric Field and Transfer Capillary Temperature**; [Eugene Moskovets](#)¹; [Mikhail Yakshin](#)²; [Berk Oktem](#)²; [Vladimir Doroshenko](#)¹; ¹*MassTech Inc, Columbia, MD*; ²*SESI, Columbia, MD*
- ThP 629 **The Study of Aqueous Solution Electrochemistry by DESI-MS**; [Mei Lu](#); [Yi Cai](#); [Hao Chen](#); *Ohio University, Athens, OH*
- ThP 630 **Leidenfrost Phenomenon-Assisted Thermal Desorption: A New Desorption Technique for Ambient Mass Spectrometry**; [Subhrakanti Saha](#); [Mridul Kanti Mandal](#); [Kenzo Hiraoka](#); *University of Yamanashi, Kofu, Japan*
- ThP 631 **Determination of the Silylation of Molecules when Using TMS Derivatization Agents in the Sample Gap of the DART Ion Source**; [Matthew Curtis](#); [Patrick Henry Batoon](#); [Patrick Jones](#); [O. David Sparkman](#); *University of the Pacific, Stockton, CA*
- ThP 632 **Microwave Plasma Torch Mass Spectrometry for Direct Analysis of Organics**; [Wei Zhou](#); [Eric Handberg](#); [Shuo Duan](#); [Huanwen Chen](#); *East China Institute of Tech., Nanchang, China*
- ThP 633 **A Comparison of the Sensitivities of Ambient Mass Spectrometries, DESI and PADI, and SIMS**; [Tara La Roche Salter](#); [Ian Gilmore](#); *National Physical Laboratory, Teddington, UK*
- Ionization Mechanisms, 634 – 651**
- ThP 634 **Covalent Dimerization in Protonated Indole Analogues under ESI⁺ Conditions**; [Richard T. Gallagher](#)¹; [Richard D. Bowen](#)²; [Stephen T. Ayrton](#)²; [William H.C. Martin](#)²; [Amie Saidykhan](#)²; ¹*AstraZeneca, Macclesfield, UK*; ²*Bradford University, Bradford, UK*
- ThP 635 **Comparison of APCI and APPI in the Ionization of Cholesterol and Hydroxycholesterols**; [Petri Kylli](#); [Risto Kostiaainen](#); *University of Helsinki, University Of Helsinki, Finland*
- ThP 636 **Hydrogen Radical Removal of 2,5-Dihydroxybenzoic Acid and Its Isomers in Negative-Ion Mass Spectrometry**; [Tohru Yamagaki](#); [Takehiro Watanabe](#); [Kotaro Sugahara](#); *Suntory Institute for Bioorg, Mishima, Osaka, Japan*

- ThP 637 **A Comparison of Ionization Efficiencies Using Electropray Ionization and Solvent Assisted Inlet Ionization;** Loubna Pagnotti; Vincent S. Pagnotti; Charles N. McEwen; *University of the Sciences, Philadelphia, PA*
- ThP 638 **An Investigation of Neutral Clusters in Electropray Mass Spectrometry;** Kristopher Kirmess; Gary Kinsel; *Southern Illinois University at Carbondale, Carbondale, Illinois*
- ThP 639 **Comparison of Various Aerosol Charging Techniques Used For Atmospheric Pressure and Reduced Pressure Ionization;** Ross C. Willoughby¹; James D. Buchner²; ¹*Chem-Space Associates, Inc., Pittsburgh, PA*; ²*BiOMCom, Inc., Allison Park, PA*
- ThP 640 **Proposed Mechanism for the Formation of [M-H]⁺ in Novel Antineoplastic Curcumin Analogues;** Hanan Awad¹; Melissa Stoudemayer²; Jon Amster²; Anas El-Aneedi¹; ¹*University of Saskatchewan, Saskatoon, Canada*; ²*University of Georgia, Athens, GA*
- ThP 641 **Production of Multiply Charged Ions from the Solid State by Matrix Assisted Ionization Vacuum: Does pH Matter?** Corinne Lutomski; Beixi Wang; Ellen Inutan; Sarah Trimpin; *Wayne State University, Detroit, MI*
- ThP 642 **Fundamental Studies on Matrix Assisted Ionization Vacuum (MAIV), a New Ionization Method Using New Matrices;** Tarick El-Baba; Lorelie Imperial; Ellen Inutan; Sarah Trimpin; *Wayne State University, Detroit, MI*
- ThP 643 **Atmospheric Pressure Photoionization Mass Spectrometry of Carotinoids Using Methyl-*tert*-butyl Ether as a Dopant;** Linlin Dong; Shunyan Mo; Yongchao Li; Richard van Breemen; *University of Illinois College of Pharmacy, Chicago, IL*
- ThP 644 **Laser Desorption/Ionization and Post-Source Decay of Peptide Ions from the Flat Surfaces of Thin Films on Oxides;** Sang Yun Han¹; Shin Hye Kim¹; Dae Won Moon²; Jeongkwon Kim³; ¹*KRISS, Daejeon, South Korea*; ²*DGIST, Daegu, South Korea*; ³*Chungnam National University, Daejeon, South Korea*
- ThP 645 **Gas-phase Hydrogen/Proton Transfer between Neutral Molecules and Cation-Radicals in Glycine and Alanine: Experiment and Theory;** Yury V. Vasil'ev¹; Benjamin J. Bythell²; Douglas F. Barofsky¹; ¹*Oregon State University, Corvallis, OR*; ²*N-I High Magnetic Field, Florida State University, Tallahassee, FL*
- ThP 646 **A Study about MALDI Mechanism in the Observation of Super Heavy Matrix Clusters;** Szu-Hsueh Lai^{1,2}; Kuang-Hua Chang¹; Jung-Lee Lin¹; Chia-Lin Wu¹; Chung-Hsuan(Winston) Chen^{1,2}; ¹*Genomics Research Center, Academia Sinica, Taipei, Taiwan*; ²*Depart. of Chemistry, National Taiwan University, Taipei, Taiwan*
- ThP 647 **Quantitative Description of MALDI by Thermal Proton Transfer Model;** Kuan Yu Chu; Sheng Lee; Yuri A. Dyakov; Ming-Tsang Tsai; I-Chung Lu; Yuan-Tseh Lee; Chi-Kung Ni; *Institute of Atomic and Molecular Sciences, Academ, Taipei, Taiwan*
- ThP 648 **A Novel View of Ionic Liquid Matrices for Matrix-assisted Laser Desorption/Ionization by Internal and Kinetic Energy Study in Plume Expansion;** I-Chung Lu; Sheng Lee; Yuan T. Lee; Chi-Kung Ni; *Institute of Atomic and Molecular, Academia Sinica, Taipei, Taiwan*
- ThP 649 **Insights into Factors that Limit the Linear Dynamic Range in Electropray Ionization Mass Spectrometry Analysis of Flavonoids;** Clint M. Alfaro; Brandie M. Ehrmann; Daniel A. Todd; Nadja B. Cech; *University of North Carolina Greensboro, Greensboro, NC*
- ThP 650 **"Best Match" Model and Effect of Na⁺/H⁺ Exchange on Anion Attachment to Peptides and Adduct Stability in Negative Ion Electropray;** Xiaohua Liu¹; Richard B. Cole^{1,2}; ¹*Dept. Of Chemistry, Univ. Of New Orleans, New Orleans, LA*; ²*Univ. P. et M. Curie (Paris 6), Paris Cedex 05, France*
- ThP 651 **The Role of Reagent Gas-Phase Basicity during the Supercharging of Proteins;** Kevin Douglass; Andre Venter; *Western Michigan University, Kalamazoo, MI*
- Energy: Biofuels, 652 – 664**
- ThP 652 **Multifaceted Analysis of Biomass Pyrolysis Products: Identification and Quantification of Biomass Pyrolysis Products by μ Py-GC-FID/APCI-TOF;** Carolyn Hutchinson; Erica Smith; D. Paul Cole; Young-Jin Lee; *Chemistry Department, Iowa State University, Ames, IA*
- ThP 653 **Compositional Analysis of Birch Wood Pyrolysis Oil by Ultrahigh-Resolution FT-ICR Mass Spectrometry: Insights into Thermochemical Conversion;** Timo Kekäläinen; Tapani Venäläinen; Janne Jänis; *University of Eastern Finland, Joensuu, Finland*
- ThP 654 **A Study of Catalytic Fast Pyrolysis Kinetics Using High Resolution Mass Spectrometry;** Daniel Cole; Erica Smith; Carolyn Hutchinson; Young Jin Lee; *Iowa State Univ Chemistry Dept, Ames, IA*
- ThP 655 **The Application of GC/MS and nanoESI-LC/MS/MS to the Characterization of Pine Fast Pyrolysis Bio-oils;** Elizabeth A. Stemmler; Matthew Rasmussen; Hassan Rone; Nathan Ricke; *Bowdoin College, Brunswick, ME*
- ThP 656 **Development of Capillary Electrophoresis-Mass Spectrometry for Analysis of Fenton Chemistry Biomass Pretreatment for Biofuels Production;** Dawn Kato; Bert Lynn; *University of Kentucky, Lexington, KY*
- ThP 657 **A Fundamental Study of the Fragmentation of Small Ionized Molecules Related to Lignin via MSⁿ and Collision-Activated Dissociation (CAD);** Christopher Marcum; Tiffany Jarrell; Benjamin Owen; Hilikka Kenttämä; *Purdue University, West Lafayette, IN*
- ThP 658 **Characterization of Flavonolignans in Ammonia-treated Lignocellulosic Biomass Using UHPLC and Collision-induced Dissociation;** Afrand Kamali Sarvestani^{1,3}; Lenoardo Da Costa Sousa^{2,3}; Venkatesh Balan^{2,3}; Bruce Dale^{2,3}; Arthur Daniel Jones^{1,3}; ¹*Department of Chemistry, Michigan State University, East Lansing, MI*; ²*Chem. Eng. & Mater.Sci., Michigan State University, East Lansing, MI*; ³*Great Lakes Bioenergy Research Center, East Lansing, MI*
- ThP 659 **Identification and Quantitation of Degradation Products in Corn Stover Hydrolyzate for the Biofuels Industry;** Kevin Krock; *Shimadzu Scientific Instruments, Columbia, MD*
- ThP 660 **Analysis of Catalytic Conversion of Biomass Feedstocks and Products by UPC²-MS;** Julie Herniman¹; G. John Langley¹; Robert Raja¹; Matthew Potter¹; Tim J. Jenkins²; ¹*University of Southampton, Southampton, UK*; ²*Waters Corporation, Manchester, UK*
- ThP 661 **Characterization of Unsaturated Fatty Acid Methyl Esters in B100 Biodiesel by Easy Ambient Sonic-Spray Ionization Mass Spectrometry;** Rosana M. Alberici¹; Anna Maria A. P. Fernandes¹; Marcos N. Eberlin¹; Valnei S. Cunha²; Romeu J. Daroda²; ¹*ThoMSon Mass Spectrometry Laboratory, UNICAMP, Campinas, SP, Brazil*; ²*National Institute of Metrology, INMETRO, Duque de Caxias, RJ, Brazil*
- ThP 662 **Quantitative Real-Time Monitoring of Transesterification Reactions by Auto-Sampling FIA/APCI-MS for the Improvement of Industrial Biodiesel Production;** Zhenqian Zhu; John Bartmess; Liguo Song; *Department of Chemistry, University of Tennessee, Knoxville, TN*

- ThP 663 **Oxidation of FAME: Natural, Forced and Electrochemical to Understand and Resolve Issues with Biodiesel**; G. John Langley¹; Christianne Wicking¹; Waraporn Ratsameepakai¹; Julie Herniman¹; Samuel Whitmarsh²; Tom Lynch²; Simon Lambert³; ¹University of Southampton, Southampton, UK; ²BP Global Fuels and Lubricants Research, Pangborne, UK; ³Arc Sciences Limited, Alton, UK
- ThP 664 **LC/ESI-MS/MS Method for Simultaneous Determination of TMAE(trimethylaminoethyl)-fatty Acids in Macroalgae**; Yeongeun Kim¹; Yudong Jeong¹; Insook Rhee Paeng²; Ki-jung Paeng¹; ¹Yonsei university, Wonju, South Korea; ²Seoul Women's University, Seoul, South Korea
- Informatics: Pathway Analysis, 665 – 668**
- ThP 665 **An Integrated Workflow for the Identification and Pathway Visualization of Lipids**; Stephen Madden; Steven M. Fischer; David Weil; Theodore Sana; *Agilent Technologies, Inc., Santa Clara, CA*
- ThP 666 **Network and Pathway Analysis of Post-Translationally Modified Peptides Identified by Immunoaffinity-Based Proteomics**; Jeffrey C. Silva¹; Stuart Tugendreich²; Hongbo Gu¹; Charles L. Farnsworth¹; Kimberly A. Lee¹; Xiaoying Jia¹; Jian Min Ren¹; Matthew P. Stokes¹; ¹Cell Signaling Technology, Danvers, MA; ²Ingenuity Systems, Redwood City, CA
- ThP 667 **Label-Free Quantitative Proteomics of Renal Cell Carcinomas with Differential Hypoxia-Inducible Factor-2 α Expression**; Tatjana Talamantes¹; Lokesh Dalasanur Nagaprashantha²; Sharad S. Singhal²; Laszlo Prokai¹; ¹University of North Texas Health Science Center, Fort Worth, TX; ²City of Hope National Medical Center, Duarte, CA
- ThP 668 **Proteomics Profiling of Different Transfected Mammalian Cell Lines**; Sohye Kang¹; Da Ren¹; Gang Xiao¹; Kristi Daris¹; Shivani Gupta¹; Lynette Buck¹; Atim A. Enyenihi¹; Roman A. Zubarev²; Rohini Deshpande¹; Pavel V. Bondarenko¹; ¹Amgen, Inc., Thousand Oaks, CA; ²Karolinska Institutet, Stockholm, Sweden
- Informatics: Peptide Identification/ Characterization II, 669 – 693**
- ThP 669 **Use of Single-Protein Libraries to Improve Coverage and Identification Confidence of Human Proteins and Their Modifications in Large-Scale Proteomics Studies**; Qian Dong; Xinjian Yan; Lisa Kilpatrick; Yuxue Liang; Yuri Mirokhin; Dmitrii Tchekhovskoi; Jeri Roth; Paul Rudnick; Stephen Stein; *NIST, Gaithersburg, MD*
- ThP 670 **New Improvements on UniQua for Better Protein Identification Accuracy and Sensitivity**; Wei-Hung Chang; Yet-Ran Chen; *Academia Sinica, Taipei, TAIWAN*
- ThP 671 **Improving Peptide and Protein Identification Rates Using a Novel Semi-Supervised Approach in Scaffold**; Brian C. Searle; Caleb J. Emmons; Bryan Head; *Proteome Software Inc., Portland, OR*
- ThP 672 **Mutation Tolerant Spectral Library Search**; Mingxun Wang¹; Antonius Koller²; Nuno Bandeira^{1,3}; ¹UCSD, La Jolla, CA; ²Stony Brook University Medical Center, Stony Brook, NY
- ThP 673 **Improving Peptide Searching Workflow to Maximize Protein Identifications**; Shadab Ahmad¹; Amol Prakash¹; David Sarracino¹; Bryan Krastins¹; MingMing Ning²; Barbara Frewen¹; Scott Peterman¹; Gregory Byram¹; Maryann S. Vogelsang¹; Gouri Vadali¹; Jennifer Sutton¹; Mary F. Lopez¹; ¹Thermo Fisher Scientific, BRIMS Center, Cambridge, MA; ²Massachusetts General Hospital, Boston, MA
- ThP 674 **Complete GPU-Accelerated Database Search: From Digestion to Scoring**; Andy Kong; Alexey Nesvizhskii; *University of Michigan, Ann Arbor, MI*
- ThP 675 **ProteomicsDB: In-memory Computing Platform Enables Rapid Meta Analysis of Thousands of Mass Spectrometry Data Sets**; Mathias Wilhelm¹; Judith Schlegl²; Amin Moghaddas Gholami¹; Hannes Hahne¹; Joos-Hendrik Boese²; Marcus Lieberenz²; Mikhail Savitski³; Yuval Morad²; Lars Butzmann²; Emanuel Ziegler²; Anton Niadzelka²; Eyk Kny²; Helmut Cossmann²; Siegfried Gessulat²; Marcus Bantscheff³; Anja Gerstmair²; Franz Faerber²; Bernhard Kuster¹; ¹Technical University Munich, Freising, Germany; ²SAP AG, Walldorf, Germany; ³Cellzome, Heidelberg, Germany
- ThP 676 **Combining Endogenous Peptide Prediction and MS/MS Peptide Search: An Application to Search for the Most Primitive Neuropeptides**; Eisuke Hayakawa¹; Hiroshi Watanabe²; Gerben Menschaert³; Thomas Holstein²; Geert Baggerman⁴; Liliane Schoofs¹; ¹KU Leuven, Leuven, Belgium; ²Heidelberg University, Heidelberg, Germany; ³Ghent University, Ghent, Belgium; ⁴VITO, Mol, Belgium
- ThP 677 **Combining Database Search and Spectral Library Search**; Kyowon Jeong; Pavel Pevzner; *UCSD, La Jolla, CA*
- ThP 678 **A New Database Search Engine for Tandem Mass Spectrum Identification**; Jianqi Wang; *U of Texas, Southwestern University, Dallas, TX*
- ThP 679 **Application of de novo Sequencing to Study Abiogenic Oligo-Peptides**; Ivan Terterov¹; Kira Vyatkina¹; Vitali Boitsov¹; Sergey Vyazmin¹; Igor Popov²; Alexey Kononikhin²; Eugene Nikolaev²; Pavel Pevzner¹; Michael Dubina¹; ¹St Petersburg Academic University, St. Petersburg, Russia; ²Institute for Energy Problems of Chemical Physics, Moscow, Russia
- ThP 680 **The Next Generation Database Search Engine ROCCIT 2.0**; Michael J Sweredoski; Sonja Hess; *Caltech, Pasadena, CA*
- ThP 681 **Full-length de novo Protein Sequencing**; Adrian Guthals¹; Karl Clauser²; Nuno Bandeira^{1,3}; ¹UCSD Dept of Computer Science and Engineering, La Jolla, CA; ²Broad Institute of MIT and Harvard, Cambridge, MA; ³Skaggs School of Pharmacy and Pharmaceutical Sci, La Jolla, CA
- ThP 682 **MS Amanda: A Novel Algorithm for the Identification of High Accuracy Tandem Mass Spectrometry Data**; Viktoria Dorfer¹; Peter Pichler²; Stephan Winkler¹; Karl Mechtler²; ¹University of Applied Sciences Upper Austria, Hagenberg, Austria; ²Research Institute of Molecular Pathology (IMP), Vienna, Austria
- ThP 683 **Combining in silico Prediction and Ribosome Profiling in a Genome-Wide Search for Novel Micropeptides**; Jeroen Crappé¹; Wim Van Criekeing¹; Geert Trooskens¹; Eisuke Hayakawa²; Walter Luyten²; Geert Baggerman³; Gerben Menschaert¹; ¹Universiteit Gent, Gent, Belgium; ²KU Leuven, Leuven, Belgium; ³Center For Proteomics, Antwerpen, Belgium
- ThP 684 **Novel Amino Acid Counting and machine Learning Product Ion Identification Algorithms Enable MS¹-based, and Greatly Improve MS²-based, Peptide Identification**; Catherine E. Vincent; Christopher M. Rose; Alicia L. Richards; Derek J. Bailey; Michael S. Westphall; Joshua J. Coon; *University of Wisconsin, Madison, WI*
- ThP 685 **Fast and Accurate Database Searches with MS-GF+Percolator**; Viktor Granholm¹; Sangtae Kim²; José Fernández Navarro³; Richard D. Smith²; Lukas Käll³; ¹Stockholm University, Solna, Sweden; ²Pacific Northwest National Laboratory, Richland, WA; ³KTH - Royal Institute of Technology, Solna, Sweden

- ThP 686 **Application of Complementary Ions to Identify co-Isolated Peptides in Complex Samples;** Fedor Kryuchkov; Thiago Verano-Brage; Thomas A. Hansen; Richard Sprenger; Frank Kjeldsen; *BMB, Odense M, Denmark*
- ThP 687 **Benchmarking the Composition-Based Sequencing Approach on High-Resolution Orbitrap-HCD Data;** Vladimir Gorshkov; Christian Lotze; Bernhard Spengler; *Justus-Liebig University Giessen, Giessen, Germany*
- ThP 688 **A New Algorithm for Peptide de novo Sequencing with Multiple Complementary Spectra;** Lian Yang¹; Mingjie Xie¹; Bin Ma²; ¹*Bioinformatics Solutions Inc, Waterloo, Canada*; ²*University of Waterloo, Waterloo, Canada*
- ThP 689 **Peptide Identification Using Protein Sequence Databases Derived from RNA-Seq Data;** Lei Xin; Lian Yang; Baozhen Shan; *Bioinformatics Solutions Inc., Waterloo, Canada*
- ThP 690 **IPA: An Informed Proteomics Analysis Tool for Improved Peptide Identifications;** Sangtae Kim; Gordon Slys; Kevin Crowell; Samuel Payne; Gordon Anderson; Richard D. Smith; *Pacific Northwest National Laboratory, Richland, WA*
- ThP 691 **An Open-Source Search Engine Utilizing a Multidimensional Scoring Algorithm for Advanced Mass Spectrometry Data Processing and Protein Identification;** Lev I. Levitsky¹; Mark V. Ivanov¹; Anna A. Lobas¹; Marina L. Pridatchenko¹; Irina A. Tarasova¹; Tanya Panic²; Goran Mitulovic²; Yury O. Tsybin³; Ünige A. Laskay³; Mikhail V. Gorshkov¹; ¹*INEPCP RAS, Moscow, Russian Federation*; ²*Medical University of Vienna, Vienna, Austria*; ³*Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland*
- ThP 692 **An Unbiased Comparison of Peptide Identification Performance between SEQUEST, Mascot, and X!Tandem;** Phillip Wilmarth; William Rathje; Larry David; *OHSU, Portland, OR*
- ThP 693 **Morpheus: A Novel Peptide-Spectrum Matching Algorithm for High-Resolution Tandem Mass Spectra;** Nicholas W. Kwiecien¹; Craig D. Wenger^{1,2}; Joshua J. Coon¹; ¹*University of Wisconsin, Madison, WI*; ²*Agilent Laboratories, Santa Clara, CA*
- Ion Spectroscopy, 694 – 710**
- ThP 694 **Effect of the Asparagine Side Chain on Dissociation Chemistry of Deprotonated Peptides Elucidated by IRMPD;** Josipa Grzetic; Jos Oomens; *Radboud University Nijmegen, FELIX Facility, Nijmegen, The Netherlands*
- ThP 695 **Modeling and Progress Towards a Segmented Linear Ion Trap for Spectroscopy of Gas Phase Ions;** Yeon Jae Ko; Chris Stokes; Alessandra Ferzoco; *Rowland Institute at Harvard, Cambridge, MA*
- ThP 696 **Cold Ion Spectroscopy of the Cyclic Peptide Vasopressin;** Frederic Rosu^{1,2}; Aleksandra Zabuga²; Oleg Boyarkin²; Thomas Rizzo²; ¹*IECB cnrs, Pessac, France*; ²*LCPM, ISIC, EPFL, Lausanne, Switzerland*
- ThP 697 **Ultraviolet Action Spectroscopy of Iodinated Proteins;** Benjamin Moore; Ryan Julian; *UC Riverside, Riverside, CA*
- ThP 698 **Vibrational Spectroscopy of Water Loss Products from Peptides in the Hydrogen Stretching Region;** Kerim Gulyuz; Da Wang; Nicolas Polfer; *University of Florida, Gainesville, FL*
- ThP 699 **High Resolution UV Spectroscopy of Cold, Protonated Leucine Enkephalin;** James Redwine; Nicole Burke; Scott McLuckey; Timothy Zwier; *Purdue University, Lafayette, IN*
- ThP 700 **Counter Ion-Mediated Formation of Weakly Interacting Ionic Complexes in Rare Gas Matrices as Probed by FTIR;** Ryan Ludwig¹; Alex Hunter¹; Nathan Roehr²; David Moore¹; ¹*Lehigh University, Bethlehem, PA*; ²*University of Florida, Gainesville, FL*
- ThP 701 **IRMPD Spectroscopy of Deprotonated 6-hydroxynicotinic Acid;** Michael J. Van Stipdonk¹; Grant Forsythe¹; Leandro Bergmann¹; Jos Oomens²; Giel Berden²; ¹*Lawrence University, Appleton, WI*; ²*FOM Institute for Plasma Physics, Nieuwegein, The Netherlands*
- ThP 702 **Chiral Analysis of Proline in Proline-Substituted L-Serine Octamers by IRPD Spectroscopy;** Xianglei Kong; Yijie Yang; Guanhua Liao; *Nankai University, Tianjin, China*
- ThP 703 **Photo-cleavable Peptides: Collision-Induced Dissociation and Photolysis;** Ales Marek; *University of Washington, Seattle, WA*
- ThP 704 **Assembly of Mass Gate & Tandem Time-of-flight Used in Infrared Photo-Dissociation Spectroscopic Research of Gas Ion;** Guanjun Wang¹; chaoxian chi³; xiaopeng xing²; mingfei zhou¹; ¹*Fudan University, Shanghai, P. R. China*; ²*Graduate University of Chinese Academy of Sciences, Beijing, China*; ³*East China Institute of Technology, Nanchang, China*
- ThP 705 **Direct Observation of Photodissociation Products from Phenylperoxyl Radicals Isolated in the Gas Phase;** Alan Maccarone¹; Benjamin Kirk¹; Christopher Hansen¹; Thomas Griffiths¹; Seth Olsen²; Adam Trevitt¹; Stephen Blanksby¹; ¹*School of Chemistry University of Wollongong, Wollongong, Australia*; ²*School of Physics University of Queensland, Brisbane, Australia*
- ThP 706 **Shoot the Messenger: The Benefits (and pitfalls) of Tagging in IR Spectroscopy;** Corey Stedwell; Nicolas Polfer; *University of Florida, Gainesville, FL*
- ThP 707 **In situ Infrared Spectroscopy of Mass-selected Polyoxometallate Ions Soft-landed onto Surfaces;** Don Gunaratne; Weiyang Zhang; Dan Du; Grant Johnson; Yuehe Lin; Julia Laskin; *Pacific Northwest National Laboratory, Richland, WA*
- ThP 708 **Action-FRET Based Dissociation of Disulfide Bonds with Tryptophan as a Donor in the Gas Phase;** Nathan Hendricks; Ryan Julian; *University of California, Riverside, CA*
- ThP 709 **Ultraviolet Photodissociation Action Spectroscopy of Gas-Phase N-substituted Pyridine Cations;** Christopher Hansen; Benjamin Kirk; Stephen Blanksby; Adam Trevitt; *School of Chemistry, University of Wollongong, Wollongong, Australia*
- ThP 710 **Infrared Multiphoton Dissociation of α,ω -diamines: A Fundamental Study of Hydrogen Bonding;** Chad A. Jones; Matthew C. Asplund; David V. Dearden; *Brigham Young University, Provo, UT*
- Ion Structure / Energetics, 711 – 727**
- ThP 711 **Fragmentation and Growth Energetics of Clusters Relevant to Atmospheric Particle Formation Determined by FTICR-SID;** Douglas P. Ridge¹; Bryan Bzdek¹; Joseph DePalma¹; Julia Laskin²; Murray Johnston¹; ¹*University of Delaware, Newark, DE*; ²*PNNL, Richland, WA*
- ThP 712 **A New Gas-Phase Deprotonated Tyrosine Structure;** Chelsea E. Plummer; Samantha S. Bokatzian-Johnson; Michele L. Stover; David A. Dixon; Carolyn J. Cassidy; *The University of Alabama, Tuscaloosa, AL*
- ThP 713 **Fragmentation of Bacteriochlorophyll-a in a Mass Spectrometer: An Experimental and Theoretical Study;** Daryl Giblin; Hao Zhang; Robert E. Blankenship; Michael L. Gross; *Washington University, St Louis, MO*

- ThP 714 **Internal Energy Estimates of Thermometer Molecules Desorbed from Multilayers by Ultrashort Pulse Laser Ablation With and Without Single Photon Ionization;** Slobodan Milasinovic; Yang Cui; Robert J. Gordon; Luke Hanley; *University of Illinois at Chicago, Chicago, IL*
- ThP 715 **Collision-Induced Dissociation of Homocysteine Sulfinyl Radical Ions;** Chasity B. Love; Joseph S. Francisco; Yu Xia; *Purdue University, West Lafayette, IN*
- ThP 716 **Fragmentation Characteristics of Peptides containing Proline Residue;** Cagdas Tasoglu¹; Alex G. Harrison²; Talat Yalcin¹; ¹*Izmir Institute of Technology, Izmir, Turkey*; ²*University of Toronto, Toronto, ON, Canada*
- ThP 717 **Probing Radical Rearrangement Reactions by IR Spectroscopy;** Ning Zhao; *University of Florida, Gainesville, FL*
- ThP 718 **Formation of Molecular Hydrogen from PAHs: Effects of Structure and Charge;** Yi Fu; Nicolas Polfer; *Department of Chemistry, University of Florida, Gainesville, FL*
- ThP 719 **Investigating the Alpha Effect: Reactions of Microsolvated Anions in the Gas Phase;** Ditte Thomsen²; Jennifer Reece¹; Charles Nichols¹; Veronica Bierbaum¹; Steen Hammerum²; ¹*University of Colorado at Boulder, Boulder, CO*; ²*University of Copenhagen, Copenhagen, DK*
- ThP 720 **Evidence for Salt-bridge Formation Between Low Basicity Conjugate Base Anions (HSO₄⁻ or ClO₄⁻) and Peptides;** Xiaohua Liu¹; Jean-Claude Tabet²; Richard B. Cole^{1,2}; ¹*Dept. Of Chemistry, Univ. Of New Orleans, New Orleans, LA*; ²*Univ. P. et M. Curie (Paris 6), Paris Cedex 05, France*
- ThP 721 **Fragmentation of Photoionized Boron Trichloride Cluster Ions: Experiment and Theory;** David Hales; Robert Brooks; Erik Urban; Paul Taucher; Alida Kwisangineza; Jamie Dimond; *Hendrix College, Conway, AR*
- ThP 722 **Understanding the Effect of Chirality on Gas-Phase Acidity of Oligopeptides;** Ashish Sawhney; Jianhua Ren; *University of the Pacific Department of Chemistry, Stockton, CA*
- ThP 723 **Gas-Phase Acidity and Proton Affinity of ESI Sensitive Organic Compounds;** Bhupinder Padda¹; Jianhua Ren¹; Christine Hughey²; ¹*University of the Pacific, Stockton, CA*; ²*James Madison University, Harrisonburg, VA*
- ThP 724 **Resonance Electron Capture by Common Amino Acids;** Yury V Vasil'ev; Douglas Barofsky; *Oregon State University, Corvallis, OR*
- ThP 725 **Influence of "Remote" Charges on Radical Centres: Experimental Evidence for Non-Aufbau Orbital Occupation in Gas-Phase Distonic Anions;** David Marshall¹; Ganna Gryn'ova²; Michelle Coote²; Philip Barker³; Stephen Blanksby¹; ¹*University of Wollongong, Wollongong, Australia*; ²*Australian National University, Canberra, Australia*; ³*Bluescope Steel Research, Port Kembla, Australia*
- ThP 726 **Dihydro Polycyclic Aromatic Hydrocarbons: Ionic Dissociation Mechanisms and Energetics;** Paul Michael Mayer¹; Brandi West¹; Valerie Blanchet²; Christine Joblin³; Andras Bodi⁴; Balint Sztaray⁵; ¹*University of Ottawa, Ottawa, Canada*; ²*Laboratoire des Collisions Agrégats Réactivité, Toulouse, France*; ³*CNRS, IRAP, Toulouse, France*; ⁴*Paul Scherrer Institut, Villigen, Switzerland*; ⁵*University of the Pacific, Stockton, CA*
- ThP 727 **Dissociative Photoionization of Dimethyl Disulfide and Dimethyl Diselenide Using the Imaging PEPICO (iPEPICO): Structure and Energetics;** Sampada Borkar¹; Andras Bodi²; Balint Sztaray¹; ¹*University of the Pacific, Stockton, CA*; ²*Paul Scherrer Institut, Villigen, Switzerland*



INDEX OF AUTHORS

Aaron, W. Scott.....	ThP06 105	Afehi-Sadat, Leila.....	TP22 348	Alberici, Rosana M.....	ThP32 661
Aasebø, Elise.....	ThP22 432	Afonso, Carlos.....	MP36 747	Albers, Leila.....	TP27 489
Aasebø, Elise.....	ThP23 456	Afonso, Carlos.....	TOG am 09:30	Alberti, James.....	ThP01 007
Abate, Chiara.....	MP31 637	Afonso, Carlos.....	TP06 122	Alberto Labate, Carlos.....	MP32 656
Abate, Chiara.....	WP08 134	Afonso, Carlos.....	WP38 738	Albrecht, Sascha.....	MP15 282
Abbas, Esraa Y.....	TP32 618	Afsar, Fayyaz A.....	ThOB am 09:30	Albright, Jessica.....	MOE am 09:10
Abbatiello, Susan E.....	ThP01 011	Agafonov, Dmitry.....	MOH am 09:10	Albuquerque, Daniele.....	MP26 543
Abbott, Richard.....	WP16 288	Agar, Jeffrey.....	WOH pm 3:50	Aldajaei, Jamal.....	TP02 032
Abdelmegeed, Mohamed.....	ThP17 305	Agar, Nathalie Y.....	WP11 185	Aldredge, Danielle.....	TOD am 08:30
Abdelmoula, Walid M.....	WP09 141	Agarabi, Cyrus.....	TOC pm 4:10	Aldrich, Joshua.....	WP34 644
Abdelnur, Patricia Verardi.....	MP05 084	Agarwal, Anurag.....	WP30 571	Alelyunas, Yun W.....	WP15 280
Abdul-Hakim, Mohammed A.....	TP32 618	Agarwal, Kinty.....	MP27 562	Alelyunas, Yun W.....	TP25 421
Abdulla, Laila.....	TP21 312	Agnès, Noel.....	MP10 198	Alelyunas, Yun W.....	WP13 232
Abdullah, Laila.....	WP29 515	Agnihotra, Narendra.....	TP32 618	Alexander, Kristin.....	MP11 217
Abeykoon, Amila.....	WP29 533	Agrawal, Rakesh.....	ThOG pm 2:30	Alexander, Morgan.....	ThP02 022
Abomughaid, Moseleh.....	ThP28 580	Agreste, Tasha.....	WP33 613	Alexandrov, Theodore.....	ThP04 036
Abraham, Paul.....	WP29 523	Agroskin, Yury.....	TP35 698	Alexandrov, Theodore.....	TOB pm 4:10
Abraham, Paul.....	ThP09 153	Agroskin, Yury.....	WP24 442	Alexandrov, Theodore.....	MP04 069
Abraham, Paul.....	MP32 669	Aguiar, Mike.....	WP34 668	Alexandrova, Ludmila.....	WP14 240
Abraham, Paul.....	TP08 146	Aguilan, Jennifer T.....	TP18 267	Alexandrova, Sonya.....	TP16 243
Abraham, Smita B.....	ThOD pm 3:50	Aguilar-Bonavides, Clemente.....	MP27 553	Alexeev, Yuri.....	WP38 742
Abrahamsson, Peter.....	WP16 291	Agunsoye, Maria.....	MP13 243	Alexopoulos, John.....	WOH am 08:50
Abramov, Tigran.....	ThP04 042	Agyekum, Isaac.....	WOC am 09:50	Alfaro, Clint M.....	ThP31 649
Abrams, Ezra.....	WP35 674	Agyekum, Isaac.....	ThP20 366	Alghamdi, Waleed.....	ThP17 283
Abrams, Ezra S.....	WP31 590	Ahlers, Hector.....	ThP09 169	Alghanem, Bandar.....	TP08 152
Abrell, Leif.....	TP31 584	Ahlf, Dorothy.....	ThP04 040	Alghanem, Bandar.....	WP31 593
Abubacker, Thaminum Ansari.....	WP14 250	Ahlf, Dorothy.....	MOB pm 4:10	Alghanem, Bandar.....	MP23 458
Abubacker, Thaminum Ansari.....	WP14 249	Ahlf, Dorothy.....	WP11 187	Al-Hajji, Adnan.....	WP05 066
Abzalimov, Rinat.....	WP28 490	Ahmad, Shadab.....	TP22 351	Ali, H. Raza.....	WP28 496
Abzalimov, Rinat.....	WP23 408	Ahmad, Shadab.....	ThP34 673	Ali, Liaqat.....	WOG pm 3:50
Abzalimov, Rinat R.....	WP22 392	Ahmad, Shadab.....	TP21 309	Aliani, Michel.....	TP23 373
Ackerman, Luke.....	TOE pm 2:30	Ahmad, Yasmeen.....	TP28 526	Allen, Amy.....	MP08 163
Ackermann, Gail.....	TOB pm 4:10	Ahmed, Musahid.....	WP14 243	Allen, Dave.....	ThP08 126
Ackroyd, Jim.....	MP25 497	Ahn, Byung Hak.....	TP24 399	Allen, Dave.....	TP15 233
Acosta, Rafael.....	MP34 684	Ahn, Joomi.....	WP21 376	Allen, David.....	ThP22 423
Acosta, Rafael.....	TP19 297	Ahn, Seunghee.....	TP37 759	Allen, David.....	ThP23 459
Acosta Martin, Adelina.....	WP32 604	Ahn, Soyoun.....	TP24 413	Allen, Jason.....	MP25 497
Acosta Martin, Adelina.....	MP09 176	Ahn, Sun Young.....	MP08 155	Allen, Jenna.....	MP09 181
Adaime, Martha B.....	ThP27 555	Ahn, Sun Young.....	MP08 154	Allen, Lloyd.....	TP04 067
Adam, Claire.....	ThP23 476	Ahn, Tae-Hyuk.....	WP29 527	Allen, Mark.....	ThP06 107
Adam, Gerhard.....	MP04 077	Ahn, Tae-Hyuk.....	WP32 603	Allen, Mike.....	TP08 130
Adam, Gregory.....	ThP10 182	Ahnoff, Martin.....	WP16 291	Allen, Robert.....	MP06 117
Adams, Chris.....	ThP08 137	Ahnoff, Martin.....	WP16 290	Allen, Robert.....	MOE am 10:10
Adams, Paul.....	WP05 048	Ahrens, Maike.....	ThP22 412	Allen, Samuel J.....	WP38 737
Adams, Paul D.....	TOA am 09:50	Ahnmé, Erik.....	TP13 216	Alley, Stephen C.....	TOH am 09:50
Adams, Rachel.....	TP08 146	Ahnmé, Erik.....	TP28 520	Alleyn-Chin, Chris.....	ThP22 420
Adams, Rachel.....	WP29 523	Aich, Udayanath.....	WP24 442	Allipour Birgani, Shadab.....	WP30 563
Adarayan, Emily.....	ThP21 396	Aich, Udayanath.....	WP24 444	Allis, C. David.....	TP22 346
Adav, Sunil.....	MP24 492	Aich, Udayanath.....	TP35 698	Allmaier, Guenter.....	MP34 705
Addepalli, Balasubrahmanyam.....	MP14 254	Aichholz, Reiner.....	WP15 275	Allmaier, Günter.....	MP16 328
Addison, Tom.....	ThP29 597	Aichler, Michaela.....	ThP04 036	Allory, Yves.....	ThP23 476
Adelinskaya, Yelena A.....	ThP13 248	Aiello, Donatella.....	TP34 690	Allos, Tara.....	MP28 575
Adeljiang, Gulishana.....	WP28 503	Aiello, Mauro.....	WP33 643	Allred, Mckay.....	WOF am 09:50
Adhikari, Jagat.....	TP10 179	Aiello, Mauro.....	WP33 640	Allred, Serena.....	WP26 472
Aditham, Anupama.....	WP03 015	Ait-Belkacem, Rima.....	WP24 440	Al-Mansoori, Sumaya.....	ThP15 266
Adkins, Joshua.....	TP12 209	Ait-Belkacem, Rima.....	ThP02 025	Almeer, Saeed H.....	TP32 618
Adkins, Joshua.....	MP20 389	Ajredini, Ramadan.....	TP24 414	Al-Meer, Saeed.....	TP32 611
Adlard, Paul.....	WP12 212	AK, Vinayak.....	MP07 145	Almeida, Andrea.....	WP26 473
Adler, Belinda.....	MP09 182	Akashi, Satoko.....	TP09 166	Almeida, Igor.....	MP27 553
Adnani, Navid.....	TP24 415	Akashi, Tomohiro.....	ThP25 489	Almeida, Reinaldo.....	MP11 212
Advani, Andrew.....	TP24 385	Akervik, Kristi.....	WP04 042	Almon, Richard R.....	TP21 337
Aebersold, Rudolf.....	TP08 142	Akervik, Kristi.....	TP31 578	Al-Naqshabandi, Mohammed.....	MP22 417
Aebersold, Ruedi.....	TP28 499	Akervik, Kristi.....	TP31 589	Alon, Tal.....	MP17 338
Aebersold, Ruedi.....	TP21 310	Akhmetova, Evgenia.....	WP14 247	Alon, Tal.....	ThP11 188
Aebersold, Ruedi.....	TOH pm 4:10	Akinapalli, Srikanth.....	MP15 291	Alonso, Dave.....	WOF am 09:10
Aebersold, Ruedi.....	WP31 595	Akyildiz, Erdal.....	MP17 350	Alonso, David.....	MP04 073
Aebersold, Ruedi.....	WP36 685	Al Sharif, Halah.....	WOC pm 3:30	Alonso, David.....	TP05 100
Aebersold, Ruedi.....	WOB am 10:10	Alaee, Mehran.....	MP31 631	Alonso, David.....	MP31 645
Aebersold, Ruedi.....	WP36 688	Alalwiat, Ahlam.....	MP36 725	Alonso, David.....	MP04 078
Aebersold, Ruedi.....	TOD pm 3:50	Alaminos, Miguel.....	WP12 216	Alonso, David.....	MP36 742
Aeppli, Christoph.....	ThOG pm 3:50	Alawani, Nadrah.....	ThOF pm 2:50	Alonso, David.....	WP04 040
Aerni, Hans Rudolf.....	MP29 586	Alawani, Nadrah.....	MP36 726	Alonso, David E.....	MP31 630
Afchine, Armin.....	MP15 282	Alayash, Abdu.....	WP30 557	Alonso, David E.....	MP31 631
Affholter, Brittany.....	ThOC am 09:10	Alayash, Abdu.....	WP30 556	Alquier, Lori.....	ThOF pm 3:50
Affolter, Matthew.....	TP05 108	Alayoubi, Abdulfatah.....	WP09 139	Alrawashdeh, Wasfi.....	ThP22 423
Affolter, Michael.....	TOC am 09:50	Albanese, Jenny.....	MP06 125	Al-Saad, Khalid.....	TP32 611
Afifi, Mehmaz.....	WP03 029	Alberici, Rosana.....	TP34 682	Al-Saad, Khalid A.....	TP32 618
Afiuni, Somi.....	WOA am 09:50	Alberici, Rosana.....	WOA pm 2:50	Alsaggaf, Wejdan.....	ThP07 114
Afehi-Sadat, Leila.....	ThP09 164	Alberici, Rosana M.....	TP34 681	Alsaygh, Aisha N.....	TP32 618

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Alsina-Fernandez, Jorge	TP11 205	Andersen, Jens S	MP06 097	Aoki, Jun	ThP05 066
Altelaar, A.F. Maarten	ThP17 291	Andersen, Mette D.	WP22 395	Aoshima, Ken	MP18 358
Altelaar, Maarten	WP30 541	Andersen, Nisana	MP13 241	Aoshima, Ken	MP18 360
Altelaar, Maarten	WP31 583	Andersen, Wendy C.	ThP13 237	Aoshima, Ken	MP18 359
Altemus, Margaret	ThP01 009	Anderson, Amanda	MP25 497	Aoyama, Chiaki	MP06 089
Altmaier, Stephan	WP19 335	Anderson, David	WP22 391	Apetri, Adrian	MP22 429
Altmann, Friedrich	WOC am 10:10	Anderson, David	TP26 456	Aponte, Julia	ThP09 152
Aluthgedara, Warunika	TP25 425	Anderson, David M. G.	WP09 152	Appelblad, Patrik	MP06 086
Alvarez, Melissa	MP06 106	Anderson, E.H.	ThP06 103	Appelblad, Patrik	WP07 103
Alvarez, Sophie	MP23 460	Anderson, Gordon	MP20 389	Aprelia, Melinda	MOA am 09:50
Alvarez-Fernández, Monica	MOA am 09:50	Anderson, Gordon	TP33 652	Apsaga, Mark	TP27 496
Alves, Atecia Nunciata Lopes	WP29 529	Anderson, Gordon	MOC am 08:30	Aqeel, Zeshan	WP19 336
Alves, Gelio	MP18 372	Anderson, Gordon	ThP34 690	Aqueel, Mohammad Sabir	WP05 056
Alwis, K. Udeni	WP03 025	Anderson, Gordon	ThP06 081	Arabshahi, Ali	TP23 376
Alzate, Oscar	TP21 325	Anderson, Gordon	TOG am 08:30	Arakawa, Kiyomi	MP06 110
Amad, Ma'an	MP17 349	Anderson, Ken	WOD am 08:30	Arakawa, Kiyomi	MP02 040
Amad, Ma'an	WP05 068	Anderson, Kenneth	ThP23 467	Arakawa, Kiyomi	ThP27 558
Amann, Kerstin	MP10 194	Anderson, Kyle W.	TP22 356	Arakawa, Ryuichi	WP12 207
Amano, Junko	TP36 734	Anderson, Lissa	TOH am 09:30	Arakawa, Ryuichi	ThP05 065
Amano, Junko	TP36 736	Anderson, Lissa C.	TP14 223	Arapidi, Georgij	MP27 550
Amano, Junko	ThP19 331	Anderson, Lissa C.	TP10 173	Arapidi, Georgy	WP26 469
Amano, Junko	TP36 729	Anderson, Lorraine	TP36 733	Aravamudhan, Sriram	ThP18 309
Amaral, Phellipe	WP07 100	Anderson, N. Leigh	WOD pm 2:50	Arevalo, Ricardo	ThOE am 08:50
Amaya, Stephanie	MOE pm 3:50	Anderson, Tim	MP32 658	Arevalo, Ricardo	TP05 090
Amaya, Stephanie	TP24 387	Anderson, Tim	WP19 351	Arevalo Jr., Ricardo	MP35 718
Ambatipudi, Kiran	TP19 287	Anderson, Wayne F.	MOA pm 3:50	Argikar, Upendra A.	WP15 279
Amberg, Sean	WP15 282	Andersson, Jan	WP05 068	Argikar, Upendra A.	WP15 271
Ambrose, Stephen J.	ThP01 016	Andersson, Jan T.	ThOG pm 4:10	Argo, Andrew	WP28 500
Ambs, Stefan	WP18 312	Andersson, Linda	WP24 434	Argoti, Dayana	MP06 113
Amerom, Friso	MP16 308	Ando, Takashi	TP31 603	Argoti, Dayana	MP01 011
Amerly, John H. A.	TP15 236	Andre, Jacques	MP15 270	Argi, Emma	MP27 553
Amin, Jakal	WOD am 09:10	Andre, Jennifer	MP01 015	Arima, Kazunari	ThP19 340
Amin, Kinjal	TP10 177	Andreasson, Ulf	TP19 280	Armengaud, Jean	ThP09 158
Amirav, Aviv	WP14 236	Andren, Per	ThOF am 08:30	Armengaud, Jean	ThP25 506
Amirav, Aviv	MP17 338	Andren, Per E.	ThOF am 09:50	Armenta, Jenny M.	ThP17 302
Amirav, Aviv	ThP11 188	Andrén, Per E.	WP09 141	Armentrout, Peter	TP01 015
Amirkhani, Ardeshir	WP27 488	Andrén, Per E.	WP10 161	Armentrout, Peter B.	WOC pm 2:30
Ammann, Adrian A.	TP31 593	Andrén, Per E.	WP11 184	Armstrong, Barbara	ThOF pm 3:50
Amodei, Dario	MOA am 08:30	Andrén, Per. E.	WP12 210	Armaudo, Anna	ThOH am 08:50
Amodei, Dario	TP28 512	Andreotti, Amy H.	MP22 419	Armaudo, Anna	TP22 347
Amr, Mohamed	TP32 611	Andrew, Ruth	TOB pm 3:30	Armaudo, Anna	TP22 345
Amr, Mohamed A.	TP32 618	Andrews, Philip	TP33 644	Armaudo, Anna M.	WP30 562
Amster, Jon	ThP31 640	Andrien, Bruce	TP14 224	Arndt, Daniel	ThP13 247
Amster, Jon	MP16 317	Andrzejewski, Denis	ThP25 516	Arndt, James	MP22 426
Amster, Jon	ThP20 366	Anduri, Sridevi	WP03 029	Arnold, Lora L.	ThP13 241
Amster, Jon	ThP20 383	Ané, Jean-Michel	ThOE pm 3:30	Arnold, Mark E.	MOC pm 3:50
Amster, Jon	WOC am 09:30	Ané, Jean-Michel	WP09 151	Arnold, Randy	WP32 600
Amster, Jon	TOA pm 3:30	Angel, Peggì	WP09 154	Arnold, Randy	WP31 588
Amster, Jon	WOC am 09:50	Angeles, Aida	MOC pm 3:50	Arnold, Randy J.	MP21 400
Amunugama, Ravi	TP15 233	Angeles, Mark	MP26 526	Arnotskaya, Natalia	MP27 559
Amunugama, Ravi	ThP23 459	Angeletti, Ruth H.	TP18 267	Arnotskaya, Natalia	MP27 560
Amunugama, Ravi	ThP22 423	Angeletti, Ruth Hogue	WP34 664	Arnott, David	TP22 349
An, Bo	TP18 257	Angermann, Bastian	WP36 692	Arnott, David	TP28 502
An, Bo	WP29 534	Anglos, Demetrios	TP05 105	Arnott, David	TP22 350
An, Dingding	ThOC pm 2:50	Anikanov, Nikolay	WP26 469	Aronov, Pavel	WP18 322
An, Eunkyung	MP29 577	Anizan, Sebastien	WOA pm 2:30	Aronova, Sofia	WP08 123
An, Eunkyung	WP36 692	Annabi, Borhane	WP17 297	Aronova, Sofia	TP24 388
An, Haejung	TP37 764	Annan, Roland	ThP09 165	Aronova, Sofia	TP24 419
An, Hyun Joo	TP15 235	Annan, Roland	WP34 651	Aronova, Sofia	MP34 685
An, Hyun Joo	ThP19 346	Annis, D. Allen	TP15 234	Arora, Jasbir	WP17 306
An, Hyun Joo	ThOD am 09:50	Ansong, Charles	TP12 209	Aros-Calt, Sandrine	MP04 075
An, Hyun Joo	TP35 705	Ansong, Charles	MP20 389	Arouri, Khaled	WP05 066
An, Hyun Joo	MP27 556	Anspach, Jason	MP06 095	Aroyo-Manzanares, Natalia	MP03 058
An, Hyun Joo	TP35 704	Anspach, Jason	MP13 244	Arriaga, Edgar	MP24 474
An, Hyun Joo	TOC pm 3:50	Antharavally, Babu	ThP08 135	Arriaga, Edgar	TP28 514
An, Yan	MP30 611	Anthony, Staci	MP16 298	Arriaga, Edgar A.	MOE am 09:30
An, Yanming	TOD am 10:10	Anthony, Staci	ThP06 080	Arrington, Justine	WP30 573
Anabel, Fandino	ThP27 548	Antinori Malaspina, Paola	WP32 604	Arroyo, Alejandro D.	MP11 218
Anagnostopoulos, Demetris	ThOC am 09:30	Antoine, Rodolphe	TP05 094	Artaev, Slava	WP03 031
Anand, Swati	TP18 271	Antoine, Rodolphe	TP06 122	Artaev, Viatcheslav	MP16 323
Anania, Veronica	MP29 591	Antoine, Rodolphe	WOG am 10:10	Artaev, Viatcheslav	TP04 067
Anastasiou, Dimitrios	WP22 386	Antonowicz, Stefan	MP10 204	Artaev, Viatcheslav	WP23 358
Anceski Bataglion, Giovana	TP33 620	Antony Joseph, Mariya Juno	ThP06 076	Artamonova, Irena I.	WP28 512
Anciaux, Sarah	WP37 730	Antonymsamy, Stephen	WP22 389	Artavanis-Tsakonas, Spyros	WP28 509
Andacht, Tracy	MP09 168	Anumol, Tarun	TP32 614	Artemenko, Konstantin	ThP22 441
Andaya, Armann	ThP17 300	Anumol, Tarun	MP31 629	Artemenko, Konstantin	ThP16 278
Andaya, Armann	TP33 651	Anumol, Tarun	WP26 472	Arthur, Patrick	TOH pm 4:10
Andaya, Armann	ThP17 301	Anumol, Tarun	TP31 604	Artigues, Antonio	WP22 387
Anderegg, Francois	TP05 108	Anyoji, Hisae	TP36 736	Aryal, Uma	MP32 668

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Asakawa, Daiki	MOG am 09:10	Avery, Kristen M.	ThP08 136	Bailey, Derek J.	WOE am 09:50
Asano, Natsuyo	MP02 040	Aviram, Lilach	MP07 139	Bailey, Jim	ThOC am 09:10
Asano, Yuuki	TP09 166	Avula, Bharathi	MP32 659	Bailey, Nathanael	MP27 564
Asara, John M.	WP28 504	Awad, Amany	ThP09 151	Bailly-Chouriberry, Ludovic	WP17 305
Asara, John M.	ThP17 296	Awad, Danielle	TP26 467	Bain, Ryan	TP34 680
Asara, John M.	WOD am 08:50	Awad, Hanan	ThP31 640	Baiocchi, Claudio	ThP28 571
Asare Okai, Papa-Nii	TOF pm 2:50	Awaiye, Kayode	WOD am 10:10	Baird, Lisa	WOA pm 3:50
Asare-Okai, Papa Nii	MP21 396	Awasthi, Yogesh	ThP29 602	Baird, Zane	ThP06 083
Ashcroft, Alison E.	MP14 255	Awazu, Kunio	ThP05 066	Bais, Preeti	TP29 548
Ashcroft, Alison E.	WP23 407	Awazu, Kunio	ThOA pm 4:10	Baiwir, Dominique	ThP23 453
Ashcroft, Alison E.	MOF pm 4:10	Axelsen, Paul	WP11 180	Bajrami, Bekim	TP19 279
Ashfold, Michael NR	TP04 059	Ayet, Samuel	TP11 201	Bajrami, Bekim	MP23 462
Ashkenazi, Avi	MP29 591	Ayotte, Christiane	MP16 324	Bajrami, Bekim	ThP24 478
Ashline, David	TP36 717	Ayoub, Daniel	MP30 615	Bajrami, Bekim	ThP24 479
Ashline, David	TP36 718	Ayton, Scott	MOB pm 3:50	Bak, Soeren	ThP17 279
Asiago, Vincent	MP32 667	Azadi, Parastoo	TOH am 08:50	Bakalarski, Corey	WP33 632
Askenazi, Manor	ThOD am 08:30	Azarkin, Igor	ThP31 634	Bakalarski, Corey E.	ThP18 307
Askenazi, Manor	WP31 584	Azuma, Takeshi	WP12 212	Bakalkin, Georgy	ThP22 441
Askenazi, Manor	WOB am 08:30	Azzam, Sausan	WOC am 09:30	Baker, Andrew	WP18 313
Askenazi, Manor	TP28 507	Baars, Oliver	WP26 469	Baker, Andrew G.	WP15 264
Askenazi, Manor	MP18 368	Baba, Hideo	MP27 563	Baker, Christopher	ThP11 192
Askenazi, Manor	WP31 590	Baba, Hideo A.	ThP23 468	Baker, David	ThP27 543
Asmellash, Senait	MP09 181	Baber, J. Christian	ThP13 240	Baker, David	ThP27 540
Aspenleiter, Julia	TP30 562	Bach, Stephen	ThP22 412	Baker, Erin	MOC am 08:30
Aspiras, Marcelo	TP18 260	Bache, Nicolai	ThP22 413	Baker, Erin	MP20 389
Asplund, Matthew C.	ThP35 710	Bache, Nicolai	WP24 431	Baker, Erin	TOG am 08:30
Assadi-Porter, Fariba	WP29 528	Bächer, Silvia	TP20 302	Baker, Erin	TOF pm 3:30
Assmann, Sarah	MP32 653	Bachmann, Brian	MP06 097	Baker, Erin	TP33 660
Assunção, Nilson Antonio	WP29 529	Bachmann, Brian O.	MP06 119	Baker, Erin	TP33 652
Astarita, Giuseppe	TOF am 09:30	Bachmann, Brian O.	TP30 573	Baker, Erin	WP38 753
Astarita, Giuseppe	TP23 361	Bachmeier, Corbin	TOF pm 3:10	Baker, Peter R.	WP31 591
Astarita, Giuseppe	ThP28 573	Bachschnid, Markus M.	ThP25 486	Bakewell, William	TP35 713
Astarita, Giuseppe	TP27 492	Bachschnid, Markus M.	WP38 751	Baklouti, Donia	ThOE am 09:10
Astarita, Giusseppe	ThP07 118	Bacica, Michael	WP29 515	Bala, Kanak	MP03 053
Astorga-Wells, Juan	TP04 071	Backlund, Peter	TOA am 09:10	Balachandran, Naresh	WP22 393
Ástot, Crister	WP14 237	Backlund, Peter	TP18 258	Balan, Jagadheshwar	TP36 737
Atakay, Mehmet	WP34 654	Backlund, Peter S.	WP33 630	Balan, Venkatesh	ThP32 658
Atakay, Mehmet	WP34 653	Backlund, Peter S.	WP24 432	Balasubramani, Mani	WP30 570
Athanas, Michael	WP17 301	Bader, Noor M.	WP38 740	Balbo, Silvia	TP29 533
Athanas, Michael	TP23 381	Bader, Samuel L.	TP33 657	Balbo, Silvia	TP29 553
Atik, Ahmet Emin	TP06 119	Bader, Samuel L.	MP12 227	Balbo, Silvia	TP29 542
Atik, Ahmet Emin	TP06 115	Badger, John	ThOD pm 3:50	Balcer, Jesse L.	ThP13 248
Atkinson, David	MP17 348	Badu-Tawiah, Abraham	ThOE am 09:30	Balch, William E.	MP29 598
Atsumi, Shota	TP24 419	Bae, Dong-Won	TP32 618	Baldi, Pierre	MP21 411
Atsushi, Ogiwara	ThOB am 09:50	Bae, Hanhong	TP28 501	Baldin, Diogo	WP07 100
Attaluri, Sivaprasad	TP29 549	Bae, Jong-Sup	TP06 110	Baldwin, H. Scott	WP09 154
Attwa, Mohamed W.	TP37 768	Baek, Julia	TP34 687	Baldwin, Ian T.	MP03 052
Attygalle, Athula	TP02 047	Baek, Moon Chang	MP33 677	Baldwin, Kathrine	WP09 148
Attygalle, Athula	TP01 016	Baek, Sun Jong	MP33 677	Ball, Lauren	WP30 553
Atwell, Brian	ThOE pm 2:30	Baessmann, Carsten	TP29 543	Ball, Lauren	ThP19 347
Aubin, Yves	TP28 500	Baessmann, Carsten	WP24 442	Ball, T Blake	MP06 094
Aubry, Anne-Francoise	MP06 114	Baessmann, Carsten	TP35 705	Balland, Alain	ThOC am 09:10
Aubry, Anne-Francoise	MOC pm 3:50	Baessmann, Carsten	MP31 650	Ballard, Billy	TP24 390
Aubry, Anne-Françoise	MP25 508	Baessmann, Carsten	WP24 434	Ballif, Bryan A.	TOE am 08:50
Auer, Florian	MP29 585	Baessmann, Carsten	MP24 491	Ballihaut, Guillaume	ThP17 295
Auger, Serge	ThP29 596	Baessmann, Carsten	TOH am 08:50	Balloon, Allison J.	ThOE pm 3:30
Auger, Serge	TP29 529	Baemisberger, Dominic	MP24 486	Balog, Julia	ThP28 560
Auger, Serge	ThP01 001	Baemisberger, Dominic	TP15 226	Balov, James E.	ThOD pm 3:50
Auger, Serge	ThP27 535	Baemisberger, Dominic	ThP08 129	Baltzer, Axel W.	MP10 193
Auger, Serge	ThP10 178	Bafna, Vineet	WOB pm 2:50	Baltzer, Wendy I.	TP24 403
Auger, Serge	TP30 577	Bafna, Vineet	MP19 380	Baluya, Dodge	MP07 138
Auger, Serge	ThP29 595	Bag, Soumabha	TP02 021	Bamba, Takeshi	MP03 044
Auger, Serge	MP02 035	Baggerman, Geert	ThP34 676	Bamba, Takeshi	ThOC pm 3:10
Auger, Serge	TP27 484	Baggerman, Geert	ThP34 683	Bamba, Takeshi	MP06 089
Auger, Serge	TP30 576	Bahr, Ute	TP15 226	Bamba, Takeshi	TP31 603
Auger, Serge	WP05 062	Bai, Bing	ThP17 290	Bamba, Takeshi	ThP28 583
Auger, Serge	ThP10 177	Bai, Dina	WP33 611	Banaszynski, Laura	TP22 346
Auger, Serge	MP01 025	Bai, Dina	TOH am 09:30	Bandeira, Nuno	WP31 576
Augusti, Rodinei	TP34 685	Bai, Dina L.	TP14 223	Bandeira, Nuno	ThP09 149
Aurand, Craig	MP07 131	Bai, Haihong	MP08 162	Bandeira, Nuno	TOB pm 4:10
Auras, Rafael	WP37 714	Bai, Yidong	ThP28 578	Bandeira, Nuno	ThP34 681
Auray-Blais, Christiane	ThP21 387	Bailey, Bob	ThOC am 09:10	Bandeira, Nuno	WP30 569
Aushev, Tagir	ThP12 219	Bailey, Derek	MP19 377	Bandeira, Nuno	MP04 069
Aushev, Tagir	WOE am 08:50	Bailey, Derek	WP29 528	Bandeira, Nuno	MP19 380
Aushkap, Sergei	MP27 560	Bailey, Derek J.	TOA am 08:30	Bandeira, Nuno	TOH pm 2:30
Austin, Daniel	TP34 674	Bailey, Derek J.	MOA am 09:10	Bandeira, Nuno	WP31 587
Auwärter, Volker	WP08 133	Bailey, Derek J.	ThP34 684	Bandeira, Nuno	ThP34 672
Auzeil, Nicolas	ThP28 572	Bailey, Derek J.	ThOE pm 3:30	Bandhakavi, Sricharan	WP28 505
Avci, Fikri	ThOC pm 2:50	Bailey, Derek J.	WP33 608	Bandhakavi, Sricharan	TP17 248

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Bando, Kiyoko.....	TP29 556	Barrett, David.....	ThP02 022	Baumann, Stephan.....	WP04 038
Banerjee, Atrayee.....	ThP17 305	Barrett, Jeffrey.....	TP25 436	Baumann, Stephan.....	MP34 685
Banerjee, Indroneal.....	ThOA am 09:10	Barrett, Jeffrey.....	WP06 094	Baustad-Thomas, Dylan.....	MP31 633
Banerjee, Sarbjit.....	ThP04 038	Barricklow, Jason.....	TP25 435	Bavari, Sina.....	TOH pm 3:30
Banfield, Jillian.....	WP29 527	Barrow, Mark.....	TP09 170	Bavari, Sina.....	MP25 500
Bang, Su Kyeong.....	TP32 608	Barrow, Mark.....	MP23 445	Bavro, Vassily N.....	MOF am 10:10
Bangasser, Debra A.....	TP21 322	Barrow, Mark.....	MP31 644	Baykal, Burcu.....	WP23 408
Bangma, Jackie.....	ThP28 575	Barrow, Mark.....	WP30 567	Bayliss, Mark A.....	ThP12 224
Bani Rashaid, Ayat.....	MP30 611	Barrow, Mark.....	ThP12 220	Bazdar, Douglas.....	ThP23 468
Baniasadi, Hamid.....	MP32 667	Barrow, Mark.....	MOH pm 2:50	Bazemore-Walker, Carthene.....	WP30 558
Baniasadi, Hamid.....	ThP22 414	Barry, Bill.....	TP33 647	Bazenet, Chantal.....	TP19 281
BaniRashaid, Ayat H.....	ThP21 410	Barry, Bill.....	TOG am 08:50	Bazydlo, Lindsay.....	WOA pm 4:10
Banks, Charles.....	WP29 526	Barry, Clifton E.....	WP11 183	Beauchamp, J. L.....	ThP20 371
Bann, James.....	WP22 391	Barry, Jeremy A.....	WP10 158	Beaudry, Francis.....	TP25 440
Bannister, John.....	ThP21 397	Barry, Jeremy A.....	ThOF am 09:10	Beaudry, Francis.....	ThP22 442
Banno, Miho.....	TP08 163	Barry, Jeremy A.....	ThP05 060	Beaudry, Francis.....	ThP07 112
Banno, Miho.....	ThP23 469	Barry, Jeremy A.....	WP11 177	Beausoleil, Sean.....	WP33 632
Bantscheff, Marcus.....	MP29 582	Barry, Jeremy A.....	MP30 618	Beausoleil, Sean.....	WP34 668
Bantscheff, Marcus.....	MP19 383	Barry, Samantha J.....	ThP01 020	Bebek, Gurkan.....	ThP16 275
Bantscheff, Marcus.....	MP29 581	Barry, William.....	ThP28 584	Becerra-Artiles, Aniuska.....	MP28 574
Bantscheff, Marcus.....	ThP34 675	Barsch, Aiko.....	MP03 052	Bechara, Etelvino Jose Henriques.....	WP29 529
Bao, Ya-Fei.....	WP07 104	Barsch, Aiko.....	TP24 408	Becher, Francois.....	TP13 215
Bao, Yifei.....	TP28 507	Barsch, Aiko.....	MP04 079	Becher, François.....	TOH pm 3:50
Bao, Yuanwu.....	MP01 001	Barsch, Aiko.....	MP03 051	Becher, François.....	MOD am 08:50
Baohong, Liu.....	WOE pm 3:30	Barsnes, Harald.....	ThP22 433	Becher, Oren.....	TP22 346
Barão Baptista Saidemberg, Nicoli.....	TOG pm 2:50	Barsnes, Harald.....	ThP23 452	Bechet, Daniel.....	MP10 188
Barata, Lauro E.S.....	TP34 675	Bartberger, Michael.....	TP33 623	Becht, Steven.....	TP35 713
Baratin, Delphine.....	WP32 606	Barthel, Jochen.....	MP15 282	Becht, Steven.....	MP13 248
Barba, Agustín.....	TP28 524	Barthélemy, Nicolas.....	MOD am 08:50	Bechtel, Misty.....	ThP28 577
Barbacci, Damon.....	WP10 169	Bartlett, Michael.....	MP14 258	Beck, Alain.....	TOH am 08:50
Barbade, Komal.....	MP34 689	Bartlett, Michael.....	TP10 187	Beck, Alain.....	WP24 428
Barber, Jill.....	ThP17 283	Bartlett, Michael G.....	MOD am 10:10	Beck, Alain.....	MOB pm 3:50
Barber, Shane.....	MP16 321	Bartmess, John.....	ThP32 662	Beck, Alain.....	TP15 229
Barbero, Luca.....	MOD am 09:50	Bartolone, Sarah.....	ThP23 459	Beck, Alain.....	WP24 429
Barbero, Luca.....	MP25 498	Barylyuk, Konstantin.....	MP13 236	Beck, Erling.....	WP06 089
Barbour, Alan G.....	TP14 222	Bas, Richard.....	MP25 515	Beck, Florian.....	TOD pm 3:10
Barcellos, Roberto.....	MP31 652	Bas, Richard R.....	WP15 252	Beck, Hans Christian.....	TP19 283
Barceló-Coblijn, Gwendolyn.....	MP10 201	Basak, Trayambak.....	WP18 315	Beck, Jonathan.....	TP31 595
Barcenas, Mariana.....	MOC pm 2:30	Basanta Sanchez, Maria.....	WP21 396	Beck, Jonathan.....	TP31 597
Bardet, Chloé.....	ThP23 444	Basanta Sanchez, Maria.....	TOF pm 2:50	Beck, Jonathan.....	TP31 600
Barding, Gregory A.....	TP05 096	Basanta-Sanchez, Maria.....	MOH am 08:30	Beck, Jonathan.....	WP03 534
Bardsley, Jon.....	WP33 634	Basar, Murat.....	WP36 704	Beck, Jonathan.....	TP31 589
Bardwell, James.....	MP21 405	Basdeo, Shenita.....	MOC pm 3:50	Beck, Jonathan.....	MP06 123
Barile, Daniela.....	MP33 680	Basile, Franco.....	ThP25 496	Beck, Jonathan.....	TP37 757
Barile, Daniela.....	WP19 350	Baska, Katelynn S.....	TP23 380	Beck, Sebastian.....	TP10 182
Barile, Daniela.....	ThP15 265	Basur, Venkatesha.....	MP27 564	Becker, Chris.....	WP32 601
Barinaga, Charles J.....	Special	Bassett, David.....	ThOC am 09:10	Becker, Chris.....	TP11 203
Barinaga, Charles J.....	MOB am 10:10	Bassey, Ekong.....	MP36 748	Becker, Chris.....	ThOB pm 3:30
Barkauskas, Donald.....	MP27 556	Bassey, Ekong.....	ThOF pm 3:30	Becker, Chris.....	WP31 577
Barkeer, Srikanth.....	MP27 554	Bastos, Wagner.....	TOG am 09:50	Becker, Chris.....	WP31 583
Barker, Philip.....	ThP36 725	Basu, Sankha.....	TP29 550	Becker, Kristin.....	TP19 285
Barker, Philip J.....	MP36 722	Bataglion, Giovana.....	WP07 100	Becker, Michael.....	MP10 202
Barket, Dennis.....	ThP26 527	Bataglion, Giovana.....	MP31 652	Becker, Michael.....	WP09 145
Barket, Dennis.....	ThOA am 08:50	Bataglion, Giovana A.....	TP33 658	Becker, Michael.....	WP09 142
Barkley, Robert M.....	WP06 073	Bateman, Kevin.....	TP25 422	Becker, Michael.....	ThP04 036
Barlaz, Morton.....	WOF am 09:50	Bateman, Kevin.....	MP26 547	Becker, Rene.....	TP10 182
Barnes, Alan.....	ThP27 543	Bateman, Kevin.....	WOD pm 3:10	Becker, Trisha.....	ThP23 474
Barnes, Brian.....	MP06 117	Bateman, Nicholas.....	WP33 627	Beckman, Joe.....	TP13 217
Barnes, Brian.....	ThP11 210	Bateman, Randall.....	ThOD pm 3:30	Bédard, Vincent.....	ThP27 535
Barnes, Brian.....	MP03 049	Bates, Emily.....	WP33 636	Bedner, Mary.....	TP30 561
Barnes, Brian B.....	MP06 118	Batinic, Danica.....	TP18 262	Bedner, Mary.....	TP30 560
Barnes, Ian.....	MP15 276	Batoon, Patrick.....	ThP11 206	Beech, Iwona.....	MP29 578
Barnes, Martin.....	MP25 497	Batoon, Patrick.....	ThP11 213	Beech, Iwona.....	TP24 417
Barnes, Stephen.....	TP23 376	Batoon, Patrick Henry.....	ThP30 631	Beecher, Chris.....	MP04 079
Barnes, Stephen.....	TP08 143	Batoon, Patrickhenry.....	ThP14 257	Beecher, Chris.....	TP23 364
Barnes, Stephen.....	MP03 059	Batt, Angela.....	TP31 591	Beecher, Chris.....	TP24 418
Barnett, Dave.....	TP33 640	Batubara, Afnan.....	WP12 198	Beecher, Chris.....	TP24 414
Barnholtz-Sloan, Jill.....	ThP23 468	Batz, Nicholas.....	MOB am 09:30	Beekman, Christopher.....	ThP01 014
Barnidge, David.....	MP09 175	Baudys, Jakub.....	ThP26 526	Beekman, Christopher R.....	MOC am 09:30
Barnidge, David.....	WP24 423	Baudys, Jakub.....	ThP26 522	Beeston, Helen.....	WP23 407
Barnidge, David.....	WOB pm 4:10	Bauer, Kerry.....	WP33 614	Beger, Richard.....	ThP28 588
Barofsky, Douglas.....	ThP36 724	Bauer, Kerry.....	ThP08 139	Beger, Richard.....	TP24 383
Barofsky, Douglas F.....	ThP31 645	Bauer, Kerry M.....	TP22 353	Begley, Timothy.....	TOE pm 2:30
Baronner, Judith.....	ThP04 034	Baum, Laura.....	TP26 472	Beglinger, Katherine M.....	ThP22 439
Barr, John.....	MOA am 09:30	Baumann, Christian.....	TP18 275	Beglinger, Katherine M.....	ThP22 437
Barr, John R.....	MP26 548	Baumann, Christian.....	WP30 543	Behar, Francoise.....	WP05 060
Barr, John R.....	ThP26 526	Baumann, Marc.....	MP09 182	Behring, Jessica.....	WP33 630
Barr, John R.....	ThP26 522	Baumann, Stephan.....	TP24 388	Behring, Jessica B.....	TOA am 09:10
Barran, Perdita.....	TP01 002	Baumann, Stephan.....	TOE pm 3:10	Behring, Jessica B.....	TP18 258

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Bei, Ling.....	WP07 103	Benter, Thorsten.....	WP38 754	Bérubé, Eugénie-Raphaëlle.....	ThP29 613
Beijnen, Jos H.....	WP15 252	Benter, Thorsten.....	MP15 283	Bérubé, René.....	ThP29 601
Beilman, Greg.....	TP24 398	Benter, Thorsten.....	MP15 275	Berven, Frode.....	TP19 284
Beilman, Greg.....	TP23 366	Benter, Thorsten.....	MP15 280	Berven, Frode.....	ThP22 433
Beilman, Gregory.....	ThP14 259	Benter, Thorsten.....	MP15 281	Berven, Frode.....	ThP23 452
Bélangier, Patrick.....	ThP29 601	Benter, Thorsten.....	MOH pm 3:30	Berven, Frode S.....	ThP23 456
Belau, Eckhard.....	WP09 142	Benter, Thorsten.....	MP15 274	Berven, Frode S.....	ThP22 432
Belau, Eckhard.....	WP09 145	Benter, Thorsten.....	MP15 284	Berzina, Zane Berzina.....	MP11 212
Belford, Michael.....	ThP01 011	Benter, Thorsten.....	MP15 277	Besa, Axel.....	MP12 223
Belford, Michael.....	ThP01 018	Benter, Thorsten.....	MP15 276	Beu, Steve.....	MP16 318
Belford, Michael.....	ThP06 094	Benter, Thorsten.....	MP15 278	Beu, Steve.....	ThP12 215
Belford, Michael.....	ThP01 016	Benter, Thorsten.....	MP15 279	Beu, Steve.....	ThP12 216
Belford, Michael W.....	ThP06 093	Bente-von Frowein, Matthias.....	MOH pm 4:10	Beu, Steven C.....	ThP06 081
Belgacem, Omar.....	TP35 708	Bente-Von Frowein, Matthias.....	TP03 053	Beusse, Jon.....	WOE pm 4:10
Belgacem, Omar.....	ThP25 503	Bentley, Adam.....	MP02 037	Beussman, Douglas J.....	MP30 610
Belgacem, Omar.....	WP30 564	Bentley, Adam.....	MP17 340	Beussman, Douglas J.....	MP30 619
Beliek, Alicia.....	TP35 697	Bentz, Bryan L.....	Museum	Beynon, Robert J.....	WP33 641
Belikova, Natalia.....	ThP28 566	Bentzley, Catherine.....	WP33 626	Bezstarosti, Karel.....	ThP18 310
Belisle, Pascal.....	WP05 062	Bentzley, Catherine.....	MP08 167	Bhagi, Ambika.....	MP20 389
Bell, Ashley.....	MOD pm 4:10	Benz, Christopher.....	WP30 555	Bhandari, Deepak.....	MP15 272
Bell, Christina.....	TP27 494	Benz, Christopher.....	ThOD am 08:50	Bhandari, Dhaka.....	WP12 214
Bell, Dave.....	MP07 131	Benziger, David.....	TP08 162	Bhandarkar, Deepti.....	MP06 112
Bell, Patrick.....	MP01 015	Beranek, Josef.....	WP04 041	Bhandarkar, Deepti.....	MP11 219
Bell, Ryan J.....	TP04 074	Berchem, Guy.....	MP26 541	Bhandarkar, Deepti.....	MP34 689
Bell, Ryan J.....	WOF pm 2:30	Berden, Giel.....	WOG am 08:50	Bhanu, Natarajan.....	TP22 348
Bellanger, Laurent.....	ThP25 506	Berden, Giel.....	WOG am 08:30	Bharadwaj, Gaurav.....	WP18 315
Bellina, Bruno.....	TP01 002	Berden, Giel.....	ThP35 701	Bhardwaj, Chhavi.....	WP12 195
Bellovin, David I.....	MP10 205	Berdnikov, Alexander.....	TP04 084	Bhardwaj, Chhavi.....	WP14 243
Belmant, Christian.....	WP24 440	Berdyshev, Evgeny.....	TP27 488	Bhargava, Maneesh.....	ThP23 474
Belov, Mikhail.....	MP17 336	Bereman, Michael.....	MP27 566	Bhat, Vadiraja.....	MP23 450
Belpaire, Claude.....	MP31 631	Bereman, Michael.....	MP33 673	Bhat, Vadiraja B.....	MP24 488
Bemis, Kyle.....	ThP03 030	Bereman, Michael.....	MP33 672	Bhat, Vadiraja B.....	MP25 513
Ben Haddou, Souade.....	ThP21 399	Bereman, Michael.....	TP08 132	Bhat, Vadiraja B.....	WP33 628
Bench Alvarez, MeiHwa Tanielle.....	TP19 278	Berenguer, Caroline.....	ThP02 025	Bhatia, Vivek N.....	WP32 605
Benda, David.....	TP10 182	Bereszczak, Jessica.....	WOH am 09:10	Bhatnagar, Deepak.....	MP03 058
Benderdour, Mohamed.....	TP10 178	Berezovski, Maxim.....	WP26 454	Bhattacharya, Nivedita.....	WP18 315
Bendiak, Brad.....	WOC am 08:30	Berg, Amanda.....	MP06 120	Bhattacharya, Subarna.....	ThP24 481
Bendiak, Brad.....	ThP20 374	Berg, Amanda.....	WP27 486	Bhattacharya, Subarna.....	ThP19 336
Benesch, Justin.....	TP33 641	Bergen, Robert.....	MP26 524	Bhone, Ankush.....	MP34 690
Benesch, Justin.....	TOG am 10:10	Bergen, Robert (Bob).....	MP18 362	Bhone, Ankush.....	ThP27 539
Bengali, Kathleen.....	MP09 169	Bergen, III, H. Robert.....	MP26 546	Bhone, Ankush.....	ThP11 200
Bengali, Kathleen.....	MP09 172	Bergen, III, H. Robert.....	ThP23 466	Bhuin, Radha Gobinda.....	TP02 021
Ben-Hur, Asa.....	ThOB am 09:30	Bergen, III, H. Robert.....	MP18 363	Biacchi, Michael.....	WP24 429
Benicky, Julius.....	ThP19 354	Berger, III, Robert.....	WOB pm 4:10	Bian, Yangyang.....	WP34 647
Benjamin, Ashlee.....	MP18 371	Berger, Judith.....	ThP04 036	Bich, Claudia.....	MP10 184
Benjamin, John.....	TP18 272	Berger, Scott.....	TOC pm 3:30	Bielawski, Christopher.....	TP02 039
Bennett, Alexander.....	WP26 471	Berger, Terry.....	WP19 330	Bier, Mark E.....	ThP06 106
Bennett, Dylan.....	MP01 027	Berger, Victoria.....	WOG pm 3:30	Bierbaum, Veronica.....	MP35 715
Bennett, Keiryn.....	MP09 168	Bergeron, Annik.....	ThP29 612	Bierbaum, Veronica.....	ThP36 719
Bennett, Mark.....	ThOB am 08:50	Bergeron, Mélanie.....	ThP29 619	Bierbaum, Veronica.....	TP02 035
Bennett, Mark.....	TOF am 09:30	Berg-Lyons, Donna.....	TOB pm 4:10	Bierbaum, Veronica.....	TP02 034
Bennett, Michael J.....	TP30 558	Bergmann, Leandro.....	ThP35 701	Bierilo, Kathy.....	TP21 307
Bennett, Patrick.....	MP25 502	Bergo, Vladislav.....	WP09 144	Bierkandt, Thomas.....	MP17 350
Bennett, Patrick.....	ThP29 592	Bergquist, Jonas.....	MP26 539	Biggin, Philip.....	WP23 411
Bennett, Patrick.....	TP15 229	Bergquist, Jonas.....	TP25 425	Bilbao, Aivett.....	MP23 458
Bennett, Patrick.....	ThOC am 08:30	Bergström, Sven.....	WP18 316	Bilbao, Aivett.....	WP31 593
Bennett, Patrick.....	MP25 509	Bergwerff, Aldert.....	TP37 750	Bilbao, Aivett.....	TP08 152
Bennett, Patrick.....	WP24 443	Berkaw, Mary.....	ThP19 347	Billheimer, Dean.....	WP26 472
Bennett, Patrick.....	TP28 517	Berkowitz, Steven A.....	WOH am 10:10	Billheimer, Dean.....	ThP22 419
Bennett, Patrick.....	WP24 444	Berle, Magnus.....	ThP23 452	Billheimer, Dean.....	WP26 455
Bennett, Patrick.....	WP24 442	Bern, Marshall.....	WP32 601	Bilodeau, Jason.....	MP01 019
Bennett, Patrick.....	ThOC am 09:10	Bern, Marshall.....	TP11 203	Bingham, Patrick.....	ThOH am 09:10
Bennett, Patrick.....	TP13 214	Bern, Marshall.....	WP31 577	Bingol, Baris.....	ThP18 307
Bennett, Patrick.....	MOE pm 2:50	Bern, Marshall.....	ThOB pm 3:30	Binkley, Joe.....	MOE pm 3:50
Bennett, Patrick.....	ThP12 228	Bern, Marshall.....	WP31 583	Binkley, Joe.....	WP04 040
Bennett, Patrick.....	ThP29 607	Bernevic, Bogdan.....	ThP09 145	Binkley, Joe.....	ThOG am 08:50
Bennett, Patrick.....	TP25 420	Bernhardt, Oliver.....	TP21 310	Binkley, Joe.....	WP19 333
Bennett, Patrick.....	ThP29 608	Bernhardt, Oliver M.....	TP17 252	Binkley, Joe.....	WP05 063
Bennett, Patrick.....	ThP13 244	Bernier, Matthew.....	TP06 123	Binkley, Joe.....	TP24 402
Bennett, Rachel V.....	ThP05 062	Bernstein, E.R.....	ThP06 103	Binkley, Joe.....	TP24 387
Bennett, Rachel V.....	ThP05 052	Bernstein, Hans C.....	WP14 243	Binkley, Joe.....	WOF am 09:10
Benoît, Rachel.....	TP31 588	Bernstein, Kenneth E.....	ThOD pm 3:10	Binkley, Joe.....	MP31 631
Bensaddek, Dalila.....	TP28 526	Bernstein, Mike.....	TP28 524	Binkley, Joe.....	MP04 078
Benskin, Jonathan.....	WP03 016	Bertaccini, Diego.....	ThP09 156	Binkley, Joe.....	MP04 073
Benskin, Jonathan.....	WP17 309	Berthiller, Franz.....	TP37 747	Binkley, Joe.....	MP36 742
Benson, Linda.....	MP26 524	Berti, Paul.....	WP22 393	Binz, Pierre-Alain.....	WP32 606
Benson, Jr, Don M.....	MP27 562	Bertile, Fabrice.....	TP21 306	Bird, Susan S.....	ThP28 561
Bentayeb, Karim.....	TOE pm 2:30	Berube, Matthew.....	MP07 141	Bird, Susan S.....	ThP28 565
Benter, Thorsten.....	MP15 282	Bérubé, Eugénie-Raphaëlle.....	ThP29 617	Birsan, Alex.....	TP30 577

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Birsan, Alex	ThP10 177	Blaske, Franziska	ThP05 070	Bomgarden, Ryan	WP31 583
Birt, Diane	WP19 351	Blatchley, Ernest	WP03 029	Bomgarden, Ryan	ThP23 449
Bischoff, Rainer	WP33 639	Blatnik, Matthew	ThOD pm 2:50	Bomgarden, Ryan	ThP18 321
Biselli, Scarlett	TP37 752	Blatnik, Matthew	WOD am 09:30	Bomgarden, Ryan	TP11 197
Bishop, Alex	WP37 728	Blatt, Celso	ThP27 555	Bomgarden, Ryan	TP08 131
Bissette, Brad	ThP29 592	Blazics, Balazs	ThP29 602	Bomgarden, Ryan	WOA am 09:30
Bisson, Linda	TOE pm 3:50	Blcakmer, James	TP35 692	Bomgarden, Ryan	ThP08 135
Bitan, Gal	WP23 414	Bleay, Stephen	MP30 623	Bomgarden, Ryan D.	WOA am 09:50
Bitterman, Peter	ThP23 474	Bleiholder, Christian	TP33 651	Bonačić-Koutecký, Vlasta	WOG am 10:10
Bjergum, Matthew	ThP10 170	Bleiholder, Christian	TOF pm 4:10	Boncristiani, Humberto	MP33 682
Bjergum, Matthew	ThP10 174	Blenis, John	TOE am 08:50	Bond, Nick	MP10 203
Bjergum, Matthew	ThP10 173	Blennow, Kaj	TP21 323	Bond, Nick	TP33 661
Bjergum, Matthew	ThP10 171	Blennow, Kaj	TP19 280	Bondar, Olga	MP26 524
Bjerke, Maria	TP19 280	Blessborn, Daniel	WP16 290	Bondar, PhD, Olga	MP09 173
Bjorlykke, Yngvild	TP19 284	Blethrow, Justin	TOA am 09:30	Bondarenko, Pavel	MOD pm 2:30
Bjorlykke, Yngvild	ThP22 432	Blethrow, Justin	MOA pm 2:30	Bondarenko, Pavel	ThP25 495
Blachon, Gregory	TP29 529	Blethrow, Justin	TP14 218	Bondarenko, Pavel V.	ThP33 668
Blachon, Gregory	ThP27 535	Blethrow, Justin	TP05 093	Bondesson, Ulf	WP15 274
Blachon, Gregory	TP27 484	Blethrow, Justin	TOA pm 2:30	Bondesson, Ulf	WP15 276
Blachon, Gregory	ThP29 595	Blethrow, Justin	ThP25 519	Bonduriansky, Russell	MP29 590
Blachon, Gregory	ThP01 001	Blokland, Marco H.	TP37 771	Bones, Jonathan	TP35 696
Blachon, Gregory	WP05 062	Blonder, Josip	ThP19 352	Bones, Jonathan	WOG pm 3:30
Blachon, Gregory	TP30 577	Blonder, Niksa	MP18 368	Bones, Jonathan	TP36 719
Blachon, Gregory	TP30 576	Blonder, Niksa	MP19 384	Bonham, Christopher A.	WP29 539
Black, David	TP20 302	Blount, Benjamin	WP03 025	Bonifay, Vincent	TP24 417
Blackburn, Kevin	WP28 500	Blount, Benjamin	ThP21 406	Bonilla, Leo	WP34 657
Blackburn, Kevin	ThP17 289	Blount, Benjamin	ThP21 404	Bonkovsky, Herbert L.	MP27 555
Blackburn, Kevin	ThOE pm 4:10	Blueggel, Martin	TOC pm 3:10	Bonnaire, Yves	WP17 305
Blackburn, Mary	WP20 369	Bluff, Jo	WP11 172	Bonneil, Eric	TP33 640
Blackburn, Mary	TP08 132	Blum, Lorenz C.	MP13 249	Bonnel, David	ThP02 023
Blackburn, Mary	ThP27 544	Blumberg, Bruce	ThP28 575	Bonnel, David	WP11 193
Blackburn, Mary	TP31 602	Blumert, Conny	TP17 250	Bonnel, David	ThOF am 10:10
Blackburn, Mary	WP27 479	Bo, Tao	MOE pm 4:10	Bonner, Ron	TP24 385
Blackburn, Mary L.	ThP06 093	Bo, Tao	MP34 709	Bonner, Ron	WP13 230
Blackwel, Anne E.	MP25 513	Bo, Tao	WP19 324	Bonner, Ron	MP24 463
Blackwel, Anne E.	WP33 628	Bo, Tao	MP33 674	Bonner, Ron	WP36 685
Blackwell, Benny	TP22 351	Bo, Tao	MP34 708	Bonner, Ron	MP24 493
Blair, Ian	TP24 393	Bø, Lars	ThP22 433	Bonner, Ron	TP08 144
Blair, Ian A.	TP29 550	Bobba, Sudheer	MP06 100	Bonner, Ron	TP08 141
Blair, Ian A.	WP17 306	Bobst, Cedric E.	TP15 231	Bonomelli, Camille	TP35 707
Blair, Ian A.	TP24 407	Bobst, Cedric E.	MP25 499	Bonsing, Bert A.	ThP23 471
Blair, Ian A.	MP11 218	Bobst, Cedric E.	WP23 410	Bonzón Kulichenko, Elena	TP17 246
Blake, Daniel	MP06 109	Boccard, Julien	MOE am 08:50	Boock, Jared	ThP01 015
Blake, Daniel	WP08 125	Böcker, Sebastian	WP13 231	Boock, Jared J.	MOC am 09:30
Blake, Donald R.	WOF pm 2:30	Boden, Adrienne	WP04 042	Boon, Kum-Loong	MP20 387
Blake, James C.	MP34 694	Bodi, Andras	ThP36 726	Boons, Geert-Jan	WOC am 09:50
Blake, Robert S.	MP16 321	Bodi, Andras	ThP36 727	Boothman, David	WP06 089
Blake, Thomas	MOD am 09:10	Bödi, Stefan	MP04 077	Borchers, Christoph	TP11 196
Blake, Thomas	ThP26 525	Bodle, Eric S.	TP26 455	Borchers, Christoph	MP09 180
Blake-Hedges, Jacquelyn	WP01 002	Bodnar, Edward	TP36 726	Borchers, Christoph	TOA am 10:10
Blakeman, Kenion	MP15 290	Boecker, Sebastian	MP36 734	Borchers, Christoph	MP22 424
Blakeman, Kenion	MP16 299	Boedec, Angélique	WP24 440	Borchers, Christoph	MOF am 09:10
Blakeman, Kenion	MP16 300	Boege, Fritz	ThP23 454	Borchers, Christoph	MP21 406
Blakeslee, Beth	WP19 334	Boehm, Guenter	ThP11 194	Borchers, Christoph	TOF am 09:10
Blakney, Greg T.	ThP12 217	Boehm, Guenter	MP25 518	Borchers, Christoph	ThP04 037
Blakney, Gregory	MP16 318	Boehm, Jesse S.	ThP10 179	Borchers, Christoph	WP16 289
Blakney, Gregory T.	ThP06 081	Boekel, Jorrit	MP19 376	Borchers, Christoph	MP20 390
Blanchet, Valerie	ThP36 726	Boerma, LeeAnn	MP22 425	Borchers, Christoph	MP21 408
Blanco, Francisco J.	MP10 197	Boerma, LeeAnn J.	ThOD am 09:30	Borchers, Christoph	MP21 405
Blanco-Tirado, Cristian	WP05 055	Boersma, Melissa	WP29 528	Borchers, Christoph	MP19 375
Blanco-Tirado, Cristian	MP08 164	Boese, Joos-Hendrik	MP29 582	Borchers, Christoph	WP28 499
Bland, Celine	ThP09 158	Boese, Joos-Hendrik	MP19 383	Borén, Mats	TP20 303
Blank, David	MP01 009	Boese, Joos-Hendrik	ThP34 675	Borges, Endler	TP34 683
Blank, Michael	ThP23 449	Boese, Joos-Hendrik	MP29 581	Borgmann-Winter, Karin E.	TP21 319
Blank, Michael	WP33 617	Boggio, Kristin J.	TP19 282	Borhan, Babak	MOG am 08:50
Blank, Michael	WP33 629	Bogumil, Raf	WP17 309	Borisov, Oleg	ThOC am 09:10
Blankenship, Robert	WP23 403	Bohn, Paul	ThP04 040	Borisov, Roman	MP36 724
Blankenship, Robert E.	MOB pm 2:30	Boichenko, Alexander	WP33 639	Bork, Peer	MP29 580
Blankenship, Robert E.	WP23 401	Boissel, Pierre	TP04 070	Borkar, Sampada	ThP36 727
Blankenship, Robert E.	WP23 402	Boissery, Pierre	TP31 585	Borkowski, Carina	MP10 202
Blankenship, Robert E.	ThP36 713	Boitsov, Vitali	ThP34 679	Boronina, Tatiana N.	ThP08 127
Blanksby, Stephen	ThOC pm 3:30	Bokatzian-Johnson, Samantha S.	ThP36 712	Borotto, Nicholas	MP22 421
Blanksby, Stephen	ThP35 709	Bolcato, Christopher	TP12 212	Borotto, Nicholas	MP22 430
Blanksby, Stephen	ThP35 705	Boldyrev, Alexey	MP17 356	Borrajo-Pelaez, Rafael	TP23 377
Blanksby, Stephen	ThP36 725	Boles, Chris	WP35 674	Borthwick, Andy	ThOB am 08:50
Blanksby, Stephen J.	TP33 642	Bolgar, Mark	WP14 246	Borton, David	WP14 235
Blanksby, Stephen J.	MP12 229	Bollig, Klaus	MP06 111	Borton, David	ThOG pm 2:30
Blanksby, Stephen J.	MP36 722	Bolton, Barbara	ThP11 209	Boschmans, Jasper	TP33 637
Blaske, Franziska	WP11 174	Bomgarden, Ryan	WP33 617	Bosco, Daryl A.	TP19 282

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Bose, Ron	MP24 478	Boyer, Anne E	MP26 548	Britton, Eric	TP26 473
Bose, Ron	MOF am 09:30	Boyes, Barry	TP35 694	Britton, Laura-Mae	TP22 349
Boshuis, Peter	MP25 495	Boyes, Barry	ThP19 348	Britz-McKibbin, Phillip	TP23 359
Bosnich, Whynn	MP03 053	Boyes, Barry	MP06 129	Brkic, Boris	WP04 043
Boswell, Paul	MP03 048	Boyle, Billy	ThP01 020	Brkic, Boris	MP15 170
Boswell, Paul	ThP11 210	Boyle, Billy	ThP01 021	Broadbelt, Kevin G.	ThOD am 10:10
Boswell, Paul	ThP11 211	Boyle, Billy	ThP01 019	Broadbuss, Russell	MP27 553
Boswell, Paul	MP03 049	Boyne, Michael	MOD pm 2:50	Broccardo, Carolyn	TP05 099
Boswell, Paul	MP03 047	Bozack, Svetlana	MP11 216	Broch Trentini, Débora	WP34 660
Boswell, Paul G.	MP06 118	Bozell, Joseph	ThOG am 10:10	Brockhaus, Albrecht	MP15 283
Boswell, Sarah A.	TP08 147	Bozhenok, Ludmila	MP25 497	Brockman, Stephen	MP34 688
Bothner, Brian	TP23 360	Braakman, Rene	ThP22 416	Brockmann, Klaus	MP15 284
Bothner, Brian	TP24 398	Braakman, Rene	ThP22 417	Brockmann, Klaus J.	MP15 283
Bothner, Brian	WOA pm 3:50	Braakman, René B.H.	ThOD am 09:10	Brockmann, Klaus J.	MP15 279
Bothner, Brian	TP23 366	Brabeck, Gregory	TP05 098	Brockmann, Klaus J.	MP15 274
Botrè, Francesco	WP08 135	Bracht, Thilo	ThP22 413	Brockmoeller, Scarlet	MP10 203
Botrè, Francesco	MP30 614	Bracht, Thilo Bracht	ThP22 412	Broadbelt, Jennifer	TP11 199
Bottalico, Lisa	WP17 306	Brachthaeuser, Yessica	WP38 754	Broadbelt, Jennifer	WP37 728
Böttcher, Christoph	ThOB am 09:10	Brachthäuser, Yessica	MP15 275	Broadbelt, Jennifer	TP01 003
Bottinelli, Dario	MP23 458	Brachthäuser, Yessica	MP15 280	Broadbelt, Jennifer	TP09 172
Bottinelli, Dario	TP08 152	Brachthäuser, Yessica	MP15 284	Broadbelt, Jennifer	WP30 566
Bottinelli, Dario	WP31 593	Bradford, Andrew P.	WP06 073	Broadbelt, Jennifer	WP24 427
Botz, Chad	MP09 175	Bradley, Emma	WP37 707	Broadbelt, Jennifer	TP01 010
Bou-Assaf, George M.	WOH am 10:10	Bradley, Joel C.	TOA am 08:30	Broadbelt, Jennifer	ThP09 152
Boudah, Samia	MP12 232	Bradshaw, Robert	MP30 623	Broadbelt, Jennifer	MP12 231
Boudah, Samia	MP04 075	Branson, Owen E.	ThP22 411	Broadbelt, Jennifer S.	MP24 485
Boudreau, Nadine	MP01 021	Brant, David	TP28 517	Broadbelt, Jennifer S.	ThP19 353
Boudreau, Nadine	MP01 025	Brantley, Milam	MP04 060	Broadbelt, Jennifer S.	ThP09 146
Boudreau, Nadine	MP06 107	Branza-Nichita, Norica	TP21 336	Broadbelt, Jennifer S.	TOA pm 4:10
Boudreau, Nadine	MP01 023	Brask, Julie Benedicte	ThOD am 09:10	Broderick, David	MP22 432
Boudreau, Nadine	TP08 149	Bratt, Jennifer	WP17 308	Brodesser, Susanne	MP12 223
Boudreau, Nadine	MP01 019	Brauckmann, Christine	WP23 409	Brodie, Nicholas	MP21 406
Boudreau, Nadine	MP06 088	Brauer, Jonathan	ThP05 069	Broeckling, Corey	MP04 071
Boudreau, Nadine	MP01 020	Braun, Doug R.	TP24 415	Broeckling, Corey	ThOE pm 2:50
Boudreau, Nadine	MP01 022	Braun, Thomas	ThP18 309	Broeckling, Corey	MP03 049
Boudreau, Nadine	MP01 026	Braun, Thomas	WP29 525	Broeckling, Corey D.	ThOB am 09:30
Boudreau, Nadine	MP01 014	Braun, Thomas	MP24 476	Bromirski, Maciej	TP31 589
Boudreau, Nadine	MP01 024	Braunschweiger, Karen	ThP09 151	Bromirski, Maciej	ThP29 606
Boudreau, Paul	TOH pm 2:30	Braverman, Alan	TP21 314	Bromirski, Maciej	TP31 597
Boudreau, Paul	TOG pm 2:30	Bray, Fabrice	TOA pm 3:10	Bromirski, Maciej	WP04 042
Bougueleret, Lydie	WP32 606	Bray, Fabrice	TP12 210	Bromirski, Maciej	WOE am 09:30
Bouhifd, Mounir	TP24 391	Breault-Turcot, Julien	ThP04 041	Bromirski, Maciej	TP31 578
Boukhali, Myriam	WP28 509	Brechlin, Peter	WP26 456	Bromirski, Maciej	MOE am 08:50
Boukhedimi, Yasmin	WP17 297	Breed, Jason	WP23 407	Bromirski, Maciej	ThP12 228
Boulanger, Martin	MP21 408	Breinolt, Jens	WP22 395	Brookmeyer, Claire	TP29 547
Bourassa, Sylvie	WP33 622	Breitkopf, Susanne	ThP17 296	Brooks, Robert	ThP36 721
Bourdaudhui, Pascal	MP04 063	Breitkopf, Susanne	WOD am 08:50	Brorson, Kurt	TOC pm 4:10
Bourgeois, Philippe	TP19 280	Breitkopf, Susanne	WP28 504	Brosch, Gerald	WP30 563
Bourgon, Richard	WP33 632	Brekenfeld, Andreas	TP36 716	Brouard, Mark	ThP04 050
Bourgoudien, Freek	ThP21 396	Brenna, J. Thomas	ThP11 214	Brouard, Mark	ThP05 059
Boursier, Laure	WP05 059	Brennan, John	MP06 099	Brouard, Mark	ThP05 068
Boutin, Michel	ThP21 387	Brennen, Reid	ThP09 147	Broudy, Daniel	TP28 521
Boutonnet, Baptiste	WP14 244	Brennen, Reid A.	WP21 380	Broussard, Joshua	TP04 066
Bovee, Michael	ThP08 133	Brennen, Reid A.	MP22 431	Brouwer, Hendrik-Jan	WP15 260
Bowden, John	ThP28 575	Brenner, Michael	TP08 143	Brouwer, Hendrik-Jan	ThP18 317
Bowden, Thomas	TP35 707	Breuker, Kathrin	MOH am 09:30	Brown, Ann	WOD am 09:10
Bowen, Chester	MP07 140	Breuker, Kathrin	TP09 171	Brown, Gordon D.	WP28 496
Bowen, Chester L.	TP25 451	Breuker, Kathrin	MOB pm 3:30	Brown, Jeff	TP01 001
Bowen, Richard D.	ThP31 634	Brewer, Heather M.	MP34 707	Brown, Jeff	TP01 002
Bowerman, Charles	TP25 439	Bridge, Alan	WP32 606	Brown, Jeff	WP10 167
Bowers, Jeremiah	ThP22 414	Briese, Thomas	ThP25 497	Brown, Jeffery	TP02 027
Bowers, Michael	TP33 619	Bright, Jane	MP30 627	Brown, Kari	WP15 272
Bowers, Michael T.	TOF pm 4:10	Brik, Ashraf	TP22 354	Brown, Kristy	ThP19 337
Bowersock, Greg	ThOD am 09:30	Brill, Laurence	MOA pm 2:30	Brown, Kristy J.	WOD pm 4:10
Bowfield, Andrew	MP17 345	Brinckerhoff, Will	TP05 090	Brown, Lauren	ThP01 021
Bowling, Heather	MP29 601	Brinckerhoff, William	MP35 719	Brown, Lauren	ThP01 013
Bowman, David	WP04 040	Brinckerhoff, William	ThOE am 08:50	Brown, Lauren	ThP01 020
Bowman, Jennifer	ThP11 187	Brinckerhoff, William	MP35 718	Brown, Lewis M.	TP21 326
Bowman, Jennifer	TP10 181	Brinckerhoff, William	MP35 720	Brown, Melisa	WP05 049
Bowser, Michael	WP37 730	Brink, Andreas	MP02 031	Brown, Nat	ThP25 511
Boyarkin, Oleg	ThP35 696	Brink, Andreas	MOE pm 3:10	Brown, Noah	MP27 564
Boyarkine, Oleg V.	WOG am 09:30	Brinkmalm, Ann	TP21 323	Brown, Paula N.	MP34 706
Boyce, Gregory	WP11 181	Brinkmalm, Ann	TP19 280	Brown, Roslyn	TP12 209
Boyce, Gregory	TP21 341	Brinkmalm, Gunnar	TP21 323	Brown, Stephen	TP35 710
Boyd, Jessica	WOF am 08:50	Brinkmalm, Gunnar	TP19 280	Brown, Stuart	ThOD am 08:30
Boyd, Jessica M.	MP31 633	Briscoe, Andrew	TP36 730	Browne, Shaynah	WP23 417
Boyd, Robert	MP25 497	Bristow, Anthony	ThOF pm 4:10	Brownridge, Philip J	WP33 641
Boyd, Robert K.	ThOH pm 3:30	Britigan, Bradley	WP15 272	Broxterman, Henk	WP34 665
Boyd, Robert K.	MP18 364	Brittain, Scott	ThP09 144	Bruce, James	WP28 495

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Bruckner, Raphael.....	WP28 509	Burton, Aaron.....	ThOE am 09:30	Calligaris, David.....	WP11 185
Bruckner-Tuderman, Leena.....	WP36 706	Burton, Lyle.....	WP15 256	Calligaris, David.....	MOG am 09:10
Bruckskotten, Marc.....	MP24 476	Burton, Lyle.....	TP08 144	Calligaris, David.....	ThP09 154
Bruderer, Roland M.....	TP08 142	Burton, Lyle.....	TP24 385	Caltagarone, John.....	MOF pm 3:50
Bruderer, Roland M.....	TP17 252	Burton, Lyle.....	WP13 230	Calvo, Enrique.....	TP05 095
Brueggemann, Ernst E.....	MP25 500	Burton, Mark D.....	ThP25 497	Calvo-Calle, J. Mauricio.....	MP28 574
Brüggemann, Martin.....	MP31 649	Büschel, Christoph.....	MP33 680	Camara, Johanna.....	WP19 352
Bruins, Andries P.....	WP15 261	Büschl, Christoph.....	MP04 077	Camenzind, Alexander.....	MP09 180
Brüker, Kathrin.....	WOC pm 2:50	Bush, Ashley.....	WP12 212	Cammarata, Michael.....	TP09 172
Brumm, Riccardo.....	TP17 250	Bush, Matt.....	WP23 412	Camp, Dave.....	MOD am 08:30
Brun, Virginia.....	TP13 215	Bush, Matthew F.....	WP38 737	Camp, David G.....	WP27 484
Brunelle, Alain.....	MP11 220	Bushee, Jennifer L.....	WP15 279	Camp, David G.....	MP26 542
Brunelle, Alain.....	MP10 184	Bushee, Jennifer L.....	WP15 271	Camp II, David G.....	MP24 483
Brunelle, Alain.....	WP14 244	Busik, Julia.....	ThP28 576	Camp II, David G.....	MOA am 10:10
Brunelle, Alain.....	TP03 051	Busik, Julia V.....	MP11 216	Camp, II, David G.....	MP26 540
Brunetto, Rosario.....	ThOE am 09:10	Busnel, Jean-Marc.....	WP24 428	Campbell, Colin.....	MP23 452
Brunnert, Hans.....	ThP27 553	Busnel, Jean-Marc.....	MP15 287	Campbell, Colin.....	MP13 243
Brunnström, Åsa.....	TP25 430	Busnel, Jean-Marc.....	TP15 229	Campbell, Dave.....	TOH pm 4:10
Bruns, Nicole.....	TOG pm 2:30	Busquets, Xavier.....	MP10 201	Campbell, J. Larry.....	ThP28 586
Bruserud, Øystein.....	ThP23 456	Bustos, Daisy.....	ThP18 307	Campbell, J. Larry.....	TP33 642
Brusic, Vladimir.....	WP31 575	Bustos, Daisy.....	TOD pm 4:10	Campbell, J. Larry.....	WP04 039
Bruton, Jim.....	TP30 571	Butcher, Rebecca.....	TP23 378	Campbell, J. Larry.....	ThP01 010
Bryan, Scott R.....	ThP04 045	Büter, Lars.....	TP10 189	Campbell, Larry.....	TP02 043
Buchholz, Malte Buchholz.....	MP10 202	Butko, Margaret.....	TP21 318	Campbell, Larry.....	WOA pm 3:10
Buchner, James.....	MP34 687	Butler, Rebecca.....	ThP10 184	Campbell, Scott.....	TP28 524
Buchner, James D.....	ThP31 639	Buts, Kim.....	ThOE pm 3:10	Campbell, Yan.....	MP22 432
Buchner Jr., James.....	MP34 687	Butsch Kovacic, Melinda.....	WP15 272	Campos, Tiago.....	MP34 696
Buck, Lynette.....	ThP33 668	Butscheid, Yulia.....	TP21 310	Campuzano, Iain.....	TP33 623
Buckanovich, Ronald.....	WP26 466	Butscheid, Yulia.....	TP17 252	Campuzano, Iain D G.....	WP14 241
Budamgunta, Harshavardhan.....	TP04 071	Butzmann, Lars.....	ThP34 675	Canchaya, Gabriela.....	MP26 543
Budimir, Natali.....	WP37 708	Butzmann, Lars.....	MP19 383	Cancilla, Mark.....	MP14 259
Budzinski, Ilara Gabriela Frasson.....	MP32 666	Butzmann, Lars.....	MP29 582	Cancilla, Mark.....	MP14 261
Bugni, Tim S.....	TP24 415	Butzmann, Lars.....	MP29 581	Candish, Esme.....	MP07 137
Buhrlage, Sara.....	WP11 185	Byer, Jonathan.....	MP31 631	Canella, Alessandro.....	MP27 562
Bukowski, Nick.....	TP04 061	Byram, Gregory.....	TP08 131	Cannon, Joe R.....	ThP09 146
Bulayeva, Nataliya.....	MP26 522	Byram, Gregory.....	WP32 602	Cannon, Joe R.....	MP24 485
Bull, James.....	TP05 102	Byram, Gregory.....	TP22 351	Cano, Patricia M.....	MP04 063
Bull, James.....	ThP05 068	Byram, Gregory.....	TP21 309	Cansizoglu, Ertugrul.....	WOB am 09:10
Bülter, Ann-Christin.....	ThP05 056	Byram, Gregory.....	WP26 457	Cantarel, Brandi.....	ThP25 502
Bülter, Ann-Christin.....	ThP05 070	Byram, Gregory.....	ThP34 673	Canterbury, Jesse.....	WOE am 09:50
Bülter, Ann-Christin.....	WP11 174	Bystrom, Cory.....	MP09 168	Canterbury, Jesse.....	TOA am 09:30
Bunch, Josephine.....	WP10 165	Bythell, Benjamin J.....	WOC pm 3:10	Canterbury, Jesse.....	MOA am 08:30
Bunch, Josephine.....	WP09 153	Bythell, Benjamin J.....	ThP31 645	Canterbury, Jesse.....	TOA pm 2:30
Bunch, Josephine.....	MP11 208	Byun, Jaeman.....	TP35 710	Canterbury, Jesse D.....	MP16 309
Bunch, Josephine.....	ThP23 455	Byun, Jaeman.....	WP17 311	Canterbury, Jesse D.....	WP31 582
Bunch, Josephine.....	WP10 164	Bzdek, Bryan.....	ThP36 711	Cantley, Lewis.....	WP22 386
Bunch, Josephine.....	ThP04 049	Cabanzo, Rafael.....	WP05 054	Canty, John M.....	TP18 257
Buncherd, Hansuk.....	MP21 407	Cabanzo, Rafael.....	ThOG pm 3:30	Cao, Hui.....	TP37 741
Bundy, Jacob G.....	WP12 220	Cabovska, Baiba.....	MP36 736	Cao, Jian.....	MP22 416
Bunger, Maureen.....	MP09 168	Cabral, Elaine Cristina.....	ThP04 044	Cao, Lulu.....	WP09 138
Bunn, Jonathon.....	ThP11 202	Cabrera, Karin.....	WP19 335	Cao, Rui.....	WP26 461
Burgers, Peter.....	WP18 319	Cabrices, Oscar.....	WOA pm 3:10	Cao, Weiqian.....	TP35 693
Burgeson, Jim.....	WP15 282	Cabrices, Oscar.....	TP29 555	Cao, Xing-Jun.....	WP30 562
Burgess, Jennifer.....	TP31 579	Cabrices, Oscar G.....	TP29 541	Cao, Zhe.....	TP31 605
Burgess, Michael.....	WOA am 10:10	Caesar, Ina.....	ThP23 465	Capacio, Benedict.....	TP26 458
Burgess, Michael.....	MP26 523	Cafazzo, Mark.....	TP08 137	Capilla, Ramsés.....	TOG am 09:50
Burk, Peeter.....	TP02 030	Cai, Chengyuan.....	WP20 366	Capodanno, Eric.....	TP37 746
Burke, Anthony.....	MP21 411	Cai, Qian.....	WP32 599	Cappiello, Achille.....	WP20 361
Burke, Kathleen.....	MP22 426	Cai, Qian.....	WP29 519	Cappiello, Achille.....	TP31 606
Burke, Meghan.....	TOE am 08:30	Cai, Sheng-Suan (Victor).....	ThP27 556	Capri, Joseph.....	TP18 273
Burke, Nicole.....	ThP14 256	Cai, Sheng-Suan (Victor).....	MOH pm 3:10	Caprioli, Richard.....	ThP05 061
Burke, Nicole.....	ThP35 699	Cai, Tanxi.....	TP27 479	Caprioli, Richard.....	WP10 166
Burke, Rochelle.....	TP25 448	Cai, Xianmel.....	ThP10 172	Caprioli, Richard.....	WP09 156
Burke, Jr., Terrence.....	ThP14 258	Cai, Yang.....	TP10 186	Caprioli, Richard.....	WP09 154
Burkhart, Julia M.....	TP19 285	Cai, Yang.....	TP11 195	Caprioli, Richard.....	TOB am 10:10
Burlingame, Al.....	TOD am 09:30	Cai, Yi.....	ThP30 629	Caprioli, Richard.....	MP10 195
Burlingame, Alma.....	WOE am 09:30	Cajka, Tomas.....	TP27 480	Caprioli, Richard.....	MP27 551
Burlingame, Alma.....	WP31 591	Cajka, Tomas.....	ThOC pm 2:30	Caprioli, Richard.....	WP12 206
Burnet, Meagan.....	MP20 389	Calabrese, Antonio.....	MP21 403	Caprioli, Richard M.....	WP12 202
Burns, Sarah A.....	MP06 103	Calafat, Antonia.....	ThP21 405	Caprioli, Richard M.....	MP10 190
Burnum, Kristin.....	TOB am 08:50	Caldas, Carlos.....	WP28 496	Caprioli, Richard M.....	WP10 163
Burnum, Kristin.....	TOB pm 3:50	Calderon, Angela.....	ThP13 236	Caprioli, Richard M.....	WP09 152
Burnum-Johnson, Kristin.....	TP33 652	Calderon, Neisy.....	ThOG pm 3:30	Caprioli, Richard M.....	MP10 191
Burr, Alicia.....	WP24 428	Callahan, John.....	ThP12 224	Caprioli, Richard M.....	WP12 199
Burrier, Robert.....	TP29 548	Callahan, John.....	ThP27 557	Caprioli, Richard M.....	MP10 186
Burrows, Jon.....	MP09 172	Callahan, John H.....	ThP25 516	Caprioli, Richard M.....	WP09 155
Burrows, Jon.....	MP09 169	Callahan, John H.....	WP19 343	Caprioli, Richard M.....	ThP04 033
Burt, Oliver.....	MP36 736	Callahan, John H.....	TOE pm 2:50	Caprioli, Richard M.....	WP10 162
Burt, Randall.....	TP21 314	Callaway, Myrasol.....	ThP23 460	Caprioli, Richard M.....	TOB pm 2:50

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Capriotti, Fabiana	WP20 361	Cassady, Carolyn J.	ThP36 712	Chait, Brian	MP20 391
Capuano, Floriana	TP33 661	Cassady, Carolyn J.	TP07 124	Chait, Brian T.	WOE pm 2:30
Carapito, Christine	ThP09 156	Cassidy, Elizabeth	TP06 116	Chait, Brian T.	WP28 507
Carapito, Christine	ThP22 428	Castaneda, Carlos	MP29 590	Chait, Brian T.	WP23 418
Carapito, Christine	TP21 306	Castangia, Roberto	ThP18 308	Chait, Brian T.	TOH am 10:10
Carchedi, Marisa	MP36 729	Casteel, Darren E.	TP35 708	Chakrabarti, Atis	MP06 127
Cardasis, Helene L.	ThP06 091	Castellano, Natalie	WP22 397	Chakrabarty, Shubhashis	ThOA pm 2:50
Cardenas, Johnny	WP33 640	Castellanos-García, Laura J.	WP24 437	Chakrabarty, Shubhashis	ThP07 113
Cardenas, Johnny	WP33 643	Castellino, Stephen	MP08 164	Chakrabarty, Shubhashis	TP04 062
Cardozo, Karina Helena Morais	MP10 196	Castello, Olena	ThOF am 09:10	Chakraborty, Asish	TOC pm 3:30
Carlini, Edward	MP14 259	Castellino, Stephen	WP11 177	Chakraborty, Asish	ThP06 089
Carlis, John V.	TP28 511	Castello, Olena	ThP13 248	Chalkha, Achouak	MP15 270
Carlson, Erik	MP23 446	Castillia, Caterina Strambio De	MP23 458	Chalkley, Robert	MP24 472
Carlson, Erin	TOG pm 3:10	Castillino, Stephen	WP11 175	Chalkley, Robert	WP31 591
Carlson, Gerald M.	WP22 387	Castillo, Mary Joan	WP27 480	Chalkley, Robert	WP31 587
Carlson, Ross P.	WP14 243	Castoro, John	WP14 251	Chalmers, Michael	WOH am 09:50
Carlson, Timothy	MP01 002	Castro, Sergio	ThP12 218	Chalmers, Michael	WP22 389
Carlsson, Cynthia	WP27 476	Castro Feo, Begonia	WP12 216	Chalmers, Michael	MOF pm 3:10
Carlsson, Henrik	WP26 465	Castro-Perez, Jose	TP21 307	Chalmers, Michael	WP22 386
Carlton, D.	ThP06 103	Castro-Perez, Jose	WOD pm 3:10	Chalmers, Michael J.	WP21 384
Carlton Jr., Doug D.	WP19 325	Catalano, Carlos E.	WP23 420	Chalmers, Michael J.	WP36 697
Carmella, Steven	TP29 547	Catenacci, Daniel	MP09 169	Chambers, Andrew	TOA am 10:10
Carmella, Steven	TP29 532	Catenacci, Daniel	MP09 172	Chambers, Andrew	MP19 375
Carmen, Deanna	MP21 403	Catherman, Adam	MOB pm 4:10	Chambers, Andrew	WP16 289
Carmona, Juan	ThP27 545	Catherman, Adam	TP01 008	Chambers, Erin E.	WP33 634
Carmona, Juan	ThP27 544	Catherman, Adam	TP16 244	Chambers, Laura	ThP11 201
Carniel, Elisabeth	TOH pm 3:50	Catherman, Adam	ThP08 128	Chambers, Matthew	WP31 587
Carolan, Vikki	WP11 172	Catherman, Adam D.	WOD pm 3:30	Chambers, Matthew	WOB am 08:50
Caron, Pierre-Yves	MP01 021	Catherman, Adam D.	WP35 684	Chambers, Matthew	MP09 168
Caron, Pierre-Yves	MP06 088	Catoire, Alexandre	MP17 340	Chambless, Kevin	WP05 065
Caron, Pierre-Yves	MP01 022	Catron, Brittany	ThP23 472	Chambon, Christophe	MP10 188
Caron-Lizotte, Olivier	MP28 573	Causon, Jason	MP06 109	Chammas, Roger	ThP22 431
Carpenter, Michael S.	MP06 094	Cavagnino, Daniela	TP31 606	Chamot-Rooke, Julia	ThOB pm 3:50
Carpentier, Sebastien	ThOE pm 3:10	Cavanaugh, Craig	MP15 290	Chamot-Rooke, Julia	MOG am 08:30
Carpentier, Andrea	ThP19 350	Cavazos, Ramiro	TP26 463	Chamot-Rooke, Julia	TP06 123
Carpita, Adriano	TP30 567	Cavdar, Avni	WP07 101	Champer, Jackson	ThP25 513
Carpuy Gutierrez Cirlos, Alejandro	ThP09 163	Cazares, Lisa H.	MP25 500	Champer, Miriam	ThP25 513
Carr, Peter	MP06 117	Cazares, Lisa H.	TOH pm 3:30	Chan, Becky	WP23 414
Carr, Steve	TP08 148	Cece, Esra Nurten	MP02 031	Chan, C.K.	WP13 228
Carr, Steve	MOF pm 3:30	Cech, Nadja	MP34 700	Chan, Chang-Ching	TP01 016
Carr, Steve	MP26 523	Cech, Nadja B.	ThP31 649	Chan, Daniel	TOD pm 3:30
Carr, Steve	TOD pm 3:30	Celik, Murat	MP07 150	Chan, Eric	TP22 350
Carr, Steve	MOD am 08:30	Celik, Murat	MP07 149	Chan, Ethan	ThP06 094
Carr, Steve	WOA am 10:10	Celik, Murat	WP07 101	Chan, King	TP08 158
Carr, Steven A.	ThP10 179	Çelikbiçak, Ömür	WP34 654	Chan, King	WP18 312
Carr, Steven A.	ThP01 011	Çelikbiçak, Ömür	WP34 653	Chan, Shan-An	TP37 749
Carr, Steven A.	MP26 544	Çelikbiçak, Ömür	MP23 455	Chan, Sheot Harn	TP37 738
Carreira, Ricardo J.	WP09 141	Çelikbiçak, Ömür	TP36 725	Chan, Xian	MP19 374
Carrera, Maria G.	WP11 191	Çelikbiçak, Ömür	ThP09 150	Chance, Deborah	MP34 703
Carrilho, Emanuel	WP29 529	Celiz, Adam	ThP02 022	Chance, Mark	ThP16 275
Carroll, Frances	WP08 120	Cellar, Nicholas	WP20 361	Chance, Mark	WP36 701
Carroll, James A.	MOB pm 2:30	Cerda, Blas	WP37 716	Chance, Mark	ThP23 468
Carroll, James A.	TP15 236	Cerda, Blas	ThP27 536	Chance, Mark R.	MOF am 10:10
Carroll, Jason S.	WP28 496	Cerda, Blas	WP37 715	Chance, Mark R.	TP11 201
Carroll, Rebecca	MP23 442	Cerniglia, Carl	TP37 766	Chance, Mark R.	ThP17 280
Carroll, Richard	TP26 456	Ceroni, Alessio	MP18 365	Chance, Mark R.	WP28 501
Carruthers, Anthony	ThP24 482	Cerqueira, Cátia	ThP19 332	Chanco, Luigi	TP25 432
Carson, James	TOB pm 3:50	Cha, Byung Heun	ThP23 457	Chandler, Donald Walt	ThP06 098
Carson, James	TOB am 08:50	Cha, Byungchul	ThP06 099	Chandorkar, Gurudatt	TP08 162
Carson, Joshua	WP29 528	Cha, Hyun-Jeong	WP35 675	Chandramohan, Govindarajan	WP14 250
Carson, Joshua J.	MOA pm 3:30	Cha, Jeeyeon	TOB am 08:50	Chandramohan, Govindarajan	WP14 249
Carson III, William E.	ThP22 411	Cha, Jeeyeon	TOB pm 3:50	Chaney, Paul	ThP26 520
Carstens, Carsten	ThP25 497	Cha, Sangwon	TP10 180	Chang, Chen-Chin	WP18 314
Carter, Christy	WP12 204	Cha, Seong Won	WOB pm 2:50	Chang, Ching-Yun	WOB am 10:10
Carter, Melissa	MOD am 09:10	Chacón, Martha L.	WP05 055	Chang, Chun-Chao	MP27 567
Carter, Melissa	ThP26 525	Chadwick, Stuart	ThP29 598	Chang, Eugene	TP37 764
Carter, Spencer	ThP13 233	Chadwick, Stuart	TP20 301	Chang, Geen-Dong	ThP18 326
Carter, Spencer	ThOC am 08:30	Chae, Sung-Suk	MP26 540	Chang, Geoffrey	WP23 411
Carter, Spencer J.	TP26 455	Chaerkady, Raghothama	MP24 478	Chang, George	MP02 034
Caruntu, Daniela	TP10 186	Chaerkady, Raghothama	TP12 208	Chang, Grover	ThP15 267
Caruso, Michael	ThP17 293	Chaerkady, Raghothama	ThP22 440	Chang, Hui-Yin	TP28 518
Caruso, Michael A.	WP33 633	Chahal, Jasdave S.	WP29 524	Chang, Hui-Yin	MP03 042
Carvalho, Valdemir Melechco	MP10 196	Chahal, Jasdave S.	MP28 569	Chang, Jingshan	MP27 567
Carver, Jeremy	MP19 380	Chahal, Navjot	MP01 005	Chang, Kuang-Hua	ThP31 646
Casadonte, Rita	MP10 194	Chahal, Navjot	MP01 029	Chang, Lai-Chuan	WP18 314
Casadonte, Rita	MP10 193	Chai, Yunfeng	TP01 018	Chang, Wei-Chao	ThP19 334
Cass, Quezia	MP34 696	Chai, Yunfeng	ThP30 623	Chang, Wei-Hung	ThP34 670
Cassady, Carolyn	ThP14 250	Chailapakul, Orawon	WP02 006	Chang, Ya-Hui	WP07 104
Cassady, Carolyn J.	TP06 115	Chait, Brian	ThOB pm 3:10	Chang, Ying-Hua	ThP08 123

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Chang, Yu-Huai	ThP27 531	Chen, Huanwen	WP20 364	Chen, Yu-Ju	ThP18 320
Chang, Yu-Ling	WP38 743	Chen, Huanwen	WP20 363	Chen, Yu-Ju	WP02 010
Chanthamontri, Ken	WP05 049	Chen, Huanwen	WP20 362	Chen, Yu-Luan	MP06 130
Chao, Chien-Chung	WP29 533	Chen, Huanwen	WP20 357	Chen, Yun	TP21 335
Chao, Ma	MP03 054	Chen, Huanwen	ThP30 632	Chen, Zhen	MP24 465
Chao, Moses	MP29 601	Chen, Huanwen	WP20 358	Chen, Zhong	ThP12 223
Chao, W.	ThP06 103	Chen, Hung-Chun	WP18 314	Chen, Zhu	MP26 529
Chapman, Jessica	TP28 507	Chen, Jenny	TP13 214	Chen, Zongmao	WP19 342
Chapman, Jessica	ThOB pm 3:30	Chen, Jianzhong	TP27 496	Chenau, Jérôme	TOH pm 3:50
Chapman, John	TP34 684	Chen, Jie	TP30 558	Chendo, Christophe	MP36 735
Chapman, Kent D.	ThP28 581	Chen, Jie	ThP13 230	Chendo, Christophe	MP36 746
Chapman, Richard	WP10 167	Chen, Ju	ThOA am 09:10	Cheng, Changfu	TP25 450
Chapman, Richard	TP01 002	Chen, Junjun, Richard	TP22 356	Cheng, Chia-Ying	TP28 518
Chapple, Iain	TP18 260	Chen, Junjun	MP26 535	Cheng, Chunain	TP23 379
Chapple, Iain L. C.	TP18 261	Chen, Junmei	TP19 293	Cheng, Chun-Chia	MP27 567
Charles, Laurence	MP36 735	Chen, Kuangcai	TP01 006	Cheng, Chu-Nian	MP17 335
Charles, Laurence	MP36 746	Chen, Lee Chuin	ThP30 620	Cheng, Guang	TP29 542
Charlesworth, Cristine	MP26 546	Chen, Lee Chuin	MP17 339	Cheng, Guilong	MP15 266
Charlton, Adrian	MP04 070	Chen, Lin-Zhi	MP25 505	Cheng, Guilong	ThP01 013
Charon, Nyles W.	ThP25 512	Chen, Lin-Zhi	MP25 506	Cheng, Guilong (Charles)	MOE pm 3:30
Charrier, Jean-Philippe	TP28 505	Chen, Liuxi	WP26 475	Cheng, Hong	MP24 480
Chassy, Alexander	MP33 680	Chen, Liuxi	TP33 650	Cheng, Jianlin	MP34 706
Chattopadhyaya, Chaitali	TP37 753	Chen, Min-Jane	WP17 299	Cheng, Keding	ThP08 136
Chattopadhyay, Madhuri	WP23 414	Chen, Mu	TP02 039	Cheng, Mei-Ling	MP03 042
Chaudhary, Ashish	MP35 720	Chen, Pei	ThP11 186	Cheng, Michael T.	ThOG pm 2:50
Chauhnan, Dharminder	ThP23 467	Chen, Ruibing	WP28 508	Cheng, Min-Wei	ThP27 531
Chauhan, Pratibha	TOA am 09:10	Chen, Sha	TP24 410	Cheng, Ping	MP31 641
Chauhan, Rajat	TP02 043	Chen, Shaon-Nong	MP34 686	Cheng, Ping	MP31 640
Chaurand, Pierre	WP09 157	Chen, She	ThP13 230	Cheng, Robert	ThP24 484
Chaurand, Pierre	ThP04 041	Chen, Shu-Hua	TP33 650	Cheng, Shijun	ThP12 223
Chaurand, Pierre	MP10 183	Chen, Shu-Hui	ThP19 351	Cheng, Sy-Chyi	MP17 334
Chaurand, Pierre	MP10 185	Chen, Sixue	MP32 653	Cheng, Sy-Chyi	MP17 332
Chavali, Aparna	MP06 116	Chen, Suming	ThP12 222	Cheng, Sy-Chyi	MP17 333
Chavez, Juan	WP28 495	Chen, Sung-Fang	ThP23 443	Cheng, Victor	TP24 411
Chavez, Juan	TP19 279	Chen, Sung-Fang	TP18 256	Cheng, Zhongyi	WP29 530
Chavez, Leonard	MP29 596	Chen, Tai-Hung	MP30 621	Cheong, Nam-Yong	TP34 678
Che, Fayun	TP18 267	Chen, Tong	ThP12 216	Cherepnin, Denis	WOF pm 3:30
Chelsky, Daniel	TP19 296	Chen, Tong	MP16 318	Chernookiy, Dmitry	MP16 303
Chen, Albert	ThP08 123	Chen, Tong	ThP06 081	Chernushevich, Igor	ThP01 010
Chen, Bingming	WP11 178	Chen, Tsungchi	TOA pm 2:50	Cherny, Robert	WP12 212
Chen, Buyun	MOD am 10:10	Chen, Tsung-Chi	MP17 331	Chervet, Jean-Pierre	MP23 454
Chen, Chang-Yang	WP02 010	Chen, Tsung-Chi	TP04 079	Chervet, Jean-Pierre	ThP18 317
Chen, Chein-Hung	ThP20 372	Chen, Tsung-Chi	TP05 091	Chervet, Jean-Pierre	WP15 260
Chen, Chein-Hung	WP30 549	Chen, Tsung-Chi	MP17 330	Chew, Yai Fong	TP37 738
Chen, Chein-Hung	WP30 548	Chen, Wei	WP30 559	Chew, Yin Ling	ThP27 530
Chen, Chein-Hung	WP30 550	Chen, Wei	MOE pm 4:10	Chew, Yin Ling	TP35 701
Chen, Chein-Hung	ThP19 334	Chen, Wei	MP34 708	Chi, Bert	MP01 013
Chen, Chien-Hsun	TP05 091	Chen, Wei	TOC pm 2:30	Chi, Chaoxian	ThP35 704
Chen, Chuangbin	TP21 331	Chen, Wei	MP33 674	Chi, Hao	MP21 397
Chen, Chung Hsuan (Winston)	WP30 550	Chen, Wei	MP34 709	Chi, Jen-Tsan	TOF am 09:30
Chen, Chung-Hsuan	TP04 058	Chen, Weibin	WP25 447	Chi, Jingduan	WP06 096
Chen, Chung-Hsuan	ThP06 096	Chen, Weibin	TOC pm 3:30	Chi, Jingduan	MP06 130
Chen, Chung-Hsuan	WP38 743	Chen, Weibin	TP15 232	Chia, Shao Hua	TP37 738
Chen, Chung-Hsuan	ThP19 335	Chen, Weiwu	TP28 510	Chiang, Nai-Yuan	TP28 518
Chen, Chung-Hsuan	ThP19 334	Chen, Xian	MP24 479	Chiang, Vincent L.	TP21 328
Chen, Chung-Hsuan	WP30 549	Chen, Xianwei	WP30 546	Chiarelli, M. Paul	WP03 023
Chen, Chung-Hsuan	WP30 548	Chen, Xiaozhen	TP37 741	Chiarelli, M. Paul	WP03 021
Chen, Chung-Hsuan	ThP20 372	Chen, Xin	TP12 207	Chicooree, Navin	WP30 560
Chen, Chung-Hsuan (Winston)	ThP31 646	Chen, Xiulan	WP33 612	Chicooree, Navin	WOA am 09:10
Chen, Chung-Yu	MP01 018	Chen, Xuechai	ThP21 389	Chien, Allis	WP14 240
Chen, Chung-Yu	TP31 586	Chen, Xuequn	MP29 589	Chien, Allis	WP18 322
Chen, Dai-Jie	ThP23 451	Chen, Yanfeng	ThP11 193	Chien, Allis	ThP08 137
Chen, Dazhou	WP37 723	Chen, Yanwen	ThP23 468	Chien, Allis S.	ThP11 208
Chen, Eric Sheng-Wen	ThP17 282	Chen, Yao-Yi	WOB am 08:50	Chien, Allis S.	ThP29 594
Chen, Fan	MP13 236	Chen, Yet-Ran	ThP34 670	Chien, Chih-Wei	WP02 010
Chen, Guodong	WOH am 08:30	Chen, Yi-Chen (Ivy)	ThP18 318	Chien, Ko-Yi	ThP23 465
Chen, Han	MOH am 09:50	Chen, Yi-Ju	ThP18 320	Chiesa, Oscar A.	WP06 093
Chen, Hao	ThP30 629	Chen, Yi-Ling	TP18 263	Chilton, John	TP17 248
Chen, Hao	MP23 451	Chen, Ying	TP21 307	Chilton, John	TP28 514
Chen, Hao	WP30 540	Chen, Yi-Yun	ThP18 316	Chilton, John	MP24 474
Chen, Hao	TP02 043	Chen, Yong	WP37 723	Chilton, John	MP18 370
Chen, Hauh-Jyun Candy	TP29 531	Chen, Yu	ThP06 081	Chilton, John	MP18 362
Chen, Hauh-Jyun Candy	ThP18 323	Chen, Yu	MP16 316	Chilton, John	MP19 378
Chen, Hong	TP28 513	Chen, Yuan-Chek	TP25 438	Chilton, John	MP29 583
Chen, Hongzhan	ThP28 574	Chen, Yuan-Shek	WP06 074	Chin, Frederick	ThP12 221
Chen, Huan	ThOG pm 3:50	Chen, Yue	WP29 535	Ching, Wei-Mei	WP29 533
Chen, Huanwen	TP37 770	Chen, Yue	WP29 530	Chingin, Konstantin	TP04 071
Chen, Huanwen	TP34 672	Chen, Yue	WP29 536	Chinnaiyan, Arul M.	MP26 540
Chen, Huanwen	TP34 673	Chen, Yu-Ju	TP28 518	Chinot, Olivier	ThP02 025

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Chiplunkar, Sanket.....	ThP27 539	Chu, Sandra.....	MP24 463	Clench, Malcolm R.....	WP10 168
Chiplunkar, Sanket.....	ThP11 200	Chu, Yajing.....	MP10 203	Clench, Malcolm.....	WP12 198
Chiplunkar, Sanket.....	MP34 690	Chubatyj, Nicholas.....	TP34 668	Clendinen, Chaevien.....	TP24 414
Chiron, Lionel.....	ThP12 220	Chuck Farah, Shaker.....	MP21 399	Clerens, Stefan.....	MP33 681
Chiron, Lionel.....	TOA pm 3:10	Chumbley, Chad.....	WP12 206	Clerici, Lorella.....	MP09 176
Chirof, Fabien.....	WP38 736	Chung, Dominic W.....	TP19 293	Cliby, William A.....	TP35 700
Chiu, Chih-Wei.....	ThP23 443	Chung, Dong hee.....	TP24 419	Clifford-Nunn, Billy.....	TP33 644
Chiu, Chih-Wei.....	TP18 256	Chung, Heaseung Sophia.....	ThP18 321	Clingenpeel, Amy.....	WP05 053
Chiu, Daniel.....	WOE pm 3:10	Chung, Nicksha.....	ThP11 199	Clipson, Linda.....	ThP22 422
Chiu, Yulun.....	WOC am 09:30	Chung, Ray.....	TP19 281	Clouse, Steven.....	ThOE pm 4:10
Chiu, Yulun.....	ThP20 359	Chung, Tze-Wen.....	WP26 453	Clowers, Brian H.....	MP17 348
Chiu, Yulun.....	ThP20 360	Chung-Davidson, Yu-Wen.....	WP33 635	Clubb, Robert.....	WP23 415
Chiueh, Lih-Ching.....	ThP27 531	Chupak, Louis S.....	ThP13 243	Cobas, Carlos.....	TP28 524
Chiuminato, Ugo.....	TP31 599	Chuppa, Sandra.....	ThP19 336	Cobb, Nicholas.....	MP14 260
Chiva, Cristina.....	TP28 498	Chuppa, Sandra.....	ThP24 481	Cobb, Steven L.....	TP06 120
Chiva, Cristina.....	ThP08 138	Churchwell, Mona I.....	TP26 477	Cobbs, Archie.....	TP08 143
Chmelik, Josef.....	MP21 393	Churley, Melissa.....	ThP21 392	Cobell, Jesse.....	TP19 278
Cho, Dae Hyun.....	TP31 598	Chytrowski, Julian.....	TP28 521	Cobice, Diego.....	TOB pm 3:30
Cho, Jin-Hwan.....	MP22 418	Cianféraní-Sanglier, Sarah.....	ThP22 428	Cochems, Philipp.....	MP15 280
Cho, Jin-Young.....	WP35 675	Ciarlariello, Paul D.....	MP27 562	Cochems, Philipp.....	WP38 754
Cho, Joo-Youn.....	WP06 076	Ciavarini, Steven.....	TP28 519	Cochran, Jack.....	MP31 630
Cho, Kun.....	MP06 091	Ciborowski, Pawel.....	WP34 667	Cochran, Kristin H.....	MP30 618
Cho, Kyungcho.....	WP29 532	Ciborowski, Pawel.....	MP24 469	Cochran, Richard.....	ThP06 086
Cho, Soo Gyeong.....	TP33 628	Ciborowski, Pawel.....	ThP18 325	Cochran, Richard.....	WP04 041
Cho, Sool Yeon.....	WP28 513	Ciccimaro, Gene.....	TP08 131	Cochran, Richard.....	WP04 044
Cho, Soon-Kil.....	ThP27 537	Ciccimaro, Gene.....	WP33 631	Cockrill, Steve.....	ThOC am 09:10
Cho, Yi-Tzu.....	WP07 104	Cichelli, Julie.....	MP22 431	Cody, Crystal.....	TOF pm 3:30
Cho, Yunju.....	WP05 069	Cid, Maria.....	TP30 564	Cody, Crystal.....	TOG am 08:50
Choi, Bernard.....	WOD am 08:30	Cilia, Michelle.....	MP33 672	Cody, Crystal K.....	ThP28 584
Choi, Bernard.....	MP26 529	Cilia, Michelle.....	MP33 673	Cody, Crystal K.....	TP36 723
Choi, Hyungwon.....	TOD pm 2:50	Cillero Pastor, Berta.....	MP10 197	Cody, Robert.....	WP07 116
Choi, Hyungwon.....	TP28 523	Ciner, Frederic L.....	WP06 083	Cody, Robert B.....	WP12 201
Choi, Hyungwon.....	WP36 687	Cipollo, John.....	TOD am 10:10	Cody, Robert B.....	ThOA am 08:30
Choi, Hyungwon.....	MP29 602	Cipollo, John.....	TP35 706	Cody, Robert B.....	TP01 020
Choi, In Young.....	TP25 442	Cirello, Amanda.....	WP15 271	Coe, Christopher.....	TP24 404
Choi, Jaewon.....	WP37 724	Cisowska, Tamara.....	MP34 686	Coe, Roger.....	WP06 077
Choi, Jaewon.....	WP03 024	Claassen, Manfred.....	TOH pm 4:10	Coelho Graça, Didia.....	MP09 176
Choi, Jaewoo.....	TOC am 09:30	Clague, Michael.....	WP33 610	Coelho, Mirela B.....	MP06 102
Choi, Jaewoo.....	TP24 403	Clamons, Samuel.....	WP01 002	Coffey, Chelsea.....	ThP18 313
Choi, Jaewoo.....	MP12 226	Clark, Andrew.....	ThP05 068	Cohen, Alejandro.....	MP29 579
Choi, Jong-Soon.....	TP35 704	Clark, Clifford.....	ThP25 515	Cohen, Daniel.....	WOH am 08:30
Choi, KeunHwa.....	TP31 598	Clark, Daniel.....	WP24 425	Cohen, Herbert.....	WOE pm 2:30
Choi, Keun-Joo.....	MP31 634	Clark, David.....	TP24 388	Cohen, Jerry.....	WP17 298
Choi, KyungOh.....	MP29 584	Clark, Jay.....	WP37 709	Cohen, Jerry.....	WP29 520
Choi, Wonseok.....	WP37 724	Clark, Kimberly.....	TP26 460	Cohen, Jerry.....	TOC am 09:10
Choi, Yuchang.....	WP06 075	Clarke, David.....	MP23 452	Cohen, Jerry D.....	MP32 671
Choi, Yun Kyoung.....	TP25 442	Clarke, David.....	WP28 494	Cohen, Lucinda.....	WOD am 08:30
Choi, Yun Kyoung.....	TP25 445	Clarke, Nigel J.....	MP09 171	Cohen, Lucinda H.....	MP26 529
Choksawangarn, Waeowalee.....	TOE am 08:30	Classon, Marie.....	TP22 350	Cohen, Richard A.....	TOA am 09:10
Choksawangarn, Waeowalee.....	ThP09 157	Claude, Emmanuelle.....	WP10 168	Cohen, Richard A.....	WP33 630
Chong, Patrick.....	ThP25 498	Claude, Emmanuelle.....	ThP05 054	Cohen, Richard A.....	TP18 258
Chong, Patrick.....	ThP25 515	Claude, Emmanuelle.....	WP12 208	Cohen, Samuel M.....	ThP13 241
Choo, Matthew S. F.....	TP35 708	Clausen, Tim.....	WP34 660	Cohen, Steve.....	ThP07 118
Chopra, Shilpi.....	MP03 049	Clauser, Karl.....	TOD pm 3:30	Cohen, Steven.....	ThP28 573
Choquet-Kastylevsky, Geneviève.....	TP28 505	Clauser, Karl.....	WOA am 10:10	Cohen, Steven.....	TP29 538
Chorna, Nataliya.....	TP24 397	Clauser, Karl.....	ThP34 681	Cohen, Steven.....	TOF am 09:30
Chorover, Jon.....	TP31 584	Clauss, Therese.....	WP34 644	Cojocariu, Cristian.....	WP36 699
Chou, Albert.....	ThP04 037	Clayton, Richard.....	WP15 254	Cojocariu, Cristian.....	ThP22 438
Chou, Chi-Chi.....	ThP18 326	Cleary, Margot P.....	TP26 465	Colamonic, Cristiana.....	MP30 614
Chou, Chih-Chiang.....	TOE pm 3:30	Cleary, Michele.....	WOD pm 3:10	Colangelo, Christopher.....	WP33 620
Chou, Jo-Han.....	TP34 670	Cleary, Michele.....	MP26 529	Colantonio, Simona.....	MP08 151
Choudhary, Jyoti.....	ThP25 504	Cleary, Michelle.....	TP21 307	Cole, Callie.....	MP35 717
Chow, H-H Sherry.....	WP18 313	Cleland, Gareth.....	TP31 579	Cole, D. Paul.....	ThP32 652
Chow, Julia.....	WP28 492	Cleland, Timothy P.....	MP29 603	Cole, D. Paul.....	ThOG pm 3:10
Chowdhary, Puneet.....	TP23 378	Clemen, Martin.....	TP01 004	Cole, Daniel.....	ThP32 654
Chowdhury, Swapan.....	MP15 289	Clemens, Paul.....	TP25 427	Cole, James.....	WP22 390
Chris, Wendt.....	ThP23 474	Clemens, Paul.....	WP15 265	Cole, Jason.....	ThP27 544
Christ, Jacob.....	TP25 432	Clemens, Sara.....	WP06 070	Cole, Laura.....	WP09 136
Christensen, J. Mark.....	TOC am 09:30	Clement, Cristina.....	ThP23 460	Cole, Laura.....	WP11 172
Christiano, Romain.....	MP29 587	Clemmer, David.....	WP32 600	Cole, Laura M.....	WP10 168
Christianson, Chad.....	ThP08 130	Clemmer, David E.....	TP33 636	Cole, Regina.....	ThP09 169
Christianson, Chad.....	WP27 478	Clemmer, David E.....	TP36 722	Cole, Richard B.....	TP06 122
Chu, Caroline.....	TP26 459	Clemons, Kristina.....	ThOC pm 4:10	Cole, Richard B.....	MP30 616
Chu, Caroline S.....	MP25 511	Clench, Malcolm.....	WP11 172	Cole, Richard B.....	TP11 195
Chu, Dinh Binh.....	WP17 300	Clench, Malcolm.....	WP15 278	Cole, Richard B.....	ThP36 720
Chu, Dinh Binh.....	WP17 295	Clench, Malcolm.....	MP30 623	Cole, Richard B.....	ThP31 650
Chu, Ivan K.....	WP35 679	Clench, Malcolm.....	ThP14 251	Cole, Richard B.....	MP03 056
Chu, Kevin.....	TP25 439	Clench, Malcolm.....	WP09 136	Cole, Robert.....	WP26 464
Chu, Kuan Yu.....	ThP31 647	Clench, Malcolm.....	WP11 176	Cole, Robert.....	TP12 208

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Cole, Robert.....	ThP22 440	Cook, Jeremy.....	ThP13 235	Cossmann, Helmut.....	MP29 582
Cole, Robert N.....	ThP08 127	Cook, Kelsey.....	ThP30 624	Cossmann, Helmut.....	ThP34 675
Coleman, Stuart.....	TP30 564	Cook, Kevin.....	WP13 232	Costa Simas, Rosineide.....	MP06 102
Coles, Samuel.....	ThP05 059	Cook, Shannon.....	ThP07 115	Costello, Catherine.....	WP29 516
Colhoun, Helen.....	WP26 468	Cooke, Cara.....	MP27 556	Costello, Catherine.....	MP12 221
Colin, Patrick.....	ThP29 617	Cooke, Rob.....	ThP24 484	Costello, Catherine E.....	TP33 660
Colizza, Kevin.....	WP15 271	Cooks, Graham.....	ThOA pm 2:30	Costello, Catherine E.....	TP16 240
Collado, Vladimir.....	ThP05 057	Cooks, R. Graham.....	ThP06 083	Costello, Catherine E.....	ThP23 462
Collamati, Robert.....	MP06 124	Cooks, R. Graham.....	ThP03 030	Costello, Catherine E.....	MP12 222
Coller, Hilary.....	TOE am 09:50	Cooks, R. Graham.....	MP17 331	Costello, Catherine E.....	TP18 268
Collier, Timothy.....	MOF am 09:30	Cooks, R. Graham.....	TP05 091	Costello, Catherine E.....	TP33 634
Colligan, Ryan M.....	TP21 326	Cooks, R. Graham.....	ThP30 627	Costello, Catherine E.....	ThP20 378
Collin-Hansen, Christian.....	TP04 074	Cooks, R. Graham.....	TP37 745	Costello, Catherine E.....	TOA am 09:10
Collins, Ben C.....	WP36 688	Cooks, R. Graham.....	ThOE am 10:10	Costello, Catherine E.....	WOG pm 2:50
Collins, Eileen.....	WP33 634	Cooks, R. Graham.....	TP34 689	Costello, Catherine E.....	WP32 605
Collins, Thomas S.....	WP19 338	Cooks, R. Graham.....	TP34 680	Costello, Catherine E.....	ThOB pm 3:50
Collins, Thomas S.....	TOE pm 4:10	Cooks, R. Graham.....	TP34 687	Costello, Catherine E.....	MP29 593
Cologna, Stephanie.....	WP38 740	Cooks, R. Graham.....	TP34 688	Costello, Catherine E.....	TP36 723
Cologna, Stephanie.....	TP33 657	Cooks, R. Graham.....	MP17 330	Costello, Catherine E.....	ThP19 350
Cologna, Stephanie M.....	ThOD pm 3:50	Cooks, R. Graham.....	TP34 686	Costello, Catherine E.....	ThP20 377
Colombo, Joseph.....	WP03 019	Cooks, Robert G.....	ThOA am 09:30	Costello, Catherine E.....	WOC am 09:10
Colsch, Benoit.....	MP12 232	Cooks, R. Graham.....	TP34 685	Costello, Catherine E.....	TP18 258
Colton, Ray.....	MP36 745	Cool, Lydia.....	MP36 727	Costello, Catherine E.....	TOF pm 3:30
Colucci, Wilson.....	WP33 630	Cool, Lydia.....	MP36 726	Costello, Catherine E.....	WP30 568
Colucci, Wilson S.....	TOA am 09:10	Cool, Lydia.....	MP36 730	Costello, Catherine E.....	WP28 493
Colucci, Wilson S.....	TP18 258	Cooley, Michael B.....	ThP25 517	Costello, Catherine E.....	WP33 630
Comb, Michael J.....	ThP23 473	Coon, Joshua.....	WP29 528	Cote, Linda.....	TP26 461
Combariza, Marianny Y.....	MP08 164	Coon, Joshua J.....	ThP13 231	Cotnam, Victoria.....	WP24 427
Combariza, Marianny Y.....	WP05 055	Coon, Joshua J.....	MOA am 09:10	Cotter, Robert.....	TP21 324
Commodore, Juliette J.....	TP06 116	Coon, Joshua J.....	ThP34 693	Cottrell, John.....	WP31 587
Comolli, James.....	TP27 489	Coon, Joshua J.....	TP02 026	Countryman, Sky.....	WP19 336
Compagnon, Christelle.....	ThP23 444	Coon, Joshua J.....	ThP34 684	Coupier, Bruno.....	TP28 506
Compagnon, Isabelle.....	TP01 002	Coon, Joshua J.....	ThP13 232	Coupier, Bruno.....	MP16 303
Compson, Keith.....	TP18 262	Coon, Joshua J.....	ThOB pm 2:30	Coupier, Bruno.....	MP16 300
Compton, Laine.....	TP34 665	Coon, Joshua J.....	WP33 608	Coupier, Bruno.....	MP16 301
Compton, Philip.....	ThP06 101	Coon, Joshua J.....	WP34 646	Courcelles, Mathieu.....	MP20 388
Compton, Philip.....	WP33 611	Coon, Joshua J.....	MOA pm 3:30	Court, Magali.....	ThP23 476
Compton, Philip.....	TP16 244	Coon, Joshua J.....	TOA am 08:30	Cousins, Lisa M.....	TP04 082
Compton, Philip.....	ThP08 128	Coon, Joshua J.....	WOE am 09:50	Cousins, Lisa M.....	TP04 056
Compton, Philip.....	MOB pm 4:10	Coon, Joshua J.....	ThOE pm 3:30	Cousins, Lisa M.....	WP19 354
Compton, Philip D.....	ThP09 141	Coon, Joshua J.....	TP08 153	Coutouly, Marie-Aude.....	ThP12 220
Compton, Philip D.....	MP16 311	Cooper, Helen.....	TP18 260	Coutouly, Marie-Aude.....	TOA pm 3:10
Compton, Philip D.....	WP35 684	Cooper, Helen.....	MOC am 09:50	Coutu, Brendan.....	MP11 217
Compton, Philip Daniel.....	TP01 019	Cooper, Helen J.....	ThP23 455	Couture, Patrick.....	WP33 622
Compton, Teresa.....	TP19 279	Cooper, Helen J.....	ThP04 049	Couzens, Amber L.....	WP36 685
Comstock, Kate.....	ThOF pm 3:30	Cooper, Josh.....	MP01 008	Covas, Dimas.....	MP26 543
Comstock, Kate.....	MOE pm 2:50	Coote, Michelle.....	ThP36 725	Covey, Thomas.....	WP38 741
Comstock, Kate.....	ThOC am 08:30	Cope, Michelle.....	TOE am 09:50	Covey, Thomas.....	TP33 632
Comstock, Kate.....	WP13 233	Corbett, Cindi.....	ThP25 498	Covey, Thomas.....	ThP14 260
Comstock, Kate.....	ThP13 246	Corbett, John.....	TP12 211	Covey, Tom.....	TP04 078
Comstock, Kate.....	ThP13 245	Corbin, Karen.....	WP18 321	Covey, Tom.....	MP02 034
Comstock, Kate.....	ThP29 610	Corbitt, Astrid D.....	MP35 716	Cowan, Elizabeth.....	ThP21 404
Comstock, Kate.....	MP36 748	Corcoran, Henry.....	MP03 049	Cowan, Elizabeth A.....	ThP21 406
Comstock, Kate.....	WP15 258	Cordero, Francisco.....	TP22 346	Coward, Lori.....	WP15 273
Comte-Walters, Susana.....	WP30 553	Cordwell, Stuart.....	ThP17 294	Cowart, Emily.....	MP22 425
Conard, Kevin.....	TP29 548	Cordwell, Stuart.....	WP30 554	Cox, Christopher.....	WP07 116
Concannon, Patrick.....	WP33 611	Cordwell, Stuart.....	WOG pm 2:30	Cox, Dave.....	TP24 385
Concheiro-Guisan, Marta.....	WOA pm 2:30	Cordwell, Stuart.....	ThP25 507	Cox, David.....	MP24 463
Condac, Eduard.....	WOC am 09:30	Corilo, Yuri.....	WOC pm 3:10	Cox, David.....	ThP27 529
Conde, Carlos.....	TP21 321	Corilo, Yuri E.....	WP05 045	Cox, David.....	TP08 134
Conine, Andrea.....	TP31 584	Corilo, Yuri E.....	TP33 655	Cox, Holly.....	MOC pm 4:10
Conjelko, Tim.....	MP34 685	Corilo, Yuri E.....	TOG am 09:50	Cox, James.....	MP04 076
Conlon, Kevin.....	MP27 564	Corminboeuf, Clémence.....	MOG pm 3:50	Cox, Juergen.....	TOE am 09:10
Connolly, Joanne B.....	ThP22 438	Corn, Jacob.....	ThP18 307	Cox, Juergen.....	TOD pm 2:30
Connolly, Joanne B.....	WP35 672	Cornett, D. Shannon.....	WP09 146	Cox, Juergen.....	WOE am 10:10
Connolly, Paul.....	WP08 120	Cornett, Shannon.....	ThP04 036	Cox, Juergen.....	WP30 572
Connolly, Yvonne.....	WP33 610	Cornish, Timothy.....	MP35 719	Cox, Jurgen.....	TP17 253
Connolly, Yvonne.....	WP30 560	Corona, Alejandro.....	ThP22 420	Cox, Kathy.....	WOD am 08:30
Connolly, Yvonne.....	WOA am 09:10	Corr, Jay.....	TP33 632	Cox, Richard.....	WOC pm 2:30
Connors, Lawreen.....	WP29 516	Corrier, Kristen.....	ThP25 501	Cox, Sharon.....	ThP08 130
Conrad, Charles A.....	MP29 597	Cort, John.....	MP20 389	Coy, Stephen.....	TP33 639
Conrad, Charles A.....	WP35 677	Corthésy, John.....	WP33 629	Cozma, Claudia.....	WP07 108
Conrads, Kelly A.....	MP25 501	Corver, Willem.....	WP12 218	CPTAC Consortium, NCI.....	TOD pm 3:30
Conrads, Thomas.....	TP08 131	Cosenza, Stephen C.....	WP28 513	Cramer, Grant.....	ThOE pm 2:30
Conrads, Thomas P.....	MP25 501	Cosgrove, John.....	WP03 016	Cramer, Hugh.....	MP07 131
Constantino, Julie.....	TOH pm 3:30	Cosgrove, John.....	WP17 309	Cramer, Rainer.....	TP04 060
Conticello, Vincent P.....	TP06 118	Cossins, Aimee.....	MP25 520	Crappé, Jeroen.....	ThP34 683
Contino, Nathan C.....	MP16 313	Cossmann, Helmut.....	MP19 383	Crappé, Jeroen.....	TP17 254
Cook, Amber.....	TP35 711	Cossmann, Helmut.....	MP29 581	Craven, Kirsten.....	MP36 723

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Crawford, Elizabeth	WP37 719	Cunniff, Jack	WP15 258	Dalton, Christine N.	WP03 032
Crawford, Elizabeth	WP37 722	Cunningham, Christian	ThP18 307	Dalton, Christine N.	MP31 643
Crawford, Elizabeth	TOC am 08:50	Cunningham, Robert	WP27 476	Daly, Terik	TP34 674
Crawford, Elizabeth	TOE pm 3:50	Cunningham, Robert	ThP08 135	Damale, Shailesh	MP11 219
Crawford, Fiona	TP21 312	Cunningham, Robert	WP26 462	Damale, Shailesh	MP34 689
Crawford, Fiona	WP29 515	Cuppen, Edwin	WP31 586	Damale, Shailesh	MP06 112
Creaser, Colin	ThP01 019	Curcio, Davide	MP30 614	D'Amelio, Frank S.	MP34 691
Creaser, Colin	ThP01 021	Curle, Jared	MP04 064	Damen, Carola W.N.	TOF am 10:10
Creaser, Colin	TP34 669	Curtis, Mathew	ThP11 213	Damoc, Eugen	TP14 218
Creaser, Colin	TP34 671	Curtis, Mathew	ThP11 206	Damoc, Eugen	ThP12 227
Creech, Clarence	MP28 575	Curtis, Matthew	ThP30 631	Damoc, Eugen	WOE am 09:30
Creese, Andrew	TP18 260	Cusack, Michael P.	ThOD am 08:50	Damoc, Eugen	MP16 311
Creese, Andrew J.	MOC am 09:50	Cushing, Jennifer	ThP21 385	Damoc, Eugen	TP14 219
Creese, Andrew J.	TP18 261	Cushing, Jennifer	MP22 425	Damsbo, Martin	TP17 245
Cremers, Serge	TP26 467	Cushing, Jennifer	ThOD am 09:30	Dan, Vi	TP25 438
Creran, Brian	WP02 003	Cusi, Kenneth	WP18 317	Dan, Yongbo	WP03 022
Criado Hidalgo, Ernesto	TP33 622	Cutillas, Pedro	ThP17 287	Dana, Ruth	WP01 002
Criado-Hidalgo, Ernesto	TP23 377	Cutillas, Pedro	ThP22 423	Dancel, Maria Cristina A.	MP34 697
Crichton, Edward	MP16 297	Cutillas, Pedro	ThP17 281	Dancy, Beverley	MP24 478
Crick, D.C.	ThP06 103	Cutillas, Pedro R.	WP29 537	Dane, John	ThOA am 08:30
Crispin, Matthew C.	MP34 702	Cutler, Paul	TP21 333	Dane, John	TP01 020
Crispin, Max	TP35 707	Cutts, John	MP03 059	Dane, John	WP12 201
Cristea, Ileana	ThOB pm 3:10	CV, Suresh Babu	MP07 145	Danel, Jean-Sébastien	MP16 320
Cristea, Ileana M.	ThOH am 09:30	CV, Suresh Babu	WP13 222	Danell, Rayn	TP05 090
Cristea, Ileana M.	MOA pm 3:10	CV, Suresh Babu	WP06 081	Danell, Ryan	MP35 718
Cristea, Ileana M.	TP19 286	Cvacka, Josef	WP37 727	Danell, Ryan M.	ThOE am 08:50
Cristea, Ileana M.	WP28 510	Cyr, Terry D.	TP28 500	Dang, Xibei	TP22 343
Cristescu, Melania	MP23 449	Cyriac, Jobin	ThOA pm 2:30	Dang, Xibei	TP22 344
Cristiano, Roberto	MP16 314	Czaplewski, Paulina	MP23 443	Dangott, Larry	MP09 168
Cristobal, Alba	MP06 098	Czernekova, Lydie	WP32 601	Dangott, Lawrence J.	TP08 159
Cristobal, Alba	MP06 119	Czerniejewski, Megan	MP30 620	Daniel, Daniela	ThP27 555
Cristobal, Alba	WP31 586	Czerniewiec, Gregg	ThP22 434	Danielsen, Marianne	TP19 283
Cristofanilli, Massimo	ThP22 418	da Campo, Raffaello	MOH pm 2:50	Danielson, Steven	WP33 629
Crizer, David	ThP01 005	da Silva Ribeiro, Tanara	MP24 473	Danielson, William	TP33 652
Crnogorac-Jurcevic, Tatjana	ThP22 423	Daali, Youssef	WP32 604	Danielson, William	MOC am 08:30
Croley, Tim	ThP27 557	Dadenkar, Satya	TP19 290	Danso, Darlington	ThP10 173
Croley, Timothy	ThP25 516	Dahl, Jeff	MP34 691	Danso, Darlington	ThP10 170
Croley, Timothy	ThP12 224	Dahl, Jeff	ThP21 390	Danso, Darlington	ThP10 174
Croley, Timothy	TP37 762	Dahl, Jeffrey	WP06 083	Danso, Darlington	ThP10 171
Croley, Timothy R.	TOE pm 2:50	Dahl, Jeffrey	TP37 754	D'Antona, Aaron	WP24 431
Crone, Catharina	WP37 722	Dahlbäck, Magnus	ThOF am 09:30	Dao, Fanny	TOD pm 3:30
Crone, Catharina	ThP12 227	Dahmane, Elyes	MOE am 08:50	Daouda, Tariq	MP28 573
Crone, Catharina	TP28 517	Dai, Dongcheng	WP15 282	Dapron, John	ThP17 304
Crooks, James L.	TP23 370	Dai, Hongping	MP03 043	Darbouret, Bruno	TP21 309
Crooks, Jamie	ThP05 068	Dai, Jie	TP25 437	Darfler, Marlene	MP09 169
Crossley, Janna	ThP28 581	Dai, Lunzhi	WP29 536	Darfler, Marlene	MP09 172
Crotty, Sarah	MP36 734	Dai, Shin-Ying	ThP14 253	Darie, Costel	ThP22 437
Croushore, Callie	ThP03 028	Dai, Shujia	ThP22 430	Darie, Costel	ThP22 439
Crow, Brian	ThP26 525	Dai, Xiaoxia	WP32 599	Darie, Costel	TP36 732
Crow, Brian	MOD am 09:10	Dai, Ximo	WP20 364	Darie, Costel	MP29 594
Crowell, Kevin	MP20 389	Dai, Xi-Mo	WP20 358	Darie, Costel C.	ThP22 438
Crowell, Kevin	TP33 652	Dai, Xi-Mo	WP20 357	Darie, Costel C.	TP21 336
Crowell, Kevin	ThP34 690	Dai, Yuqin	ThP01 012	D'Arienzo, Celia	MP25 507
Crutchfield, Christopher	TP33 657	Dai, Yuqin	WP14 242	D'Arienzo, Celia	MOE am 08:30
Crutchfield, Christopher	WP38 740	Daiber, Eric	WP03 029	Daris, Kristi	ThP33 668
Crynen, Gogce	WP29 515	Daikos, George	ThOC am 09:30	Darlak, Krzysztof	TP15 234
Crynen, Gogce	TP21 312	Dal Bello, Federica	ThP28 571	Darland, Ed	TP33 652
Csajka, Chantal	MOE am 08:50	Dalbec, Megan	MP35 717	Darland, Ed	TOF pm 3:10
CSF Proteomics Project Team, Biomarkers Consortium	TP19 296	Dalby, Kevin	TP11 199	Darland, Ed	WP38 751
Cubbon, Simon	WP33 641	Dale, Bruce	ThP32 658	Darland, Ed	WP38 740
Cui, Dan	WP15 281	Dalebout, Hans	WP31 585	Darland, Ed	TOG am 08:50
Cui, Li	MOG am 08:50	Dalgleish, Jon K.	MP17 331	Darland, Ed	TOF pm 3:30
Cui, Qiang	MOG am 09:50	Dall, Tara	TP30 571	Darland, Ed	ThP25 486
Cui, Weidong	WP30 540	Dallas, Dave C.	ThP15 265	Darland, Ed	TP33 657
Cui, Weidong	WP23 403	Dallas, David	WP19 350	Darland, Ed	TP36 723
Cui, Weidong	MOB pm 2:30	Dalleska, Nathan	ThP28 570	Daroda, Romeu	WOA pm 2:50
Cui, Weidong	MP22 423	Dallongeville, Sophie	TP12 210	Daroda, Romeu J.	WP38 735
Cui, Weidong	WP23 401	Dalluge, Joseph	TP27 497	Daroda, Romeu J.	ThP32 661
Cui, Xiaojie	MOH am 09:50	Dalluge, Joseph	WP18 320	Daroda, Romeu J.	TOG am 09:50
Cui, Xiaojie	MP13 235	Dalluge, Joseph J.	MOE am 09:30	Dartiguelongue, Cyril	WP05 059
Cui, Yang	WP12 195	Dally, Jennifer	MP08 167	Dartois, Veronique	WP11 183
Cui, Yang	ThP36 714	Dalmia, Avinash	WP37 715	Darzi, Ara	ThP04 042
Cui, Yang	WP14 243	Dalmia, Avinash	MP34 704	Dasari, Surendra	MP18 363
Culzoni, Maria Julia	MP30 606	Dalmia, Avinash	WP37 716	Dasari, Surendra	ThP23 464
Cummings, Matthew	WP22 398	Dalmia, Avinash	WP08 131	Dasari, Surendra	MP09 175
Cunha, Valnei	WOA pm 2:50	Dalmia, Avinash	WP37 717	Dasari, Surendra	ThP23 466
Cunha, Valnei S.	ThP32 661	Dalmia, Avinash	WP37 710	Dasari, Surendra	WOB pm 4:10
Cunliffe, Jennifer	WOD am 09:10	Dalmia, Avinash	ThP27 551	Dasgupta, Purnendu	MP01 013
		Dalsgaard, Trine	WP19 345	Dash, Neil	MP16 297

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Datar, Ajit	MP34 690	de Kruij, John	WP24 422	Delaforge, Marcel	MP04 063
Datar, Ajit	ThP11 200	de la Chapelle, Albert	TP21 314	Delahunty, Claire	TP21 318
Datar, Ajit	ThP27 539	de la Torre, Xavier	WP08 135	Delatour, Benoît	MP10 185
Datar, Ajit	MP34 689	De La Torre, Xavier	MP30 614	Delgass, Nicholas	ThOG pm 2:30
Datar, Ajit	MP11 219	De Leoz, Maria Lorna A.	TP15 237	Dell, Anne	TP35 708
Datar, Ajit	MP06 112	De Marchi, Tommaso	ThP22 416	Della-Negra, Serge	ThOE am 09:10
Date, Sachiko	MP04 065	De Marchi, Tommaso	ThOD am 09:10	Delmotte, Nathanael	MP25 518
Date, Sachiko	TP29 556	De Marchi, Umberto	WP33 629	Delphine, Debois	MP10 198
Date, Sachiko	ThP28 579	De Moor, Bart	WP10 159	Delsuc, Marc-André	TOA pm 3:10
Date, Sachiko	MP33 678	De Moor, Bart	WP10 166	Delsuc, Marc-André	ThP12 220
Dator, Romel	WP28 511	de Oliveira, Anselmo E.	MP05 084	Demant, Myriam	MP25 518
Daub, Henrik	ThP22 425	De Oliveira, Diogo	WP11 190	Demarais, Nicholas	TP02 034
Daugherty, Sean	TP29 536	de Oliveira, Eduardo	MP26 543	Demarais, Nicholas	MP35 715
Daully, Claire	TOB pm 2:30	de Oliveira, João Bosco	ThP22 431	DeMarini, David	WP03 029
Davey, Nicholas G.	TP04 074	de Paula, Fernando	MP34 696	Demers, Sarah	ThP01 001
Davey, Nicholas G.	WOF pm 2:30	De Pauw, Edwin	MOG am 09:10	Demers, Sarah	TP29 529
Davey, Norman	TOC am 10:10	De Pauw, Edwin	TP33 653	Demireva, Maria	WOC pm 4:10
David, Bitto	TP35 707	De Pauw, Edwin	ThP09 154	Demmers, Jeroen	ThP18 310
David, Calligaris	MP10 198	De Pauw, Edwin	ThP16 272	Denes, Julia	MOC pm 3:10
David, Frank	MP34 685	De Pauw, Edwin	MP23 459	Denes, Julia	TP30 570
David, Larry	ThP34 692	De Pauw, Edwin	ThP23 453	Deng, Ai-Fang	TP25 444
David, Yael	ThOH am 08:50	De Pauw, Edwin	TP07 127	Deng, Bin	MP23 462
Davidov, Mikhail I.	MP27 559	De Pauw, Edwin	WP12 215	Deng, Haiteng	WP28 503
Davidov, Mikhail M.	MP27 559	De Pauw, Edwin	MP10 198	Deng, Haiteng	ThP23 450
Davies, Alun	TP24 384	De Pra, Mauro	MP06 128	Deng, Lu	WP23 406
Davies, Geoff	TP30 563	de Reus, Inge	WP34 665	Deng, Sihong	ThOC am 09:10
Davies, Geoff	MP07 135	De Saeger, Sarah	MP03 058	Deng, YiKun	ThP27 528
Davies, Geoff	WP08 124	de Vos, Jayne	MP31 630	Deng, YuZhong	ThP21 395
Davies, Geoff	WP07 109	De Waal, Eric	TP26 471	Dengjel, Joern	WP36 706
Davies, Geoff	WP08 117	De Winter, Julien	MP36 723	Denicola, Chris	WP08 120
Davies, Geoff	ThP08 132	Deakin, Laura	ThP25 504	Denisov, Eduard	WOC am 09:30
Davies, Geoff	MP07 136	Dean, Brian	ThP21 388	Denisov, Eduard	TP14 219
Davies, Sherri	TOD pm 3:30	Dean, Brian	ThP21 395	Denisov, Eduard	WOC am 09:50
Davies, Sherri R.	ThOD am 08:30	Dean, Brian J.	WP11 179	Denisov, Eduard	MP16 309
Davies, Sherri R.	ThP17 299	Dearden, David V.	ThP35 710	Denisov, Eduard	TP14 218
Davies, Sherri R.	TP21 332	DeBarber, Andrea E.	TP30 572	Denisov, Eduard	MP16 311
Davila, Stephen	TP33 635	Deb-Choudhury, Santanu	MP33 681	Dennif, Philip	MP07 140
Davila, Stephen	WP38 752	Deblasio, Stacy	MP33 672	Dennis, Elise A.	Special
Davis, Alan	WP30 571	Deblasio, Stacy	MP33 673	Dennis, Elise A.	MOB am 10:10
Davis, Darryl	MP25 517	DeBoer, Gerrit	ThP13 248	Denny, Joshua	TP10 181
Davis, Frank	ThP23 459	Debois, Delphine	WP12 215	Denslow, Nancy	MP26 538
Davis, Ian	TP18 261	DeBord, John Daniel	TP09 167	Denton, M. Bonner	ThP06 104
Davis, Luke	MP26 549	Debrauwer, Laurent	MP04 063	Denu, John	WP29 528
Davis, Mark	TP02 024	DeCastro, Rey	ThP21 404	DePalma, Joseph	ThP36 711
Davis, Sonnet	TP23 372	Deckers, Christophe	TP26 461	DePhillipo, Tom	TP25 451
Davis, Tyler	TP15 238	Decosterd, Laurent	MOE am 08:50	Derek Pyland, Derek	MP22 439
Davis, W. Clay	ThP23 472	Decrop, Wim	WP24 442	Derewacz, Dagmara	TOF pm 3:10
Davis, W. Clay	ThP17 295	Dee, Stacy	TP30 557	Derkits, David	WOC pm 3:50
Davoli, Enrico	WP11 191	Deelder, André	WP12 218	Derks, Rico J.E.	WP35 678
Davydov I., Iakov	WP28 512	Deelder, André M.	ThP23 471	Derpmann, Valerie	MP15 274
Dawes, Peter A.	MP07 137	Deelder, André M.	MP23 454	Derpmann, Valerie	MP15 284
Dawson, Marcus	ThP17 287	Deelder, André M.	WP35 678	Derpmann, Valerie	MP15 277
Dawson, Ted	TP19 276	Deelder, André M.	MP23 457	Derpmann, Valerie	MP15 278
Day, Robert	TOB pm 2:30	Deelder, André M.	WP31 585	Dervilly-Pinel, Gaud	WP17 305
Day, Sharlene	ThP23 459	Deese, Alan	WP13 233	Desai, Reena	TP26 453
Dayon, Loïc	WP33 629	DeFelice, Brian	ThOC pm 2:30	Desaire, Heather	WP24 425
Dayrit, Fabian M.	MP34 697	DeFelice, Brian	TP27 480	Desaire, Heather	ThP19 355
Dayspring, Thomas	TP30 571	DeForce, Dieter	ThP17 306	Desbenoit, Nicolas	MP10 184
de Bona Sartor, Sabrina	WP11 190	Degenstein, John	ThOG pm 2:30	Desbrow, Claire	WP07 109
de Castro, Edouard	WP32 606	DeGreeff, Lauryn E.	WP37 732	Desbrow, Claire	MP07 135
De Cecco, Martin	ThP06 087	Deguchi, Jiro	TP29 556	Desbrow, Claire	MP07 136
de Felicio, Rafael	TOG pm 2:30	Degueldre, Michel	ThP16 272	Desbrow, Claire	WP08 117
De Felippis, Michael	TP11 205	DeHart, Caroline	MP28 569	Desbrow, Claire	WP08 124
de Haas, Richard	WP34 665	DeHart, Caroline	WP29 524	Desbrow, Claire	TP30 563
de Jager, Marko	TP18 260	DeHaven, Corey	MP03 043	Desharnais, Joel	WP24 431
De Jesus, Victor	MOC pm 2:50	Deimler, Robert E.	MP12 230	Deshazer, David	TP08 158
de Jong, Ad P.J.M.	TP10 176	Deimler, Robert E.	TP01 009	Deshmukh, Manish kumar	ThP27 542
de Jong, Ebbing	MP18 370	Deininger, Soeren-Oliver	WP09 145	Deshpande, Rohini	ThP33 668
de Jong, Ebbing	MP29 583	Deininger, Soeren-Oliver	WP09 142	DeSimone, Joseph	TP25 439
de Jong, Ebbing	TP17 248	Deininger, Sören	MP10 193	Desjardins, Michel	TP27 494
de Jong, Ebbing	WP28 505	Deininger, Sören	MP10 194	Desveaux, Darrell	ThP25 509
de Jong, Ebbing P.	TP28 511	Dekker, Lennard	TP20 304	Deterding, Leesa	WP19 346
de Jong, Felice	MP04 079	Dekker, Lennard	WP18 319	Deterding, Leesa	WP19 345
de Jong, Gerhardus J.	WOG pm 3:10	Dekker, Lennard	TP16 243	Determan, Charles	ThP14 259
de Jong, Luitzen	MP21 407	Dekker, Lennard	TOH am 08:30	Deutsch, Eric	WP31 587
de Keizer, Wouter	TP37 750	Dekker, Lennard J.M.	WP33 639	Deutsch, Eric W.	MP18 373
de Koning, Leo J.	MP21 407	Dekker, Tim	WP12 218	Deutsch, Eric W.	TP28 525
de Koster, Chris G.	MP21 407	Dekkers, Dick	ThP18 310	Deutschman, Robert	MP18 361

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Devaney, Joseph	ThP19 337	Ding, Xun-Lei	TP02 046	Dong, Qian	ThP34 669
Devarakonda, Srikrupa	MOF pm 3:10	Ding, Yan	ThP11 193	Dong, Qian	WP31 578
Devenport, Neil	TP34 671	Ding, Yue-He	MP21 397	Dong, Xiaoli	MP13 234
Devine, Lauren	WP26 464	Ding, Zheng-Ming	TP21 315	Dong, Yusheng	WP30 546
Devkota, Laxman	WP05 065	Dinh, Thien	ThP12 221	Dongari, Nagaraju	ThP06 086
DeVoe, Don L.	ThP07 117	Dion, Annick	ThP10 178	Dongen, William D. van	WP15 252
Dewaele, Debbie	TP33 637	Dion, Annick	MP02 035	Donley, Elizabeth	TP29 548
Dey, Sanjoy	ThP23 474	Dion, Annick	WP05 062	Donnelly, Marcie	TP21 307
Dey, Subhakar	MP06 108	Dion, Annick	ThP10 177	Donohoe, Greg	TP21 311
Dey, Sudhansu K.	TOB pm 3:50	Dion-Fortier, Annick	TP30 576	Donzelli, Riccardo	TP30 567
Dey, Sudhansu K.	TOB am 08:50	Dioumaeva, Irina	MP07 133	Dopson, Wesley	MP07 140
Deyholos, Michael	MP05 082	DiPasquale, Robert A.	WP11 180	Doran, Angela	MP26 531
Dhabaria, Avantika	TP14 220	Diraviyam, Karthikeyan	MOF am 09:30	Doran, Thomas	TP29 544
Dhabaria, Avantika	TOE am 08:30	Dirix, Luc Y.	ThOD am 09:10	Dorfer, Viktoria	ThP34 682
Dhaenens, Maarten	ThP17 306	Distler, Ute	MP24 464	Dorman, Frank	WP08 131
Dhawan, Neil	WP36 701	Ditewig Meyers, Gail A.	TP30 558	Dornan, David	WP33 632
Dhawan, Neil	ThP17 280	Dittenhafer-Reed, Kristin	WP29 528	Dorny, Pierre	MP23 457
Dhople, Vishnu Mukund	TP19 277	Dittwald, Piotr	MP18 369	Doroschak, Kathryn J.	TP28 511
Dhungana, Suraj	TP23 362	Dittwald, Piotr	TP16 241	Doroshenko, Vladimir	ThP05 058
Di, Xiao-Jing	WP28 501	Dixit, Sugyan	MP21 396	Doroshenko, Vladimir	ThP26 523
Di Bussolo, Joseph	TP29 545	Dixit, Surjit B.	WP24 439	Doroshenko, Vladimir	ThP30 628
Di Donna, Leonardo	TP34 690	Dixon, Brent	TP29 538	Doroshenko, Vladimir M.	ThP07 117
Di Poto, Cristina	WP26 460	Dixon, Brent	WP08 130	Doroshenko, Vladimir M.	MP16 304
Diana Di Mavungu, José	MP03 058	Dixon, David A.	ThP36 712	Dorrestein, Kathleen	MP04 069
Diaz, Gustavo	MP26 549	Dixon, Emma	ThP18 308	Dorrestein, Kathleen	TOB pm 4:10
Diaz-Arevalo, Diana	ThP25 513	Dixon, Kevin	WP38 746	Dorrestein, Pieter	TOG pm 2:30
Dicaire, Catherine	ThP29 617	Dixon, Roger A.	MP04 066	Dorrestein, Pieter	MP04 069
Dicaire, Catherine	ThP29 616	Djiana, Rose	MP01 009	Dorrestein, Pieter	TOB pm 4:10
Dickel, Timo	MP16 324	Djukovic, Danijel	TP23 371	Dorrestein, Pieter	WP12 217
Dickinson, Danielle N.	ThP25 499	D'mello, Rhijuta	MOF am 10:10	Dorrestein, Pieter	TOH pm 2:50
Dickinson, Danielle N.	ThP25 497	Dobbie, Peter	MP33 681	Dorrestein, Pieter	TOH pm 2:30
Dickinson, Danielle N.	ThP26 520	Doble, Philip	WP12 212	Dorrestein, Pieter C.	MP34 707
Dickinson, Michael	MP04 070	Dobos, Karen	WP26 459	Dorrestein, Pieter C.	ThOA am 09:10
Diedrich, Jolene K.	TP05 096	Dobos, Karen	MP26 549	Dorschel, Craig	WP13 232
Diefenbach, Otto	MP22 429	Dobson, Gareth	ThP11 199	Dorsey, Tiffany H.	WP18 312
Diego, Pamela	MP23 462	Dodds, Eric D.	TP33 633	Døskeland, Stein Ove	ThP23 456
Diehl, Hanna	ThP04 034	Dodds, Eric D.	TP36 715	Doster, Douglas	ThP11 194
Diepenbroek, Jacob	WP06 095	Dodds, Eric D.	TP09 165	Douce, David	ThP27 533
Dietz, Harry (Hal)	ThP23 463	Dodge, Jeffrey	WP22 389	Douce, David	ThP11 207
Diez-Garcia, Javier	WP12 216	Dodmane, Puttappa R.	ThP13 241	Doud, Emma	ThP23 448
Dijkstra, Jouke	WP09 141	Doerge, Daniel R.	TP26 477	Dougan, Gordon	ThP25 504
Diken, Eric	ThP11 199	Dogan, Ahmet	ThP23 464	Douglas, Donald	ThP06 075
Dikler, Sergei	WP09 146	Dogan, Ahmet	WOB pm 4:10	Douglas, Donald	ThP06 100
Dilek, Isil	MP01 008	Dogan, Ahmet	ThP23 466	Douglas, Justin	ThP28 577
Dill, Brian	ThP25 501	Dogan, Belgin	MP33 675	Douglas, Mark	ThP28 580
Dill, Brian	MP28 571	Doi, Yasunori	ThP26 524	Douglass, Kevin	ThP31 651
Dillin, Andrew	ThP17 286	Dojahn, Joerg	WP30 543	Douglass, Kevin	WOE pm 3:50
Dillon, Leonard	TP33 626	Dolan, Brendan K.	MOA pm 3:30	Dousty, Faezeh	TP03 052
DiMaggio, Peter	TOE am 09:50	Domalain, Virginie	TOG am 09:30	Dove, William F.	ThP22 422
DiMaggio, Peter	ThOB pm 2:50	Domanski, Dominik	MP19 375	Dovichi, Norman	WP35 681
DiMaggio, Peter	TP22 347	Domin, Mark	WP37 725	Dovichi, Norman	WP30 545
Dimapasoc, Lauren	ThOC am 09:50	Dominguez, Santiago	TP28 524	Dovichi, Norman	WP35 680
Dimapasoc, Lauren	TP35 704	Domizio, Paola	TOE pm 3:50	Dovichi, Norman J.	WP35 682
Dimapasoc, Lauren	MP27 556	Domon, Bruno	MP26 541	Dow, Alex	TP04 075
Dimapasoc, Lauren	ThOD am 09:50	Domon, Bruno	ThP23 476	Dowd, Sarah	WP33 615
Dimapasoc, Lauren M.	WP19 347	Domon, Bruno	TP08 138	Downard, Kevin	TP11 198
Dimond, Jamie	ThP36 721	Doneanu, Angela	WOD pm 3:10	Dowsey, Andrew	MP19 386
Dimopoulos, George	TOH pm 2:30	Doneanu, Angela	ThP28 573	Doyle, Michael	WOH am 08:30
Dimson, Phil	TP25 432	Doneanu, Angela	ThP07 118	Doyle, Rory	MP25 513
D'Incalci, Maurizio	WP11 191	Doneanu, Angela	MP06 124	Drabkin, Harry	TP36 728
Dindyal-Popescu, Alina	WP15 266	Doneanu, Catalin	TP25 421	Drabner, Georg	MP23 444
Diner, Benjamin	WP28 510	Doneanu, Catalin	MP25 521	Drake, Richard	MP10 192
Ding, Chuan-Fan	TOA pm 3:50	Doneanu, Catalin	WP15 280	Drake, Richard	WP09 139
Ding, Chuan-Fan	MP16 294	Doneanu, Catalin	ThP08 131	Drake, Richard	WP11 188
Ding, Chuan-Fan	MP16 305	Doneanu, Catalin	MP26 532	Drake, Richard R.	TP36 728
Ding, Chuan-Fan	TP01 014	Donenko, Fedor	MP27 550	Drake, Richard R.	WP11 192
Ding, Hua	TP21 322	Dong, Hengtao	TP37 741	Drake, Richard R.	WP09 137
Ding, Huijiang	WP21 379	Dong, Hengtao	WP03 033	Drake, Richard R.	TOB pm 3:10
Ding, JianHua	TP34 673	Dong, Hengtao	ThP27 528	Dreiling, Alena	WP28 497
Ding, Jie	WP15 264	Dong, Hengtao	TP37 740	Dreisewerd, Klaus	TP04 060
Ding, Jie	WP15 257	Dong, Jia	MP22 430	Drexler, Dieter	ThP12 226
Ding, Li	ThOD am 08:30	Dong, Jia	MP22 421	Drexler, Dieter M.	ThP13 243
Ding, Shi-Jian	ThP18 327	Dong, Jing	MP11 214	Dreyer, Mark	TP23 381
Ding, Shi-Jian	MP27 557	Dong, Linlin	ThP31 643	Drici, Adam	WP01 002
Ding, Shi-Jian	ThP13 241	Dong, Meng-Qiu	MOA pm 4:10	Driffield, Malcolm	WP37 707
Ding, Xiang	TP36 727	Dong, Meng-Qiu	ThP13 230	Driscoll, C. F.	TP05 108
Ding, Xiao	ThP21 388	Dong, Meng-Qiu	MP21 397	Driver, Joshua	MP16 317
Ding, Xiaojing	TP37 751	Dong, Meng-Qiu	TP21 338	Driver, Joshua	TOA pm 3:30
Ding, Xiao-Jun	ThP13 230	Dong, Mingming	WP34 647	Droit, Arnaud	WP33 622

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Drouin, Elise E.....	MP29 593	Dunyach, Jean-Jacques.....	ThP06 094	Eckle, Tobias.....	TOF am 09:10
Drul, Dainna.....	TP37 744	Dunyach, Jean-Jacques.....	TP01 019	Eddington, Alan.....	MP07 135
Drusano, George.....	MP07 138	Dunyach, Jean-Jacques.....	ThP06 101	Edelman, Daniel C.....	WP18 312
D'Santos, Clive S.....	WP28 496	Dunyach, Jean-Jacques.....	ThP01 016	Edgar, J. Scott.....	MP17 336
D'Souza, Alexandria K.....	TP28 521	Dunyach, Jean-Jacques.....	ThP01 018	Edgar, J. Scott.....	TP04 064
D'Souza, Alexandria.....	WP30 555	Duplock, Stephen K.....	ThP20 361	Edgar, J. Scott.....	MP24 484
D'Souza, Alexandria K.....	MOA pm 3:50	Dupre, Mathieu.....	TP13 215	Edgar, J. Scott.....	WP23 420
D'souza, Rochelle C J.....	TOD pm 2:30	Duraffourg, Laurent.....	MP16 320	Edgar, J. Scott.....	TP34 684
Du, Chengan.....	MP03 057	Durairaj, Anita.....	ThP04 043	Edgar de Moraes, Fabricio.....	MP32 656
Du, Dan.....	ThP35 707	Durand, Kirt.....	TP06 114	Edgeworth, Matthew.....	WP24 424
Du, Ping.....	MP34 711	Durand, Kirt.....	TP06 112	Edgeworth, Matthew.....	TP35 707
Du, Ping.....	MP34 710	Durazo, Armando.....	TP32 614	Edgington, Alan.....	WP07 109
Du, Ping.....	MP34 713	Durbin, Ken.....	TP16 244	Edgington, Alan.....	TP30 563
Du, Ping.....	ThP28 574	Durbin, Kenneth.....	TP01 008	Edgington, Alan.....	ThP08 132
Du, Wei.....	MP34 708	Durbin, Kenneth.....	MOB pm 4:10	Edison, Arthur S.....	TP24 414
Du, Y. Melodie.....	ThP20 373	Durbin, Kenneth R.....	WP35 684	Edvardsson, Vidar O.....	ThOC am 10:10
Du Bois, Justin.....	WP37 731	Duretz, Benedicte.....	MP30 617	Edwards, Alistair.....	MP24 477
Duan, Jiana.....	ThP20 383	Duretz, Bénédicte.....	MOE am 08:50	Edwards, Kathleen.....	WP05 051
Duan, Shuo.....	ThP30 632	Duriez, Elodie.....	ThP23 476	Edwards, Kathryn.....	MP28 575
Dube, David.....	ThP27 535	Durighello, Emie.....	ThP25 506	Edwards, Laura.....	ThP17 289
Dube, David.....	ThP10 177	Dutta, Bama.....	MP27 565	Edwards, Lori.....	WP19 346
Dubin, DHE.....	TP05 108	Dutta, Sucharita.....	ThP28 590	Edwards, Nathan.....	MP19 384
Dubin, Paul.....	WP23 408	Dutta, Sucharita.....	WP26 474	Edwards, Nathan.....	TP14 220
Dubina, Michael.....	ThP34 679	Duvaud, Severine.....	WP32 606	Edwards, Nathan.....	TOE am 08:30
DuBois, Debra C.....	TP21 337	Duyckaerts, Charles.....	MP10 184	Edwards, Nathan.....	ThP09 157
Dubois, Laura.....	ThP25 487	Dvorkin, Mikhail.....	TP16 243	Edwards, Peter.....	MP16 297
Duchoslav, Eva.....	WP15 256	Dwivedi, Prabha.....	TP04 085	Egan, Christina T.....	ThP25 497
Duchoslav, Eva.....	TP33 642	Dwivedi, Prabha.....	MP15 265	Egan, Thomas.....	WP10 169
Duchoslav, Eva.....	ThP28 586	Dwivedi, Prabha.....	MP15 267	Egertson, Jarrett.....	TP28 512
Duchoslav, Eva.....	TP24 385	Dwivedi, Prabha.....	WP17 292	Egertson, Jarrett.....	MP24 490
Duchoslav, Eva.....	TP25 427	Dwivedi, Prabha.....	MP15 266	Egertson, Jarrett.....	MOA am 08:30
Duchoslav, Eva.....	WP13 230	Dwivedi, Prabha.....	MP30 606	Egertson, Jarrett.....	ThP12 229
Duchoslav, Eva.....	WP15 255	Dworkin, Jason.....	ThOE am 09:30	Egertson, Jarrett D.....	WP31 582
Ducret, Axel.....	TP21 333	Dworski, Shaalee.....	WP09 139	Eggers, Frederike.....	ThP14 255
Duczak, Nick.....	TP31 607	Dyakov, Yuri A.....	ThP31 647	Eggertson, Michael.....	WP21 378
Duczak, Nick.....	TP28 517	Dyson, Barry.....	TP28 519	Eggertson, Michael.....	WP21 376
Duczak, Jr., Nicholas.....	ThP29 606	Dzerek, Alan.....	WP06 077	Egle, Brian.....	ThP06 105
Dudte, Sophia.....	WP01 002	Dzerek, Alan.....	ThP21 408	Ehling, Stefan.....	WP20 360
Duewel, Henry.....	ThP17 304	Earley, Lee.....	ThP06 101	Ehresmann, Treeske.....	MP33 679
Duffin, Kevin.....	WP18 323	Earley, Lee.....	TP01 019	Ehrlich, Kenneth C.....	MP03 058
Duffresne, Craig.....	WP33 620	Early, Bryan.....	TP01 008	Ehrmann, Brandie.....	MP34 700
Duffresne, Martin.....	ThP04 041	Early, Bryan.....	MOB pm 4:10	Ehrmann, Brandie M.....	ThP31 649
Dugarte, Rafael.....	MP19 385	Early, Bryan.....	ThP25 510	Eiceman, Gary.....	WP38 752
Duggan, Jeffrey.....	MP25 504	Early, Bryan P.....	TP16 239	Eiceman, Gary.....	TP33 635
Duggan, Jeffrey.....	MP25 506	Early, Michael.....	WP28 505	Eichelbaum, Katrin.....	MP24 471
Duggan, Jeffrey.....	MP25 505	Easterling, Michael.....	WOH pm 3:50	Eichner, Daniel.....	MOC pm 4:10
Dugourd, Philippe.....	TP06 122	Easterling, Michael L.....	WP11 185	Eickhoff, Kristen.....	MP02 031
Dugourd, Philippe.....	WOE am 08:50	Eastwood, Stephanie.....	TP04 055	Eigenheer, Richard A.....	ThP09 148
Dugourd, Philippe.....	TP05 094	Easwaramoorthy, D.....	WP14 248	Eiichiro, Fukusaki.....	ThOB am 09:50
Dugourd, Philippe.....	WOG am 10:10	Eatough, David.....	TP37 750	Eijkel, Gert.....	MP10 199
Dugourd, Philippe.....	WP38 736	Eatough, David.....	TP33 627	Eijkel, Gert.....	WOD pm 3:50
Dührkop, Kai.....	WP13 231	Ebeler, Susan.....	WP19 338	Eijkel, Gert B.....	MP10 197
Dulaurent, Sylvain.....	WP08 125	Ebeler, Susan E.....	MP34 685	Eijkel, Gert B.....	WP09 143
Dumas, Paul.....	ThOE am 09:10	Ebeler, Susan E.....	TOE pm 4:10	Eikel, Daniel.....	ThP12 221
Dumas, Pierre.....	ThP29 596	Ebeler, Susan E.....	ThP11 196	Eikel, Daniel.....	WP25 451
Dumas, Pierre.....	ThP29 601	Eberlin, Livia.....	ThP03 030	Eiffeld, Alexander.....	WP20 367
Duménil, Guillaume.....	ThOB pm 3:50	Eberlin, Livia S.....	MP10 205	Eiriksson, Finnur.....	TP27 495
Dumont, Isabelle.....	ThP29 612	Eberlin, Livia S.....	ThOA am 09:30	Eiriksson, Finnur Freyr.....	ThOC am 10:10
Dunaev, Anatoly.....	TP02 044	Eberlin, Marcos.....	WOA pm 2:50	Eisenacher, Martin.....	ThP22 412
Dunbar, Brett.....	ThP13 233	Eberlin, Marcos.....	WP05 063	Eisenacher, Martin.....	ThP22 413
Dunbar, Robert C.....	WOG am 08:30	Eberlin, Marcos.....	TP34 683	Eiserberg, Gene.....	WP15 258
Duncan, Bradley.....	WP02 003	Eberlin, Marcos.....	TP34 679	Eisinger, Martin.....	TOA am 10:10
Duncan, Jason S.....	MP17 331	Eberlin, Marcos.....	MP31 652	Eitel, Michael.....	ThP17 291
Duncan, Kyle D.....	TP04 081	Eberlin, Marcos N.....	TP33 655	Ejsing, Christer.....	MP11 212
Duncan, Mark W.....	MP09 181	Eberlin, Marcos N.....	ThP32 661	Ekanayaka, E.A. Prabodha.....	MP32 654
Duncan, Meghan.....	WP29 531	Eberlin, Marcos N.....	WP38 735	Ekdahl, Anja.....	WP14 236
Dunn, Amelia D.....	WP28 507	Eberlin, Marcos N.....	TP34 675	Eklund, Göran.....	TP25 430
Dunn, Keiana.....	TP21 307	Eberlin, Marcos N.....	TP33 658	Ekroos, Kim.....	ThOC pm 3:50
Dunn, Stanley D.....	MP22 428	Eberlin, Marcos N.....	MP18 364	Ekström, Simon.....	MP09 182
Dunn, Warwick.....	MP19 386	Eberlin, Marcos N.....	TP34 681	El Aalamat, Yousef.....	WP10 159
Dünbier, Uwe.....	TP31 578	Eberlin, Marcos N.....	ThOG am 08:50	El Khoury, Maroun.....	WP33 631
Dunne, Christine E.....	WP15 271	Eberlin, Marcos N.....	TOG am 09:50	El-Aneed, Anas.....	ThP31 640
Dunne, Timothy.....	WP13 228	Eberlin, Marcos N.....	TP34 682	El-Baba, Tarick.....	ThP31 642
Dunstan, Jody.....	MP31 639	Ebert, Jens.....	MP16 324	Elenitoba-Johnson, Kojo.....	MP27 564
Dunstan, Jody.....	ThP11 207	Ebner, Ford.....	TP21 318	Eligar, Sachin M.....	MP27 554
Dunyach, Jean Jacques.....	ThP06 102	Ecelberger, Scott.....	MP35 719	Eliot, Andrew.....	MP23 447
Dunyach, Jean-Jacques.....	TP05 101	Echeverria, Pablo.....	WP36 698	Eliuk, Shannon.....	TP14 218
Dunyach, Jean-Jacques.....	ThP06 084	Echterbille, Julien.....	TP07 127	Eliuk, Shannon.....	MP29 596
Dunyach, Jean-Jacques.....	ThP06 093	Eckels, Josh.....	MP19 382	Eliuk, Shannon.....	ThP20 375

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Eliuk, Shannon.....	TOA am 09:30	Esades, Amanda.....	ThP21 403	Falconet, Denis.....	TP34 662
Eliuk, Shannon.....	WP36 689	Esaki, Tsuyoshi.....	MP04 065	Falconet, Denis.....	TP34 664
Elizabeth, Ryan.....	ThP09 167	Escoubas, Pierre.....	TP07 127	Falkenby, Lasse.....	MP06 097
Elkhatib, Soraya.....	TP34 682	Escoubas, Pierre.....	ThP16 272	Falkenhagen, Jana.....	MP36 737
Ellefsen, Kayla.....	WOA pm 2:30	Escribá, Pablo V.....	MP10 201	Fallavollita, James.....	TP18 257
Ellenberger, Thomas E.....	WP23 401	Espadas, Guadalupe.....	WP28 498	Famigliini, Giorgio.....	WP20 361
Elliott, Justin.....	MP31 648	Espona Pernas, Lucia.....	TP28 499	Famigliini, Giorgio.....	TP31 606
Elliott, Noelle.....	WP08 131	Esposito, Christopher.....	TP29 545	Fan, Guoping.....	MP13 239
Ellis, Andrew M.....	MP16 321	Espourteille, Francois.....	MP05 083	Fan, Hui.....	MP01 012
Ellis, Gregory A.....	TP24 415	Espourteille, Francois.....	ThP12 228	Fan, Hui.....	MP06 101
Ellis, Matthew.....	TOD pm 3:30	Espourteille, Francois.....	TP29 545	Fan, Hui.....	ThP10 181
Ellis, Matthew J.....	ThP17 299	Espourtielle, Francois.....	ThP29 606	Fan, Jun.....	ThP11 189
Ellis, Matthew J.....	ThOD am 08:30	Esra Nurten, Cece.....	MOE pm 3:10	Fan, Jun.....	WP03 027
Ellis, Matthew J.....	TP21 332	Essaka, David.....	WP35 680	Fan, Kai-Ting.....	MP32 671
Ellis, Megan.....	WP24 441	Esteve, Francisco.....	MOD am 08:30	Fan, Mengdi.....	ThP20 378
Ellis, Shane.....	ThP04 039	Esteve, Francisco J.....	MP26 544	Fan, Sheng-Bo.....	MOA pm 4:10
Ellis, Shane.....	MOB am 09:50	Estrada, Anthony.....	TOD pm 4:10	Fan, Sheng-Bo.....	MP21 397
Elm, Julian.....	ThP04 034	Estrada, Sergio.....	WP11 184	Fan, Teresa W-M.....	TP23 365
Elmasri, Marwan.....	TOA am 08:30	Etienne, Chris.....	TP11 197	Fan, Xinghua.....	MP31 636
ElNaggar, Mariam S.....	TOH pm 2:50	Ettrich, Rudiger.....	MP21 401	Fan, Xiuzhen.....	TP21 316
Elortza, Felix.....	MP09 168	Evans, Annie.....	MP03 043	Fanayan, Susan.....	ThP22 418
El-Sherbiny, Mohamed.....	MP30 606	Evans, Catherine.....	TOH am 08:50	Fandino, Anabel.....	TP26 459
Eltaha, Chadi.....	TP18 272	Evans, Christopher.....	TP25 451	Fang, Faye.....	MP23 456
Elzey, Sherrie.....	WP23 419	Evans, Christopher.....	MP25 519	Fang, Huafeng.....	TP27 486
Emmett, Mark.....	ThP19 345	Evans, James.....	TP21 312	Fang, Jing.....	TP15 228
Emmett, Mark R.....	MP29 597	Evans, James.....	WP29 515	Fang, Jingye.....	MP29 589
Emmons, Caleb J.....	ThP34 671	Evans, Kate.....	MP05 083	Fang, Liling.....	MP11 214
Emmons, Caleb J.....	TP28 509	Evans, T. Idil.....	ThP25 505	Fang, Meng.....	MP07 142
Enders, Jeffrey.....	ThP29 593	Evans-Nguyen, Theresa.....	ThP01 007	Fang, Meng.....	ThP21 394
Enders, Jeffrey.....	MP29 588	Evans-Nguyen, Theresa.....	TP27 489	Fang, Pengfei.....	MP22 422
Enders, Jeffrey R.....	MP01 004	Evans-Nguyen, Theresa.....	MP16 308	Fang, Tammy.....	ThP20 374
Eng, Jimmy.....	WP28 495	Evard, Hanno.....	TP04 063	Fang, Xiang.....	MP16 306
Eng, Jimmy K.....	TP28 525	Evenson, Mary.....	MP12 225	Fang, Xiang.....	MP16 295
Eng, Marian.....	MP06 106	Evenson, Mary.....	ThP11 191	Fang, Xiang.....	MP16 316
Engel, Marc E.....	WP20 359	Evers, Waltraud.....	WP24 434	Fang, Xiang.....	MP16 296
Engelhard, Carsten.....	WP37 711	Evers, Waltraud.....	TOH am 08:50	Fang, Xiaowei.....	WP20 362
Engelhardt, John.....	ThP25 505	Evertts, Adam.....	TOE am 09:50	Fang, Xiao-Wei.....	WP20 357
Engen, John.....	WP21 376	Ewing, Rob.....	WP36 700	Fang, Xiao-Wei.....	WP20 358
Engen, John.....	WP22 400	Ewing, Robert.....	MP17 348	Farang, Yehia.....	ThP23 452
Engen, John R.....	MP22 419	Eyler, John R.....	WOG am 09:10	Faramarzi, Saeed.....	WP36 704
Engen, John R.....	WOH am 08:30	Eyles, Stephen.....	WP23 408	Farcas, Claudiu.....	MP19 380
Engen, John R.....	MP22 414	Eysberg, Martin.....	WP15 260	Farese, Ann M.....	WP26 471
Engen, John R.....	WP21 378	Ezan, Eric.....	ThP25 506	Farnood, Ramin.....	TP31 589
Enger, Robert.....	ThP10 173	Ezeoke, Ogochukwu.....	MP30 606	Farnsworth, Charles L.....	ThP33 666
Enger, Robert.....	ThP10 171	Ezponda-Itoiz, Teresa.....	ThOH am 10:10	Farnsworth, Charles L.....	WP31 590
Enger, Robert.....	ThP10 174	Fabacher, David.....	MP08 159	Farnsworth, Charles L.....	MOA pm 2:50
Enger, Robert.....	ThP10 170	Faber, Helene.....	WP23 409	Farnsworth, Charles L.....	WP34 657
Engler, Martin S.....	MP36 734	Faber, Helene.....	TP10 189	Farrak, Terry.....	TOH pm 4:10
English, A. Michelle.....	TP14 223	Faber, Johan.....	WP22 395	Farrak, Terry.....	TP28 525
English, A. Michelle.....	TP10 173	Faber, Johan H.....	WP28 514	Farrak, Terry.....	MP18 373
English, A. Michelle.....	TOH am 09:30	Faber, Matthew.....	MP11 216	Farrokhi, Vahid.....	MP23 462
English, Michelle.....	ThP06 101	Fabrik, Ivo.....	WP34 649	Farrokhi, Vahid.....	ThP24 479
English, Robert D.....	TP21 316	Fabris, D.....	ThOH am 09:50	Fasciotti, Maíra.....	TOG am 09:50
Enjalbert, Quentin.....	TP06 122	Fabris, D.....	MOH am 08:30	Fasciotti, Maíra.....	WOA pm 2:50
Enjalbert, Quentin.....	TP05 094	Fabris, Daniele.....	MP21 396	Fasciotti, Maíra.....	WP38 735
Enke, Christie G.....	MOB am 10:10	Fabris, Daniele.....	TOF pm 2:50	Faserl, Klaus.....	ThP17 285
Enke, Christie G.....	Special	Fabritz, Sebastian.....	TP31 599	Faserl, Klaus.....	WP30 563
Enriquez, Jose Antonio.....	TP05 095	Faça, Vitor.....	MP26 543	Faserl, Klaus.....	MP24 482
Ens, Werner.....	ThP05 057	Fack, Fred.....	WP11 193	Fast, Douglas.....	ThP13 244
Enthaler, Bernd.....	ThP04 031	Fadeyi, Ifeyinwa.....	MP30 606	Fast, Douglas.....	MP25 514
Entwistle, Andrew.....	ThP01 002	Fadgen, Keith.....	MP25 521	Fast, Walter.....	TP09 172
Enyenihi, Atim A.....	ThP33 668	Fadgen, Keith.....	WP21 376	Fatou, Benoit.....	TP04 087
Eom, Han Young.....	MP34 714	Fadgen, Keith.....	WP21 378	Fattinger, Christof.....	MP15 263
Epelbaum, Stéphane.....	MP10 185	Faerber, Franz.....	MP19 383	Faull, Kym.....	TP26 457
Epifanio, Vera.....	MP26 543	Faerber, Franz.....	MP29 581	Faull, Kym.....	MP13 239
Erb, Matthias.....	MP03 052	Faerber, Franz.....	ThP34 675	Faull, Kym.....	TP24 404
Erdmann-Gilmore, Petra.....	ThP17 299	Faerber, Franz.....	MP29 582	Faull, Kym.....	WP21 379
Erdmann-Gilmore, Petra.....	TP21 332	Faeth, Stanley.....	MP34 700	Faull, Kym F.....	ThP24 485
Erdmann-Gilmore, Petra.....	WP30 571	Fagbami, Lola.....	ThP10 179	Fauty, Scott.....	ThP21 396
Erickson, Alison.....	ThP25 502	Fagbami, Lola.....	MOD am 08:30	Favela, Kristin.....	ThOE am 08:30
Erickson, Brian K.....	TP04 077	Fagbami, Lola.....	TP08 148	Fawzi, Elham.....	TP32 611
Erickson, Ingrid.....	TP33 626	Fagbami, Lola.....	MP26 544	Fayad, Paul.....	TP32 617
Ericson Jogsten, Ingrid.....	MP31 639	Fagerquist, Clifton K.....	ThP25 517	Fazio, Alessia.....	MP36 729
Eriksson, Cecilia.....	WP09 141	Fague, Kaitlin.....	MP06 093	Fazlollahi, Farbod.....	TP24 404
Erkaev, Evgeny.....	WP26 454	Fahrenholtz, Timothy.....	TP32 615	Fearn, Sarah.....	WP12 220
Ernst, Jordan C.....	ThP20 379	Fair, Sarah.....	MP06 113	Feasley, Christa L.....	TP35 703
Ernst, Robert K.....	MP10 206	Fair, Sarah.....	MP01 011	Fedorov, Dmitri G.....	WP38 742
Erol, Halil.....	TP25 450	Falconer, Shelley.....	MP33 681	Feenstra, Adam.....	WP12 200
Errey, James.....	ThP24 484	Falconer, Travis M.....	ThP06 104	Fehniger, Thomas.....	ThOF am 09:30

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Feigerle, Charles	ThP30 624	Fernández, Jose A.	MP10 201	Fischler, David	ThP20 358
Feld, Brian	TP37 756	Fernandez, Roberto	WP12 216	Fisher, Christine	MP15 273
Feinberg, Thomas	ThOF pm 2:30	Fernández, Roberto	MP10 201	Fisher, Gregory	ThP04 046
Feldman, Andrew L.	ThP23 466	Fernández de la Mora, Juan	WP38 748	Fisher, Gregory L.	ThP04 045
Feldman, Daniel	WP11 185	Fernández de la Mora, Juan	TP33 622	Fisher, Henry	MP14 255
Feldmann, Ingo	TOD pm 3:10	Fernández de la Mora, Juan	TP33 629	Fisher, Markus	ThP23 476
Feldmesser, Marta	TP19 288	Fernández García, Juan	WP38 748	Fisher, Susan	TP35 691
Fell, Lorne	WOF am 09:10	Fernández García, Juan	TP33 629	Fitchett, Jon	WP21 377
Fell, Lorne	WP04 040	Fernández García, Juan	TP33 622	Fitchett, Jon	MP22 420
Fellers, Ryan	ThP25 510	Fernandez Lima, Francisco	TP09 167	Fitz, Lori	WP24 431
Fellers, Ryan	TP16 244	Fernandez-Murray, J. Pedro	MP29 579	Fitzgerald, Maria	MP02 032
Fellers, Ryan T.	ThP09 141	Fernando, Reshan A.	TP26 470	Fitzgerald, Michael C.	TP10 179
Fellers, Ryan T.	TP16 239	Fernando, Reshan A.	MP34 694	Fitzgerald, Michael C.	TP11 200
Fellers, Ryan T.	WOD pm 3:30	Fernando, Vijanaka	ThP05 057	Fitzgerald, Michael C.	TP11 202
Felsher, Dean W.	MP10 205	Feroggio, Marina	MP25 498	Fjeldsted, John	WP38 753
Felske-Mueller, Stephanie	TOC pm 3:10	Ferrante, Ilaria	WP08 134	Fjeldsted, John	TOG am 08:50
Fenaille, Francois	TP13 215	Ferrante, Ilaria	TP29 554	Flandinet, Laurène	ThOE am 09:50
Fenaille, François	TOH pm 3:50	Ferrante, Ilaria	MP31 638	Flandrin, Aurore	ThP18 315
Fenaille, François	MOD am 08:50	Ferrante, Ilaria	MP31 637	Flarakos, Jimmy	WOD am 09:10
Fenaille, François	MP04 075	Ferreira, Alexandre	WP26 473	Flarakos, Jimmy	MP17 340
Feng, Changgeng	ThP14 250	Ferreira, Christina	ThP03 030	Flarakos, Jimmy	MP02 037
Feng, John	MP29 600	Ferreira, Christina R.	ThOA am 09:30	Flaxer, Eli	MP17 338
Feng, Qiang	TP28 503	Ferreira, Christina R.	TP34 681	Flender, Cornelia	WP37 731
Feng, Shan	WP28 503	Ferreira, Christina R.	MP06 102	Fleskes, Raquel	MP30 605
Feng, Shan	ThP23 450	Ferreira Do Vale, Luis Henrique	ThP08 128	Flett, Fiona	WP28 494
Feng, Shanshan	ThP13 241	Ferreira Padilha, Francine	MP24 473	Fleury, Normand	ThP29 601
Feng, Shixia	WP06 093	Ferreira Siqueira, Mônica	WP11 190	Fleury, Normand	ThP29 596
Feng, Xidong	TP33 638	Ferrer, Imma	TOG pm 3:30	Flick, Tawnya	TP33 623
Feng, Ye	TP26 454	Ferris, Heather	WP12 202	Flinders, Bryn	MP30 608
Fennell, Anne	ThOE pm 2:30	Ferzoco, Alessandra	ThP35 695	Flint, S. J.	WP29 524
Fenner, Amanda	TOG pm 2:30	Festa, Michael	MP17 342	Flint, S. J.	MP28 569
Fenner, Kathrin	WOF am 09:30	Festa, Michael	TOC am 08:50	Flook, Josh	WP19 334
Fenselau, Catherine	TOE am 08:30	Fetterly, Gerald	TP26 460	Florens, Laurence	TP28 515
Fenselau, Catherine	ThP09 157	Fetterly, Gerald J.	MP06 103	Florens, Laurence	WP29 526
Fenselau, Catherine	TP14 220	Fhaner, Cassie	ThP28 564	Flowers, Sarah	WOG pm 3:50
Fenton, Anne	TP19 290	Fhaner, Cassie	ThP28 576	Floyd, Brendan J.	MOA pm 3:30
Fenyo, David	ThOD am 08:30	Fiacco, Ilaria	WP08 135	Floyd, Kyle A.	MP10 191
Fenyo, David	WP31 584	Fialkov, Alexander	ThP11 188	Floyd, McKenzie	TP34 663
Fenyo, David	TOH am 10:10	Fialkov, Alexander	MP17 338	Floyd, Melissa	MP35 719
Fenyo, David	ThOB pm 3:30	Fidelis, Carlos H.V.	TP34 675	Flug, Tom	ThP11 194
Fenyo, David	TP11 203	Fiebig, Lukas	TP02 022	Focsa, Cristian	TP04 087
Fenyo, David	TP21 332	Fiedler, Katherine L.	WP19 343	Foekens, John	ThP22 417
Fenyo, David	ThP17 299	Fiehn, Oliver	TP27 480	Foekens, John	ThP22 416
Fenyo, David	WP31 575	Fiehn, Oliver	ThOB am 08:30	Foekens, John A.	ThOD am 09:10
Fenyo, David	TOD pm 3:30	Fiehn, Oliver	ThOC pm 2:30	Foekens, Renée	ThOD am 09:10
Fenyo, David	WOB am 08:30	Fiehn, Oliver	WP13 225	Fomina, Natalia	TP04 084
Fenyo, David	WP31 577	Fiehn, Oliver	TOF am 08:50	Fonbonne, Catherine	MP26 527
Fenyo, David	TP28 507	Fiehn, Oliver	TP24 412	Fong, Jason	ThP23 449
Fenyó, David	ThOB pm 3:10	Field, Jennifer	WOF am 09:50	Fonseca, Kari	MP26 531
Feraco, Taylor	MP17 342	Fierro-Monti, Ivo	WP36 698	Fonslow, Bryan	ThP09 162
Ferguson, Carly N.	ThP09 140	Figard, Ben	MP26 522	Fontaine, Burr	TP29 548
Ferguson, James	WP15 265	Figard, Benjamin	WP03 028	Foo, Siong Chun	TP24 386
Ferguson, Leesa	MP30 623	Figarella-Branger, Dominique	ThP02 025	Forbes, Alwyn	MP01 030
Ferguson, Michael	WP26 468	Figueroa, Mario	MP34 700	Ford, David	MP10 199
Ferguson, P. Lee	TP31 595	Filali, Sofia	TOH pm 3:50	Ford, Lisa	TP30 568
Fermin, Damian	MP27 564	Files, Darin	TP37 764	Ford, Michael	ThP23 459
Fermin, Damian	TOD pm 2:50	Filgueira, Marcelo	MP06 117	Ford, Michael	WP33 613
Fermin, Damian	TP28 523	Filippakopoulos, Panagis	TOE am 09:30	Ford, Michael	ThP08 126
Fernandes, Anna Maria A. P.	TP34 681	Fillmore, Thomas L.	WP27 484	Ford, Michael	TP15 233
Fernandes, Anna Maria A. P.	ThP32 661	Fillmore, Thomas L.	MP26 542	Ford, Michael	ThP22 423
Fernandes, Deolinda	WP15 266	Fillmore, Thomas L.	MP26 540	Foret, Frantisek	ThP06 085
Fernandes, Lucy	WP15 254	Finan, Michael	ThP22 419	Foret, Frantisek	ThP07 109
Fernandes, Lucy	WP36 699	Finan, Michael	TP35 712	Formolo, Catherine A.	TP36 721
Fernandes, Patricia	ThP22 426	Finazzi, Ilaria	MP23 445	Fornal, Emilia	ThP13 234
Fernandez, Bernard	ThP09 158	Findsen, Eric	MP17 353	Fornecker, Luc	ThP22 428
Fernandez, Facundo	MP15 267	Fine, Dennis	MP03 050	Fornelli, Luca	WOE am 08:50
Fernandez, Facundo	TP04 085	Fine, Zachary	ThP13 239	Fornelli, Luca	MOB pm 3:50
Fernandez, Facundo	TP24 394	Finkelstein, David	WP12 212	Forni, Sabrina	TP27 483
Fernandez, Facundo	MP15 266	Finniss, Matthew	TP25 439	Forrest, William	WP33 632
Fernandez, Facundo	MP15 265	Fioramonte, Mariana	MP21 399	Forrest, William F.	ThP18 307
Fernandez, Facundo M.	ThP05 052	Firth, Neville	ThP25 507	Forsberg, Erica	MP06 099
Fernandez, Facundo M.	TP33 654	Fischer, Lukas	MP15 286	Forsthuber, Thomas	TP20 302
Fernandez, Facundo M.	ThP05 062	Fischer, Martina	WOB am 09:50	Forsyth, Mark	WP01 002
Fernández, Facundo	TP24 389	Fischer, Roman	ThP09 143	Forsythe, Grant	ThP35 701
Fernández, Facundo	ThOE am 09:30	Fischer, Roman	MP18 357	Forsythe, Jay	ThP28 585
Fernández, Facundo	WP17 292	Fischer, Steven M.	ThP33 665	Forsythe, Jay	TP04 066
Fernández, Facundo M.	MP30 606	Fischer, Steven M.	MP19 379	Fort, Kyle L.	TP33 659
Fernandez, Jose A.	WP12 216	Fischle, Wolfgang	TP22 354	Fort, Kyle L.	TP33 636

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Fortin, Tanguy	TP28 505	Fu, Qin	WP27 489	Gal, Jean-François	TP02 030
Fortin, Tanguy	ThP23 444	Fuchigami, Sotaro	TP09 166	Galan, Jacob A.	TOE am 08:50
Foster, Fred	TP29 541	Fuchs, Beate	MP11 210	Galaverna, Renan S.	TOG am 09:50
Foster, Fred	WP20 371	Fuchser, Jens	MP10 194	Galaverna, Renan S.	TP33 658
Foster, Leonard	MP33 682	Fuchser, Jens	WP09 145	Galaverna, Renan S.	TP34 675
Foster, Leonard	ThP25 511	Fuchser, Jens	MP10 193	Galayda, Katie-Jo	MP32 658
Fountain, Kenneth	MP06 096	Fuchser, Jens	WP12 220	Gale, P. Jane	WP01 001
Fountain, Kenneth J.	TP20 301	Fuchser, Jens	TP36 731	Gale, P. Jane	Museum
Fountain, Kenneth J.	WP33 634	Fuesler, John	WP28 510	Galgiani, John	TP19 291
Fournier, Frédéric	WP33 622	Fuhrer, Katrin	WP38 744	Galhena, Asiri S.	ThP05 062
Fournier, Isabelle	TP04 087	Fuhrer, Tobias	WP36 702	Gall, Lidia	ThOH pm 2:30
Fournier, Isabelle	TOB pm 2:30	Fujimoto, Gordon	MP25 519	Gall, Nicolay	TP04 084
Fournier, Marc	TP08 149	Fujimoto, Junichiro	WP07 114	Gallagher, Jane E.	TP23 370
Fournier, Marc	MP06 107	Fujimura, Yoshinori	WP19 341	Gallagher, Richard	WP13 224
Fox, Howard S.	MP24 469	Fujimura, Yoshinori	WP12 221	Gallagher, Richard T.	ThP31 634
Fox, Todd	TP21 314	Fujimura, Yoshinori	ThP04 032	Gallardo, Vanessa	TP02 037
Francese, Simona	MP30 623	Fujioka, Sachi	TP26 452	Gallegos-Candela, Maribel	MP26 548
Francese, Simona	ThP14 251	Fujioto, Junichiro	WP07 105	Gallie, Daniel	ThP12 223
Francese, Simona	WP09 136	Fujita, Ai	ThP14 252	Gallien, Sebastien	TP08 138
Francisco, Joseph S.	TP06 111	Fujita, Yuichiro	MP18 359	Gallo, Richard L.	TP24 401
Francisco, Joseph S.	ThP36 715	Fujito, Yuka	ThP27 558	Gamage, Chaminda M.	ThP05 062
Franck, Julien	TOB pm 2:30	Fukusaki, Eiichiro	TP31 603	Gambin, Ania	TP16 241
Franco, Caroline	WP38 735	Fukusaki, Eiichiro	MP06 089	Gamble, Heather	TP04 056
Francois, Yannis	WP24 429	Fukusaki, Eiichiro	WP13 226	Gamble, Kim	TP29 534
Francois, Yannis	WP24 428	Fukusaki, Eiichiro	ThOC pm 3:10	Gamboa da Costa, Goncalo	MP07 143
Franklin, Edward	MP06 093	Fukusaki, Eiichiro	MP03 044	Gamecki, Piotr	ThOG pm 2:30
Franzi, Lisa	WP17 308	Fukusaki, Eiichiro	ThP28 583	Gamez, Roberto	WP02 007
Fraser, Bruce	WP17 304	Fukuyama, Yuko	MP08 160	Gammulla, C. Gayani	ThOE pm 2:30
Fraser, Bruce	ThP07 116	Fulton, Scott	ThP08 133	Gan, Lawrence	ThP01 003
Fraser, Christopher	ThP17 301	Funabashi, Hitoshi	TP29 556	Gandhi, Adarsh	WP08 129
Fraser, Karl	WP19 340	Funahashi, Yasuhiro	TP22 352	Gandhi, Nikita	ThP28 567
Fraser, William	TP30 565	Funakoshi, Natsumi	MP18 359	Gandhi, Tejas	TP21 310
Fraser-Liggett, Claire	ThP25 502	Funatsu, Shinji	ThP25 493	Gandhi, Tejas P.	TP17 252
Frazer, William	MOC am 08:30	Fung, Nga Kit Eliza	MP06 114	Gandy, Sam	ThP23 465
Fredenhagen, Andreas	WP15 275	Funk, Carrie	MP02 039	Gangelhoff, Kristi	MP30 619
Fredriksson, Sten-Ake	MP30 607	Funk, Carrie	MP02 038	Ganisil, Barbara	MOB pm 3:30
Freed, Tiffany A.	MP34 694	Furlong, Edward	WOF am 08:30	Gao, Chao	WP37 712
Freeman, Bruce A.	TP27 493	Furlong, Edward T.	TP31 581	Gao, Cong	ThP06 075
Frei, Balz	TP26 468	Furlong, Michael	ThOD pm 2:30	Gao, Cong	ThP06 100
Freihoff, Sandy-Dominic	MP31 647	Furmanski, Brian	WP15 282	Gao, Di	WOC am 08:50
Freitas, Michael	WP36 704	Furmanski, Brian	MOE am 10:10	Gao, Di	ThP20 379
Freitas, Michael A.	ThP22 411	Furong, Wang	TP37 748	Gao, Hongying	TP25 435
Freitas, Michael A.	TP08 156	Furtado, Milton	ThP29 615	Gao, Hongying	MP26 531
Freitas, Michael A.	ThP18 324	Furtado, Milton	ThP29 613	Gao, Hui	ThP27 528
Freitas, Michael A.	MP27 562	Furtado, Milton	ThP29 618	Gao, Jinshan	ThP20 371
Frenkel, Ruth	TP15 231	Furtado, Milton	TP08 140	Gao, Jehan	WOG am 08:50
Frenking, Gernot	TP02 022	Furtado, Milton	ThP29 616	Gao, Kai	WP24 436
Frese, Christian	WP30 541	Furtado, Milton	ThP29 612	Gao, Mingming	MP34 712
Frese, Christian	WP31 583	Furtado, Milton	ThP29 617	Gao, Peng	WP03 027
Frewen, Barbara	TP08 131	Furtado, Milton	ThP29 611	Gao, Peng	WP11 192
Frewen, Barbara	ThP34 673	Furtado, Milton	ThP29 619	Gao, Peng	ThP11 189
Frewen, Barbara	WP32 602	Furtos, Alexandra	WP08 128	Gao, Qi	TP10 192
Frey, Brian L.	TP07 128	Furtos, Alexandra	MP30 612	Gao, Qiang	MP24 480
Frey, Robert	ThP11 192	Furuichi, Keiko	MP08 160	Gao, Wei	MP31 641
Friddy, Peter C.	TOH am 10:10	Fushman, David	ThP18 308	Gao, Wei	MP31 640
Frieden, Carl	MP22 415	Fussell, Richard	ThP27 532	Gao, Wei	TP37 770
Friedman, Beth	TP21 318	Gabelica, Valerie	MP13 233	Gao, Xiaoli	ThP28 578
Friedrich, Jochen	WP04 036	Gabriel, Stefan Johannes	WP09 150	Gao, Xiaoling	ThP28 574
Friend, Lexie	ThP15 266	Gabriël, Sarah	MP23 457	Gao, Yang	MP21 402
Friesen, William	ThP04 038	Gabriela Frasson Budzinski, Ilara	MP32 656	Gao, Yuan	TP37 766
Fritzsche, Kevin L.	MP34 706	Gabriela Ioana, Paraschiv	MP23 443	Gao, Yuan	ThP17 305
Fritzsche, Romy	MP21 409	Gabriele, Bartolo	MP36 729	Gao, Yuqian	MP26 542
Frochoux, Violette	TP10 182	Gachotte, Daniel	MP12 225	Gao, Yuqian	WP27 484
Froehlich, John	TP36 730	Gadi, Sneha	TP31 592	Garai, Kanchan	MP22 415
Froehlich, John	TOD am 09:10	Gaffrey, Matthew	WOA am 08:50	Garbelini Marques, Felipe	MP32 656
Frolov, Andrej	ThP21 386	Gaffrey, Matthew J.	MOA am 10:10	Garberg, Hilde	ThP23 452
Frost, Dustin	WP27 476	Gafken, Philip	WP36 704	Garberg, Hilde	ThP22 432
Frost, Dustin	WP33 616	Gafken, Philip	TP21 314	Garcia, Benjamin	TOE am 09:50
Frost, Dustin	TP23 367	Gagne, Sebastien	WOF pm 4:10	Garcia, Benjamin	ThOH am 08:50
Frycak, Petr	WOE pm 3:10	Gagné, Sébastien	MP01 023	Garcia, Benjamin	TP22 345
Fryčák, Petr	ThP10 181	Gagnon-Carignan, Sofi	MP01 014	Garcia, Benjamin	ThOB pm 2:50
Fu, Feifei	TP24 411	Gagnon-Carignan, Sofi	MP01 020	Garcia, Benjamin	TP22 346
Fu, Qiong	WP28 492	Gahl, William	ThP23 475	Garcia, Benjamin	TP22 349
Fu, Xiaoyun	TP19 293	Gahoual, Rabah	WP24 428	Garcia, Benjamin	TP22 347
Fu, YiThP36 718		Gai, Cesaire	TP21 307	Garcia, Benjamin A.	TP22 348
Fu, Yueqiao	TP04 078	Gaie-Levrel, François	TP03 051	Garcia, Benjamin A.	ThP09 164
Fu, Yu-Hui Ann	TP26 475	Gaillard, Jean-Charles	ThP09 158	Garcia, Benjamin A.	WP30 562
Fu, Zhong	MP31 640	Gairloch, Elena	MP07 135	Garcia, Ileana	TP05 100
Fu, Zhong	MP31 641	Gajadhar, Aaron	TOD pm 3:30	Garcia Caro, Roxana	WP24 438

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Garcia Macias, Gustavo.....	TP03 051	Geng, Qiudi.....	WP29 539	Ghosh, Dipankar.....	TP31 597
Garcia-Garcia, Alejandro.....	WP12 216	Gengenbacher, Martin.....	TOH pm 4:10	Ghosh, Parthasarathi.....	MP06 104
García-Marqués, Fernando.....	TP05 095	Genin, Eric.....	MOE am 08:50	Giaever, Guri.....	TP24 409
García-Marqués, Fernando J.....	TP17 246	Genovesi, Luca.....	MP25 498	Giannini, Catarina.....	ThP23 464
Gardner, Lorenz.....	TP04 083	Genovesi, Luca.....	MOD am 09:50	Giannone, Richard.....	ThP09 153
Gardner, Michael S.....	TP26 470	Genesberger, Sabrina.....	WP20 365	Giannone, Richard J.....	WP36 686
Garin, Jérôme.....	ThP23 476	Gentile, Cecilia.....	WP17 298	Giansanti, Piero.....	WP31 586
Garlish, Rachel.....	WP22 394	Gentles, Robert.....	ThP13 243	Giardina, Matthew.....	TP23 358
Garlica, Ruben.....	ThP11 198	George, Barbara Jane.....	TP23 370	Giavazzi, Raffaella.....	WP11 191
Garofolo, Fabio.....	ThP29 615	George, Iniga.....	ThOE pm 2:30	Gibert, Josep Ma.....	TP05 100
Garofolo, Fabio.....	ThP29 613	George, Jessica.....	WP12 212	Gibert, Roger.....	TP05 100
Garofolo, Fabio.....	ThP29 612	Georges, Jean-Yves.....	TP21 306	Giblin, Daryl.....	ThP36 713
Garofolo, Fabio.....	WP33 631	Georgieva, Gergana.....	WP03 021	Gibson, Bradford.....	WP30 555
Garofolo, Fabio.....	ThP29 611	Georgieva, Gergana.....	WP03 023	Gibson, Bradford W.....	MOA pm 3:50
Garofolo, Fabio.....	ThP29 617	Georgiou, George.....	WP24 427	Gibson, Bradford W.....	ThOD am 08:50
Garofolo, Fabio.....	ThP29 618	Geraghty, Kathryn M.....	TOE am 08:50	Gibson, Bradford W.....	TP28 521
Garofolo, Fabio.....	TP08 135	Gerbaux, Pascal.....	MP36 723	Gibson, Christopher.....	MP26 547
Garofolo, Fabio.....	TP08 140	Gerber, David.....	WP06 089	Gibson, Graham.....	TP04 078
Garofolo, Fabio.....	WP33 640	Gerfault, Laurent.....	TP28 505	Gibson, Greg.....	MP04 060
Garofolo, Fabio.....	ThP29 619	Gerges, Christian.....	ThP22 413	Gibson, Radiance J.....	TP21 327
Garofolo, Fabio.....	WP33 643	Gerhardt, Geoff.....	TOF am 09:30	Gibson, Stephen.....	ThP30 624
Garofolo, Fabio.....	MP25 494	Gerhardt, Geoff.....	WP21 378	Gibson Dilthey, Beverly.....	MP12 228
Garofolo, Fabio.....	ThP29 616	Gerşliöglü, Selim.....	ThP09 150	Gidden, Jennifer.....	MP22 439
Garofolo, Fabio.....	ThP29 614	Gerlich, Michael.....	ThOB am 09:10	Giddings, Morgan C.....	MP19 374
Garrard, Kenneth P.....	WP10 158	Germain, Ronald.....	WP36 692	Giddings, Morgan C.....	MP24 479
Garrett, Timothy.....	WP18 317	Germain, Ronald.....	MP29 577	Giera, Martin A.....	MP23 454
Garrett, Timothy.....	WOA pm 4:10	German, Bruce.....	WP19 350	Gierlinski, Marek.....	MP28 571
Garrett, Timothy.....	WP12 204	German, Bruce.....	ThP19 341	Giesbertsen, Jan.....	WP06 095
Garrett, Timothy J.....	ThP01 014	German, J. Bruce.....	ThP15 265	Gieschen, Andy.....	MOH pm 3:10
Garrett, Timothy J.....	MOC am 09:30	Gerner, Christopher.....	ThP23 470	Giesen, Joseph.....	MP36 744
Gartner, Anton.....	MP29 595	Gernert, Claus.....	TP01 004	Gifford, Jim.....	TP34 686
Gasilova, Natalia.....	TP34 677	Geromanos, Scott.....	WP26 475	Gigmes, Didier.....	MP36 746
Gaskell, Simon.....	ThP17 283	Geromanos, Scott.....	ThOB pm 4:10	Gikas, Evangelos.....	ThOC am 09:30
Gasper, G.L.....	ThP06 103	Geromanos, Scott.....	WP31 590	Gil, Diana.....	WOB pm 4:10
Gaston, Kirk.....	MP14 253	Geromanos, Scott J.....	TP28 519	Gilbert, Anthony.....	MP16 319
Gaston, Kirk.....	WP28 511	Gerrits, Han.....	ThP21 396	Gilbert, David M.....	TP22 344
Gatto, Laurent.....	TP33 661	Gershenzon, Jonathan.....	MP03 052	Gilbert, Jeffery.....	TP34 689
Gattoni-Celli, Sebastiano.....	MP10 192	Gerson, Stanton L.....	TP26 454	Gilbert, Jeffrey.....	ThP11 191
Gau, Brian.....	WP34 663	Gerssen, Arjen.....	TP37 771	Gilbert, Jeffrey.....	MP12 225
Gaudreau, Eric.....	ThP29 596	Gerstmair, Anja.....	MP29 581	Gilbert, Jeffrey R.....	ThP13 248
Gaulier, Jean-Michel.....	WP08 125	Gerstmair, Anja.....	MP19 383	Gilbert, Jeffrey R.....	TP34 686
Gault, Joseph.....	ThOB pm 3:50	Gerstmair, Anja.....	ThP34 675	Gilbert, Joshua D.....	TP02 089
Gausdal, Gro.....	ThP23 456	Gerstmair, Anja.....	MP29 582	Gilbert, Richard.....	TP24 385
Gautam, Mohan.....	WP11 178	Gerwick, William.....	TOH pm 2:30	Giles, Kevin.....	ThP06 087
Gavin, Anne-Claude.....	MP29 580	Gerwick, William.....	TOG pm 2:30	Giles, Kevin.....	TP01 002
Gavin, Igor.....	WP07 113	Gesell Salazar, Manuela.....	TP19 277	Giles, Roger.....	ThP06 074
Gavin, Igor.....	WP19 353	Gessulat, Siegfried.....	MP29 581	Giles, Roger.....	ThP01 002
Gavin, Qi.....	WP03 015	Gessulat, Siegfried.....	MP19 383	Giles, Roger.....	MP16 322
Gavin, Reid.....	ThP28 576	Gessulat, Siegfried.....	ThP34 675	Gill, Christopher G.....	TP04 074
Gavrilov, Dimitar.....	WP07 106	Gessulat, Siegfried.....	MP29 582	Gill, Christopher G.....	WOF pm 2:30
Gavrilov, Dimitar.....	MP09 179	Gethings, Lee.....	TP28 519	Gill, Christopher G.....	TP04 081
Gavrilov, Dimitar K.....	WP07 107	Gethings, Lee.....	ThP22 438	Gill, Matthew.....	ThP06 074
Gay, Maissa M.....	TP36 722	Gethings, Lee A.....	TP18 262	Gill, Preet.....	WOH pm 3:30
Gazda, Daniel.....	MP15 265	Gethings, Lee A.....	WP19 344	Gilles, Christopher.....	WP19 332
Gbormittah, Francisca.....	ThP19 333	Gethings, Lee A.....	ThP22 415	Gilles, Christopher.....	MP36 733
Ge, Ying.....	TP12 207	Gethings, Lee A.....	MP27 558	Gilles, Nicolas.....	TP07 127
Ge, Ying.....	ThP18 318	Gethings, Lee A.....	WP36 699	Gilles, Nicolas.....	TP33 653
Ge, Ying.....	ThP08 123	Getty, Stephanie.....	MP35 719	Gillet, Ludovic.....	WOB am 10:10
Ge, Ying.....	MOB pm 2:50	Getzinger, Gordon.....	TP31 595	Gillet, Ludovic.....	WP31 595
Ge, Ying.....	WP29 522	Gewain, Andrew.....	TP21 307	Gillet, Ludovic C.....	WP36 688
Ge, Ying.....	TP12 206	Geyer, Roland.....	MP07 132	Gillet, Ludovic C.....	TOD pm 3:50
Geahlen, Robert.....	WP34 655	Geyer, Roland.....	TP30 573	Gillette, Michael.....	MOD am 08:30
Geahlen, Robert.....	WP34 658	Ghanate, Avinash.....	WP18 315	Gillette, Michael.....	TOD pm 3:30
Gebhardt, Christoph.....	TP29 546	Ghashghaei, H. Troy.....	TP21 327	Gillette, Michael.....	WOA am 10:10
Gebreab, Fana.....	WP28 509	Ghassemi, Shahnaz.....	WP25 451	Gillette, Michael.....	MP26 523
Geenen, Suzanne.....	WP36 699	Ghavim, Behrad.....	MP21 407	Gillette, Michael A.....	MP26 544
Geerlof-Vidavskiy, Ilan.....	WP30 571	Gherezghiher, Teshome.....	MP13 238	Gillig, Kent.....	WP38 743
Gehrmann, Linda.....	MP31 647	Ghobarah, Hesham.....	WP15 256	Gillig, Kent J.....	TP04 058
Geiger, Matthew.....	WP03 019	Gholami, Amin Moghaddas.....	ThP34 675	Gillis, Elizabeth A.L.....	TP01 005
Geis-Asteggianta, Lucia.....	ThP13 238	Ghosh, Dipankar.....	ThP27 544	Gilmore, Ian.....	ThP30 633
Geissel, Hans.....	MP16 324	Ghosh, Dipankar.....	TP31 589	Gimenez, Marcela.....	ThP22 431
Gelb, Michael.....	MOC pm 2:30	Ghosh, Dipankar.....	TP37 763	Gimenez-Cassina, Begofia.....	MP34 699
Geldenhuys, Werner.....	TP26 456	Ghosh, Dipankar.....	WP04 042	Gingras, Anne-Claude.....	WP36 685
Gelfond, Jonathan.....	TP20 302	Ghosh, Dipankar.....	WP03 024	Gingras, Anne-Claude.....	MP29 602
Gelhaus, Stacy L.....	TP27 493	Ghosh, Dipankar.....	WP20 369	Gingras, Anne-Claude.....	WP31 581
Gellman, Samuel.....	ThP14 256	Ghosh, Dipankar.....	TP31 600	Gingras, Anne-Claude.....	WP36 687
Gemmill, Robert.....	TP36 728	Ghosh, Dipankar.....	TP31 602	Gingras, Anne-Claude.....	WP31 576
Gemperline, Erin.....	WP09 151	Ghosh, Dipankar.....	WP19 348	Gingras, Anne-Claude.....	TP17 249

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Gingras, Anne-Claude.....	TOE am 09:30	Gombart, Adrian F.....	TP24 401	Graf, Stephan.....	TP33 625
Gingras, Anne-Claude.....	TOD pm 2:50	Gomes, Alexandre.....	MP21 395	Graf, Stephan.....	WP38 744
Gingras, Genevieve.....	TP28 500	Gomes, Catarina.....	WP26 473	Graham, David.....	TP19 297
Ginsburg, Gregory.....	WP01 002	Gómez, Andrea.....	WP05 054	Graham, Jim.....	MP19 386
Giordano, Laurent.....	MP36 746	Gómez-Escudero, Andrea.....	WP05 055	Graham, Kendon.....	TP33 626
Giorgi, Gianluca.....	TP06 118	Gómez-Guzmán, Jose Manuel.....	MP25 495	Graham, Kendon.....	MP31 639
Giovannelli, Jean-François.....	TP28 505	Gómez-Romero, María.....	ThP28 567	Graham, Lauren.....	ThP09 157
Girault, Hubert.....	WOE pm 3:30	Gong, Yiyi.....	WP28 503	Graham, Mark.....	ThP25 507
Girault, Hubert.....	TP34 677	Gonin, Marc.....	WP38 744	Graham, Mark.....	WOG pm 2:30
Giremus, Audrey.....	TP28 505	Gonzales, Rosalia.....	WP13 228	Grange, Andrew.....	WP37 734
Girod, Marion.....	TP05 094	Gonzales-Serrano, Andres F.....	ThOA am 09:30	Grangeat, Pierre.....	TP28 505
Girod, Marion.....	WOG am 10:10	González, Javier.....	TOD am 08:30	Granholt, Viktor.....	ThP34 685
Giuffrida, Jonathan.....	WP31 575	Gonzalez Badillo, Beatriz.....	TOE am 09:30	Granrath, Markus.....	MP10 193
Giuliani, Alexandre.....	TP03 051	Gonzalez Pena, Antonio.....	TOB pm 4:10	Grant, Jennifer.....	TP11 204
Givogri, Maria Irene.....	TP27 482	Goo, Young Ah.....	MP10 206	Grant, Kyle.....	ThP17 289
Gjertsen, Bjørn Tore.....	ThP23 456	Goo, Young Ah.....	TP04 064	Grant, Melissa.....	TP18 260
Glasmachers, Albrecht.....	MP15 283	Goo, Young Ah.....	MP24 484	Grant, Russell.....	TP30 557
Glassmeyer, Susan T.....	TP31 581	Goodlett, David.....	MP24 468	Grapov, Dmitry.....	ThOC pm 2:30
Glatler, Timo.....	TP28 520	Goodlett, David R.....	TP04 064	Grapov, Dmitry.....	ThOB am 08:30
Glauner, Thomas.....	ThP27 554	Goodlett, David R.....	TP34 684	Grapov, Dmitry.....	TP27 480
Glauner, Thomas.....	TP31 582	Goodlett, David R.....	MP24 484	Grappnerhaus, Craig.....	TP02 043
Glauner, Thomas.....	ThP27 553	Goodlett, David R.....	WP23 420	Grater, Richard.....	ThP01 003
Glauner, Thomas.....	ThP27 541	Goodlett, David R.....	MP10 206	Graves, Ian.....	ThP29 603
Glauner, Thomas.....	WP20 370	Goodlett, David R.....	MP17 336	Graves, Steven.....	TP19 278
Glauner, Thomas.....	ThP25 518	Goodman, Haddon.....	WP12 209	Gray, Alexander.....	TP24 389
Glauner, Thomas.....	ThP27 548	Goodsell, Kyle.....	MP01 027	Gray, Bob.....	ThP21 397
Glauner, Thomas.....	TP37 747	Goodwin, Cody.....	MOB am 09:10	Gray, Bob.....	ThP13 235
Glavin, Daniel.....	MP35 720	Goodwin, Cody.....	TOF pm 3:10	Gray, Bob.....	MP30 627
Glavin, Daniel.....	ThOE am 09:30	Goodwin, Cody R.....	ThP25 486	Gray, François.....	TP31 585
Glavy, Joseph.....	TP28 507	Goodwin, Cody R.....	WP38 751	Gray, François.....	WP24 440
Glazer, Louis.....	MP11 216	Goodwin, Richard.....	ThOF am 09:50	Gray, Nathanael.....	WP22 400
Glazyrin, Yury.....	WP26 454	Goodwin, Richard.....	WP11 184	Gray, Nathanael.....	WP11 185
Gleddie, Steve.....	MP03 053	Goodwin, Richard.....	WP11 176	Gray, Nicola.....	WP16 286
Glibert, Pieter.....	ThP17 306	Goodwin, Richard.....	ThOF am 08:30	Gray, Nicola.....	WP18 318
Glick, James.....	TP33 639	Gooley, Andrew.....	MP07 137	Gray, Nora.....	MP34 701
Glick, James.....	MP13 250	Goossens, Eliane.....	TP33 637	Gray, Stewart.....	MP33 672
Glinn, Michele.....	MP01 015	Görransson, Charlotta.....	TP21 339	Gray, Stewart.....	MP33 673
Glish, Gary.....	ThP01 006	Gordillo, Ruth.....	MP11 213	Gray, Veronica.....	WP01 002
Glish, Gary.....	MP17 344	Gordon, Robert.....	WP12 195	Gray, William M.....	MP32 671
Glish, Gary.....	ThP01 004	Gordon, Robert J.....	ThP36 714	Grayson, Michael A.....	WP01 001
Glish, Gary.....	MOC am 09:10	Gorka, Jan.....	MP08 159	Grayson, Scott.....	TP33 621
Glish, Gary.....	ThP01 005	Gorman, Greg.....	WP15 273	Grayson, Scott M.....	MP36 743
Glish, Gary L.....	TP31 592	Gorshkov, Mikhail V.....	ThP34 691	Grayson, Scott M.....	MP36 744
Glocker, Michael O.....	WP34 661	Gorshkov, Mikhail V.....	ThP13 242	Grayson, Scott M.....	MP36 728
Gloessmann, Kerstin.....	ThP23 470	Gorshkov, Vladimir.....	ThP16 278	Graziose, Rocky.....	MP34 691
Glukhov, Evgenia.....	TOG pm 2:30	Gorshkov, Vladimir.....	ThP34 687	Greco, Todd.....	ThOH am 09:30
Go, Eden.....	WP24 425	Gorshkova, Irina.....	TP27 488	Greco, Todd.....	MOA pm 3:10
Go, Eden.....	ThP19 355	Gorst-Allman, Peter.....	MP31 630	Greco, Todd.....	TP19 286
Godal, Debra.....	ThP08 136	Gosciny, Severine.....	ThP27 533	Greco, Todd.....	ThOB pm 3:10
Godbey, Jeffrie.....	ThP11 191	Gosciny, Séverine.....	TP33 627	Green, Daniel.....	MP15 292
Godinho, Justin.....	MP06 093	Goshawk, Jeff.....	TP37 750	Green, Kari.....	MP20 392
Godl, Klaus.....	ThP22 425	Goshawk, Jeff.....	TP33 626	Green, Kari B.....	TP27 496
Gödörházy, Lajos.....	ThOA am 10:10	Goshawk, Jeff.....	TP33 627	Green, Karin M.....	MP28 574
Gödörházy, Lajos.....	TP04 086	Goshe, Michael.....	ThP17 289	Green, Martin.....	ThP06 089
Godula, Michal.....	TP31 607	Goshe, Michael B.....	WP28 500	Green, Martin.....	MOB am 09:30
Goebbert, Daniel.....	MP36 739	Goshe, Michael B.....	ThOE pm 4:10	Green, Martin.....	TP01 001
Goebbert, Daniel.....	TP01 011	Goswami, Devrishi.....	WP21 384	Green, Thomas.....	TP21 316
Goedecke, Tanja.....	MP34 686	Goswami, Devrishi.....	MOF pm 3:10	Greenberg, Howard.....	WP05 048
Goepfert, Tyler.....	ThP25 519	Goswami, Devrishi.....	WP22 389	Greenhaw, James.....	ThP28 588
Goetz, Gilles.....	ThP01 013	Goto, Takaaki.....	TP20 298	Greenhaw, James.....	TP24 383
Goggin, Melissa.....	TP25 434	Goto-Inoue, Naoko.....	ThP04 048	Greenleaf, C. Michael.....	MP34 706
Goggin, Melissa.....	MP13 243	Gottlieb, Colin.....	WP30 559	Greenwalt, Scott.....	MP12 225
Goguen, Robert.....	WP37 718	Gottschalk, Michael.....	ThP04 036	Greenwalt, Scott.....	WP19 334
Goh, Eun Mee.....	TP33 628	Götz, Sebastian.....	TP29 546	Greer, Sylvester.....	TP01 010
Gokce, Emine.....	ThP09 155	Goudriaan, Vincent.....	WP06 095	Greer, Sylvester M.....	ThP09 146
Gokulrangan, Giridharan.....	ThP16 275	Goulding, Scott.....	WP33 627	Greer, Tyler.....	TP23 367
Gokulrangan, Giridharan.....	ThP17 280	Gouveia, Sandra.....	WP17 302	Greer, Tyler.....	WP33 616
Gokulrangan, Giridharan.....	WP36 701	Gouw, Joost.....	ThP25 511	Gregorich, Zachery.....	WP29 522
Golan, Amnon.....	WP36 689	Govorukhina, Natalia I.....	WP33 639	Gregorich, Zachery.....	TP12 207
Gold, Mark.....	TP21 317	Govorun, Vadim.....	WP26 469	Gregory, Katherine E.....	ThP28 561
Goldberger, Bruce.....	WOA pm 4:10	Govorun, Vadim.....	MP27 550	Gregory, Kerin.....	TP02 041
Goldin, Robert.....	ThP04 042	Gowda, G. A. Nagana.....	ThP22 414	Gregory, Mark.....	ThOA am 08:50
Goldin, Robert D.....	MP10 204	Gowda, G. A. Nagana.....	MP03 041	Greiner, Martin.....	ThP27 553
Goldman, Radoslav.....	ThP19 354	Goyal, Jaya.....	TP19 279	Greiner, Martin.....	ThP29 605
Golemi-Kotra, Dasantila.....	WOH pm 3:30	Gozzo, Fabio.....	TP10 190	Greiner, Martin.....	MOH pm 3:10
Golf, Ottmar.....	ThOA am 10:10	Gozzo, Fabio.....	MP21 395	Greis, Ken.....	ThP17 297
Golin-Bisello, Franca.....	TP27 493	Gozzo, Fabio C.....	MP21 399	Grewal, Gurmit.....	TP25 443
Golizeh, Makan.....	TP10 178	Grabenaue, Megan.....	MP34 694	Griep-Raming, Jens.....	ThOE pm 3:30
Gombart, Adrian.....	MP22 432	Grace, Phillip.....	ThP21 397	Griep-Raming, Jens.....	WP30 541

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Griesbach, Jan	WP23 407	Gross, Michael L	ThP12 218	Guidetti-Gonzalez, Simone	MP32 666
Grieves, Nigel	ThP07 116	Gross, Richard W.	MP12 228	Guise, Amanda	ThOH am 09:30
Griffin, Jeddidah	TP10 185	Gross, Robert	TP25 436	Guise, Amanda	MOA pm 3:10
Griffin, Jules	ThP28 562	Gross, Vera S.	ThP28 561	Gulbakan, Basri	MP13 236
Griffin, Julian	MP10 203	Grosse-Coosmann, Florian	MP19 377	Gulcevi, Makedonka	WP18 320
Griffin, Julian L.	ThP28 582	Grossel, Martin	MP36 747	Guldbrandsen, Astrid	ThP22 432
Griffin, Patrick	WOH am 09:50	Grossert, J. Stuart	TP01 005	Guldbrandsen, Astrid	ThP23 452
Griffin, Patrick	WP22 389	Grossmann, Michael E.	TP26 465	Güler, Ülkü	WP34 653
Griffin, Patrick	MOF pm 3:10	Grosvenor, Anita	MP33 681	Güler, Ülkü	MP23 455
Griffin, Patrick	WP22 386	Grottemeyer, Jurgen	ThP20 382	Gullick, Darren	ThP11 205
Griffin, Patrick R.	WP36 697	Grottemeyer, Jürgen	TP01 004	Gulyas, Paul	WP03 019
Griffin, Patrick R.	WP21 384	Grotewiel, Michael	ThP18 314	Gulyuz, Kerim	ThP35 698
Griffin, Paula	Special	Grotewiel, Mike	ThP18 312	Gulyuz, Kerim	TP02 031
Griffin, Paula	TP18 268	Grothe, Rob	ThP06 095	Gummer, Joe	TP23 363
Griffin, Tim	MP19 378	Grothe, Robert A.	ThP06 102	Gummer, Joel	WP17 303
Griffin, Tim	WP24 423	Grove, Kerri	TOB am 10:10	Gun, Jenny	WP02 008
Griffin, Timothy	TP17 248	Grove, Kerri	MP10 195	Gunaratne, Don	ThP35 707
Griffin, Timothy	MP18 362	Grover, Himanshu	WP31 575	Gunawardena, Harsha P.	MP19 374
Griffin, Timothy	MP18 370	Grover, Martha A.	TP33 654	Gunawardena, Harsha P.	MP24 479
Griffin, Timothy	WP28 505	Gruenwalder, Bianca	MOE pm 2:30	Gunderson, Drew R.	MOA pm 3:30
Griffin, Timothy	ThP22 426	Grunbaum, Ami	MP10 183	Gundlach-Graham, Alexander	MOB am 10:10
Griffin, Timothy	MP29 583	Grüning, Anja	MP06 111	Gundlach-Graham, Alexander	Special
Griffin, Timothy J.	TP28 514	Gryn'ova, Ganna	ThP07 109	Gundry, Rebekah	ThP19 336
Griffin, Timothy J.	WOA am 09:50	Grzyb, Arkadiusz	ThP36 725	Gundry, Rebekah L.	ThP24 481
Griffin, Timothy J.	TP28 511	Gstaiger, Matthias	ThP35 694	Gunsalus, Robert	ThP25 514
Griffiths, David	MP25 520	Gu, Chunang (Christine)	ThP06 089	Gunsalus, Robert	WP09 147
Griffiths, John	WP30 560	Gu, Haiwei	WP36 688	Gunsalus, Robert P.	WOG pm 2:50
Griffiths, John	WP33 610	Gu, Haiwei	WP13 233	Guo, Ailan	ThP23 473
Griffiths, John	WOA am 09:10	Gu, Hongbo	TP23 371	Guo, Ailan	WP29 531
Griffiths, Matthew	MOH pm 2:50	Gu, Hongbo	MP03 041	Guo, Chunxiao	TP24 401
Griffiths, Rian	WP10 165	Gu, Hongbo	ThP33 666	Guo, Dan	MP16 295
Griffiths, Rian L.	WP10 164	Gu, Lixiao	WP29 531	Guo, Dan	WP30 546
Griffiths, Rian L.	ThP04 049	Gu, Ming	WP28 503	Guo, Jia	WOA am 08:50
Griffiths, Rian L.	MP11 208	Gu, Ming	ThP12 221	Guo, Jia	MOA am 10:10
Griffiths, Rian L.	WP09 153	Gu, Ming	MP25 517	Guo, Jiao	WP30 546
Griffiths, Thomas	ThP35 705	Gu, Ming	ThP11 197	Guo, Kevin K.	TP24 408
Grimm, Rudolf	TOC pm 3:50	Gu, Ming	WP13 227	Guo, Lei	WP36 691
Grimm, Rudolf	ThP19 346	Gu, Ming	TP25 429	Guo, Liangran	WP11 186
Grimm, Rudolf	WP12 212	Gu, Zezong	WOA am 09:30	Guo, Lihai	WP34 647
Grimm, Rudolf	TP15 235	Gu, Zezong	MP34 706	Guo, Lin	TP25 437
Grimsrud, Paul A.	MOA pm 3:30	Guallar-Hoyas, Cristina	TP34 669	Guo, Manman	MP28 571
Grimsrud, Paul A.	ThOE pm 3:30	Guallar-Hoyas, Cristina	TP04 086	Guo, Min	MP22 422
Gritsenko, Marina	TOD pm 3:30	Guan, Fuyu	MP30 625	Guo, Ming-Quan	TP24 410
Gritsenko, Marina A.	MP26 540	Guan, Shenheng	WOE am 09:30	Guo, Ming-Quan	MP32 657
Grobler, Jay	ThP10 182	Guan, Xiaoyan	TP08 156	Guo, Qiaozhen	TP37 758
Groeber, Elizabeth	WOD am 09:30	Guarani-Pereira, Virginia	WP28 509	Guo, Shuai	TP27 490
Groeger, Thomas	MOH pm 4:10	Guaras, Adela	TP05 095	Guo, Shuai	ThP22 429
Groeger, Thomas	MOH pm 3:50	Guardiola, Francisca	MP10 201	Guo, Wei	ThP08 123
Groenewold, Gary	WP37 734	Guardiola-Diaz, Hebe	TP23 375	Guo, Wei	WP29 522
Groessl, Michael	ThP23 470	Guarrera, Donna	WP12 201	Guo, Weixin	WP30 546
Grogan, Laura	TP23 363	Guazzotti, Sergio	ThP27 545	Guo, Xiaofeng	MP18 357
Gröger, Thomas	ThOG am 08:30	Gucek, Marjan	WP29 533	Guo, Xiuling	MP29 587
Gröger, Thomas	TP03 053	Gucek, Marjan	TP19 287	Guo, Xu	MP18 361
Groh, Ksenia J.	TP31 593	Gucinski, Ashley	MOD pm 2:50	Guo, Xuejiang	TP21 330
Grollman, Arthur P.	TP29 549	Gucinski, Ashley	TP06 123	Guo, Yidan	MP36 749
Gronert, Scott	TP02 025	Gudihal, Ravindra	WP13 222	Guo, Yinlong	TP31 605
Gronert, Scott	WOC pm 3:50	Gudihal, Ravindra	MP27 554	Guo, Yueshuai	TP21 330
Gronert, Scott	TP02 024	Guenther, Sabine	MP04 074	Guo, Yumei	ThP22 429
Gronert, Scott	ThP18 314	Guenther, Sabine	TOB am 08:30	Guo, Yumei	WP26 463
Gronert, Scott	ThP18 313	Guenther, Sabine	MP10 204	Guo, Zhuyan	MP24 480
Gronert, Scott	ThP18 312	Guérineau, Vincent	WP14 244	Gupta, Kallol	ThP16 276
Groppe, Brad	WP29 526	Guérilavais, Vincent	TP15 234	Gupta, Sayan	MOF am 10:10
Groseclose, Reid	ThOF am 09:10	Guerra, Stephanie	MOC pm 2:50	Gupta, Shivani	ThP33 668
Groseclose, Reid	WP11 177	Guerrasio, Raffaele	ThP29 599	Gupta, Vijay	MP29 598
Gross, Michael	MP22 427	Guerrero, Andres	TP36 735	Gupta, Vineet	WP26 457
Gross, Michael	WP23 403	Guerrero, Andres	ThP15 265	Gursoy, Meric	MP31 648
Gross, Michael	MP22 438	Guerrero, Andres	WP19 350	Guryev, Victor	WP31 586
Gross, Michael	MP22 423	Guerrero, Andres	TOC am 10:10	Guterres, Sheila Barreto	WP29 529
Gross, Michael	TP09 168	Guerrero, Candace	MP13 240	Guthals, Adrian	ThP34 681
Gross, Michael	MP22 415	Guerrero, Nasser	TP21 321	Gutheil, William	MP06 100
Gross, Michael	WP22 390	Guevara, Claudia	MP23 442	Guthrie, Ellen	TP35 697
Gross, Michael L.	WP23 401	Guevara, Francisco	MP08 167	Gutierrez, Jesus A.	MP26 530
Gross, Michael L.	ThP36 713	Guggenheim, Emily	ThP04 049	Gutierrez, Paulo Sampaio	MP10 196
Gross, Michael L.	WP23 402	Guggenheim, Emily	WP10 165	Gutmann, David H.	WP09 152
Gross, Michael L.	MP21 412	Guggenheim, Emily J.	WP09 153	Gutmann, Rene	MP15 286
Gross, Michael L.	MOB pm 2:30	Gugiu, Gabriel	ThP28 587	Gutstein, David E.	MP26 529
Gross, Michael L.	MOF am 09:50	Gugiu, Gabriel	ThP09 147	Guttman, Charles M.	MP36 721
Gross, Michael L.	WP30 565	Gugiu, Gabriel B.	ThOD pm 3:10	Guttman, David S.	ThP25 509

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Guttman, Miklos.....	WP21 385	Hall, Stacy.....	WP32 601	Hann, Stephan.....	WP17 295
Guyet, Kendall.....	WP05 048	Hall, Stacy.....	ThOD am 09:30	Hann, Stephan.....	ThP29 599
Guzel, Coskun.....	WP33 639	Hall, Stacy D.....	ThP19 330	Hann, Stephan.....	WP17 300
Güzel, Coskun.....	TP20 304	Hallidin, Magnus.....	TP25 430	Hannam, Sally.....	WP33 634
Guzzo, Cristiane R.....	MP21 399	Ham, Amy-Joan.....	WOB am 08:50	Hanneman, Andrew.....	TP36 718
Gwak, Young S.....	MP10 200	Hamada, Akinobu.....	WP11 189	Hanneman, Andrew.....	TP36 717
Gygi, Melanie.....	WP28 509	Hamana, Chikako.....	ThP19 329	Hannibal-Bach, Hans Kristian.....	MP11 212
Gygi, Steven.....	WP34 668	Hamasaka, Tomoko.....	TP31 603	Hanning, Gary.....	ThOE pm 2:50
Gygi, Steven P.....	WP28 509	Hambly, Brett.....	ThP17 294	Hanold, Karl A.....	ThP26 520
Gygi, Steven P.....	TP18 266	Hamdy, Omar.....	MOG am 09:30	Hansel, Armin.....	MP15 286
Gygi, Steven P.....	TOA am 09:30	Hamerly, Timothy.....	TP23 366	Hansen, Christopher.....	ThP35 705
Gygi, Steven P.....	TP04 077	Hamilton, Chad A.....	MP25 501	Hansen, Christopher.....	ThP35 709
Gygi, Steven P.....	TP28 508	Hamilton, Coreen.....	WP03 016	Hansen, Henrik H.....	TP19 283
Gygi, Steven P.....	TOE am 10:10	Hamilton, Jason.....	TP32 609	Hansen, Marc.....	MP11 217
Ha, Seulki.....	ThP09 142	Hamm, Gregory.....	ThOF am 10:10	Hansen, Thomas A.....	ThP34 686
Haack, Alexander.....	MP15 281	Hamm, Gregory.....	ThP02 023	Hanson, Curtiss.....	MP16 312
Haaning, Allison.....	MP03 047	Hamm, Gregory.....	WP11 193	Hanson, Leif.....	MP10 187
Haapala, Markus.....	MOH pm 2:30	Hamm, Gregory.....	ThP03 029	Hanson, Matthew.....	TP23 373
Haas, Elisabeth A.....	ThOD am 10:10	Hammann, Philippe.....	WP24 428	Hansson, Oskar.....	TP19 280
Haas, Wilhelm.....	TP04 077	Hammer, Elke.....	TP19 277	Hao, Changtong.....	WP03 017
Haas, Wilhelm.....	TOE am 10:10	Hammer, Robert.....	TP08 130	Hao, Changtong.....	WP06 079
Haas, Wilhelm.....	TP28 508	Hammer, Trent.....	MP15 285	Hao, Changtong.....	WP06 080
Haas, Wilhelm.....	TOA am 09:30	Hammerum, Steen.....	ThP36 719	Hao, Chunyan.....	TP31 597
Haase, Andreas.....	ThP05 061	Hammock, Bruce.....	WP17 308	Hao, Chunyan.....	TP31 589
Haber, Steve.....	MP32 670	Hammond, Janet.....	WP36 699	Hao, Chunyan.....	WP04 042
Haberhauer-Troyer, Christina.....	ThP29 599	Hammond, Janet.....	ThP22 438	Hao, Hongyuan.....	ThP27 528
Hachisu, Kazuko.....	ThP19 331	Hammond, John.....	ThP04 046	Hao, Hongyuan.....	WP03 033
Hacker, Timothy.....	WP29 522	Hammond, John S.....	ThP04 045	Hao, Hongyuan.....	TP37 740
Hackett, Murray.....	MP18 366	Hampel, Heather.....	TP21 314	Hao, Hongyuan.....	TP37 741
Hadjifrangiskou, Maria.....	MP10 191	Hampton, Andrew.....	MP16 300	Hao, Ling.....	TP23 367
Haettner, Emma.....	MP16 324	Han, Chanyoung.....	TOC pm 3:50	Hao, Zhiqi.....	MP25 502
Hagan, Iain.....	ThP09 163	Han, Chia-Li.....	WP02 010	Hao, Zhiqi.....	WP24 443
Hagberg, Jessika.....	MP31 639	Han, Ga-Ram.....	TP10 181	Hao, Zhiqi.....	WP24 444
Hagemann, Sacha.....	ThP22 412	Han, Jun.....	TOF am 09:10	Hao, Zhiqi.....	WP24 442
Hägglund, Gunnar.....	WP16 291	Han, Jun.....	ThP04 037	hao, Zhiqi.....	TP13 214
Hagihara, Takatoki.....	WP19 341	Han, Liang.....	ThP20 377	Hao, Zhiqi.....	TP15 229
Haglund, Johanna.....	TP25 430	Han, Ling.....	WP23 404	Hao, Zhiqi.....	WP24 445
Haglund, Peter.....	MP31 645	Han, Linjie.....	TP33 644	Hao, Zhiqi.....	MOD pm 3:50
Hahn, Andrea.....	ThP20 382	Han, Linjie.....	TP33 643	Harada, Takanori.....	ThP28 579
Hahn, Chang-Gyu.....	TP21 319	Han, Sang Beom.....	MP34 714	Harada, Takanori.....	MP32 660
Hahn, Si Houn.....	ThP23 475	Han, Sang Yun.....	ThP05 055	Harazono, Akira.....	WP24 426
Hahne, Hannes.....	MP29 585	Han, Sang Yun.....	ThP31 644	Hardesty, William.....	WP11 175
Hahne, Hannes.....	MP29 582	Han, Shen.....	WP19 339	Hardie, Darryl.....	WP16 289
Hahne, Hannes.....	MP29 581	Han, Wei.....	TP23 357	Hardman, Mark E.....	ThP07 111
Hahne, Hannes.....	TP04 072	Han, Xianlin.....	ThP28 559	Hardt, Markus.....	TP18 269
Hahne, Hannes.....	MP19 383	Han, Xianlin.....	TP27 486	Hare, Dominic.....	WP12 212
Hahne, Hannes.....	ThP34 675	Han, Xiaogang.....	WOD am 09:30	Harge, Jasmine.....	WOC pm 3:50
Hahne, Hannes.....	WP35 670	Han, Xuemei.....	TP05 096	Harget, Audra Ann.....	ThP21 385
Hai, Pu.....	MP31 651	Hanash, Sam.....	WP06 072	Hargett, Audra.....	ThOD am 09:30
Haidar Ahmad, Imad.....	MP06 117	Hanberg, Brandon.....	WOA pm 3:50	Hargett, Audra.....	WP32 601
Hail, Mark.....	MP13 244	Hancapie, Marina.....	ThP19 333	Haritidis, Panagiotis.....	ThOC am 09:30
Haines, Stephen.....	MP33 681	Hancock, Peter.....	MP36 736	Harkewicz, Richard.....	WP28 495
Hainsworth, Eugenie.....	TP04 057	Hancock, William.....	ThP19 333	Harman, Victoria.....	WP33 641
Hajkova Leary, Dagmar.....	ThP08 121	Hancock, William.....	TP35 696	Harmon, Alice.....	MP32 653
Haj-Yahya, Mahmood.....	TP22 354	Hancock, William.....	ThP22 418	Harmon, Brennan.....	ThP19 337
Hakansson, Kristina.....	WOC am 08:50	Hancock, William S.....	WP35 675	Harmon, Erin.....	MP01 028
Hakansson, Kristina.....	MOG pm 3:10	Handberg, Eric.....	WP20 363	Harper, Brett.....	TP06 110
Hakansson, Kristina.....	TP02 033	Handberg, Eric.....	WP20 364	Harper, Brett.....	TP09 164
Hakansson, Kristina.....	ThP20 379	Handberg, Eric.....	TP37 770	Harper, J. Wade.....	WP28 509
Hakansson, Kristina.....	ThP17 284	Handberg, Eric.....	WP20 357	Harper, Robert.....	ThP14 257
Hakenberg, Oliver.....	WP34 661	Handberg, Eric.....	WP20 358	Harradine, Paul.....	WOD am 08:30
Hakimi, Bejan.....	WOE pm 3:10	Handberg, Eric.....	TP34 673	Harriman, Shawn.....	WOD am 09:10
Halada, Petr.....	MP22 437	Handberg, Eric.....	TP34 672	Harriman, Shawn.....	WP15 279
Halada, Petr.....	WOH pm 3:10	Handberg, Eric.....	ThP30 632	Harrington, Peter.....	ThP11 187
Hale, Robert.....	TP01 016	Handberg, Eric.....	WP20 362	Harrington, Peter.....	ThP11 186
Hale, Wendi A.....	ThP17 284	Handelsman, David.....	TP26 453	Harrington, Peter B.....	ThP21 410
Hales, David.....	ThP36 721	Handique, Dheeraj.....	MP34 690	Harris, Linda.....	MP03 053
Halford, Edward.....	ThP04 050	Handique, Dheeraj.....	ThP27 539	Harris, Raymond.....	MP10 195
Halford, Edward.....	ThP05 059	Handique, Dheeraj.....	ThP11 200	Harris, Timothy.....	WP28 509
Halim, Vincentius A.....	MOA am 09:50	Hang, Wei.....	TP32 610	Harris, William A.....	ThP25 497
Haljasorg, Tõiv.....	TP02 030	Hanigan, Marie H.....	TP35 703	Harris, William A.....	ThP25 499
Halket, John.....	TP23 368	Hankemeier, Thomas.....	TP27 492	Harris, William A.....	ThP26 520
Hall, Adam.....	TP33 639	Hankemeier, Thomas.....	TOF am 10:10	Harrison, Alex G.....	ThP36 716
Hall, David.....	TP25 432	Hankin, Joseph A.....	WP06 073	Harrison, Mark.....	MP04 070
Hall, Mark.....	MP32 668	Hanley, Luke.....	WP14 243	Harrison, Rane.....	WP22 400
Hall, Michael.....	TP21 314	Hanley, Luke.....	WP12 195	Harrison, Stephanie.....	ThP29 608
Hall, Nick.....	MP36 742	Hanley, Luke.....	ThP36 714	Harron, Andrew F.....	ThP04 051
Hall, Seth.....	MP30 624	Hanlon, Brittany.....	MP08 163	Harshman, Sean W.....	MP27 562
Hall, Seth E.....	MP30 622	Hann, Stephan.....	WOC am 10:10	Harst, Andreas.....	WP36 703

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Hart, Ariel.....	TP21 312	Hayashi, Masahiro.....	MP16 315	Heeren, Ron M.A.....	WP09 143
Hart, Kevin.....	ThP06 105	Hayes, Kevin.....	ThP15 268	Heeren, Ron M.A.....	MP10 197
Hart, Philippa.....	ThP25 503	Hayes, Michael.....	WOD am 09:10	Heeren, Ron M.A.....	ThP05 067
Hartig, Lutz.....	TP37 752	Hayes, Thomas.....	WP06 083	Heeren, Ron M.A.....	MP30 608
Hartl, Franz-Ulrich.....	TOA am 08:50	Hayes, Thomas.....	WP08 121	Heeren, Ron M.A.....	TOB am 09:10
Hartmann, Laura.....	TP36 731	Haynes, Christopher A.....	MOC pm 2:50	Heeren, Ron M.A.....	MOB am 09:50
Hartmer, Ralf.....	MP09 176	Haynes, Christy.....	MOE am 09:30	Hegeman, Adrian.....	TOC am 09:10
Hartmer, Ralf.....	MP24 486	Haynes, Christy.....	TP27 497	Hegeman, Adrian.....	WP29 520
Hartmer, Ralf.....	MP24 491	Haynes, J. David.....	ThOB pm 4:10	Hegeman, Adrian.....	WP17 298
Hartsock, Wendy.....	ThP08 132	Haynes, Paul A.....	ThOE pm 2:30	Hegeman, Adrian D.....	MP34 688
Hartson, Steven D.....	ThP23 447	Hays, Faith.....	MP03 044	Hegeman, Adrian D.....	MP32 671
Hartung, Thomas.....	TP24 391	Hazama, Hisanao.....	ThOA pm 4:10	Hegeman, Adrian D.....	TP26 465
Harvey, Alex.....	ThP19 348	Hazama, Hisanao.....	ThP05 066	Heien, Michael.....	TP09 169
Harvey, Audrey.....	MP01 015	Hazama, Hisanao.....	WP11 180	Heierhorst, Jörg.....	ThP17 282
Harvey, David J.....	TP35 707	Hazama, Makoto.....	ThP06 088	Heiling, Sven.....	MP03 052
Harvey, Stephen.....	TP36 733	Hazebroek, Jan.....	TP23 364	Heim, John.....	MP04 073
Harvey, Steven.....	WP18 320	Hazebroek, Jan.....	MP32 667	Heim, John.....	TP24 402
Hase, Prashant.....	MP34 690	He, Hua-jun.....	ThP24 477	Heim, John R.....	MP04 078
Hase, Prashant.....	ThP27 539	He, Huan.....	MP10 200	Heinemann, Joshua.....	TP23 366
Hase, Prashant.....	ThP11 200	He, Huan.....	TOF am 09:50	Heinemann, Joshua.....	TP23 360
Hasegawa, Yuki.....	TP30 569	He, Huan.....	MP29 597	Heiningen, Sandra H. van.....	WP09 141
Haselberg, Rob.....	WOG pm 3:10	He, Jintang.....	MP26 540	Heinks, Nicole.....	MP23 446
Haselmann, Kim F.....	ThP17 279	He, Muji.....	MP16 306	Heinzmann, Julia.....	ThOA am 09:30
Haserick, John R.....	ThP19 350	He, Sheng-Gui.....	TP02 046	Heiskanen, Laura.....	ThOC pm 3:50
Hashi, Yuki.....	TP37 741	He, Si-Min.....	MOA pm 4:10	Heiss, Christian.....	WOC am 09:30
Hashi, Yuki.....	WP06 078	He, Si-Min.....	MP21 397	Heitz, Judith.....	MP26 548
Hashi, Yuki.....	WP03 033	He, Tao.....	WP24 431	Held, Jason.....	ThP17 299
Hashi, Yuki.....	TP37 740	He, Yingke.....	MP34 712	Held, Jason.....	WP30 555
Hashi, Yuki.....	ThP27 528	Head, Bryan.....	ThP34 671	Heldmann, Stefan.....	ThP04 036
Hashii, Noritaka.....	WP24 426	Headley, John.....	MP31 644	Helle, Norbert.....	MP34 695
Hashii, Noritaka.....	WP22 399	Headley, John V.....	WP04 039	Hellqvist, Anna.....	WP15 276
Hashimoto, Hiroyuki.....	ThP05 065	Hearn, Bryan.....	ThP11 193	Helm, Dominic.....	TP08 139
Hashimoto, Masahiro.....	MP36 738	Heaven, Michael.....	TP08 143	Helm, Dominic.....	WP35 670
Hashimoto, Yuichiro.....	TP05 092	Hebert, Alex.....	WP29 528	Helmerhorst, Eva.....	TP18 270
Hashimoto, Yuichiro.....	TP05 088	Hebert, Alex S.....	MOA pm 3:30	Helms, Adam.....	ThP23 459
Hashimoto, Yuichiro.....	ThP26 524	Hebert, Alexander S.....	WP33 608	Hemalatha, R. G.....	WP12 194
Hashmi, Nabeel.....	TP06 110	Hebert, Alexander S.....	ThP13 232	Hemar, Yacine.....	WP19 340
Haskins, William.....	TP20 302	Hebert, Alexander S.....	TOA am 08:30	Hembrough, Todd.....	MP09 169
Haslam, Stuart M.....	TP35 708	Hebert, Alexander S.....	WOE am 09:50	Hembrough, Todd.....	MP09 172
Hasman, Gregg.....	WOE pm 3:50	Hebert, Nicole.....	ThP14 260	Hempen, Christel.....	WP16 284
Hasman, Gregg.....	WP19 327	Hebert, Nicole.....	ThP08 134	Hempen, Christel.....	WP16 285
Hassan, Lyla.....	MP15 264	Hebrok, Matthias.....	TP21 340	Hemsley, Kim M.....	ThP20 361
Hassan, Tahmid.....	ThP07 120	Hecht, Stephen.....	TP29 553	Hemstrom, Petrus.....	MP06 086
Hassell, Kerry.....	MP01 011	Hecht, Stephen.....	TP29 542	Hendecourt, Louis.....	ThOE am 09:10
Hassell, Kerry.....	MP06 113	Hecht, Stephen S.....	TP29 533	Hendershot, Raquel.....	MP10 199
Hassett, Catherine A.....	ThOD am 10:10	Hecht, Stephen S.....	TP29 547	Henderson, Douglas B.....	ThP25 497
Hassler, Shayne N.....	MP10 200	Hecht, Stephen S.....	TP29 532	Henderson, Douglas B.....	ThP26 520
Hatano-Saga, Satomi.....	MP33 678	Heck, Albert.....	WP31 583	Henderson, Douglas B.....	ThP25 499
Hatcher, Patrick.....	ThOG am 09:30	Heck, Albert.....	WP30 572	Henderson, Holly.....	TP21 341
Hatcher, Patrick G.....	WP05 060	Heck, Albert.....	WOH am 09:10	Henderson, Holly.....	ThP28 589
Hathout, Yetrib.....	ThP19 337	Heck, Albert.....	ThP17 291	Henderson, Holly.....	TP34 666
Hathout, Yetrib.....	WOD pm 4:10	Heck, Albert J.R.....	WP30 541	Henderson, Holly.....	WP11 181
Hatsis, Panos.....	ThP29 607	Heck, Albert J.R.....	TOH am 09:10	Henderson, Holly.....	WP12 209
Hattan, Stephen J.....	MP08 158	Heck, Albert J.R.....	WP24 422	Henderson, Jeremy.....	MP12 231
Hatzivassiliou, Georgia.....	ThP21 388	Heck, Albert J.R.....	MOA am 09:50	Henderson, Michelle.....	MP24 474
Haubro, Lena.....	MP06 097	Heck, Albert J.R.....	MOF pm 2:50	Henderson, Michelle.....	TP28 514
Haufe, Günter.....	TP25 424	Heck, Albert J.R.....	MP06 098	Hendricker, Alan.....	ThOF pm 2:30
Haugh, Jason.....	ThP17 289	Heck, Albert J.R.....	MP06 119	Hendricks, Nathan.....	ThP35 708
Haulenbeek, Jonathan.....	MP08 167	Heck, Albert J.R.....	WP31 586	Hendricks, Paul I.....	MP17 331
Hauschild, Jan-Peter.....	MP19 377	Heck, Albert J.R.....	WP32 597	Hendrickson, Chris.....	ThP12 215
Hauser, Nicolas J.....	WP06 084	Heckendorf, Christian.....	TP16 240	Hendrickson, Christopher.....	MP16 318
Havard, Guy.....	MP01 026	Heckendorf, Christian.....	ThP23 462	Hendrickson, Christopher.....	ThP12 216
Havard, Guy.....	MP06 088	Heckendorf, Christian F.....	WP32 605	Hendrickson, Christopher L.....	ThP06 081
Hawke, David.....	TP25 433	Heckerman, David.....	MP28 572	Hendrickson, Christopher L.....	ThP13 249
Hawke, David.....	TP24 406	Hedeland, Mikael.....	WP15 276	Hendrickson, Christopher L.....	WP05 046
Hawke, David H.....	WP34 664	Hedeland, Mikael.....	WP15 274	Hendrickson, Erik.....	MP18 366
Hawkridge, Adam M.....	TP35 711	Hedges, Jason.....	ThP30 625	Hendrickson, Ronald C.....	MP26 529
Hawkridge, Adam M.....	TP21 329	Hedman, Curtis.....	WP03 020	Hendrickson, Ronald C.....	ThOD pm 4:10
Hayakawa, Eisuke.....	ThP34 676	Heegaard, Niels H. H.....	TP19 292	Hendriks, Linda J.A.....	WP24 422
Hayakawa, Eisuke.....	ThOE pm 3:10	Heemskerck, Anthonius A.M.....	WP35 678	Hendrikse, Jan.....	MP17 346
Hayakawa, Eisuke.....	ThP34 683	Heerd, Gabriel.....	WP38 735	Hengel, Shawna.....	TP16 242
Hayakawa, Shigeo.....	TP02 045	Heerd, Gabriel.....	TP33 658	Hengel, Shawna M.....	TOH am 09:50
Hayakawa, Yoshihiro.....	ThP27 558	Heeren, Ron.....	ThP04 039	Hengerer, Bastian.....	WP28 491
Hayakawa, Yoshihiro.....	WP03 028	Heeren, Ron.....	WOD pm 3:50	Heninger, Michel.....	TP04 070
Hayakawa, Yoshihiro.....	MP02 040	Heeren, Ron.....	ThP04 046	Henion, Jack.....	TP25 422
Hayakawa, Yoshihiro.....	MP11 214	Heeren, Ron.....	MP16 317	Henion, Jack.....	WP16 287
Hayakawa, Yoshihiro.....	MP06 110	Heeren, Ron.....	MP10 199	Henion, Jack.....	WP37 721
Hayasaka, Takahiro.....	ThP04 048	Heeren, Ron.....	TOA pm 3:30	Henion, Jack.....	WP16 288
Hayashi, Marito.....	ThOA am 09:10	Heeren, Ron M.A.....	ThP05 064	Henke, Matthew.....	MOE am 09:10

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Henkel, Corinna.....	ThP04 034	Hieftje, Gary.....	Special	Hockenbery, David.....	TP23 371
Henneman, Alex A.....	WP31 585	Hieftje, Gary M.....	MOB am 10:10	Hodgkin, Jonathan.....	TP35 706
Hennrich, Marco.....	MP29 580	Hiatt, Kelli.....	TP37 766	Hodgkins, Chris.....	WP27 488
Hennrich, Marco L.....	MP06 098	Higashi, Richard M.....	TP23 365	Hodgkinson, Mike.....	TP33 626
Henrich, Christoph.....	MP19 377	Higdon, Roger.....	TP21 340	Hodgson, James.....	ThP21 407
Hensel, Susanne.....	TOC pm 3:10	Higgins, LeeAnn.....	ThP23 474	Hodson, Peter V.....	MP31 631
Heo, Gun-Young.....	ThP24 477	Higgins, LeeAnn.....	ThP14 259	Hoefkens, Jens.....	TP24 402
Heppelmann, Carrie J.....	ThP23 466	Higgins, LeeAnn.....	TP28 511	Hoefkens, Jens.....	MP18 365
Heppelmann, Carrie J.....	MP18 363	Higgs, Richard E.....	MP26 530	Hoefner, Daniel.....	TP30 571
Herath, Kiithsiri.....	TP21 307	Higuchi, Tetsuo.....	ThP11 202	Hoek, Kristen.....	MP28 575
Herath, Kitshiri.....	WOD pm 3:10	Higuera, Monica.....	MP10 201	Hoelper, Soraya.....	WP29 525
Herbig, Jens.....	ThP26 521	Hiki, Yoshiyuki.....	ThP19 330	Hoerth, Patric.....	WP19 329
Herbig, Jens.....	MP15 286	Hilder, Emily F.....	MP07 137	Hofele, Romina.....	MOH am 09:10
Herbold, Rose.....	TP23 381	Hilderbrand, Amy.....	MP06 106	Hofferek, Vinzenz.....	TP27 485
Herbst, John.....	ThP10 172	Hilger, Maximiliane.....	TP15 227	Hoffman, Benjamin S.....	WP28 513
Herbst, John.....	ThP12 226	Hilger, Maximiliane.....	MOE pm 2:30	Hoffman, Brian T.....	WP06 097
Herbst-Robinson, Katie.....	MP24 478	Hilger, Ryan T.....	MOB am 08:50	Hoffman, Brian T.....	MP06 085
Herdering, Christina.....	ThP04 047	Hill, Herbert.....	TP33 625	Hoffman, Eric P.....	WOD pm 4:10
Herdering, Christina.....	ThP05 070	Hill, Herbert H.....	TOG am 09:10	Hoffman, William.....	TP32 609
Hering, Bernhard.....	MP29 583	Hill, Laura.....	ThP05 068	Hoffman Madureira, Ed.....	MP06 102
Herman, Joseph.....	MP06 113	Hillenkamp, Franz.....	TP04 060	Hoffmann, Ralf.....	ThP18 311
Herman, Joseph.....	MP01 011	Hilliard, Mark.....	TP36 719	Hoffmann, Thomas.....	MP03 051
Hermann, Isabel.....	MP23 444	Hilmer, Jonathan.....	WOA pm 3:50	Hoffmann, Thorsten.....	MP31 649
Hermansson, Eskil.....	WP16 291	Hilt, Gerhard.....	TP02 022	Hoffmann, William D.....	MP12 230
Hermes, Jeffrey.....	ThP10 182	Hincapie, Marina.....	TP35 696	Hoffmann, William D.....	TP01 009
Hernandez, Celine.....	WP36 698	Hindenlang, Dave.....	WP05 048	Hoffmann, William D.....	MP16 327
Hernandez, Juan-Ramon.....	ThP17 292	Hindle, Ralph.....	WP03 013	Hofree, Matan.....	ThP22 418
Hernandez, Oscar.....	TP06 119	Hines, Jesse.....	TP25 446	Hofstetter, Theresa.....	TP01 015
Hernández, Julie.....	WP05 063	Hines, Kelly.....	TP24 390	Hofstetter, Theresa.....	WP14 243
Hernández, Julie A.B.....	ThOG am 08:50	Hinks, Michaela M.....	MP23 441	Hogan, Chris.....	WP38 739
Hernández, Victor Alfonso.....	TP21 321	Hinneburg, Hannes.....	TP36 731	Hogan, Christopher.....	WP38 750
Hernandez-Ruiz, Selene.....	ThP11 203	Hiraguchi, Ryuji.....	ThOA pm 4:10	Hogan, Maries.....	MP26 546
Herniman, Julie.....	ThP32 663	Hirano, Ichiro.....	MP26 536	Hogan, Thomas J.....	ThP06 076
Herniman, Julie.....	ThP32 660	Hirano, Ichiro.....	TP08 161	Hogberg, Helena.....	TP24 391
Herodes, Koit.....	TP04 063	Hirano, Ichiro.....	ThP07 115	Højrup, Peter.....	MP21 394
Herold, Nick.....	TP37 756	Hirano, Ichiro.....	TP31 590	Højrup, Peter.....	ThP19 342
Heron, Scott.....	MP17 336	Hirano, Ichiro.....	WP08 121	Holcomb, April.....	MP08 157
Heron, Scott.....	WP23 420	Hirano, Ichiro.....	TP30 569	Holcomb, April.....	MP08 167
Heron, Scott.....	MP24 484	Hirano, Ichiro.....	ThP27 558	Holden, Dustin.....	TP01 003
Heron, Scott.....	TP34 684	Hirano, Ichiro.....	MP02 040	Holder, Daniel J.....	ThOD pm 4:10
Heron, Scott.....	TP04 064	Hirano, Takashi.....	ThP20 368	Holdgate, Geoff.....	WP23 407
Herrenknecht, Christine.....	ThP25 518	Hiraoka, Kenzo.....	ThP30 620	Holguin, Fernando.....	TP27 493
Hershman, Dawn.....	TP26 467	Hiraoka, Kenzo.....	MP17 339	Holland, William L.....	MP11 213
Hersi, Siham S.....	TP32 618	Hiraoka, Kenzo.....	ThP30 630	Holle, Armin.....	ThP05 061
Herting, Katherine.....	TP11 204	Hiraoka, Kenzo.....	WP07 115	Hollebeke, Jolien.....	TP22 355
Hertog, Maarten.....	ThOE pm 3:10	Hird, Simon.....	ThP27 540	Hollema, Harry.....	WP33 639
Hervey IV., William Judson.....	ThP08 121	Hird, Simon.....	ThP27 543	Hollenstein, Kaspar.....	ThP24 484
Herviou, Pauline.....	TP29 540	Hirose, Kenji.....	MP25 496	Holmen, Brenda.....	WP07 106
Hess, Philipp.....	ThP25 518	Hirose, Kenji.....	TP35 695	Holmes, Daniel.....	MP09 180
Hess, Sonja.....	TP22 342	Hirose-Hachisu, Kazuko.....	TP36 729	Holmes, Elaine.....	ThP28 567
Hess, Sonja.....	ThP34 680	Hirose-Hachisu, Kazuko.....	TP36 736	Holmes, Elaine.....	TP24 384
Hess, Sonja.....	TOD am 09:50	Hirose-Hachisu, Kazuko.....	TP36 734	Holmes, Kelly.....	WP28 496
Hester, Alfons.....	TOB am 08:30	Hiroshi, Tsugawa.....	ThOB am 09:50	Holmquist, Brett.....	ThP06 098
Hester, Thomas.....	MP36 739	Hirtz, Christophe.....	MOD am 08:50	Holstein, Thomas.....	ThP34 676
Hester, Thomas.....	TP01 011	Hishiki, Takako.....	WP17 296	Holfreter, Birte.....	TP19 277
Hettiarachchi, Kanaka.....	MP06 090	Hitchcock, Jennifer.....	ThP29 593	Hom, Brian.....	ThP11 209
Hettich, Robert.....	ThP25 501	Hjelmeland, Anna K.....	ThP11 196	Hommema, Eric.....	WOA am 09:30
Hettich, Robert.....	TP08 146	Ho, Jenny.....	TP21 323	Hondius, David C.....	ThP23 445
Hettich, Robert.....	WP29 523	Ho, Jenny T.C.....	WP33 629	Honer, William G.....	TP21 323
Hettich, Robert.....	WP29 527	Ho, Johnny K.....	ThP25 497	Hong, JiHye.....	WP29 532
Hettich, Robert.....	ThP09 153	Ho, Johnny K.....	ThP25 499	Hong, Miri.....	TP29 543
Hettich, Robert.....	ThP25 502	Ho, Johnny K.....	ThP26 520	Hong, Miri.....	WP06 091
Hettich, Robert.....	MP32 669	Ho, Jonathan.....	MP14 260	Hong, Qiuting.....	TP19 290
Hettich, Robert L.....	WP36 686	Ho, Ming-Yi.....	ThP20 380	Hong, Qiuting.....	MOD am 09:30
Hettich, Justin M.....	ThP25 512	Ho, Tse-Tsung.....	MP01 018	Hong, Qiuting.....	TP36 735
Heuberger, Adam.....	MP03 049	Hoang, Khoa.....	ThP04 051	Hong, Teresa B.....	ThOD pm 3:10
Heuberger, Adam.....	ThOE pm 2:50	Hobbs, Deborah.....	TP26 468	Honigberg, Lee.....	TP19 296
Hewetson, John.....	TP23 363	Hobbs, William E.....	TP19 293	Honnold, Ron.....	MP34 684
Heyburn, Denise.....	TP25 451	Hobby, Kirsten.....	WP13 224	Hood, Brian.....	TP08 131
Hibbs, John.....	TP02 047	Hobrath, Judith.....	ThP13 236	Hood, Brian L.....	MP25 501
Hicks, Leslie.....	WP34 663	Hoch, Nicolas.....	ThP17 282	Hoofnagle, Andy.....	TP08 132
Hicks, Leslie.....	WP29 517	Hochart, Guillaume.....	WP11 193	Hoog, Jeremy.....	ThP17 299
Hicks, Wayne.....	WP30 557	Hochart, Guillaume.....	ThOF am 10:10	Hoog, Jeremy.....	ThOD am 08:30
Hicks, Wayne.....	WP30 556	Hochart, Guillaume.....	ThP02 023	Hoog, Jeremy.....	TP21 332
Hidalgo, Elena.....	WP28 498	Hochberg, Georg.....	TP33 641	Hoopmann, Michael.....	MP18 373
Hidy, Bruce.....	TP25 449	Hochlaf, Majdi.....	TP03 051	Hoopmann, Michael.....	TP28 525
Hidy, Bruce.....	MP26 534	Hochstrasser, Denis.....	TP21 333	Hoopmann, Michael R.....	TP28 501
Hidy, Bruce.....	WP33 624	Hochstrasser, Denis.....	MP09 176	Hoopmann, Michael R.....	MOC am 08:50
Hieftje, Gary.....	ThOA pm 3:10	Hochstrasser, Denis.....	WP32 604	Hoover, William.....	WP37 720

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Hoozemans, Jeroen J.M.	ThP23 445	Hsu, Wen-Lian	MP03 042	Huang, Yinying	ThP28 591
Hopfer, Helene	WP19 338	Hsu, Wen-Lian	TP28 518	Huang, Yiqun	TP33 660
Hopfgartner, Gerard	WP13 230	Hu, Chang-Deng	WP28 502	Huang, Yu	ThP20 363
Hopfgartner, Gerard	MP30 608	Hu, Chang-Qin	WP14 234	Huang, Yu	ThP20 364
Hopfgartner, Gérard	MP23 458	Hu, Han	WOG pm 4:10	Huang, Yu	WOC am 09:10
Hopfgartner, Gérard	WP31 593	Hu, Han	WP28 493	Huang, Yu	ThP20 365
Hopfgartner, Gérard	TP08 152	Hu, Hanfeng	TP06 113	Huang, Yu	TP36 724
Hopfgartner, Gérard	TP25 423	Hu, Jiehui	MP34 710	Huang, Yu	WOG pm 4:10
Hopfgartner, Gérard	MOC am 10:10	Hu, Jiehui	MP34 711	Huang, Yue	TP04 064
Hopkinson, Alan C.	WOG am 08:30	Hu, Linda	MOA pm 3:50	Huang, Yue	TP34 684
Hopwood, John J.	ThP20 361	Hu, Nan	TP37 769	Huang, Yue	MP17 336
Horlacher, Oliver	WOB pm 3:30	Hu, Ping	MOD pm 3:10	Huang, Yue	MP24 484
Horn, David	WP24 445	Hu, Qingyuan	ThP21 402	Huang, Yunping	TP15 225
Horn, David	MOD pm 3:50	Hu, Xiaojie	MP06 094	Huang, Yuting	TP33 633
Horn, David	MP25 502	Hu, Yingwei	WP31 594	Huang, Zejian	MP16 296
Horn, David	TP15 229	Hu, Ying-Wei	ThP23 451	Huang, Zejian	MP16 306
Horn, David	WP19 348	Hu, Yunli	TP35 702	Huang, Zhengxu	MP31 641
Horn, Friedemann	TP17 250	Hu, Yunli	TP35 692	Huang, Zhengxu	MP31 640
Horn, Patrick J.	ThP28 581	Hu, Yunli	WP26 460	Huang, Zhi-Qiang	WP32 601
Horner, Gerhard	TP04 061	Hu, Yunli	ThP20 376	Hubbard, Simon J.	WP33 641
Horning, Stevan	MP19 377	Hua, Bin	WP03 022	Hubbard, Van S.	ThP28 565
Hornshaw, Martin	WP33 629	Hua, David	ThP19 355	Huber, Katharina	ThP04 035
Hornshaw, Martin	TP21 323	Hua, Serenus	TOC pm 3:50	Huber, Meret	MP03 052
Horowitz, Jeffrey	ThP17 293	Hua, Serenus	TP35 705	Hubert-Roux, Marie	MP36 747
Horstick, Jim	TP15 234	Hua, Serenus	ThP19 346	Hubert-Roux, Marie	TOG am 09:30
Horvath, Arpad	MP22 431	Hua, Serenus	TP35 704	Huc, Vincent	WP14 244
Horvath, Thomas	TP26 466	Hua, Serenus	TP15 235	Hucthings, Alun	TP29 536
Horvath, Thomas	WP06 082	Hua, Serenus	MP27 556	Hud, Nicholas V.	TP33 654
Horynova-Stuchlova, Milada	ThP19 330	Hua, Serenus	ThOD am 09:50	Hudak, Edward	ThP10 182
Hosfield, Chris	TP15 233	Hua, Wenyi	MP06 085	Hudalla, Christopher J.	TP20 301
Hoskins, Jessica N.	MP36 737	Hua, Wenyi	WP06 097	Huddleston, Michael	WP34 651
Hosoda, Akifumi	ThP25 493	Huan, Tao	TP23 357	Huddgens, Jeffrey	MP22 417
Hosoi, Kosuke	MP08 161	Huang, Bill	TP21 315	Hudgens, Jeffrey	MP22 436
Hosseinzadehshahri, Leila	WP12 219	Huang, Chaoran Ron	MP26 537	Hudson, Billy	MP10 195
Hoteling, Andrew J.	MP36 741	Huang, Chengsi	TP19 288	Hudson, John	MP04 062
Hoteling, Andrew J.	MP36 740	Huang, Fan	WP05 050	Hudson, Lindsey	MP25 497
Hotta, Yudai	ThP25 493	Huang, Hao-Lun	ThP14 253	Hudson, Simon	ThP13 235
Hou, Hongwei	ThP21 402	Huang, Hsin-Hung	TP37 767	Hudson, Yvette R.	ThP25 499
Hou, Jingguo	WP06 082	Huang, Hsin-Hung	MP30 621	Hudson, Yvette R.	ThP25 497
Hou, Jingguo	TP26 466	Huang, Jincui	ThP19 341	Hudson, Yvette R.	ThP26 520
Hou, Jinxuan	MP27 557	Huang, Jincui	TP36 735	Huebner, Evelyn	WOF pm 2:50
Hou, Ming-Feng	WP07 104	Huang, Jiqing	WP36 694	Huestis, Marilyn	WP08 129
Hou, Yanpeng	TP24 415	Huang, Junwei	TP37 751	Huestis, Marilyn A.	WOA pm 2:30
Houde, Damian	TP15 231	Huang, Ke	WP15 277	Hufford, Kevin	ThP01 007
Houel, Stephane	TP15 232	Huang, Lan	MP21 411	Hughes, Chris	MP27 558
Houel, Stephane	TOC pm 3:30	Huang, Lan	MP21 404	hughes, christopher	TP02 027
Houen, Gunnar	MP21 394	Huang, Lihua	TP11 205	Hughes, Christopher J.	TP08 139
Houk, R. S.	MP32 658	Huang, Li-Juan	ThP19 351	Hughes, Christopher J.	MP24 489
Houk, R. Sam	WP19 351	Huang, Lin	MP12 226	Hughey, Christine	ThP36 723
Hourani, Nadim	WP05 068	Huang, Liying	TP37 741	Huhman, David	TP23 369
Houston, Christopher	ThOF pm 3:10	Huang, Lulu	TP03 049	Huhman, David	MP03 050
Hoven, Voravee	WP02 006	Huang, Min-Zong	TOE pm 3:30	Huhmer, Andreas	WP35 683
Howard, Jacquie	WOA pm 3:50	Huang, Min-Zong	MP17 356	Huhmer, Andreas	MP04 062
Howard, Leigh	MP28 575	Huang, Min-Zong	TP34 670	Huhmer, Andreas	WP24 444
Howell, Amy	MP23 462	Huang, Min-Zong	TP34 667	Hühmer, Andreas	MP24 490
Howell, Bonnie	MP26 547	Huang, Qingtao (Mike)	TP26 471	Hühmer, Andreas	ThP12 229
Howell, Bonnie J.	ThOD pm 4:10	Huang, Richard Yu-Cheng	MP22 436	Hühmer, Andreas	WP27 479
Hoyes, Emmy	TP01 002	Huang, Richard Yu-Cheng	MP22 413	Hühmer, Andreas FR	WP24 445
Hoyes, Emmy	WP10 167	Huang, Rongfu	WOF am 08:50	Hui, Sam Xin	MOC am 09:50
Hoyes, John B.	MP16 319	Huang, Rongrong	ThP20 360	Hulsebosch, Claire E.	MP10 200
Hruby, Dennis	MOE am 10:10	Huang, Rongrong	WOC am 09:30	Humbert, Melissa	WP28 506
Hrudey, Steve	MP31 633	Huang, Rongrong	ThP20 359	Hummon, Amanda	ThP08 139
Hsiao, Chih-Hao	MP16 325	Huang, Taohong	WP03 033	Hummon, Amanda	ThP04 040
Hsiao, Chun-Jen	WP30 550	Huang, Taohong	WP20 368	Hummon, Amanda	WP34 648
Hsiao, He-Hsuan	ThP09 160	Huang, Taohong	WP06 078	Hummon, Amanda	WP33 614
Hsiao, Jordy J.	WP36 695	Huang, Taohong	ThP27 528	Hummon, Amanda	WP11 170
Hsieh, Hsin-Yu	WP30 549	Huang, Taohong	TP37 740	Hummon, Amanda B.	ThP17 288
Hsieh, Hsin-Yu	WP30 550	Huang, Taohong	TP37 741	Hummon, Amanda B.	TP22 353
Hsieh, Hsin-Yu	ThP19 334	Huang, Taohong	TP37 742	Hummon, Amanda B.	WP11 187
Hsu, Chang Samuel	WP05 067	Huang, Tom	MP01 002	Humphreys, W. Griffith	WOD am 09:50
Hsu, Cheng-Chih	ThOA am 09:10	Huang, Tsung-Ming	MP36 731	Humphreys, William	WP14 245
Hsu, Cheng-Chih	TOH pm 2:50	Huang, Xiaomei	MP36 749	Humphries, Jamie	TP31 578
Hsu, Chih-Chao	WP28 502	Huang, Xiaomei	ThOD pm 3:30	Humphries, Jamie	WP17 301
Hsu, Fongfu	TP27 481	Huang, Yingying	ThP28 559	Humphries, Jamie K.	TP08 159
Hsu, Hsu-Chen	ThP06 083	Huang, Yingying	TP23 382	Humston-Fulmer, Elizabeth	WP19 333
Hsu, Hsu-Chen	TP37 745	Huang, Yingying	MP03 045	Hung, George	MP28 569
Hsu, Pang-Hung	ThP20 372	Huang, Yingying	MP04 062	Hunt, Don	ThP06 101
Hsu, Pang-Hung	WP30 549	Huang, Yining	TP35 694	Hunt, Donald	WP33 611
Hsu, Victor	MP22 432	Huang, Yining	MP22 423	Hunt, Donald	TOH am 09:30

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Hunt, Donald F.	TP14 223	Ilchenko, Sergei	TP11 201	Ivosev, Gordana	WP36 685
Hunt, Donald F.	TP10 173	Iliopoulos, Othon	ThP19 333	Ivosev, Gordana	TP08 144
Hunt, Donald F.	TP01 019	Iliuk, Anton	WP34 658	Ivosev, Gordana	WP15 256
Hunter, Alex	ThP35 700	Iliuk, Anton	WP34 655	Iwamoto, Shinichi	MP08 161
Hunter, Christie	MP11 215	Im, Hogune	ThP22 418	Iwamoto, Shinichi	ThP06 088
Hunter, Christie	MP24 466	Imperial, Julita	WP31 577	Iwamoto, Shinichi	ThP19 338
Hunter, Christie	MP15 287	Imperial, Lorelie	ThP31 642	Iwamoto, Shinichi	MP18 359
Hunter, Christie	WP27 489	Imperial, Lorelie	TP33 621	Iwanski, Anita	TP29 544
Hunter, Christie	WP30 560	Impey, Gary	WP33 643	Izrael-Tomasevic, Anita	TP22 350
Hunter, Christie	MOA am 08:50	Impey, Gary	MOE am 09:50	Izrael-Tomasevic, Anita	TP28 502
Hunter, Christie	TP08 136	Impey, Gary	TP25 427	Izumi, Clarice	ThP22 431
Hunter, Christie	TP08 134	Impey, Gary	TP25 428	Izumi, Shunsuke	MP08 160
Hunter, Christie	TP08 151	Impey, Gary	WP33 640	Izumi, Yoshihiro	MP27 563
Hunter, Christie	MP24 493	In, Moon Kyo	WP08 126	Izzo, Angelo	MP26 549
Hunter, Christie	MP06 125	In, Yongha	MP08 155	Jabs, Wolfgang	WP24 434
Hunter, Christie	ThP08 134	In, Yongha	MP08 153	Jabs, Wolfgang	MP24 486
Hunter, Christie	MP25 516	In, Youngha	MP08 154	Jabs, Wolfgang	TOH am 08:50
Hunter, Christie L.	MP24 467	Inamdar, Shashikala R.	MP27 554	Jabs, Wolfgang	ThP19 339
Huntington, Chris	ThP03 026	Indeykina, Maria	TP20 299	Jabs, Wolfgang	WP24 435
Huntwork-Rodriguez, Sarah	TOD pm 4:10	Indeykina, Maria	ThP14 262	Jack, Richard	WP03 034
Huo, Yin	WP03 033	Indeykina, Maria	WOF pm 3:30	Jackson, Ayanna	TP34 689
Huppertz, Laura M.	WP08 133	Ingbar, David	ThP23 474	Jackson, Ayanna	ThP11 191
Huppertz, Laura M.	TP29 546	Ingelse, Benno	ThP21 396	Jackson, Ayanna U.	TP34 686
Huq, Shahana	MP07 134	Ingelsson, Martin	MP26 539	Jackson, Glen	ThP11 187
Hur, Manhoi	WP05 069	Inness, Enos	WP03 022	Jackson, Glen P.	TP01 009
Hurst, Robin	TP08 157	Inohana, Yusuke	MP06 110	Jackson, Glen P.	MP12 230
Hurt, Matt	WP14 235	Inoue, Hiroyuki	TP05 088	Jackson, Glen P.	ThP21 410
Hurt, Matthew	WP05 057	Inoue, Hiroyuki	TP05 092	Jackson, Glen P.	MP16 327
Hurt, Matthew	ThOG pm 2:30	Interthal, Heidrun	WP28 494	Jackson, Glen P.	MP30 611
Husek, Petr	ThP21 401	Inutan, Ellen	ThP31 641	Jackson, Lauren M.	ThP04 043
Husser, Christophe	WP15 268	Inutan, Ellen	ThP31 642	Jackson, Nicholas	MP09 170
Hussler, Georges	WP37 708	Inutan, Ellen D.	TP33 624	Jackson, Robert	MP06 121
Husted, Søren	MP32 662	Ion, Laura	WP07 108	Jackson, Robert	TP04 057
Hutchinson, Carolyn	ThP32 652	Irish, Mitzi	ThP29 608	Jackson, Shelley N.	WP09 148
Hutchinson, Carolyn	ThP32 654	Irving, Amy A.	ThP22 422	Jackson, Shelley N.	TP07 125
Hutchinson, Carolyn	ThOG pm 3:10	Isaac, Giorgis	TP24 384	Jacobs, Erica	ThOB pm 3:10
Huttlin, Edward	TOA am 09:30	Isaac, Giorgis	WP36 699	Jacobs, Harrys	MP24 478
Huttlin, Edward L.	WP28 509	Isaac, Giorgis	ThOB am 08:50	Jacobs, Peter L.	WP15 252
Huttlin, Edward L.	TOE am 10:10	Isaac, Giorgis	ThP28 581	Jacobs, Ryan	ThP23 449
Huvent, Isabelle	MOD am 08:50	Isaac, Giorgis	TOF am 10:10	Jacobsen, Søren	TP19 292
Hwang, Angela A.	ThP09 140	Isaac, Giorgis	TP27 492	Jacobson, Rachelle	MP17 355
Hwang, DaeHee	TP24 400	Isaac, Giorgis	ThP28 582	Jadhav, Avinash	ThP09 169
Hwang, Daehee	TP24 392	Isaac, Giorgis	ThP28 573	Jaeckle, Thomas	ThOE am 08:30
Hwang, Sun-Il	MP27 555	Isailovic, Dragan	MP10 187	Jaffe, Jacob	WOA am 10:10
Hye, Abdul	TP19 281	Isailovic, Dragan	MP17 353	Jaffe, Jacob	TP08 148
Hyun, Sung Hee	ThP23 458	Isbell, Katie	MP26 548	Jaffe, Jacob D.	ThP10 179
Hyung, Suk-Joon	TP33 638	Iseberg, Samantha	ThP01 005	Jaffe, Jacob D.	MP19 382
Hyunh, Tran T.	MP36 722	Iseberg, Samantha	ThP01 004	Jaffuel, Aurore	MP26 527
Iacob, Roxana E.	WOH am 08:30	Iseberg, Samantha	MOC am 09:10	Jager, Nynke G.L.	WP15 252
Ibañez-Vea, María	MP24 477	Ishibashi, Megumi	MP06 089	Jagerdeo, Eshwar	WP37 709
Ibraev, Maksat	MP27 559	Ishibashi, Megumi	TP31 603	Jagtap, Pratik	MP29 583
Ibrahim, Yehia	TP33 652	Ishihama, Yasushi	WOA am 08:30	Jagtap, Pratik	TP28 514
Ibrahim, Yehia	WP38 753	Ishihama, Yasushi	WP34 652	Jagtap, Pratik	MP24 474
Ibrahim, Yehia	ThP06 081	Ishihama, Yasushi	MP24 475	Jagtap, Pratik	MP19 378
Ibrahim, Yehia	MOC am 08:30	Ishihara, Mayumi	WOC am 09:30	Jagtap, Pratik	MP18 362
Ibrahim, Yehia	MP20 389	Ishii, Masaru	WP36 692	Jagtap, Pratik	MP18 370
Ibrahim, Yehia	TOG am 08:30	Ishikawa, Chihiro	WP11 171	Jagtap, Pratik	ThP23 474
Ichii, Shoko	ThP25 489	Isobe, Toshiaki	MP14 256	Jagtap, Pratik	TP17 248
Ichou, Farid	MP30 616	Isobe, Toshiaki	MP14 257	Jahouh, Farid	ThP28 569
Ichu, Taka-Aki	WP28 499	Issaq, Haleem J.	WP18 312	Jakobsen, Lene	MP24 477
Ide, Jennifer L.	WP11 185	Ito, James	ThP25 513	Jalali, Mehdi	TP29 551
Ideker, Trey	ThP22 418	Itoh, Yoshiyuki	MP36 738	Jalili, Pegah	ThP17 304
Iden, Charles R.	TP29 549	Iurascu, Marius- Ionut	WP07 108	Jalili, Pegah	MP26 526
Ifa, Demian Rocha	ThP04 044	Ivancic, Melanie M.	ThP22 422	James, Christopher	ThP29 609
Iffland, Andre	MP07 146	Ivaniuk, Alexei	MP36 724	James, Milinda	ThP25 512
Iglesias, Amadeu	TP10 190	Ivanov, Alexander	WP33 620	Jami, Mohammad-Saeid	MP27 557
Iglesias, Amadeu	MP34 696	Ivanov, Alexander R.	WP31 575	Jamin, Emilien L.	MP04 063
Igwe, David	MP33 672	Ivanov, Alexander R.	WP35 671	Jamme, Frédéric	ThOE am 09:10
Ihling, Christian	MP21 398	Ivanov, Alexander R.	WP35 676	Jan, Jia-Tsong	ThP06 096
Ihling, Christian H.	MP21 409	Ivanov, Dmitry	TP02 044	Janecek, Jacki	ThP11 193
Iida, Junko	TP37 739	Ivanov, Mark V.	ThP34 691	Jang, Haejong	WP06 075
Iida, Takashi	TP26 452	Ivanov, Vadim	WP26 469	Jang, Ik-Soon	TP35 704
Iizuka, Etsuo	MP16 315	Ivanova, Olga	WP26 469	Jang, In-Jin	WP06 076
Ijzerman, Jan	WP18 319	Iveljic, Anita	MP28 570	Jang, Jeheon	WP37 724
Ikeda, Kazutaka	MP12 224	Iversen, Line V.	TP19 292	Jang, Jeheon	WP03 024
Ikeda, Noriaki	WP08 121	Iverson Hemberg, Suzanne	TP25 430	Jang, Sehwan	ThP17 305
Ikegawa, Shigeo	TP26 452	Ivey, Richard	TP21 334	Janga, Anupama	MP19 381
Ikeguchi, Mitsunori	TP09 166	Ivey, Richard	ThP17 298	Janis, Gregory	TP29 539
Ikonomou, Michael	WP17 309	Ivleva, Vera	WP25 447	Janis, Gregory	TP25 434

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Janis, Gregory.....	MP03 049	Jeong, Jaeho.....	MP22 418	Jin, Lixia.....	MP01 002
Janis, Gregory.....	TP29 537	Jeong, Ji-Seon.....	TP23 374	Jin, Shan.....	TP26 473
Jänis, Janne.....	ThP32 653	Jeong, Justin.....	MP22 416	Jin, Song.....	TP12 206
Janiszewski, John.....	MP02 038	Jeong, Kyowon.....	ThP34 677	Jin, Wen.....	ThP01 009
Janiszewski, John.....	MP02 034	Jeong, Mi-Jeong.....	MP33 677	Jin, Wenhai.....	WP34 647
Janiszewski, John.....	MP02 039	Jeong, Seoul-Ki.....	WP35 675	Jin, Wenhai.....	MP13 237
Janiszewski, John.....	WP15 255	Jeong, Seoul-Ki.....	ThP22 418	Jin, Xiaoying.....	MOD pm 3:30
Janiszewski, John.....	MOE am 09:50	Jeong, Seung Hyup.....	ThOD am 09:50	Jin, Zhu-qiu.....	TP18 274
Janiszewski, John S.....	MP02 033	Jeong, Seunghyup.....	TP35 705	Jing, Li.....	TP23 369
Janjulia, Tea.....	ThOD pm 3:10	Jeong, Sung Woo.....	MP33 677	Jing, Linhong.....	TP18 274
Jankowska, Ewa.....	TP35 706	Jeong, Yangmo.....	ThP27 537	Jjunju, Fred.....	ThOE am 10:10
Jannetto, Paul.....	ThP10 174	Jeong, Yudong.....	ThP32 664	Jjunju, Fred Paul Mark.....	TP34 687
Jannetto, Paul.....	ThP10 173	Jeoung, Ji Hoon.....	TP25 442	Joblin, Christine.....	ThP36 726
Jannetto, Paul.....	ThP10 171	Jeoung, Ji Hoon.....	TP25 445	Jobst, Karl J.....	WOF am 09:10
Jannetto, Paul.....	ThP10 170	Jesch, Christian.....	MP16 324	Jochim, Nelli.....	TP37 752
Janow, Ginger.....	ThP23 460	Jessie, Brandon.....	WP03 032	Joe, Koman.....	MP06 106
Jansen, Mark.....	ThP04 046	Jeudy, Jeremy.....	MP26 527	Jogiraju, Harini.....	TP26 456
Jansson, Daniel.....	MP30 607	Jeudy, Jérémy.....	TP05 094	Johann, Far.....	MP10 198
Jansson, Janet.....	ThP25 501	Jewet, Erin.....	MP34 688	Johansen, Eric.....	WP25 450
Januario, Tom.....	TP22 349	Jhang, Siou-Sian.....	MP17 334	Johansen, Eric.....	MP25 516
Janulyte, Aurika.....	MP15 270	Jhang, Siou-Sian.....	MP17 333	Johansen, Eric.....	WP24 433
Janzen, Stefanie.....	TOC pm 3:10	Jhingree, Jacquelyn R.....	ThP25 509	Johansen, Eric.....	MP18 361
Jaochico, Allan.....	ThP21 395	Ji, Chao.....	WP31 588	Johansson Mal'in, Tove.....	WP14 237
Jariwala, Freneil.....	TP02 047	Ji, Chao.....	MP21 400	John, Jaya John.....	ThP05 068
Jariwala, Navin.....	MOC pm 3:50	Ji, Hong.....	ThP28 564	Johns, Doug.....	TP21 307
Jarmusch, Scott.....	MP34 700	Ji, Injung.....	ThP19 346	Johnson, Benjamin.....	WOD am 09:50
Jarrell, Tiffany.....	ThOG am 10:10	Ji, Qin.....	MP25 508	Johnson, Benjamin M.....	ThP13 243
Jarrell, Tiffany.....	ThP32 657	Ji, Qin C.....	MOC pm 3:50	Johnson, Casey.....	ThP08 130
Jarrett, Harry.....	MP08 152	Ji, Weihua.....	WP27 489	Johnson, Casey.....	WP27 478
Jarrold, Martin.....	ThP06 080	Ji, Yuhuan.....	WP30 568	Johnson, Chris A.....	WP06 073
Jarrold, Martin.....	MP16 298	Jia, Ai.....	MP31 629	Johnson, Darryl.....	MP06 129
Jarrold, Martin F.....	MP16 313	Jia, Chenxi.....	ThP15 271	Johnson, Eric.....	ThP10 182
Jarvis, Jacqueline.....	WP05 053	Jia, Chenxi.....	TP33 656	Johnson, Francis.....	TP29 549
Jarvis, Michael.....	ThP01 009	Jia, Chenxi.....	ThP15 270	Johnson, Grant.....	ThP35 707
Jarvis, Michael.....	TP26 476	Jia, Chenxi.....	MOG am 09:50	Johnson, Hannah.....	TOD pm 3:30
Jarvis, Michael.....	TP30 577	Jia, Echo W.....	TP37 751	Johnson, James.....	MP19 378
Jarvis, Michael.....	TP29 555	Jia, Wei.....	WP24 436	Johnson, James.....	MP18 370
Jarvis, Michael J. Y.....	ThP29 595	Jia, Weitao.....	ThP17 300	Johnson, James.....	TP17 248
Jarvis, Michael J. Y.....	TP29 535	Jia, Weitao.....	ThP17 301	Johnson, Jay.....	TOF am 09:30
Jayaram, Vivek.....	TP05 109	Jia, Xiaoying.....	WP29 531	Johnson, Jay.....	TP04 065
Jayaram, Vivek.....	TP05 098	Jia, Xiaoying.....	WP34 659	Johnson, Jay.....	ThP07 118
Jayaraman, Arul.....	MP29 584	Jia, Xiaoying.....	ThP33 666	Johnson, Jay.....	ThP28 573
Jayasundera, Keerthi.....	WP34 655	Jiang, Dahai.....	TP21 331	Johnson, Jay S.....	MP06 124
Jayasundera, Keerthi.....	WP34 658	Jiang, Guifeng.....	TP37 757	Johnson, Jeffrey.....	MP29 596
Jayasuriya, Hiranthi.....	TP37 753	Jiang, Guifeng.....	WP19 348	Johnson, Jeffrey.....	WP36 689
Jean, Nicolas.....	MP01 014	Jiang, Guifeng.....	MP06 123	Johnson, Jodie V.....	MP34 697
Jean, Nicolas.....	MP01 022	Jiang, Guifeng.....	WP03 034	Johnson, John E.....	MOF pm 2:50
Jeannotte, Richard.....	TOE pm 3:50	Jiang, Guifeng.....	TP31 600	Johnson, Joseph.....	MP23 446
Jedelsky, Petr.....	TP10 175	Jiang, Hong.....	WP30 559	Johnson, Joshua L.....	WP15 279
Jedrychowski, Mark.....	TOE am 10:10	Jiang, Hong.....	ThP18 328	Johnson, Kathia M.....	MP10 200
Jedrychowski, Mark P.....	TOA am 09:30	Jiang, Hui.....	WP06 090	Johnson, Katina L.....	WP19 346
Jeffery, Keon.....	ThP21 397	Jiang, Jian.....	ThP29 609	Johnson, Ken.....	ThP23 464
Jehmlich, Nico.....	TP19 277	Jiang, Lei.....	ThP28 577	Johnson, Kenneth.....	MP26 546
Jelinek, Christine.....	TP19 276	Jiang, Peng.....	TP24 418	Johnson, Kenneth L.....	ThP23 466
Jelinek, Diane.....	WOB pm 4:10	Jiang, Shan.....	MP08 156	Johnson, Kenneth L.....	MP18 363
Jellinek, Christine.....	MP19 385	Jiang, Tao.....	TP02 033	Johnson, Kevin J.....	WP37 732
Jencks, Bob.....	MP06 124	Jiang, Wen.....	MP06 086	Johnson, L'Aurelle.....	MP13 238
Jeng, Jingyueh.....	TP23 379	Jiang, Wen.....	MP06 087	Johnson, Lisa.....	WOD pm 2:50
Jenkins, Rand.....	WP33 624	Jiang, Xi.....	WP23 404	Johnson, Philip.....	WP19 344
Jenkins, Rand.....	MP26 534	Jiang, Xiangyu.....	ThP13 244	Johnson, Richard.....	TP08 132
Jenkins, Rand.....	TP25 449	Jiang, Xiaosheng.....	TP18 255	Johnson, Richard.....	MOA am 08:30
Jenkins, Tim J.....	ThP32 660	Jiang, Xiaoyue.....	ThP08 135	Johnson, Richard.....	TP28 512
Jenna, Sarah.....	WP17 297	Jiang, Xiaoyue.....	WP35 683	Johnson, Richard S.....	WP31 582
Jensen, Kirk.....	WP07 116	Jiang, Xuntian.....	WP06 090	Johnson, Richard S.....	TP08 133
Jensen, Majbrit M.....	TP19 283	Jiang, Yan.....	MP12 221	Johnson, Rudolph.....	ThP26 525
Jensen, Ole Nørregaard.....	TP25 437	Jiang, Yan.....	WOC am 09:10	Johnson, Rudolph.....	MOD am 09:10
Jensen, Pernille Foged.....	TP15 227	Jiang, Yan.....	WP29 516	Johnson, Tasha.....	WP36 689
Jensen, Poul Erik.....	MP32 662	Jiang, You.....	MP16 306	Johnson, Yoko S.....	MP33 679
Jenster, Guido.....	WP18 319	Jiang, You.....	MP16 296	Johnson-Davis, Kamisha.....	TP30 576
Jentoft, Mark.....	ThP23 464	Jiang, Yuan.....	MP22 433	Johnston, Murray.....	ThP36 711
Jeon, Diana.....	MP29 591	Jiang, Yuan.....	MP22 432	Jokinen, Ville.....	MP09 182
Jeon, WooSung.....	ThP11 212	Jiang, Yun.....	WP27 481	Jolliffe, Charles.....	TP04 056
Jeon, Yoon-Kyung.....	MP27 564	Jiangtao, Xing.....	TP37 748	Jolliffe, Chuck.....	WP06 079
Jeong, Ha Neul.....	TP15 235	Jiao, Yang.....	TP04 066	Jonakin, Kelli.....	MP25 516
Jeong, Ha Neul.....	TOC pm 3:50	Jimenez, Connie.....	WP34 665	Jonakin, Kelli.....	WP33 640
Jeong, Haewoo.....	WP04 041	Jimenez, Mark.....	TP26 453	Jonakin, Kelli.....	TP08 151
Jeong, Hyobin.....	TP24 400	Jiménez-Sandoval, Pedro.....	ThP05 063	Jonakin, Kelli.....	WP24 433
Jeong, Hyobin.....	TP24 392	Jimoh, Modupe.....	TP34 669	Jonathan, Cimino.....	MP10 198
Jeong, Hyoung Jin.....	TP35 704	Jin, Feng.....	MP16 327	Jones, A. Daniel.....	WP10 160

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Jones, A. Daniel	MP03 055	Jorgensen, Claus	WP32 602	Kaljurand, Ivari	TP02 030
Jones, A. Daniel	MP32 654	Jorgensen, Claus	TP08 131	Kalkhof, Stefan	TP17 250
Jones, A. Daniel	WP17 310	Jorgensen, Thomas J.D	WOH pm 2:30	Kalkum, Markus	ThOD pm 3:10
Jones, Andrew W.	TP18 261	Jorgenson, James	MP06 093	Kalkum, Markus	ThP25 513
Jones, Arthur Daniel	ThP32 658	Jorrin Novo, Jesús V	MP32 661	Käll, Lukas	WP31 582
Jones, Bryan E	WP21 377	Josefsson, Martin	MP30 609	Käll, Lukas	MP06 126
Jones, Bryan E	MP22 420	Joseph, Lucy	TOE pm 3:50	Käll, Lukas	ThP34 685
Jones, Chad A.	ThP35 710	Joseph, Raji E.	MP22 419	Käll, Lukas	MP19 376
Jones, Chris	WP10 167	Joseph, Siji	WP13 222	Källback, Patrik	WP10 161
Jones, Christina	TP24 389	Joseph, Siji	WP06 081	Kalli, Anastasia	TP22 342
Jones, Christina	TP24 394	Josephs, Jonathan	WOD am 09:50	Kallinger, Peter	MP16 328
Jones, Christopher	TP01 002	Josephs, Jonathan L	WP14 245	Kalmeyer, Vadim	ThP27 541
Jones, Darryl	WP03 035	Joshi, Preeti	ThOH am 09:30	Kaltashov, Igor	MP23 453
Jones, David	TP21 314	Jourdan, Emmanuel	WP12 215	Kaltashov, Igor A.	WP23 410
Jones, Dean	MP04 060	Jove, Richard	ThP28 587	Kaltashov, Igor A.	WP28 490
Jones, Dean	MP04 067	Joyner, Shannon A.	MP19 382	Kaltashov, Igor A.	TP15 231
Jones, Drew	WP30 561	Juha, Huiskonen	TP35 707	Kaltashov, Igor A.	WP22 392
Jones, E. Ellen	TOB pm 3:10	Julian, Bruce A.	ThOD am 09:30	Kaltashov, Igor A.	MP25 499
Jones, E. Ellen	TP36 728	Julian, Bruce A.	ThP19 330	Kaluarachchi, Manuja R.	ThP28 567
Jones, E. Ellen	WP11 192	Julian, Ryan	ThP35 697	Kamaev, Dmitry	WP26 469
Jones, E. Ellen	WP09 137	Julian, Ryan	ThP35 708	Kamali Sarvestani, Afrand	ThP32 658
Jones, Ellen	MP10 192	Julian, Ryan	MOG pm 2:50	Kamel, Amin	WP15 279
Jones, Ellen	WP09 139	Julian, Ryan	ThP12 223	Kamenecka, Theodore	WOH am 09:50
Jones, Ellen	WP11 188	Julian, Ryan	MOG am 09:30	Kamga, Albert W.	WP05 060
Jones, Emrys	WP12 218	Juliano, Maria Aparecida	WP29 529	Kamibayashi, Mami	TP26 452
Jones, Emrys A.	TOH pm 3:10	Jun, Fan	TP37 748	Kamijyo, Yohei	ThP19 340
Jones, Gavin	MP07 136	Jun, Fan	ThP27 550	Kamita, Masahiro	TP08 163
Jones, Gavin	WP08 117	Jung, Jette	ThP25 490	Kamita, Masahiro	ThP23 469
Jones, Gavin	WP08 124	Jung, Stephan	WP27 482	Kammeijer, Guinevere S.M.	WP35 678
Jones, Gavin	TP30 563	Jung, Stephan	TP19 295	Kamphuis, Lars	WP17 304
Jones, Gavin	MP07 135	Jung, Sunhee	ThP23 475	Kanaki, Katerina	TP05 105
Jones, Gavin	WP07 109	Jungmann, Julia	MOB am 09:50	Kanazawa, Mitsuhiro	TP36 734
Jones, Gil	WP05 048	Jungmann, Julia	ThP04 039	Kanazawa, Mitsuhiro	TP36 736
Jones, Jace W.	WP26 471	Jungmann, Julia H.	ThP05 064	Kandur, Wynne	MP21 404
Jones, Jace W.	MP10 206	Junot, Christophe	MP12 232	Kane, Maureen A.	MP10 206
Jones, Jay	TOH am 09:50	Junot, Christophe	TP13 215	Kane, Maureen A.	WP26 471
Jones, Jeff	ThP06 077	Junot, Christophe	MP30 616	Kaneshiro, Kaoru	ThP19 329
Jones, Kelly	TP21 314	Junot, Christophe	MP04 075	Kaneshiro, Kaoru	ThP19 338
Jones, Lisa M.	MOB pm 2:30	Junot, Christophe	TOH pm 3:50	Kang, Byeongsoo	TP24 392
Jones, Lisa M.	MOF am 09:50	Junot, Christophe	MOD am 08:50	Kang, Byeongsoo	TP24 400
Jones, Lisa Nader	TP21 314	Jupiter, Daniel	WP05 065	Kang, Dukjin	WP33 619
Jones, Louise	ThP17 287	Jürschik, Simone	ThP26 521	Kang, Hee-Gyoo	ThP23 457
Jones, Matt	WP33 637	Jurtschenko, Christopher	WP05 051	Kang, Hee-Gyoo	TP21 308
Jones, Michael D.	MP32 659	Jurva, Ulrik	WP15 261	Kang, Hee-Gyoo	ThP23 458
Jones, Michael D.	ThP28 581	Jusko, William	TP21 337	Kang, Huan	WP33 636
Jones, Michael D.	TOC am 08:30	Justice, Nicholas	WP29 527	Kang, JeongWon	WP29 532
Jones, Michael D.	ThP28 582	Kaabia, Zied	WP17 305	Kang, Min-Jung	WP02 011
Jones, Patrick	ThP30 631	Kaban, Ata	MP11 208	Kang, Min-Jung	WP02 012
Jones, Rhys	MP07 135	Kachetel, Kahina	TP13 215	Kang, Pilsoo	TOC pm 2:30
Jones, Rhys	ThP08 132	Kadek, Alan	TP10 175	Kang, Seungwoo	WP06 075
Jones, Rhys	WP08 124	Kadek, Alan	MP22 437	Kang, Sohye	ThP33 668
Jones, Rhys	TP30 563	Kadek, Alan	WOH pm 3:10	Kang, Yang	MP24 493
Jones, Rhys	WP07 109	Kadi, Adnan, A.	TP37 768	Kannan, Arugavur Ponnusamy	WP14 248
Jones, Rhys	WP08 117	Kadie, Carl	MP28 572	Kanobana, Kirezi	MP23 457
Jones, Rhys	MP07 136	Kaesdorf, Stefan	MP17 350	Kanshin, Evgeny	TOE am 08:50
Jones, Rhys	ThP11 207	Kaeser, Cynthia	WP10 160	Kao, Athit	MP21 411
Jones, Richard	TP15 233	Kaewkhao, Karnrawee	WP16 290	Kao, Athit	MP21 404
Jones, Richard	ThP22 423	Kaffe, Amol	TP33 639	Kao, Ya-Min	ThP27 531
Jones, Richard	ThP08 126	Kagan, Jacob	MP26 540	Kapase, Prerana	TP28 513
Jones, Richard	WP33 613	Kahen, Kaveh	TP04 069	Kapetanopoulos, Panos	TP04 059
Jones, Richard	ThP23 459	Kahl, Alandra	WP03 035	Kapinos, Brendon	ThP10 185
Jones, Robert	ThP25 500	Kahler, Ty	WP08 120	Kapinos, Brendon	MP02 039
Jones, Roger	WP19 351	Kahn, C. Ronald	WP12 202	Kapinos, Brendon	MOE am 09:50
Jonkers, Jos	WOD pm 3:50	Kahuno, Elizabeth W.	MP12 227	Kapinos, Brendon	MP02 038
Jonscher, Karen	Special	Kailemia, Muchena	WOC am 09:50	Kaplan, Desmond	WP38 745
Jonsson, Tobias	MP06 087	Kailemia, Muchena J.	WOC am 09:30	Kaplan, Desmond	WP38 746
Jonsson, Tobias	MP06 086	Kaiser, Nathan	MOG pm 2:30	Kaplan, Desmond	MP15 271
Joo, Eun-Jeong	TP21 308	Kaiser, Nathan	ThP12 217	Kaplan, Desmond	WOC am 09:50
Jorabchi, Kaveh	TP04 069	Kaiser, Nathan	ThP12 215	Kaplan, Pearl	TP31 588
Jorabchi, Kaveh	ThOA pm 3:30	Kaiser, Nathan	ThP12 216	Kapp, Eugene	WP31 587
Jordan, Alfons	MP15 286	Kaiser, Nathan	MP16 318	Kar, Upendra	TP18 273
Jordan, Alfons	ThP26 521	Kaiser, Nathan	ThOG pm 3:50	Kar, Upendra K.	ThP24 485
Jordan, Steve	ThP08 132	Kaiser, Nathan K.	ThP06 081	Karaca, Samir	WP36 696
Jordan, Steve	MP07 135	Kajihara, Shigeki	MP18 358	Karancsi, Tamás	TP01 013
Jordan, Steve	WP07 109	Kajihara, Shigeki	MP18 359	Karancsi, Tamás	ThOA am 10:10
Jordan, Steve	WP08 117	Kajihara, Shigeki	MP18 360	Karandashev, Konstantin	ThP16 278
Jordan, Steve	MP07 136	Kaku, Maiko	ThP04 032	Karas, Michael	MP06 092
Jordan, Steve	TP30 563	Kalb, Suzanne	ThP26 526	Karas, Michael	ThP08 129
Jordan, Steve	WP08 124	Kalb, Suzanne R.	ThP26 522	Karas, Michael	MP08 159

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Karas, Michael	TP15 226	Kawase, Taiji	MP25 496	Kent, K. Craig	TP18 264
Karellas, Nicholas	WP04 042	Kawashima, Miho	MP02 040	Kent, Michael S.	MP22 414
Karger, Barry	WOG pm 3:30	Kawashima, Miho	MP06 110	Kentamaa, Hilikka	ThOG pm 2:30
Karger, Barry	TOC pm 2:50	Kay, Richard	MP25 520	Kentamaa, Hilikka	WP05 057
Karger, Barry	ThP22 430	Kayili, H. Mehmet	TP36 725	Kentamaa, Hilikka	TP02 038
Karger, Barry L.	WP35 676	Kayili, H. Mehmet	ThP09 150	Kentamaa, Hilikka	WP05 056
Karger, Barry L.	WP24 445	Kayisli, Ozlem	WP36 704	Kentamaa, Hilikka	ThP32 657
Karger, Barry L.	WP31 575	Kayisli, Umit	WP36 704	Kentamaa, Hilikka	WP14 235
Karger, Barry L.	WP35 671	Kaylor, Adam	MP15 266	Kentamaa, Hilikka	ThOG am 10:10
Karimpour, Masoumeh	TP24 396	Kazuki, Yasuhiro	MP26 533	Kentamaa, Hilikka	TP02 037
Karkhanis, Aarti	ThP27 542	Ke, Jing	ThP21 409	Kenyon, Nicholas	WP17 308
Karlsson, Niclas	WOG pm 3:50	Ke, Jing	TP25 431	Kera, Kota	MP03 050
Karnpracha, Chanida	TOC am 09:30	Ke, Jing	TP25 450	Kerby, Jonathan	TP34 674
Karoly, Edward D.	WP18 312	Ke, Yan	ThP16 273	Kerns, Edward	TP25 443
Karremman, Christiaan	WP28 491	Ke, Zhenlian	MP26 547	Kero, Frank	ThP08 132
Karst, Uwe	TP10 189	Keasling, Jay D.	TOA am 09:50	Kero, Frank	MP07 135
Karst, Uwe	WP15 263	Keegan, Sarah	ThOB pm 3:10	Kero, Frank	WP07 109
Karst, Uwe	TP25 424	Keegan, Sarah	TOH am 10:10	Kero, Frank	WP08 117
Karst, Uwe	ThP03 027	Keegan, Sarah	WP31 575	Kero, Frank	TP30 563
Karst, Uwe	ThP05 056	Keelor, Joel	TP04 085	Kero, Frank	WP08 124
Karst, Uwe	WP23 409	Keelor, Joel	MP15 267	Kero, Frank	MP07 136
Karst, Uwe	WP11 174	Keen, Denise	ThP09 147	Kerr, Candace	ThP22 440
Karst, Uwe	ThP04 047	Keharia, Hareshkumar	ThP16 276	Kerr, Jenn	ThOC am 09:10
Karst, Uwe	ThP05 070	Kehlenbach, Ralph	WP36 696	Kersten, Gideon F.A.	TP10 176
Kasai, Daisuke	WP03 026	Kehl-fie, Thomas E.	MP10 190	Kersten, Hendrik	MP15 276
Kashima, Hideo	ThP26 524	Keifer, David Z.	MP16 313	Kersten, Hendrik	MOH pm 3:30
Kashyap, Tanuja	ThP18 308	Keire, David	WP37 720	Kersten, Hendrik	MP15 284
Kasi, Mohan	WP14 250	Kekäläinen, Timo	ThP32 653	Kersten, Roland	MP34 707
Kasi, Mohan	ThP27 549	Kelkar, Jitendra	MP11 219	Kertesz, Vilmos	MP17 341
Kasi, Mohan	WP14 249	Kelkar, Jitendra	ThP27 539	Kertesz, Vilmos	MP17 340
Kasi, Mohan	WP14 248	Kelkar, Jitendra	ThP11 200	Kery, Vladimir	MP23 442
Kasi, Mohan	MP31 635	Kelkar, Jitendra	MP34 689	Keshet, Uri	MP17 338
Kaspar, Stephanie	TP36 731	Kelkar, Jitendra	MP06 112	Keshipeddy, Santosh	MP23 462
Kaspar, Stephanie	MP24 486	Kelkar, Jitendra	MP34 690	Keshishian, Hasmik	MP26 523
Kaspar, Stephanie	ThP19 356	Kell, Joe	ThP11 211	Kesimer, Mehmet	WP26 461
Kasper, Dennis	ThOC pm 2:50	Kelleher, Neil	ThOH am 10:10	Kessler, Benedikt	ThP09 143
Kasper, Tina	MP17 350	Kelleher, Neil	TP01 008	Ketola, Raimo A.	MOH pm 2:30
Kasperova, Alena	ThP19 330	Kelleher, Neil	ThP08 128	Keunen, Olivier	WP11 193
Kass, Steven	WOG am 09:50	Kelleher, Neil	TP16 244	Kevala, Karl R.	ThP28 568
Kassahun, Kelem	WP15 281	Kelleher, Neil	MOB pm 4:10	Khadang, Ardeshir	TP26 472
Kassebacher, Thomas	ThP26 521	Kelleher, Neil	ThP25 510	Khadang, Ardeshir	TP25 441
Kassie, Fekadu	ThOH am 08:30	Kelleher, Neil	ThP23 448	Khairallah, George	WOG am 10:10
Kast, Juergen	WP36 705	Kelleher, Neil	MOE am 09:10	Khairallah, George N.	WOC pm 3:30
Kast, Juergen	MP25 497	Kelleher, Neil L.	WOD pm 3:30	Khalidi, Nora	TOC am 10:10
Kast, Juergen	WP36 694	Kelleher, Neil L.	ThP09 141	Khalidi, Nora	WP19 350
Kasten, Tom	ThOD pm 3:30	Kelleher, Neil L.	TP16 239	Khalidi, Nora	ThP15 265
Kasumov, Takhar	MP29 592	Kelleher, Neil L.	WP35 684	Khaledi, Morteza	ThP09 155
Katagi, Munehiro	WP08 121	Kelleher, Neil L.	MP16 311	Khalfallah, Faiza	ThP23 454
Katayama, Hiroyuki	WP06 072	Keller, Manuel	MP21 398	Khalil, Sarah	TP35 702
Kath, William	ThOH am 10:10	Keller, Nancy	MOE am 09:10	Khan, Ikhtas A.	MP32 659
Katiie, Christopher J.	WP37 732	Kellersberger, Katherine A.	WP12 220	Khan, Saeed	TP37 766
Katju, Vikram	MP24 478	Kellersberger, Katherine A.	WP11 179	Kharchenko, Andriy	TOA pm 3:30
Kato, Dawn	ThP32 656	Kelley, Deborah	MP24 468	Kharchenko, Andriy	MP16 317
Katta, Viswanatham	MP22 416	Kelley, James	ThP14 258	Khare, Sangeeta	TP24 383
Katwaru, Ravi	WOD am 08:30	Kelley, Jeremiah	MP34 701	Kharlamova, Anastasia	MP15 273
Katzmann, Jerry	MP09 175	Kellie, John F.	TP13 213	Kharybin, Oleg	WP21 383
Kaufman, Ian	MP19 380	Kellman, Markus	MOA am 08:30	Khatari, Kshitij	TOF pm 3:30
Kaufmann, Stefan H. E.	TOH pm 4:10	Kellmann, Markus	MP19 377	Khatri, Kshitij	TP36 723
Kauhanen, Dimple	ThOC pm 3:50	Kellmann, Markus	WP37 722	Khatri, Kshitij	TP36 724
Kauppi, Tiina J.	WP37 727	Kellmann, Markus	ThP12 229	Khatun, Jainab	MP19 374
Kauppi, Tiina J.	WP12 196	Kellmann, Markus	ThP12 227	Khatun, Jainab	MP24 479
Kaur, Harparkash	MP30 606	Kelly, Isabelle	WP33 622	Kheller, Jonathan R.	MP25 519
Kautiainen, Antti	TP25 430	Kelly, Orla	TP04 059	Kher, Manasi	MP34 689
Kauwe, John	TP19 278	Kelly, Patrick	WP26 458	Khezam, Maya	TP24 393
Kawabata, Shin-ichirou	ThP19 329	Kelman, Zvi	MP22 413	Khoo, Kay-Hooi	WP02 010
Kawabata, Shin-ichirou	MP08 166	Kelstrup, Christian	TP06 121	Khoo, Kay-Hooi	ThP18 316
Kawabata, Shin-ichirou	MP08 160	Kempe, Guenther	WP20 370	Khoo, Kay-Hooi	ThP18 326
Kawabata, Shin-ichirou	MP18 359	Kempe, Guenther	ThP27 554	Khoo, Kay-Hooi	ThP20 380
Kawaguchi, Riki	MP01 007	Kempe, Guenther	ThP27 541	Khorasanizadeh, Sepideh	MP22 440
Kawahara, Kazuki	MP23 448	Kempe, Günther	WP20 367	Khosla, Sundeep	MP26 524
Kawamura, Takeshi	WP30 564	Kempf, Jürgen	TP29 546	Kida, Kazuhiro	WP07 114
Kawano, Shuichi	ThP11 201	Kempf, Jürgen	WP08 133	Kida, Kazuhiro	WP07 114
Kawano, Shin-ichi	TP37 740	Kendall, Debra	WP22 390	Kidney, Anna	ThP25 497
Kawano, Shin-ichi	WP03 033	Kendall, Eric L.	ThP07 117	Kiebish, Michael	MP11 215
kawano, Shin-ichi	ThP27 528	Kennedy, Jacob	ThP17 298	Kiehne, Andrea	TP36 716
Kawano, Shin-ichi	WP06 078	Kennedy, Jacob	TP21 334	Kiehne, Andrea	TP30 575
Kawasaki, Hideya	WP12 207	Kennedy, Joseph H.	ThP03 029	Kiehne, Andrea	MP03 052
Kawasaki, Nana	WP22 399	Kennedy, Joseph H.	ThP22 427	Kieras, Elizabeth	WP24 431
Kawasaki, Nana	WP24 426	Kenney, Jim	MP07 140	Kiernan, Urban A.	MP25 503

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Kieshauer, Michael.....	ThP05 056	Kim, Soo Young.....	WP29 521	Kiuchi, Masato.....	ThP25 489
Kießhauer, Michael.....	WP15 263	Kim, Soung Jung.....	TP23 374	Kiyonami, Reiko.....	TP08 132
Kihara, Daisuke.....	MP32 668	Kim, So-Young.....	WP33 619	Kiyonami, Reiko.....	MOA am 08:30
Kil, Yong.....	WP31 577	Kim, Su Jin.....	TP24 400	Kiyonami, Reiko.....	WP31 582
Kil, Yong.....	TP11 203	Kim, Sujin.....	TP24 392	Kiyonami, Reiko.....	MP24 490
Kil, Yong.....	ThOB pm 3:30	Kim, Sung Tae.....	ThP02 024	Kiyonami, Reiko.....	WP27 479
Kil, Yong J.....	WP31 583	Kim, Sungll.....	TP31 598	Kiyonami, Reiko.....	ThP12 229
Kilby, Greg.....	TP13 214	Kim, Sung-Kyoung.....	ThP09 157	Kjeldsen, Frank.....	ThP34 686
Kilgour, David.....	MP31 648	Kim, Sungwhan.....	WP05 069	Kjeldsen, Frank.....	WP30 544
Kilgour, David.....	WOE am 09:10	Kim, Sunju.....	TP29 543	Kjeldsen, Frank.....	ThP16 277
Kilgour, David.....	ThP12 220	Kim, Tae Kyu.....	TP32 608	Kjeldsen, Frank.....	WP34 650
Killeen, Kevin.....	WP24 430	Kim, Taehee.....	MP36 732	Kjellström, Sven.....	ThP21 398
Killeen, Kevin.....	MP22 431	Kim, Unyong.....	MP34 714	Kjoller, Kevin.....	ThOA am 09:50
Killeen, Kevin.....	MP25 512	Kim, Yangsum.....	MP08 155	Klaene, Joshua.....	MP13 250
Killeen, Kevin.....	ThP09 147	Kim, Yangsun.....	MP08 153	Klakouski, Cheryl.....	WOD am 09:50
Killeen, Kevin.....	WP21 380	Kim, Yangsun.....	MP08 154	Klammer, Martin.....	ThP22 425
Killian, J. Keith.....	WP18 312	Kim, Yeongeun.....	ThP32 664	Klann, Eric.....	MP29 601
Kilpatrick, Lisa.....	TP15 237	Kim, Yeoun Jin.....	MP26 541	Klapoetke, Song.....	TP35 714
Kilpatrick, Lisa.....	ThP34 669	Kim, Yoon Hee.....	WP19 341	Klapoetke, Song.....	TP15 238
Kilpatrick, Lisa.....	WP31 592	Kim, Young Hwan.....	TP23 374	Klareskog, Lars.....	ThP19 332
Kim, AeRyon.....	ThP08 127	Kim, Youn-Jee.....	TP37 761	Klarskov, Klaus.....	ThP18 315
Kim, Bum Jin.....	TP15 235	Kim, Yunduck.....	WP37 724	Klassen, John.....	WP23 404
Kim, Bum Jin.....	TP35 704	Kim, Yuns.....	WP03 024	Klassen, John.....	WP23 406
Kim, Bum Jin.....	ThOD am 09:50	Kimura, Juki.....	TP29 556	Klassen, John S.....	WP23 405
Kim, Chang Soo.....	ThP02 024	Kimzey, Michael.....	WP26 472	Klavins, Kristaps.....	ThP29 599
Kim, Cheong-Tae.....	TP37 761	Kind, Tobias.....	WP13 225	Klavins, Kristaps.....	WP17 300
Kim, Dae-Hyun.....	TP37 761	King, Fred.....	WP21 382	Klavins, Kristaps.....	WP17 295
Kim, Eun-Hae.....	ThP25 500	King, Fred.....	WP22 398	Klee, Sonja.....	MP15 282
Kim, Eunmin.....	MP06 091	King, Fred.....	WP22 396	Klee, Sonja.....	MP15 284
Kim, Hail.....	WP35 675	King, Simon-John.....	ThP04 050	Klee, Sonja.....	MP15 274
Kim, Hark Kyun.....	TP24 392	Kingston, H. M. "Skip".....	TP32 615	Klee, Sonja.....	MP15 283
Kim, Hark Kyun.....	TP24 400	Kinney, Hannah C.....	ThOD am 10:10	Klee, Sonja.....	MP15 275
Kim, Heejung.....	ThP09 142	Kinniburgh, David.....	WP03 018	Kleemann, Kristo.....	TP04 063
Kim, Hee-Yong.....	TP21 315	Kinoshita, Kaori.....	MP08 161	Kleensang, Andre.....	TP24 391
Kim, Hee-Yong.....	ThP28 568	Kinross, James.....	ThP04 042	Klein, Adam.....	WP12 211
Kim, Helen.....	MP03 059	Kinsel, Gary.....	ThP31 638	Klein, Christian.....	TOG am 08:50
Kim, Hoguen.....	WP35 675	Kinsel, Gary.....	TP08 155	Klein, Christian.....	TP33 647
Kim, Hohyun.....	TP25 442	Kinsel, Gary.....	TP04 055	Klein, Christian.....	WP38 753
Kim, Hohyun.....	TP25 445	Kinsel, Gary.....	MP30 620	Klein, Christian.....	WP38 740
Kim, HyeRyun.....	TP24 399	Kinsel, Gary R.....	MP15 291	Klein, Christian.....	TP33 657
Kim, Hyong-Ha.....	WP25 449	Kinsel, Mary.....	TP08 155	Klein, David.....	MP30 613
Kim, Hyun Sik.....	TP05 089	Kinsky, Owen.....	WP26 472	Klein, Dustin.....	TP01 010
Kim, Hyun Sik.....	MP31 650	Kinumi, Tomoya.....	MP09 178	Kleinheinz, Tracy.....	TOD pm 4:10
Kim, Jae Han.....	ThOD am 09:50	Kirchberg, Doreen.....	TP30 574	Kleinnijhuis, Anne.....	MP25 515
Kim, Jae Han.....	MP27 556	Kirihara, Julie.....	TP36 733	Kleinridders, Andre.....	WP12 202
Kim, Jae Ho.....	TP24 399	Kirk, Benjamin.....	ThP35 709	Klepamnik, Karel.....	ThP06 085
Kim, Jaeyeon.....	TP24 394	Kirk, Benjamin.....	ThP35 705	Klesper, Heike.....	WP37 733
Kim, Jenny.....	ThP21 404	Kirkpatrick, Donald.....	WP33 632	Kleywegt, Sonya.....	TP31 589
Kim, Jenny G.....	ThP21 406	Kirkpatrick, Donald S.....	TOD pm 4:10	Klich, Amna.....	TP28 505
Kim, Jeongkwon.....	MP36 732	Kirkpatrick, Donald S.....	ThP18 307	Kliman, Michal.....	TP04 066
Kim, Jeongkwon.....	ThP31 644	Kirkpatrick, Kaylyn.....	ThOE pm 2:50	Kliman, Michal.....	WP38 751
Kim, Jeongkwon.....	TP33 628	Kirkwood, Jay.....	TP24 416	Kliman, Michal.....	ThP28 585
Kim, Jin Kyoung.....	ThP27 537	Kirkwood, Kathryn.....	TP28 526	Klinc, Kristin M.....	WP11 177
Kim, Jinil.....	TP32 608	Kirmess, Kristopher.....	ThP31 638	Kline-Schoder, Robert.....	TP05 091
Kim, Jin-Young.....	WP08 126	Kirpekar, Finn.....	WP30 551	Kling, Mitchel A.....	TP19 296
Kim, Jo-Il.....	WP02 012	Kirschner, Marc W.....	TP28 508	Klingberg, Andreas.....	ThOG am 09:50
Kim, Jo-Il.....	WP02 011	Kirsten, Eickhoff.....	MOE pm 3:10	Klingelhoefer, Ines.....	ThP06 107
Kim, Jong-Hoon.....	ThP23 458	Kiselar, Janna.....	TP11 201	Klinger, Alexandra.....	TP11 201
Kim, Jong-Hoon.....	TP21 308	Kiss, Andras.....	ThP04 039	Klinger, Andreas.....	MP15 286
Kim, Jong-Seo.....	MP24 483	Kiss, Andras.....	ThP05 064	Klingler, Diana.....	TP18 269
Kim, Jung Hoe.....	ThP19 346	Kiss, Andras.....	MP10 199	Klings, Elizabeth S.....	TP18 268
Kim, Ki Hun.....	ThP09 141	Kiss, Andras.....	MOB am 09:50	Klink, Dennis.....	ThP07 108
Kim, Kilyoung.....	ThP06 100	Kiss, Andras.....	TOB am 09:10	Klink, Dennis.....	MP15 275
Kim, Kwang Ho.....	ThP23 458	Kiss, Andras.....	ThP05 067	Klip, Harry G.....	WP33 639
Kim, KwangPyo.....	WP29 532	Kissel, Edward.....	ThP11 199	Klitzke, Clécio.....	WP05 063
Kim, Kyoungmi.....	ThOC am 09:50	Kissick, David.....	WP09 149	Klitzke, Clécio.....	MP31 652
Kim, Kyunghwan.....	WP06 075	Kita, Yoshihiro.....	ThP28 563	Klitzke, Clécio F.....	TOG am 09:50
Kim, Marcus.....	TOE pm 3:10	Kita, Yoshihiro.....	TP27 478	Klitzke, Clécio F.....	ThOG am 08:50
Kim, Moo-Young.....	TP26 475	Kitabayashi, Naoki.....	MP26 540	Kloc, Christian.....	WP02 008
Kim, Moo-Young.....	TP25 448	Kitagawa, Norton.....	MP19 379	Klopotowski, Sebastian.....	MP15 281
Kim, Nam-Sun.....	TP31 598	Kitano, Riki.....	WP17 304	Klopotowski, Sebastian.....	MP15 284
Kim, Phillip.....	TP21 314	Kitchens, Robert.....	ThP17 299	Klopotowski, Sebastian.....	MP15 276
Kim, Philseok.....	MP12 221	Kitchens, Robert.....	TP21 332	Klopotowski, Sebastian.....	MP15 274
Kim, Sanggoo.....	ThP11 204	Kitchens, Robert T.....	ThOD am 08:30	Klostermann, Stefan.....	MOE pm 2:30
Kim, Sangtae.....	ThP34 685	Kitova, Elena.....	WP23 404	Kluger, Bernhard.....	MP04 077
Kim, Sangtae.....	ThP34 690	Kitova, Elena.....	WP23 406	Knapman, Thomas.....	WP30 560
Kim, Sang-Yoon.....	TP08 138	Kitova, Elena N.....	WP23 405	Knapp, Stefan.....	TOE am 09:30
Kim, Seung Yong.....	TP05 089	Kittelmann, Matthias.....	WP15 275	Knee, Jose M.....	TP24 408
Kim, Shin Hye.....	ThP31 644	Kittles, Rick A.....	WP18 312	Knegt, Lena.....	WP16 285

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Kneisel, Stefan.....	WP08 133	Koncarevic, Sasa.....	WP27 482	Kowalski, Jane-Marie.....	WP09 146
Knierman, Michael.....	TP13 213	Konda, Chiharu.....	WOC am 08:30	Kowalski, Michael.....	WP27 489
Knight, Robert.....	TOB pm 4:10	Konda, Chiharu.....	ThP20 373	Kowski, Tom.....	MOD pm 4:10
Knochenmuss, Richard.....	WP38 744	Konda, Chiharu.....	ThP20 374	Koy, Cornelia.....	WP34 661
Knochenmuss, Richard.....	TP33 625	Koneremann, Lars.....	TP10 188	Koza, Stephan.....	MP06 096
Knol, Jaco.....	WP34 665	Koneremann, Lars.....	WOH am 08:50	Kozak, Marta.....	WP08 118
Knolhoff, Ann.....	TP37 762	Koneremann, Lars.....	TOF pm 3:50	Kozak, Marta.....	WP08 122
Knolhoff, Ann.....	ThP12 224	Koneremann, Lars.....	MP22 428	Kozak, Marta.....	WP08 132
Knolhoff, Ann M.....	ThP27 557	Koneremann, Lars.....	ThP30 625	Kozhinov, Anton N.....	MOB pm 3:50
Knolhoff, Ann M.....	TOE pm 2:50	Kong, Andy.....	ThP34 674	Kozhinov, Anton N.....	WP05 047
Knox, David.....	ThP08 136	Kong, Ricky P. W.....	WP35 679	Kozhinov, Anton N.....	ThP12 219
Knox, KS.....	TP19 288	Kong, Sudong.....	MP13 237	Kozhinov, Anton N.....	WOE am 08:50
Knudsen, Steen.....	TP19 292	Kong, Xianglei.....	ThP35 702	Kozliak, Evguenii.....	WP04 041
Kny, Eyk.....	MP29 582	Konijnenberg, Albert.....	TOF pm 2:30	Kozlowski, Rachel L.....	MP12 229
Kny, Eyk.....	MP19 383	Kononikhin, Alexey.....	WOF pm 3:30	KR, Abhinandan.....	WP13 230
Kny, Eyk.....	MP29 581	Kononikhin, Alexey.....	MP17 356	Kraj, Agnieszka.....	ThP18 317
Kny, Eyk.....	ThP34 675	Kononikhin, Alexey.....	ThP34 679	Kraj, Agnieszka.....	WP15 260
Knych, Heather.....	MP30 628	Kononikhin, Alexey.....	WP21 383	Kraj, Agnieszka.....	TP31 583
Ko, Debbie Huiling.....	ThP25 508	Kononikhin, Alexey.....	TP20 299	Kraj, Agnieszka.....	MP23 454
Ko, Yeon Jae.....	ThP35 695	Kononikhin, Alexey.....	ThP14 262	Kraljević Pavelić, Sandra.....	TP18 262
Koal, Therese.....	TP30 574	Kononikhin, Alexey.....	TP03 050	Kramer, Katharina.....	MP20 387
Kobarg, Jan Hendrik.....	ThP04 036	Konuma, Kiyotaka.....	ThP11 202	Kramer, Katharina.....	MOH am 09:10
Kobayashi, Hironori.....	TP30 569	Kooijman, Pieter.....	MP23 454	Kramer, Katharina.....	MOF am 08:30
Kobayashi, Hiroshi.....	TP05 107	Koolen, Hector.....	MP21 395	Krancsi, Tamás.....	TP04 086
Kobayashi, Takashi.....	MP27 563	Koomen, John.....	TP08 157	Krasinska, Karolina M.....	ThP29 594
Kobeissy, Firas.....	TP21 317	Koop, Christina.....	MP10 202	Krasinska, Karolina M.....	ThP11 208
Kobzeff, Fred.....	WP09 147	Koopmeiners, Joseph.....	MOE am 09:30	Krastins, Bryan.....	ThP34 673
Koch, Alexander.....	TP22 355	Kooren, Joel.....	TP17 248	Krastins, Bryan.....	WP26 457
Koch, Alexander.....	TP17 254	Kopelovich, Levy.....	TP21 314	Krastins, Bryan.....	TP22 351
Koch, Heiner.....	WP34 662	Koppenaar, David.....	Special	Krastins, Bryan.....	TP21 309
Kochansky, Christopher.....	MP14 261	Koppenaar, David W.....	MOB am 10:10	Krastins, Bryan.....	TP08 131
Kocher, Thomas.....	TP19 277	Kopysov, Vladimir.....	WOG am 09:30	Krastins, Bryan.....	MP25 503
Kochhar, Rashi.....	MP06 112	Korade, Zeljka.....	ThP28 585	Krastins, Bryan.....	WP32 602
Kochhar, Rashi.....	MP34 689	Korman, Eric.....	ThP10 174	Krat, Alexey.....	WP26 454
Kochhar, Rashi.....	MP11 219	Korman, Eric.....	ThP10 171	Kraus, Olga.....	MP10 202
Kocic, Danijela.....	ThP10 183	Korman, Eric.....	ThP10 173	Krause, Benjamin C.....	ThP04 031
Kodavanti, Prasada Rao S.....	TP21 325	Korman, Eric.....	ThP10 170	Krauter, Jürgen.....	ThP22 425
Kodera, Kei.....	MP08 161	Korn, Rachel.....	ThOD pm 4:10	Kravchenko, Ivan.....	MP15 272
Kodera, Kei.....	ThP06 088	Kornberg, Roger.....	WOE am 09:30	Kreamer, Anthony.....	ThP10 182
Koellensperger, Gunda.....	WP17 300	Kornmeier, Tina.....	ThP17 304	Kremer, Richard.....	MP10 183
Koellensperger, Gunda.....	WP17 295	Korte, Andrew.....	WP12 205	Kremser, Leopold.....	WP30 563
Koellensperger, Gunda.....	WOC am 10:10	Korte, Andrew.....	WP12 200	Kremser, Leopold.....	ThP17 285
Koenig, Simone.....	WP28 497	Korte, Andrew.....	TOB am 09:50	Kremser, Leopold.....	MP24 482
Koenig, Simone.....	ThOH pm 2:50	Korte, Andrew.....	MP32 658	Krenkova, Jana.....	ThP07 109
Koerting, Gerhard.....	TOC pm 3:10	Korte, Andrew R.....	MP34 702	Kreuter, Jörg.....	MP06 092
Kofod Schjoerring, Jan.....	MP32 662	Korte, Birgit.....	ThP22 412	Kricheldorf, Hans R.....	MP36 737
Koh, Sung-Suk.....	TP33 628	Korte, Birgit.....	ThP22 413	Krick, Tom.....	WP24 423
Koh, Young Ho.....	WP29 521	Koryakina, Irina.....	MP23 441	Krick, William.....	WP03 020
Kohira, Takahiro.....	TP27 478	Kosanam, Hari.....	TP24 385	Krieger, José Eduardo.....	MP10 196
Kohl, Michael.....	ThP22 412	Koseoglu, Secil.....	TP27 497	Krieger, Sonja.....	MP17 351
Kohl, Michael.....	ThP22 413	Koster, Emile.....	TP05 104	Kriegsmann, Jörg.....	MP10 194
Kohlbacher, Oliver.....	MP20 387	Kostiainen, Risto.....	WP37 727	Kriegsmann, Jörg.....	MP10 193
Kohlbacher, Oliver.....	MOF am 08:30	Kostiainen, Risto.....	MOH pm 2:30	Krijgsveld, Jeroen.....	MP24 471
Kohler, Isabelle.....	ThP29 605	Kostiainen, Risto.....	WP12 196	Krilich, Joan.....	ThP26 522
Kohler, Maxie.....	WP37 733	Kostiainen, Risto.....	WP30 574	Krishnamurthy, Harini.....	ThP24 484
Kohn, Jonathan.....	WP28 505	Kostiainen, Risto.....	ThP31 635	Krishnamurthy, Ramanarayanan.....	TP33 654
Kohrt, Wendy.....	TP05 099	Kostich, Mitchell.....	TP31 591	Krishnamurthy, Srinath.....	WP22 388
Koike, Masaki.....	MP16 314	Kostrzewa, Markus.....	ThP25 490	Kristal, Bruce S.....	ThP28 561
Kokkinaki, Olga.....	TP05 105	Kostyukevich, Yury.....	ThP06 082	Kristal, Bruce S.....	ThP28 565
Kolanyane, Prince.....	MP06 115	Kostyukevich, Yury.....	WP21 383	Krivacic, Cody.....	ThOH am 09:10
Kolarich, Daniel.....	TP36 731	Kotandeniya, Delshanee.....	ThOH am 08:30	Kriz, Ronald.....	WP24 431
Kolarich, Daniel.....	Special	Kotapati, Srikanth.....	ThP21 403	Krizman, David.....	MP09 172
Kolarich, Daniel.....	ThP19 339	Kothari, Nayantara.....	MP24 480	Krizman, David.....	MP09 169
Kölbel, Knut.....	MP21 398	Kotiaho, Tapio.....	WP30 574	Krock, Kevin.....	ThP32 659
Koletsy, Matthew.....	TP22 346	Kotiaho, Tapio.....	WP37 727	Kroes, Roger A.....	MP29 597
Kolippakkam, Deepak.....	WP28 509	Kou, Bryant.....	WP22 397	Krogan, Nevan.....	MP29 596
Kolker, Eugene.....	TP21 340	Koulakiotis, Nikolaos Stavros.....	MP34 705	Krogan, Nevan.....	WP36 689
Köllensperger, Gunda.....	ThP29 599	Koulman, Albert.....	MP10 203	Krogh, Erik T.....	TP04 074
Koller, Antonius.....	WP33 620	Koulman, Albert.....	ThP28 562	Krogh, Erik T.....	TP04 081
Koller, Antonius.....	ThP34 672	Koumoutsis, Alexandra.....	WP12 217	Krogh, Erik T.....	WOF pm 2:30
Kolli, Venkata.....	TP36 715	Kounadis, Diamantis.....	ThP06 079	Krogholm, Ken.....	MP32 662
Kollipara, Laxmikanth.....	MP23 461	Kounadis, Diamantis.....	ThP01 002	Krokhin, Oleg.....	WP33 623
Kolosov, Alexander.....	TP04 067	Kounadis, Diamantis.....	TP05 103	Krokhin, Oleg V.....	ThP16 274
Kolovskaya, Olga.....	WP26 454	Kounadis, Diamantis.....	TP05 097	Krokhin, Oleg V.....	WP31 589
Kolpin, Dana W.....	TP31 581	Kourjian, Georgio.....	MP28 572	Kroll, Charles.....	WP07 106
Koluntaev, Dmitry.....	WP08 123	Kovalchuk, Sergey.....	MP27 550	Kroll, Kai.....	MOH pm 3:30
Komaromi, Istvan.....	ThOE am 09:50	Kovalchuk, Sergey.....	WP26 469	Kropf, Daniela.....	WP15 282
Komarov, Alexandre.....	TP37 755	Kovalev, Sergei.....	MP27 560	Krous, Henry F.....	ThOD am 10:10
Komives, Elizabeth.....	ThP09 149	Kowalski, Jane-Marie.....	WP09 142	Krovvidi, Ravi Kumar.....	WP34 657

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Krovvidi, Ravi Kumar	MP23 450	Kuribayashi, Ryosuke	WP24 426	Lafitte, Daniel	WP24 440
Krska, Rudolf	TP37 747	Kurova, Viktoria	WOF pm 3:30	Lafitte, Daniel	ThP02 025
Krstić, Marjan	WOG am 10:10	Kurova, Viktoria	TP20 299	Lafitte, Daniel	TP31 585
Krueger, Marcus	MP24 476	Kurpad, Anura .V	WP06 081	LaFond, Sean	MP34 685
Kruff, Volker	TP18 275	Kurulugama, Ruwan	WP38 740	Lafrance, Claude-Paul	WP17 294
Krug, Daniel	MP03 051	Kurulugama, Ruwan	TOF pm 3:10	Lagurin, Lolita A.	MP34 697
Krug, Daniel	MP04 079	Kurulugama, Ruwan	TP33 657	Lahaie, Mathieu	ThP29 611
Krug, Karsten	WP36 703	Kurulugama, Ruwan	MOB am 09:10	Lahaie, Mathieu	ThP29 618
Krug, Oliver	ThOC am 08:50	Kurulugama, Ruwan	TP33 652	Lahert, Emma	TP19 295
Krüger, Marcus	WP29 525	Kurulugama, Ruwan	ThP28 584	Lahert, Emma	WP27 482
Krüger, Marcus	ThP18 309	Kurulugama, Ruwan	TOG am 08:50	Lahesmaa, Riitta	MP28 568
Kruh-Garcia, Nicole	MP26 549	Kurulugama, Ruwan	WP38 753	Lahey, Cynthia Melanie	TP37 738
Kruppa, Gary	WOD pm 2:50	Kurulugama, Ruwan	TP33 647	Lai, Christopher	ThP14 258
Kruppa, Gary	ThP25 490	Kurulugama, Ruwan	TOF pm 3:30	Lai, Ming-Tain	ThP10 182
Kruse, Natalie	ThP11 187	Kurulugama, Ruwan	ThP25 486	Lai, Nicole	MP28 572
Krutchinsky, Andrew N.	WOE pm 2:30	Kurulugama, Ruwan	WP38 751	Lai, Steven	WP18 313
Kruve, Anneli	TP04 063	Kurulugama, Ruwan	TP36 723	Lai, Steven	ThP11 207
Kryuchkov, Fedor	ThP34 686	Kurumizaka, Hitoshi	TP09 166	Lai, Szu-Hsueh	ThP31 646
Kryuchkov, Fedor	ThP16 277	Kusai, Akihiko	ThP11 202	Lai, Wei-Shun	TP37 767
Ku, Kuo-Lung	ThP14 253	Kusai, Akihiko	MP36 738	Lai, Wei-Shun	MP30 621
Ku, Kuo-Lung	WP17 299	Kushnir, Mark M.	MOC am 09:30	Lai, Yin-Hung	WP02 004
Kubatova, Alena	WP04 044	Kushon, Stuart	MP07 134	Lai, Yung	TP28 527
Kubatova, Alena	WP04 041	Kusler, Kari	ThP06 086	Laibinis, Paul E.	ThP04 033
Kubatova, Alena	ThP06 086	Kussmann, Martin	WP33 629	Laiko, Victor	MP16 304
Kubo, Ayumi	WP11 180	Kuster, Bernhard	TP04 072	Laiko, Victor	ThP26 523
Kubo, Ayumi	TP01 020	Kuster, Bernhard	WP35 670	Laine, Celine	ThP01 013
Kubo, Kinya	MP26 533	Kuster, Bernhard	WP30 572	Lakso, Hans-Ake	WP07 103
Kubwabo, Cariton	MP31 636	Kuster, Bernhard	MP24 487	Lalli, Priscila M.	TP33 655
Kucklick, John	ThP28 575	Kuster, Bernhard	MP29 581	Lalli, Priscila M.	TOG am 09:50
Kudin, Lev	TP02 044	Kuster, Bernhard	ThP34 675	Lalor, Patricia	WP10 165
Kudo, Keiko	WP08 121	Kuster, Bernhard	WP34 662	Lalor, Patricia	WP09 153
Kudo, Yukihiko	ThP11 201	Kuster, Bernhard	MP29 582	Lalor, Trish	ThP04 049
Kudryavtsev, Igor	MP27 560	Kuster, Bernhard	MP19 383	Lam, Andres	TP10 177
Kuehn, Andreas	TP08 131	Kuster, Bernhard	TP08 139	Lam, Geoffrey	MP30 626
Kuehn, Andreas	MOA am 08:30	Kuster, Bernhard	MP29 585	Lam, Henry	WP31 587
Kuehn, Andreas	ThP12 227	Kuttner, Julian	TP02 022	Lam, Henry	TP28 525
Kuehn, Andreas	MP19 377	Kuzdzal, Scott	TP30 569	Lam, Henry	ThP25 491
Kuehnbaum, Naomi	TP23 359	Kuzdzal, Scott	WP19 332	Lam, Henry	ThP23 451
Kuehnoel, Juergen	WP15 275	Kuzdzal, Scott	MP19 385	Lam, Henry	WP31 594
Kueppers, Stephan	TP31 583	Kuzdzal, Scott	TP37 756	Lam, Henry H. N.	TP28 528
Kuettner, Victoria	WP36 706	Kuznetsov, I.Y.	ThP06 103	Lam, Herman C.	WP35 679
Kuharev, Jörg	MP24 464	Kwak, Seung-Yeop	WP02 011	Lam, Kelly	TP25 431
Kuhl, Carsten	ThOB am 09:10	Kweon, Gi Ryang	TP23 374	Lam, Kelly	ThP21 409
Kuhlmann, Christopher	WP37 711	Kweon, Oh-Gew	TP37 766	Lam, Lily	MP01 013
Kuhlmann, Frank	TP28 513	Kwiecien, Nicholas W.	ThP34 693	Lam, Ying Wai	MP23 462
Kuhn, Andrew	TP11 204	Kwisangineza, Alida	ThP36 721	Lam, Zamas	MOE pm 2:50
Kuhn, Eric	MOD am 08:30	Kwon, Ja-Young	WP35 675	Lamarche, Benoit	WP33 622
Kuhn, Eric	MP26 544	Kwon, Oh Kwang	WP06 091	LaMarr, William	WP08 127
Kuhn, Eric	TP08 148	Kwon, Oh Kwang	TP29 543	LaMarr, William	MP02 036
Kuhn, Eric	ThP01 011	Kwon, Woonyong	WP08 126	Lamb, Robert A.	MOF am 09:50
Kuhn, Karsten	TOD am 08:50	Kwon, Yeong-Sang	MP33 677	Lamba, Jatinder	MP13 238
Kuhn, Lauriane	WP24 428	Kwong, Stephen	ThP25 507	Lambert, Jean-Philippe	WP36 685
Kuhn, Misty L.	MOA pm 3:50	Kyin, Saw	WP36 693	Lambert, Jean-Philippe	TOE am 09:30
Kühn, Andreas	ThP12 229	Kylli, Petri	ThP31 635	Lambert, Simon	ThP32 663
Kühne, Andreas	WP36 702	Kyogaku, Masafumi	ThP05 065	Lame, Mary	WP33 634
Kuhring, Mathias	TP28 504	Kükrer, Başak	MP22 429	Lamers, Robert-Jan	MP25 495
Kuijjer, Jennifer	TP25 439	Laaniste, Asko	TP04 063	Lammert, Stephen	ThP11 187
Kukacka, Zdenek	MP21 393	Lababidi, Sami	ThOG pm 4:10	Lammert, Steve	ThP06 077
Kukacka, Zdenek	MP21 401	Labate, Carlos	ThP25 492	Lamond, Angus	MP29 595
Kukaev, Evgeny	MP17 356	Labate, Carlos Alberto	MP32 666	Lamond, Angus	MP29 576
Kukaev, Evgeny	TP20 299	LaBrecque, David	ThP11 195	Lamond, Angus I.	TP28 526
Kukaev, Evgeny	WOF pm 3:30	Labudde, Dirk	TP17 250	Lamoureux, Lise	ThP08 136
Kukaev, Evgeny	TP03 050	Lacey, Jean M.	WP07 107	Lamp, Jared	WOC pm 3:50
Kulick, Alison	TP21 307	Lachance, Sylvain	MP01 025	Lan, Ge	MP26 529
Kulkarni, Abhishek R.	MP07 146	Lachance, Sylvain	MP01 020	Lance, Raymond	TOB pm 3:10
Kullolli, Majlinda	MP14 262	Lachance, Sylvain	MP01 014	Landry, France	WP33 640
Kultima, Kim	MP26 539	Lachance, Sylvain	MP01 024	Lane, Andrew N.	TP23 365
Kultima, Kim	TP20 303	Lacor, Pascale	MP10 185	Lane, Catherine	WOG pm 3:50
Kumano, Shun	TP05 092	LaCourse, William R.	ThP30 621	Lane, Geoff	WP19 340
Kumano, Shun	TP05 088	LaCourse, William R.	WP37 713	Lane, William	TP21 314
Kumar, Krishan	ThOB pm 4:10	Lacoursiere, Jean	TP30 576	Lanekoff, Ingela	TOB am 08:50
Kumar, Vikas	TOA am 09:10	Lacoursiere, Jean	MP02 035	Lanekoff, Ingela	TOB pm 3:50
Kumar, Vipin	ThP23 474	Lacoursiere, Jean	TP30 577	Lang, Frederick F.	MP29 597
Kung, Hank	TP25 444	Lacroix, Bruno	TP28 505	Lang, Frederick F.	WP35 677
Kunz, Roderick	TP02 041	LaCroix, Jeff	ThP23 447	Lang, Johannes	MP16 324
Kuo, Hung-Chih	ThP19 335	Ladenson, Jack	TP27 481	Lang, Johnsie	WOF am 09:50
Kuo, Ming-Shan	WP18 323	Ladokhin, Alexey	MP22 427	Langdridge, James	TOF am 09:30
Kuo, Ming-Shang	ThP10 184	Lador, Daniel	TP07 128	Lange, Catherine	TOG am 09:30
Kuplic, Paige	ThP06 086	Ladwig, Gerald	WP04 042	Lange, Catherine	MP36 747

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Lange, Christoph	ThP25 490	Laskin, Julia	ThP35 707	Lebrilla, Carlito	TP36 735
Lange, Oliver	TOA pm 2:30	Lassahn, Paul-Gerhard	MP25 518	Lebrilla, Carlito	WP19 349
Lange, Oliver	MP19 377	Lassek, Melanie	ThP08 129	Lebrilla, Carlito	MOD am 09:30
Lange, Oliver	TOB am 08:30	Lassman, Michael	MP26 528	Lebrilla, Carlito	WP19 350
Langejuergen, Jens	MP16 329	Laszlo, Zita	TP34 665	Lebrilla, Carlito	ThOD am 09:50
Langejuergen, Jens	MP17 347	Latawiec, Adam	TP26 476	Lebrilla, Carlito	TOD am 08:30
Langford, Vaughan	ThP29 603	Lateef, Syed Salman	MP07 145	Lebrilla, Carlito	TP19 290
Langley, G. John	MP18 364	Laterza, Omar	MP26 528	Lebrilla, Carlito	TOC am 10:10
Langley, G. John	ThP32 663	Latour, Sylvain	ThP29 613	Lebrilla, Carlito B.	MP27 556
Langley, G. John	ThP32 660	Lau, Adam	TP08 141	Lebrilla, Carlito B.	ThP15 265
Langman, Loralie	ThP10 171	Lau, Adeline A.	ThP20 361	Lebrilla, Carlito B.	WP19 347
Langman, Loralie	ThP10 170	Lau, Ho-Tak	WP33 609	Lebrilla, Carlito B.	ThOC am 09:50
Langman, Loralie	ThP10 174	Lau, Justin Kai-Chi	WOG am 08:30	Lederman, Harmony	TP21 307
Langman, Loralie	ThP10 173	Lau, Serrine	WP26 472	Ledertheil, Thorsten	MP24 486
Langridge, David	ThP06 073	Lau, Thomas	MOD am 08:30	LeDuc, Richard	WOB pm 3:50
Langridge, David	MP16 319	Lau, Thomas YK	MP26 544	LeDuc, Richard D.	TP16 239
Langridge, James	TP18 262	Lauber, Matthew	MP06 096	LeDuc, Richard D.	WOD pm 3:30
Langridge, James	ThP28 581	Lauer, Alexandra	ThP04 050	Ledvina, Aaron	ThP29 597
Langridge, James	WP19 344	Lauer, Alexandra	ThP05 059	Ledvina, Aaron R.	TP08 153
Langridge, James	ThP28 582	Laumont, Céline	MP28 573	Lee, Amy H.	ThP25 509
Langridge, James	WP36 699	Laungani, Rajesh	TP24 389	Lee, Anita	WOD pm 3:10
Langridge, James	MP27 558	Laura, Egnash	TP29 548	Lee, Cheng S.	WP27 483
Langridge, James	ThP28 573	Laure, Helen Julie	ThP22 431	Lee, Cheolju	WP29 518
Langridge, James	WP35 672	Laurell, Thomas	MP09 182	Lee, Chia-fang	WP28 492
Langridge, James	TP27 492	Laurie, Gordon	MP20 392	Lee, Chia-Fang	ThP18 319
Langridge, James	MP24 489	Lavallée, Richard	ThP29 614	Lee, Chin-Ron	TP29 531
Langridge, James	TP23 361	Lavanant, Helene	WP38 738	Lee, Chung-Tien	MOH am 09:10
Langridge, James	ThOB am 08:50	Lavezzi, Anna Maria	TP31 606	Lee, David	ThP25 498
Langridge, James I.	TP28 519	Lavoie, Geneviève	TOE am 08:50	Lee, Dong H.	WP18 312
Langridge, James I.	TP08 139	Lavoie, Pamela	ThP21 387	Lee, Doohyun	WP06 091
Langridge, James I.	TOF am 10:10	Law, C. H.	WP35 679	Lee, Ed.	ThP06 077
Langridge Smith, Pat	TOB pm 3:30	Lawless, Craig	WP33 641	Lee, Edgar	ThP11 187
Langridge Smith, Pat	MP31 648	Lawley, Trevor	ThP25 504	Lee, Eun Young	TP10 180
Langridge Smith, Pat	WP28 494	Lawrence, Matthew	TP12 206	Lee, Han Joo	WP21 376
Langridge-Smith, Patrick	MP23 452	Lawrie, Jenifer	TP04 066	Lee, Heehyoung	ThP28 587
Lankin, David	MP34 686	Laxmanan, Sri	TP19 279	Lee, HooKeun	TP21 308
Lannfelt, Lars	MP26 539	Lay Jr., Jackson O.	MP22 439	Lee, HooKeun	ThP23 457
Lanni, Eric J.	ThP25 494	Lay, Yifei	MP34 712	Lee, Hsun	WP02 004
Lanza, Matteo	ThP26 521	Layne, Jeff	MP07 134	Lee, Hsun	MP16 325
Lao, Ying W.	ThP16 274	Layne, Jeff	MP13 244	Lee, Hwa-Mi	TP31 598
Lapko, Veniamin	WP06 077	Layne, Jeff	MP06 095	Lee, Hyeyoung	ThP19 341
Lapko, Veniamin	ThP21 408	Lazar, Adina N.	MP10 184	Lee, Hye-Young	MP33 680
LaPointe, Joseph	WP37 718	Lazar, Alexandru C.	WP24 441	Lee, Hyoung-Joo	WP35 675
LaPointe, Joseph	TOC am 08:50	Lazarev, Alexander V.	ThP28 561	Lee, Hyunmin	TP27 487
Laprêve, Olivier	MP10 184	Lazorchak, Jim	TP31 591	Lee, Hyun-Sook	TP31 598
Lapushkin, Mikhail	TP04 084	Lazova, Rossitza	TOB pm 2:50	Lee, Jae Geun	TP25 445
Larance, Mark	MP29 595	Le, David	TP29 537	Lee, Jae Jin	MP22 418
Larance, Mark	TP28 526	Le, Thuc	MP13 239	Lee, Jae-Jin	WP21 381
Lareau, Nichole M.	ThP25 486	Le Bizec, Bruno	WP17 305	Lee, Jang-Eun	TP24 399
Larhed, Mats	WP11 184	Le Blanc, J. C. Yves	TP33 642	Lee, Jason	ThP05 068
Lariccia, Roberta	MP31 638	Le Gorrec, Madalen	ThP23 476	Lee, Jason	TP05 102
Lariccia, Roberta	TP29 554	Le Marchand, Loic	ThP21 403	Lee, Jason W. L.	ThP05 059
Larina, Irina	TP20 299	Le Pichon, Claire	TOD pm 4:10	Lee, Jeehiun K.	TP02 039
Larina, Irina	WOF pm 3:30	Le Tot, Clotilde	TP04 070	Lee, Jihyeon	MP36 732
Larriba Andaluz, Carlos	WP38 750	Leach, Franklin E.	ThP05 067	Lee, Jihyeon	TP33 628
Larriba-Andaluz, Carlos	WP38 739	Leach III, Franklin E.	ThP06 081	Lee, Jin-Gyun	MP27 555
Larsen, Barbara	TP33 621	Leak, Jennifer	WP37 707	Lee, Jin-sook	MP29 589
Larsen, Barbara S.	MP23 447	Leal, Rodrigo	WOA pm 2:50	Lee, Jiyeong	ThP23 457
Larsen, Brett	MP29 602	Leanderson, Carina	WP14 236	Lee, JiYeong	TP21 308
Larsen, Brett	WP31 581	Leaprot, Katrina L.	WP38 747	Lee, JiYeong	ThP23 458
Larsen, Brett	WP36 685	Leary, Julie	TP35 691	Lee, JuHwan	ThP23 458
Larsen, Brett	WP31 576	Leary, Julie	ThP17 300	Lee, Jung-Kun	TP37 761
Larsen, Brett	WP36 687	Leary, Julie	ThP17 301	Lee, Kelly	WP21 385
Larsen, Brett	TOE am 09:30	Leary, Julie	TP33 651	Lee, Kelvin H.	ThP24 480
Larsen, Martin	WOG pm 2:30	Leary, Kate	MP04 074	Lee, Kim	WP34 668
Larsen, Martin R.	MP06 097	Lebedev, Albert T.	WP03 031	Lee, Kimberly	WP29 531
Larsen, Martin R.	MP24 477	Lebedev, Albert T.	ThP16 278	Lee, Kimberly A.	ThP33 666
Larsen, Martin R.	ThP19 342	Lebel, Philippe	MP30 612	Lee, Kimberly A.	WP34 659
Larter, Steve	WP05 049	Lebel, Philippe	WP08 128	Lee, Kimberly A.	ThP23 473
Laserna, Anna Karen Carrasco	TP24 386	LeBerre, Nicolas	MP30 615	Lee, Kong-Joo	WP21 381
Laska, Dennis	WP18 323	Lebert, Dorothée	TP13 215	Lee, Kong-Joo	ThP09 142
Laskay, Ünige A.	TP14 222	LeBlanc, André	ThP21 399	Lee, Kong-Joo	MP22 418
Laskay, Ünige A.	ThP13 242	Leblanc, J.C. Yves	ThP01 010	Lee, Kyoung-Seok	TP32 608
Laskay, Ünige A.	ThP34 691	Leblanc, J.C. Yves	ThP14 260	Lee, Kyu Young	TP21 308
Laskay, Ünige A.	WOE am 08:50	LeBlanc, Yves	TP25 428	Lee, Lang Ho	ThP25 501
Laskay, Ünige A.	MOB pm 3:50	LeBlanc, Yves	WP15 255	Lee, Maw-Rong	TP31 586
Laskin, Julia	TOB pm 3:50	LeBlanc, Yves	MP02 034	Lee, Maw-Rong	MP01 018
Laskin, Julia	ThP36 711	LeBrasseur, Nathan	MP26 524	Lee, Mike S.	MP15 289
Laskin, Julia	TOB am 08:50	Lebrilla, Carlito	ThP19 341	Lee, Min Jeong	WP35 675

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Lee, Peng	ThP28 569	Lemanik, Stephanie	WP04 042	Levitsky, Lev I.	ThP34 691
Lee, Peter	MP36 749	Lemeer, Simone	TP08 139	Levitt, Nick	TOC am 08:50
Lee, Richard	TP36 730	Lemiere, Filip	WP34 662	Levitt, Nick	ThP10 185
Lee, Richard	ThP27 557	Lemoine, Jerome	WP30 572	Levy, Michaella	MOD pm 2:50
Lee, Richard	TOD am 09:10	Lemoine, Jerome	TP33 637	Lewander, Tommy	TP25 425
Lee, Sang Bok	ThP09 157	Lemoine, Jerome	MP28 573	Lewcock, Joseph	TOD pm 4:10
Lee, Sangkyu	TP29 543	Lemkau, Karin	ThOG pm 3:50	Lewellyn, Lara	ThP18 314
Lee, Sangkyu	WP06 091	Lemkau, Karin L.	WP05 045	Lewellyn, Lara	ThP18 312
Lee, Seon Hwa	TP20 298	Lemoine, Jerome	TP05 094	Lewis, Chance	TP10 181
Lee, SeungJae	ThP11 212	Lemoine, Jerome	MP26 527	Lewis, Esther	WP24 443
Lee, Sheng	ThP31 647	Lemoine, Jérôme	ThP23 444	Lewis, Ian A.	TP23 380
Lee, Sheng	ThP31 648	Lemoine, Jérôme	ThP07 112	Lewis, Katherine	MP25 507
Lee, Shu-Hui	MP30 621	Lemoine, Jérôme	TP28 505	Lewis, Ken	WP16 283
Lee, Shu-Hui	TP37 767	Lemoine, Jérôme	WOE am 08:50	Lewis, Ken	TP29 534
Lee, Simon M. Y.	WP35 679	Lemoine, Jérôme	WP38 736	Lewis, Lourdes	TP19 291
Lee, Sun Hee	WP35 675	Lemoine, Jérôme	ThP22 442	Lewis, Monique	WP33 633
Lee, Sun Young	WP33 619	Lemoine, Pascal	WOF pm 3:50	Lewis, Monique	ThP17 293
Lee, Sung-Hyeon	ThP19 346	Lemons, Derek	MOA pm 2:30	Lewis, Peter	TP22 346
Lee, Sungman	TP33 628	Lemr, Karel	MP01 012	Lewits, Petra	WP07 103
Lee, Suyoun	WP06 091	Lemr, Karel	MP06 101	Leymari, Nancy	WOG pm 2:50
Lee, Tae Geol	TP24 400	Lendal, Sara Eun	ThP19 342	Leymarie, Nancy	WP28 493
Lee, Tae Geol	ThP05 071	Lennon, Sarah	ThP22 428	Leymarie, Nancy	TP36 724
Lee, Tae Geol	ThP05 055	Lentini, Scott	TP15 234	Leymarie, Nancy	Special
Lee, Tae Geol	TP24 392	Lentz, David	WP19 335	Leyvraz, Serge	MOE am 08:50
Lee, Taeho	WP06 091	Lenz, Christof	MP32 661	Lhospice, Florence	WP24 440
Lee, Terry	ThP09 147	Leon, Carlos	ThOC pm 2:30	Li, Anyin	TP02 037
Lee, Terry	WP21 380	Leon, Carlos	TP27 480	Li, Anyin	TP37 745
Lee, Terry D.	MP22 431	Leon, Deborah R.	WOG pm 2:50	Li, Anyin	ThOE am 10:10
Lee, Yong-Il	TP01 006	Leon, Deborah R.	TP36 724	Li, Anyin	TP34 687
Lee, Young Jin	WP12 200	Leon, Rebecca	WP36 697	Li, Cao	WP20 363
Lee, Young Jin	ThP32 654	Leonard, Susan	MP14 260	Li, Cao	TP37 770
Lee, Young-Jin	ThP32 652	Leonard, Susan	WP19 332	Li, Chen	TOC pm 2:50
Lee, Young-Jin	ThOG pm 3:10	Leopold, Peter	ThP07 120	Li, Dandan	WP35 669
Lee, Young-Jin	TOB am 09:50	Leopold, Peter E.	ThP25 516	Li, Erqiang	MP17 349
Lee, Young-Jin	WP12 205	Lepage, Sylvie	MP30 617	Li, Fang	ThP22 429
Lee, Young-Jin	MP34 702	Leppert, Mark	WOA pm 3:50	Li, Fang Yan	TP37 738
Lee, Young-Jin	WP12 211	Leppert, Tami	WOA pm 3:50	Li, Feng	MP03 057
Lee, Young-Jin	MP32 658	Lerliche, Emma-Dune	MP36 747	Li, Fenjie	TP27 490
Lee, Yuan T.	ThP31 648	Lermyte, Frederik	TP16 241	Li, Fumin	ThP29 591
Lee, Yuan-Tseh	ThP31 647	Lermyte, Frederik	TOF pm 2:30	Li, Fumin	MP25 514
Leeds, Janet	WP15 282	Lerno, Larry	MP33 680	Li, Guannan	TP27 482
Lees, Hannah J.	ThP28 567	Lesage, Denis	MP30 616	Li, Guannan	TP02 037
Leff, Richard	WP06 089	Lescuyer, Pierre	WP32 604	Li, Guannan	MP34 686
Leffler, Amanda	WP08 131	Lescuyer, Pierre	TP21 333	Li, Guilin	TP28 503
LeGall, Sylvie	MP28 572	Lescuyer, Pierre	MP09 176	Li, Guohui	WP35 679
Legette, LeeCole	TOC am 09:30	Leser, George P.	MOF am 09:50	Li, Haiying	WP30 551
Legleiter, Justin	MP22 426	Lesslie, Michael	MP06 085	Li, Han	MP29 591
Legouffe, Raphael	WP11 193	Lesslie, Michael	WP06 097	Li, Hang	TOB am 09:30
Legouffe, Raphael	ThP02 023	Leszyk, John	TP21 314	Li, Haohang	ThP04 040
Legouffe, Raphael	ThP03 029	Leszyk, John	TP28 522	Li, Haohang	WP11 187
Legouffe, Raphael	ThOF am 10:10	Leszyk, John	MP09 168	Li, Honglan	MP18 367
Lehmann, Christine	TP30 573	Leszyk, John D.	ThP24 482	Li, Hongyu	WP04 037
Lehmann, Christine	MP07 132	Leszyk, John D.	TP19 282	Li, Hua	MP34 710
Lehmann, Sylvain	MOD am 08:50	Letarte, Sylvain	TP29 529	Li, Huilin	WP30 567
Lehotay, Steven	ThP13 238	Leung, Hon-Chiu	TP21 314	Li, Huilin	TP09 170
Lehtiö, Janne	MP19 376	Lev, Ovadia	WP02 008	Li, Jane	WP13 233
Lei, Peng	WP12 212	Levenstein, Mark	ThP09 169	Li, Jianshuang	TP25 437
Lei, Xiaoguang	MP21 397	Lévesque, Ann	TP08 149	Li, Jianzhong	WP19 324
Lei, Xiaoguang	ThP13 230	Lévesque, Ann	MP01 019	Li, Jianzhong	MP33 674
Lei, Yu	MP34 713	Lévesque, Ann	MP01 026	Li, Jilong	MP34 706
Lei, Zhentian	MP03 050	Lévesque, Ann	MP01 020	Li, Jimmy	WP33 637
Lei, Zhentian	TP23 369	Lévesque, Ann	MP01 025	Li, Jin	MP22 416
Leibowitz, Jeffrey	WP37 709	Lévesque, Ann	MP01 021	Li, Jing	TP14 221
Leigh, Daniel	MP06 109	Lévesque, Ann	MP01 022	Li, Jing	MP22 427
Leipunsky, Ilya	MP17 356	Lévesque, Ann	MP01 023	Li, Jing	TP34 672
Leiserowitz, Gary	ThOC am 09:50	Lévesque, Ann	MP06 088	Li, Jun	TP18 257
Leist, Marcel	WP28 491	Lévesque, Ann	MP01 014	Li, Jun	TP18 255
Leito, Ivo	TP04 063	Lévesque, Ann	MP01 024	Li, Jun	WP29 534
Leito, Ivo	TP02 030	Levi, Mikael	TP37 746	Li, Jun	ThP22 421
Leize, Emmanuelle	WP24 429	Levi, Mikael	WP07 098	Li, Jun	TP21 337
Leize-Wagner, Emmanuelle	WP24 428	Levi, Mikael	TP31 585	Li, Ka Wan	ThP23 445
Lekkas, Alexander	ThP06 079	Levi, Mikael	TP26 464	Li, Ke	WP33 635
Lekkas, Alexander	TP05 097	Levi, Mikael	WP07 110	Li, Lan	TP26 454
Lekkas, Alexander	TP05 103	Levin, David	WP33 623	Li, Lan	WP06 074
Lekkas, Alexander	ThP01 002	Levin, David	WP31 589	Li, Lei	MP31 640
Lelacheur, Richard	ThP29 607	Levine, Barry K.	TP35 703	Li, Li	WP37 729
Lemac, Maja	TP18 262	Levine, Douglas	TOD pm 3:30	Li, Li	MP32 663
Lemaire, Joel	TP04 070	Levis, Mark	ThP22 425	Li, Li	TP14 221

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Li, Liang	MP05 082	Li, Xiaoxu	MP31 646	Liehr, Robert	ThP10 182
Li, Liang	MP18 364	Li, Xiaoyan	WP33 625	Lieske, M.D., John	MP09 173
Li, Liang	TP17 251	Li, Xiaoyan	WP20 366	Lietz, Christopher	ThP15 271
Li, Liang	TP24 411	Li, Xin	TP34 685	Lietz, Christopher	MOG am 09:50
Li, Liang	MP04 064	Li, Xing-Fang	MP31 633	Lietz, Christopher B.	TP33 656
Li, Liang	MP04 068	Li, Xing-Fang	WOF am 08:50	Lih, T. Mamie	MP03 042
Li, Liang	WP34 666	Li, Yafeng	ThP12 222	Liigand, Jaanus	TP04 063
Li, Liang	TP23 357	Li, Yalan	WP28 506	Lill, Jennie	WP34 656
Li, Liang	MP05 081	Li, Yalan	WP26 458	Lill, Jennie	MP29 591
Li, Liang	ThP09 159	Li, Yang	WP30 546	Lilley, Kathryn	TP33 661
Li, Liang	MP04 066	Li, Yihan	WP35 684	Lim, Gwen	WOF pm 3:10
Li, Lili	ThP21 389	Li, Ying.W.	ThP10 172	Lim, Hee-Joung	ThP23 457
Li, Linfan	TOA pm 2:50	Li, Yinghe	ThP21 394	Lim, Hee-Joung	ThP23 458
Li, Linfan	TP37 745	Li, Yinghe	MP07 142	Lim, Hee-Joung	TP21 308
Li, Linfan	MP17 331	Li, Yinyin	TOH am 10:10	Lim, Heng-Keang	WP15 269
Li, Linfan	MP17 330	Li, Yongchao	ThP31 643	Lim, Ho-Jin	MP31 650
Li, Linfan	TP04 080	Li, Yongchao	ThP21 390	Lim, Ivy Hwee	WP02 009
Li, Ling	MP29 592	Li, Yong-Xi	WP06 087	Lim, Jae-Min	TP01 006
Li, Lingjun	WP17 293	Li, Yong-Xi	ThP16 273	Lim, Jong-Sun	WP35 675
Li, Lingjun	MP08 156	Li, Yong-Xi	WP06 088	Lim, Justin	WP25 450
Li, Lingjun	TP18 264	Li, Yueqi	ThP27 528	Lim, Mark	ThP09 151
Li, Lingjun	TP33 656	Li, Yu-Xin	TP21 338	Lim, Megan	MP27 564
Li, Lingjun	ThP15 267	Li, Yu-Xin	MOA pm 4:10	Lim, Sang Min	WP22 400
Li, Lingjun	ThP15 268	Li, Zhendong	WP34 666	Lim, Sung Min	ThP11 204
Li, Lingjun	MOG am 09:50	Li, Zhengjun	MP34 712	Lim, Teck Kwang	MP34 712
Li, Lingjun	WP27 476	Li, Zhili	ThP22 429	Lim, Yan Wei	MP04 069
Li, Lingjun	ThP15 269	Li, Zhili	TP27 490	Lima, Bruno	MOA pm 3:50
Li, Lingjun	WP33 616	Li, Zhili	WP26 463	Limbach, Patrick	MP14 252
Li, Lingjun	TP23 367	Li, Zhiyu	WP32 600	Limbach, Patrick	MOH am 08:50
Li, Lingjun	WP09 151	Li, Zhou	WP32 603	Limbach, Patrick	MP14 253
Li, Lingjun	WP27 477	Li, Zhou	WP29 527	Limbach, Patrick	WP28 511
Li, Lingjun	WP26 462	Li, Zhuo	MP22 413	Limbach, Patrick	MP14 254
Li, Lingjun	ThP15 271	Li, Zixuan	TP10 193	Limbach, Patrick	MP14 251
Li, Lingjun	TP35 709	Li, Zi-Yu	TP02 046	Limero, Thomas	MP15 265
Li, Lingjun	ThP15 270	Liaghati-Mobarhan, Yalda	TP10 188	Limpachayaporn, Panupun	TP25 424
Li, Lingjun	WP11 178	Liang, Hongkun	TP25 438	Lin, Baiwei	ThP13 246
Li, Lingyun	ThP20 366	Liang, Hui-Chung	TP19 281	Lin, Baiwei	ThP13 245
Li, Lingyun	ThP20 369	Liang, Qiaoli	TP07 124	Lin, Caiyong	WP20 368
Li, Mei	MP31 641	Liang, Shuang	ThP09 155	Lin, Changqing	WP03 027
Li, Mei	MP31 640	Liang, Xiaorong	ThP21 395	Lin, Changqing	ThP01 008
Li, Ming	WOB am 08:50	Liang, Yuxia	WP15 281	Lin, Cheng	WP30 568
Li, Ning	MP25 509	Liang, Yuxue	TP08 150	Lin, Cheng	ThP20 365
Li, Pei	TP10 187	Liang, Yuxue	TP15 237	Lin, Cheng	WOC am 09:10
Li, Ping	WP37 723	Liang, Yuxue	ThP34 669	Lin, Cheng	TP33 660
Li, Qiang	TP37 740	Liang, Yuxue	WP31 578	Lin, Cheng	TP33 634
Li, Qiang	MP21 397	Liang, Yuxue	WP31 592	Lin, Cheng	WOG pm 2:50
Li, Qing-Run	WP34 645	Liang, Zhenmin	WP33 626	Lin, ChenWei	MOD am 08:30
Li, Quanzi	TP21 328	Liang, Zhidan	ThP15 269	Lin, ChenWei	ThP17 298
Li, Ru	WP36 694	Liang, Zhidan	MOG am 09:50	Lin, Chenwei	MP26 541
Li, S. F. Y.	TP37 738	Liang, Zhidan	WP33 616	Lin, Chenwei	TP21 334
Li, Sam	TP24 386	Liang, Zhidan	TP23 367	Lin, ChenWei	MP26 544
Li, Shao-Hua	TP24 410	Liao, Che-I	WP17 299	Lin, Chih Hsien	TP26 471
Li, Shelly	ThP01 013	Liao, Guanhua	ThP35 702	Lin, Chih Hsien	TP25 450
Li, Sheng	WP22 397	Liao, Hanqing	MP19 386	Lin, Chun-Cheng	WP02 010
Li, Shuguang	TP30 566	Liao, Qing	MP13 250	Lin, Chun-Hung	ThP18 320
Li, Shunqiang	ThOD am 08:30	Liao, Rijing	ThP08 122	Lin, Eugene C.	ThOA am 09:10
Li, Shunqiang	TOD pm 3:30	Liao, Wei-Li	MP09 169	Lin, Feng-Ying C.	MP12 227
Li, Shunqiang	TP21 332	Liao, Wei-Li	MP09 172	Lin, Hening	ThP18 328
Li, Shunqiang	ThP17 299	Libralesso, Elisa	MP34 693	Lin, Hening	WP30 559
Li, Siwei	MP14 251	Licea-Perez, Hermes	TP25 451	Lin, Hong	WP23 405
Li, Siyang	WP31 575	Licht, Jonathan	ThOH am 10:10	lin, hongjun	WP27 485
Li, Siyang	WP35 671	Licht, Cheryl	ThP19 345	Lin, Hsiaojou	TP26 471
Li, Siyang	WP35 676	Licht, Cheryl F.	WP35 677	Lin, Huan-Chang	ThP06 096
Li, Song	MP23 462	Licht, Cheryl F.	MP29 597	Lin, Jenny	ThP28 566
Li, Tie-Mei	ThP13 230	Licht, Cheryl F.	TP21 316	Lin, Jia-Der	WP02 004
Li, Tuo	WP28 510	Liddicoat, Fiona	TP20 301	Lin, Jingchao	MP34 710
Li, Weikai	MOB pm 2:30	Liddy, Kiersten	ThP17 294	Lin, Julie	TP23 381
Li, Weiming	WP33 635	Liddy, Kiersten	WP30 554	Lin, Jung-Lee	ThP20 372
Li, Xiang	TP05 090	Liebeke, Manuel	WP12 220	Lin, Jung-Lee	ThP06 096
Li, Xiang	WP37 712	Lieberenz, Marcus	MP19 383	Lin, Jung-Lee	ThP31 646
Li, Xiang	ThOE am 08:50	Lieberenz, Marcus	MP29 581	Lin, Jung-Lee	TP04 058
Li, Xiang	MP35 719	Lieberenz, Marcus	MP29 582	Lin, Laura	WP24 431
Li, Xiang	MP35 718	Lieberenz, Marcus	ThP34 675	Lin, Li	TP26 456
Li, Xiangke	MP21 397	Lieberman, Rachel	MP26 522	Lin, Liang	WP30 546
Li, Xiangke	ThP13 230	Lieberman, Rachel	TP37 756	Lin, Liang	TP21 331
Li, Xiaohua	ThP21 393	Lieberman, Rachel	WP06 083	Lin, Liang	MP27 558
Li, Xiaohua	TP25 447	Lieberman, Rachel	TP19 276	Lin, Liang	MP24 465
Li, Xiaolin	WP33 642	Liebler, Daniel	TOD pm 3:30	Lin, Miao-Hsia	WP34 652
Li, Xiaoqing	MP30 625	Liedtke, Kristen	MP09 179	Lin, Mingxiang	MP26 528

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Lin, Ninghang	TP04 069	Liu, Charles C.	TP37 751	Liu, Xiaowen	TP16 242
Lin, Po-Chiao	WP02 010	Liu, Charles C.	TP27 479	Liu, Xin	WP11 187
Lin, Qingsong	MP34 712	Liu, Charles C.	WP37 723	Liu, Xin	WP11 170
Lin, Shanhua	WP24 442	Liu, Charles C.	WP37 726	Liu, Xiumin	MP36 730
Lin, Sheng-Huang	ThP18 320	Liu, Cheng Bin	MP11 209	Liu, Xueting	TOG pm 2:30
Lin, Shu	TP22 346	Liu, Chen-Lin	TP05 106	Liu, Xueting	TOH pm 2:50
Lin, Tsung-Ping	WP30 548	Liu, Chongdong	ThP23 450	Liu, Ya-Li	TP37 770
Lin, Wen-Peng	ThP18 323	Liu, Dingsheng	WOE pm 3:10	Liu, Ya-Li	WP20 358
Lin, Xiaoxia Nina	ThP17 284	Liu, Guomin	MP29 602	Liu, Yan	TP35 709
Lin, Ya-an	WP17 299	Liu, Haijun	WP23 402	Liu, Yanqin	MP21 403
Lin, Yan-Ping	TP26 474	Liu, Haijun	MP21 412	Liu, Yansheng	TP26 475
Lin, Yan-Ping	WOF pm 3:10	Liu, Hanghui	MP01 013	Liu, Yansheng	TP25 448
Lin, Yaping	ThP20 372	Liu, Hua-fen	WP08 129	Liu, Ying	WP19 339
Lin, Yuehe	ThP35 707	Liu, Hua-fen	ThP21 391	Liu, Yujie	TP27 490
Lin, Zhaosheng	WOD am 09:30	Liu, Hui	TP27 490	Liu, Zhaogui	ThP12 222
Lin, Zheng	WOH am 08:30	Liu, Hui	ThP22 429	Liu, Ziying	ThP09 151
Lin, Zhenxin	ThP19 344	Liu, Huiling	MP10 200	Liuni, Peter	MP22 434
Lin, Zhenxin	ThP19 343	Liu, Huiling	MP29 597	Livingston, Brittney	ThOC am 09:10
Lin, Zhen-Yuan	WP36 687	Liu, Huiling	WP35 677	Livnat, Itamar	ThP14 261
Lin, Zhen-Yuan	WP36 685	Liu, Huiling	MP35 716	Livraghi-Butrico, Alessandra	WP26 461
Lin, Zhen-Yuan	MP29 602	Liu, Hung-wen	TP09 172	Liyanage, Rohana	MP22 439
Lin, Zhi	WP19 342	Liu, Jack	WP20 356	Llinas, Manuel	TP23 380
Lin, Zhongping (John)	TP26 471	Liu, Jack	TP37 772	Lloyd, Kenneth	ThP24 482
Lin, Zhongping (John)	TP25 431	Liu, Jian	ThP20 366	Lo, Andy	TP19 289
Lin, Zhongping (John)	TP25 450	Liu, Jian	TP08 129	Lo, Andy	ThP19 344
Lin, Zhongping (John)	ThP21 409	Liu, Jiangjiang	ThP24 688	Lo, Andy	ThP19 343
Lin, Ziqing	TOA pm 2:50	Liu, Jiangjiang	TP34 689	Lo, Andy	ThP21 384
Lin, Ziqing	MP17 330	Liu, Jiangjiang	TP34 686	Lo, Andy	MP27 561
Linder, Maurine	WP30 559	Liu, Jiangjiang	TP04 080	Lo, Jennifer M.	WP30 548
Linderholm, Barbro K.	ThOD am 09:10	Liu, Jiangjiang	ThP30 627	Lo, Wan-Yu	ThP23 443
Linderholm, Karl	WP06 077	Liu, Jianhua	MP02 033	Loadman, Paul	WP12 198
Lindh, Johan	MP23 457	Liu, Jie	TP21 328	Lobas, Anna A.	ThP34 691
Lindner, Gregory	WP12 209	Liu, Jingfu	WP37 726	Lobas, Anna A.	ThP13 242
Lindner, Herbert	ThP17 285	Liu, Jingzhou	WP12 197	Lobel, Peter	WP31 584
Lindner, Herbert	WP30 563	Liu, Li-Chun	MP32 657	Lobodin, Vladislav	MOG pm 2:30
Lindner, Herbert H.	MP24 482	Liu, Lili	TP26 454	Lobodin, Vladislav V.	WOC pm 3:10
Lindner, Kathrin	WP28 491	Liu, Liping	WP37 726	Lock, Chris M.	TP33 642
Lindquist, Susan	WP36 685	Liu, Miao	ThP18 327	Lock, Richard	WP15 254
Lindquist, Susan	WP36 687	Liu, Miao	MP27 557	Lock, Stephen J.	WP03 030
Line, Eric	TP37 766	Liu, Ning Qing	ThP22 416	Lock, Stephen J.	ThP27 534
Ling, Gee Siang	TP37 738	Liu, Ning Qing	ThOD am 09:10	Lockwood, Charles	WP36 704
Ling, Victor	MP06 106	Liu, Pengyuan	WP30 540	Lodder, Helen	TP30 563
Lingenfelter, Steven	MP15 292	Liu, Qian	WOH pm 3:50	Lodder, Helen	WP08 117
Linhardt, Robert	ThP20 366	Liu, Qinfeng	TP10 177	Lodder, Helen	MP07 135
Linhardt, Robert	WOC am 09:50	Liu, Qingyuan	TP11 205	Lodder, Helen	WP08 124
Linhardt, Robert J.	ThP20 369	Liu, Qun	ThP18 328	Lodder, Helen	WP07 109
Link, A James	TP22 347	Liu, Sherry	MP13 245	Lodder, Helen	MP07 136
Link, Andrew	MP28 575	Liu, Shuo	MP13 242	Loden, Henrik	WP11 184
Link, Hannes	WP36 702	Liu, Siqi	WP30 546	Loecken, Elisabeth	WP23 419
Linn, Sabine	ThP22 416	Liu, Siqi	MP24 465	Loftus, Neil	ThP27 540
Lins, Renato C.	MP26 548	Liu, Siqi	TP21 331	Loftus, Neil	TP25 423
Linscheid, Michael	TP10 182	Liu, Siqi	MP27 558	Loftus, Neil	ThP27 543
Lintelmann, Jutta	MP34 695	Liu, Siqi	TP28 503	Loftus, Neil	WP13 224
Lintelmann, Jutta	WOF pm 2:50	Liu, Suet	WP14 243	Loganathan, Devan	MP30 626
Lintelmann, Jutta	MP07 149	Liu, Suya	MP24 493	Logemann, Rachel	MP31 643
Lipari, Francesco	TP19 280	Liu, Tao	WP27 484	Loh, Gabriel Onn Kit	MP01 017
Lippa, Katrice	TP30 561	Liu, Tao	MP26 540	Löhmus, Ants	TP04 063
Lippens, Guy	MOD am 08:50	Liu, Tao	MOD am 08:30	Löhmus, Rünno	TP04 063
Lippens, Jennifer	TOF pm 2:50	Liu, Tao	MP26 542	Lohne, Jack J.	ThP13 237
Lippens, Jennifer	MOH am 08:30	Liu, Tao	TOD pm 3:30	Lohnes, Karen	WP09 147
Lippert, Wayne	MP16 324	Liu, Ting	MP34 710	Loken, Perry	WP07 106
Lippolis, John	MP33 675	Liu, Ting	MP34 711	Lomonaco, Romina	WP18 317
Lips, Esther	ThP22 417	Liu, Ting	MP34 713	London, Robert	WP19 346
Lipton, Mary	TP12 209	Liu, Ting	ThP28 574	Long, Stephen	ThP23 472
Lipton, Mary	WP34 644	Liu, Ting	ThP23 448	Long, Tran	TP24 389
Lipton, Mary	TP33 652	Liu, Vivian Bin	MP34 707	Long, Yaoling	TP23 378
Lisacek, Frederique	WOB pm 3:30	Liu, Wei Ting	WP11 188	Longuespée, Rémi	ThP09 154
Lisacek, Frédérique	TP08 152	Liu, Xiang	TP31 597	Lönnberg, Tapio	MP28 568
Lisacek, Frédérique	WP31 593	Liu, Xiaodong	WP24 444	Loo, Joseph	WP23 415
Lisacek, Frédérique	MP23 458	Liu, Xiaodong	WP03 034	Loo, Joseph	ThP25 514
Lister, Liam	WP37 707	Liu, Xiaodong	TP35 698	Loo, Joseph	WP23 414
Lister, Suzanne	MP30 627	Liu, Xiao-Fen	ThP23 451	Loo, Joseph	ThP12 223
Litzau, Jonathan	TP37 765	Liu, Xiaohua	ThP36 720	Loo, Joseph	WP09 147
Liu, Aihua	TP26 469	Liu, Xiaohua	ThP31 650	Loo, Joseph	TP18 259
Liu, Alvin Y.	MP26 542	Liu, Xiaohui	WP11 185	Loo, Joseph A.	WOG pm 2:50
Liu, Ang	MP06 114	Liu, Xiaohui	MP21 397	Loo, Joseph A.	ThP22 434
Liu, Aston	MP07 142	Liu, Xiaojing	MP11 218	Loo, Joseph A.	ThP09 140
Liu, Aston	MOD pm 3:10	Liu, Xiaoqian	ThP23 463	Loo, Lai Chin	TP37 738
Liu, Baohong	TP34 677	Liu, Xiaowen	TP16 243	Loo, Rachel	ThP12 223

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Look, Maxime.....	ThP22 416	Luban, Jeremy.....	MP23 458	Ma, Bin.....	WP31 580
Look, Maxime P.....	ThOD am 09:10	Luban, Jeremy.....	TP08 152	Ma, Bin.....	WP31 579
Looso, Mario.....	MP24 476	Lubeck, Markus.....	MP24 491	Ma, Bingli.....	WP33 637
Lootsma, Wayne.....	MP02 039	Lubman, David.....	WP26 466	Ma, C.Y.....	WP35 679
Lootsma, Wayne.....	ThP10 185	Lubman, David M.....	ThP21 384	Ma, Che Alex.....	WP30 548
Lopez, Daniel H.....	MP10 201	Lubman, David M.....	ThP19 344	Ma, ChengYing.....	WP19 342
Lopez, Mary.....	MP25 503	Lubman, David M.....	ThP19 343	Ma, Danjun.....	ThP17 293
Lopez, Mary.....	WP32 602	Lubman, David M.....	ThP22 424	Ma, Danjun.....	WP33 633
Lopez, Mary.....	TP08 131	Lubman, David M.....	TP19 289	Ma, Di.....	TP18 264
Lopez, Mary.....	ThP21 385	Lubman, David M.....	MP27 561	Ma, Eric W.....	WP33 624
Lopez, Mary F.....	TP22 351	Lucas, Joseph.....	MP18 371	Ma, Jerome.....	WP23 411
Lopez, Mary F.....	WP26 457	Lucas-Hahn, Andrea.....	ThOA am 09:30	Ma, Jiaojiao.....	TP27 479
Lopez, Mary F.....	ThP34 673	Lucini, Stefano.....	MP31 642	Ma, Jinyu.....	TP11 197
Lopez, Mary F.....	TP21 309	Lucka, Adam.....	TP14 224	Ma, Shiqi.....	MOF pm 3:50
Lopez, Nathan.....	TP13 217	Ludlow, Helen.....	MP25 520	Ma, Shuo.....	ThP23 448
López, José A.....	TP19 293	Ludwig, Christina.....	TOD pm 3:50	Ma, Taylur.....	WP34 656
López del Olmo, Juan Antonio.....	TP05 095	Ludwig, Christina.....	TOH pm 4:10	Ma, Wen Wee.....	MP06 103
Lopez Garcia, Monica.....	ThP27 532	Ludwig, Richard.....	TP15 225	Ma, Xiaoxiao.....	TP06 114
López-Gutiérrez, José Maria.....	MP25 495	Ludwig, Robert.....	MP06 111	Ma, Xiaoxiao.....	TP06 117
Lorenz, Matthias.....	TP04 076	Ludwig, Roland.....	MP22 437	Ma, Xiaoxiao.....	TP06 112
Lorenzi, Philip.....	TP24 406	Ludwig, Ryan.....	ThP35 700	Ma, Xin.....	TP01 012
Lorenzi, Philip L.....	TP25 433	Ludwig-Kubinsky, Amy.....	ThP09 169	Ma, Xin.....	WP23 413
Lorey, Martina.....	MP09 182	Ludwig-Müller, Jutta.....	WP29 520	Ma, Yan.....	WP13 225
Lorkiewicz, Pawel K.....	TP23 365	Luetz, Stephan.....	WP15 275	Ma, Yinfa.....	WP03 022
Lorphelin, Alain.....	ThP25 506	Lührmann, Reinhard.....	MOH am 09:10	Maagdenberg, Arn M.J.M. van den.....	WP09 141
Lössl, Philip.....	MP21 398	Lührmann, Reinhard.....	MP20 387	Maasjo, Sarah.....	TP26 472
Lößner, Christopher.....	WP27 482	Luider, Theo.....	TP16 243	Maass, Peter.....	ThP04 036
Lößner, Christopher.....	TP19 295	Luider, Theo.....	ThP22 417	Ma'ayan, Avi.....	ThP17 280
Lotze, Christian.....	TOB am 08:30	Luider, Theo.....	TOH am 08:30	Ma'ayan, Avi.....	WP36 701
Lotze, Christian.....	ThP34 687	Luider, Theo.....	WP18 319	Macagno, Eduardo R.....	ThOA am 09:10
Lou, Anna.....	MP15 287	Luider, Theo M.....	TP20 304	MacAleese, Luke.....	ThP05 064
Lou, Anna.....	TP15 229	Luider, Theo M.....	ThOD am 09:10	MacAleese, Luke.....	WOG am 10:10
Lou, Xiaomin.....	WP30 546	Luider, Theo M.....	WP33 639	MacAleese, Luke.....	ThP04 046
Lou, Xiaomin.....	MP24 465	Lukashov, Dmitry.....	ThP22 430	Macatangay, Ariel.....	MP15 265
Lou, Xiaomin.....	TP21 331	Lukow, Stefan.....	MOH pm 3:10	Maccarone, Alan.....	ThP35 705
Louarn, Essyllt.....	TP04 070	Luksch, Jaroslav.....	ThP06 085	Maccarone, Alan T.....	TP33 642
Louette, Joel.....	MP25 501	Lum, Julian.....	WOD pm 2:50	MacCoss, Michael.....	TP28 499
Louie, Arnold.....	MP07 138	Luna, Marsha.....	TP25 448	MacCoss, Michael.....	ThP12 229
Louis, Edouard.....	ThP23 453	Lundberg, Karin.....	ThP19 332	MacCoss, Michael.....	MP33 673
Loukotkova, Lucie.....	MP07 143	Lundberg, Richard.....	TP25 434	MacCoss, Michael.....	MP24 490
Loureiro-López, Marta.....	TP05 095	Lundgren, Kacie.....	ThP06 086	MacCoss, Michael.....	MP33 672
Loutelier-Bourhis, Corinne.....	MP36 747	Lundström, Susanna.....	ThP19 332	MacCoss, Michael.....	TP08 133
Louwagie, Mathilde.....	TP13 215	Lunyak, Victoria.....	TP22 351	MacCoss, Michael.....	MOA am 08:30
Love, Chasity B.....	ThP36 715	Luo, Ji.....	MP13 237	MacCoss, Michael.....	WP33 627
Love, Craig.....	MP01 006	Luo, Liping.....	WP20 364	MacCoss, Michael.....	TP28 512
Love, Patrick L.....	WP26 467	Luo, Li-Ping.....	WP20 357	MacCoss, Michael.....	TP08 132
Lovejoy, Candace.....	WP15 282	Luo, Li-Ping.....	WP20 358	MacCoss, Michael.....	MP27 566
Lovestone, Simon.....	TP19 281	Luo, Quanzhou.....	ThOC am 09:10	MacCoss, Michael.....	MP24 468
Lovingood, Derek.....	MP15 288	Luo, Yang.....	ThOB pm 3:10	MacCoss, Michael J.....	MP19 382
Low, Teck Yew.....	WP31 586	Luo, Yang.....	ThOH am 09:30	MacCoss, Michael J.....	TP28 521
Lowie, Lisa.....	WP03 035	Lupo, Sharon.....	WP08 120	MacCoss, Michael J.....	WP31 582
Lowenthal, Mark.....	ThP23 446	Luraschi-Monjagatta, Carmen.....	TP19 288	MacDonald, Matthew.....	WP30 570
Lowenthal, Mark.....	WP19 352	Luscsek, Elizabeth R.....	TP23 366	Macdonald, Matthew L.....	TP21 320
Lowenthal, Mark.....	TP08 150	Lutisan, Juraj.....	ThOB am 10:10	MacDonald, Matthew L.....	TP21 319
Loziuk, Philip.....	MP24 470	Lutowski, Corinne.....	ThP31 641	Macek, Boris.....	WP36 703
Loziuk, Philip L.....	TP21 327	Luxenberg, Deborah.....	WP24 431	Macek, Boris.....	ThP09 163
Lu, Cheryl.....	TP19 279	Luyten, Walter.....	ThP34 683	Macfarlane, Ronald D.....	MP09 174
Lu, Guotao.....	MP07 148	Lv, Haipeng.....	WP19 342	MacGregor, Paul.....	MOD pm 3:10
Lu, Guotao.....	TP37 772	Ly, Alice.....	WP09 142	Macha, Stephen.....	WP15 272
Lu, Guotao.....	WP20 356	Ly, Justin.....	ThP21 395	Macher, Bruce.....	ThP22 420
Lu, I-Chung.....	ThP31 648	Ly, Mellisa.....	WP24 430	Macherone, Anthony.....	ThP21 392
Lu, I-Chung.....	ThP31 647	Ly, Tony.....	TP28 526	Macherone, Anthony.....	TP20 305
Lu, Jianfeng.....	WP17 293	Ly, Tony.....	MP29 576	Macherone, Anthony.....	WP03 035
Lu, Liang.....	ThP25 491	Lybrand, Terry P.....	WP38 751	Macherone, Anthony.....	ThP11 203
Lu, Mei.....	TP02 043	Lydic, Todd.....	ThP28 576	Macherone, Anthony.....	TP19 297
Lu, Mei.....	ThP30 629	Lydic, Todd A.....	MP11 216	Machtejevas, Egidijus.....	WP19 335
Lu, Meiling.....	WP19 339	Lynch, Ben.....	MP19 378	Machuron-Mandard, Xavier.....	MP30 616
Lu, Meiling.....	WP19 342	Lynch, Benjamin.....	MP18 362	Machuron-Mandard, Xavier.....	MP16 320
Lu, Shan.....	MOA pm 4:10	Lynch, Theresa.....	ThP29 610	Macias, Lauren N.....	MP35 716
Lu, Tian-Sheng.....	WP06 088	Lynch, Tom.....	ThP32 663	Maciel-Filho, Rubens.....	ThOG am 08:50
Lu, Wei.....	WP11 186	Lynn, Bert.....	ThP32 656	Maciel-Filho, Rubens.....	WP05 063
Lu, Yafang.....	TP31 589	Lynn, Ke-Shiuan.....	TP28 518	Macikova, Petra.....	TP31 593
Lu, Yanyan.....	WP29 516	Lynn, Ke-Shiuan.....	MP03 042	Mackay, C. Logan.....	TOB pm 3:30
Lu, Yi.....	MP20 389	Lyon, David.....	TP17 247	Mackay, C. Logan.....	MP23 452
Lu, Ying-Wei.....	WP02 010	Lyssiotis, Costas.....	WOD am 08:50	Mackay, C. Logan.....	ThOF am 08:30
Lu, Zhike.....	WP29 535	Lytvinskiy, Yaroslav.....	WOB am 09:30	Mackay, Lauren R.....	TP06 120
Lubach, Gabriele.....	TP24 404	Lytvinskiy, Yaroslav.....	WP26 454	Mackay, Logan.....	WP28 494
Lubahn, Dennis B.....	MP34 706	Ma, Bin.....	TP28 510	Mackay, Logan.....	MP31 648
Luban, Jeremy.....	WP31 593	Ma, Bin.....	ThP34 688	MacKenzie, Kim.....	ThP16 274

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Mackie, Ken.....	MP15 292	Makepeace, Karl.....	MP21 406	Manthorpe, Jeffrey.....	WP33 621
MacLean, Brendan.....	MP19 382	Maker, Garth.....	WP17 303	Manulik, Joseph.....	MP06 118
MacLean, Brendan.....	TP08 132	Makhloufi, Mohamed.....	WP06 085	Manulik, Joseph.....	MP03 048
MacLean, Brendan.....	TP28 521	Makhloufi, Mohamed.....	MP01 016	Manura, John.....	ThP11 192
MacLean, Brendan.....	MOA am 08:30	Malagrino, Pamela Araújo.....	MP10 196	Mao, Haibin.....	MP22 433
MacLean, Brendan.....	WP31 582	Malakar, Dipankar.....	WP25 452	Mao, Qunying.....	MP33 676
Maclean, Brendan.....	TP28 499	Malcolm, Andrew.....	MP16 297	Mao, Yan.....	MP25 504
MacMillan, Denise K.....	TP23 370	Maldonado-Torres, Mauricio.....	ThP05 063	Mao, Yang.....	ThP20 364
MacNeill, Joan.....	ThP23 473	Malek, Robert.....	MP19 377	Mao, Yang.....	ThP20 365
Macovei, Alina.....	TP21 336	Maleki, Hossein.....	TP21 311	Mao, Yang.....	WP29 516
MacVittie, Thomas J.....	WP26 471	Maleki, Soheila.....	WP19 346	Mao, Yuan.....	ThP13 249
Madden, Andrew.....	TP25 439	Maleknia, Simin.....	MP29 590	Maple, Hannah.....	WP22 394
Madden, Stephen.....	TP28 513	Maleknia, Simin.....	ThOG am 09:50	Marangon, Elena.....	WP06 092
Madden, Stephen.....	ThP33 665	Maleknia, Simin.....	TP11 198	Marbois, Beth.....	ThP01 005
Madsen, Jesper J.....	WP28 514	Malik, Naiela.....	MP30 606	Marceau, Veronique.....	ThP10 177
Madson, Mark.....	ThP13 237	Malinao, Maria Christina.....	MP23 442	Marceau, Veronique.....	ThP27 535
Madugundu, Guru S.....	MOH am 10:10	Malinowski, Elise.....	WP06 088	Marchand, Adrien.....	MP13 233
Maeda, Junko.....	ThOE pm 3:30	Malijers, Louis.....	TP26 474	Marchfelder, Anita.....	MP21 410
Maegley, Karen.....	ThOH am 09:10	Mallats, Nuria.....	ThP23 476	Marchionni, Mark.....	WP11 185
Maeser, Stefan.....	WP07 108	Mallery, Eileen.....	MP32 668	Marciano, David.....	WOH am 09:50
Magee, Megan H.....	MP06 118	Mallet, Claude.....	TP31 579	Marciano, David.....	WP21 384
Mageean, Craig.....	WP33 610	Mallet, Claude.....	TP27 492	Marcoux, Julien.....	WP23 411
Magera, Mark.....	MP09 179	Mallia, Krishna.....	WP07 113	Marcoux, Julien.....	MP21 401
Magera, Mark.....	WP07 106	Mallick, Parag.....	TP28 512	Marcoux, Marie-Josée.....	MP06 107
Magera, Mark J.....	WP07 107	Mallick, Parag.....	MOA am 08:30	Marcum, Christopher.....	ThP32 657
Magiotto, Claire F.....	ThOD am 10:10	Mallireddigari, Muralidhar R.....	WP28 513	Marcum, Christopher.....	ThOG am 10:10
Magnelli, Paula.....	TP35 697	Malmirchegini, G. Reza.....	WP23 415	Maréchal, Éric.....	TP34 662
Magnuson, Elizabeth.....	MP30 610	Malmstroem, Johan.....	WP31 595	Maréchal, Éric.....	TP34 664
Mahadevan, Gajendiran.....	WP06 093	Malmstroem, Lars.....	WP31 595	Marek, Ales.....	ThP35 703
Mahaffy, Paul.....	MP35 718	Maloney, Jennifer.....	ThP12 226	Marek, Alex.....	MOG am 10:10
Mahaffy, Paul.....	TP05 090	Malosse, Christian.....	ThOB pm 3:50	Marek, Beth.....	MP01 008
Mahaffy, Paul.....	ThOE am 08:50	Malstroem, Johan.....	TP21 310	Margeant, Daciana.....	TP23 371
Mahaffy, Paul.....	MP35 720	Maluccio, Mary.....	ThP22 414	Marie, Suely Kazue Nagahashi.....	ThP22 431
Mahan, Elizabeth A.....	ThP21 396	Maluccio, Mary A.....	WP26 467	Marinho, Flávio.....	MP34 692
Mahé, Pierre.....	TP28 505	Malys, Brian.....	MP08 157	Marini, Joseph T.....	WP15 257
Maher, Christopher.....	ThOD am 08:30	Malysheva, Svetlana V.....	MP03 058	Marini, Joseph T.....	WP15 264
Maher, Simon.....	ThP06 076	Mamajanov, Irena.....	TP33 654	Marino, Fabio.....	MP06 119
Maher, Simon.....	WP04 043	Man, Petr.....	WOH pm 3:10	Mark, Laszlo.....	TP34 665
Mahesula, Swetha.....	TP20 302	Man, Petr.....	MP21 393	Mark, Michael.....	ThP11 199
Maheux, Maxim.....	WP17 294	Man, Petr.....	TP10 175	Märk, Lukas.....	MP15 286
Mahieu, Romain.....	MP16 320	Man, Petr.....	MP22 437	Märk, Lukas.....	ThP26 521
Mahmoud, Khaled.....	WP09 136	Man, Petr.....	MP21 401	Märk, Tilmann D.....	MP15 286
Mahoney, Jaclyn.....	MP33 673	Mancuso, Francesco M.....	WP28 498	Märk, Tilmann D.....	ThP26 521
Mahoney, Nick.....	ThP17 301	Mancuso, Francesco Mattia.....	TP28 498	Marklund, Niklas.....	WP11 184
Mahorney, Shenrui.....	WP34 655	Mandal, Amit Kumar.....	WP06 081	Marko-Varga, György.....	ThOF am 09:30
Mahrus, Sami.....	MP24 472	Mandal, Mridul Kanti.....	WP07 115	Markowitz, Joseph.....	ThP22 411
Mahsut, Ablatt.....	TP21 307	Mandal, Mridul Kanti.....	MP17 339	Markowski, Todd.....	ThP14 259
Mai, Fu-Der.....	MP27 567	Mandal, Mridul Kanti.....	ThP30 630	Marmatakis, Kostas.....	TP05 105
Maier, Claudia.....	TP24 413	Mandrell, Robert E.....	ThP25 517	Marquer, Catherine.....	MP10 184
Maier, Claudia.....	MP22 432	Manea, Marilena.....	MP23 443	Marsh, Don.....	TP28 499
Maier, Claudia.....	MP34 701	Manefield, Mike J.....	MP36 722	Marsh, Ellen.....	MP23 460
Maier, Claudia.....	MP12 226	Manes, Nathan.....	WP36 692	Marsh, Justin.....	WP19 344
Maier, Claudia S.....	MP22 433	Mangaonkar, Manasi.....	MP10 189	Marshall, Alan.....	ThP12 216
Maier, Claudia S.....	ThP14 255	Mangia, Anita.....	ThOD am 09:10	Marshall, Alan.....	MP16 318
Maier, Claudia S.....	TP24 401	Mangrum, John.....	MP21 396	Marshall, Alan.....	WP05 053
Maier, Gary.....	MP06 130	Mani, D.R.....	MP26 523	Marshall, Alan.....	MP22 440
Maier, Stefan K.....	TP04 072	Mani, D R.....	TOD pm 3:30	Marshall, Alan.....	ThP12 215
Maier, Stefan K.....	WP35 670	Mani, D R.....	WOA am 10:10	Marshall, Alan.....	MOG pm 2:30
Maile, Tobias.....	TP22 350	Maniatis, Stephanie.....	ThP24 482	Marshall, Alan.....	ThOG pm 3:50
Maile, Tobias.....	TP28 502	Maniatis, Stephanie A.....	MP28 574	Marshall, Alan.....	MP22 422
Maile, Tobias.....	TP22 349	Manicke, Nicholas E.....	WP08 122	Marshall, Alan G.....	ThP06 081
Main, Laura.....	TOH am 08:50	Manier, M. Lisa.....	WP12 199	Marshall, Alan G.....	MP10 200
Maiolica, Alessio.....	TOD pm 3:50	Mann, Matthias.....	TOD pm 2:30	Marshall, Alan G.....	TP22 344
Mair, Waltraud.....	TP08 147	Mann, Matthias.....	TP17 253	Marshall, Alan G.....	TP33 655
Maitre, Philippe.....	TP06 119	Mann, Matthias.....	TOE am 09:10	Marshall, Alan G.....	TOF am 09:50
Majmudar, Jaimeen.....	ThP18 322	Mann, Matthias.....	TOA am 08:50	Marshall, Alan G.....	MOB pm 3:10
Major, Hilary.....	ThP05 054	Mann, Matthias.....	WP30 572	Marshall, Alan G.....	WP05 046
Majumdar, Tapan.....	MP02 037	Mann, Matthias.....	WOE am 10:10	Marshall, Alan G.....	ThP13 249
Makarov, Alexander.....	TP14 219	Manning, Janet.....	ThP17 297	Marshall, Alan G.....	WP05 045
Makarov, Alexander.....	WOE am 09:50	Manohar, Venkat.....	MP31 635	Marshall, Alan G.....	WOC pm 3:10
Makarov, Alexander.....	MP19 377	Manohar, Venkat.....	WP14 250	Marshall, Alan G.....	ThP12 217
Makarov, Alexander.....	TP14 218	Manohar, Venkat.....	WP14 248	Marshall, Alan G.....	MP29 597
Makarov, Alexander.....	ThP06 084	Manohar, Venkat.....	ThP27 549	Marshall, Alan G.....	ThP13 241
Makarov, Alexander.....	MP16 309	Manohar, Venkat.....	WP14 249	Marshall, Dana.....	TP24 390
Makarov, Alexander.....	TOA pm 2:30	Manolakos, Spiros.....	TP27 489	Marshall, David.....	ThP36 725
Makarov, Alexander.....	MP16 311	Manolakos, Spiros.....	ThP01 007	Marshall, Fiona.....	ThP24 484
Makarov, Alexander A.....	TP05 101	Mansson, Jan-Eric.....	TP27 482	Marshall, Peter.....	ThP14 251
Makepeace, Karl.....	MP21 405	Mantegazza, Alessandra.....	TP31 606	Marsico, Alyssa L. M.....	WP02 003
Makepeace, Karl.....	MP21 408	Manthorpe, Jeffrey.....	TP27 487	Marsiglia, Barbara.....	MP25 498

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Marsiglia, Barbara.....	MOD am 09:50	Mathur, Raman.....	ThP06 102	McBride, William.....	TP21 315
Martano, Chiara.....	ThP28 571	Matijevic, Mark.....	TP22 352	McCann, Kevin.....	TP26 459
Martell, Jeffrey.....	MOF pm 3:30	Matlock, Andrea.....	WP33 611	McCann, Kevin.....	TP26 461
Martens, John.....	ThP22 416	Mats, Lili.....	TP04 082	McCann, Kevin.....	WP16 283
Martens, John.....	ThP22 417	Matsubara, Atsuki.....	ThOC pm 3:10	McCann, Kevin.....	ThP07 119
Martens, John W.M.....	ThOD am 09:10	Matsubara, Atsuki.....	MP27 563	McCardle, James A.....	TOC pm 2:30
Martens, Lennart.....	TP19 285	Matsubara, Toshiya.....	MP26 536	McCarry, Brian.....	WP04 040
Martens, Lennart.....	ThP17 306	Matsubara, Toshiya.....	TP08 161	McCarter, John D.....	WP24 446
Martens, Lennart.....	TOD pm 3:10	Matsuda, Fumio.....	WP13 226	McCarthy, Jason W.....	TP19 288
Martin, Adam.....	TP08 146	Matsumoto, Keiko.....	WP19 326	McCarthy, Maureen.....	MP35 716
Martin, Amanda C.....	MP34 688	Matsumoto, Keiko.....	WP03 028	Mccaskill, David.....	WP19 334
Martin, Arch.....	TP36 728	Matsumoto, Keiko.....	TP37 739	McClelland, John.....	WP19 351
Martin, Brent.....	ThP18 322	Matsumoto, Keiko.....	WP03 026	McClure, Evelyn.....	ThP29 595
Martin, Jeffrey.....	WP35 673	Matsumoto, Keiko.....	MP36 733	McClure, Richard.....	WP12 206
Martin, LeRoy.....	ThP17 302	Matsuo, Yoshiki.....	MP23 448	Mccomb, Mark.....	Special
Martin, Nicholas J.....	ThP23 455	Matter, Brock.....	ThOH am 08:30	McComb, Mark E.....	TOA am 09:10
Martin, Roy.....	TP27 492	Mattes, Timothy.....	MP24 468	McComb, Mark E.....	TP16 240
Martin, Scott.....	WP15 278	Matthew, Troutman.....	MP02 034	McComb, Mark E.....	ThP23 462
Martin, Stephen.....	WP35 673	Mattingly, Jarrod W.....	ThP22 439	McComb, Mark E.....	WP33 630
Martin, William H.C.....	ThP31 634	Mattingly, Jarrod W.....	ThP22 437	Mccomb, Mark E.....	TP18 258
Martinez, Alberto.....	MP25 520	Mattingly, Stephanie J.....	TP23 365	Mccomb, Mark E.....	TP18 268
Martinez, Elizabeth.....	MP34 698	Matts, Robert L.....	ThP23 447	McComb, Mark E.....	WP32 605
Martinez Ferrando, Isabel.....	MP24 478	Matturri, Luigi.....	TP31 606	McComb, Mark E.....	WP28 493
Martinez-Aguilar, Juan.....	MP26 545	Maturana Filho, Milton.....	MP06 102	McConnell, Joseph.....	TP30 571
Martini, Cyril.....	WP14 244	Matzuk, Martin.....	TP24 394	McConville, Patricia.....	MP06 116
Martino, Paul.....	TP10 181	Mauclair, Gérard.....	TP04 070	McCooeye, Margaret.....	MP07 139
Martino, Paul.....	TP10 185	Maust, Matthew.....	TP12 212	Mccord, James.....	ThP09 155
Martins, Manoel L.....	ThP27 555	Mauvieux, Laurent.....	ThP22 428	McCorrister, Staurt.....	ThP25 498
Martins Ferreira Souza, Gustavo Henrique.....	TP33 620	Mawhinney, Thomas.....	MP34 703	McCorrister, Stuart.....	ThP08 136
Martinsen, Morten.....	TP04 074	Mawhinney, Thomas.....	MP34 706	McCorrister, Stuart.....	ThP25 515
Martinsen, Morten.....	WOF pm 2:30	Mawson, Deborah.....	ThP21 397	McCorrister, Stuart J.....	MP06 094
Marty, Michael.....	WP23 403	Mawuenyega, Kwasi.....	ThOD pm 3:30	McCullagh, Michael.....	TP37 750
Marur, Vasant R.....	ThP28 561	Maxwell, G. Larry.....	MP25 501	McCullagh, Michael.....	MP31 639
Marur, Vasant R.....	ThP28 565	Maxwell, Rachel.....	TP31 584	McCullagh, Michael.....	TP33 626
Maruyama, Tomoko.....	ThP19 338	May, Jody.....	MOB am 09:10	McCullagh, Michael.....	ThP27 532
Marvin, Rachel.....	MP10 187	May, Jody C.....	WP38 747	McCullagh, Michael.....	ThP27 533
Marx, Harald.....	WP30 572	May, Jody C.....	ThP25 486	McCullagh, Michael.....	TP33 627
Marx, Kristina.....	TP36 716	Mayampurath, Anoop.....	TP36 737	McCullough, Arthur.....	MP29 592
Marx, Kristina.....	ThP19 339	Mayampurath, Anoop.....	ThP20 376	Mcddevitt, Molly.....	MOA pm 3:30
Marx, Kristina.....	ThP19 356	Mayampurath, Anoop.....	WP26 470	McDevitt, Molly T.....	MOA am 09:10
Masaki, Noritaka.....	ThP04 048	Mayampurath, Anoop.....	WP32 598	McDonald, John.....	TP24 394
Masanori, Arita.....	ThOB am 09:50	Mayboroda, Oleg A.....	WP35 678	McDonald, John.....	TP24 389
Mascini, Nadine.....	WOD pm 3:50	Maydwell, George.....	TP28 524	McDonald, Scott.....	ThP27 557
Masek, Ondrej.....	MP31 648	Mayer, Chris.....	ThP10 172	McDonald, Stephen.....	WP13 232
Masesane, Ishmael.....	MP06 115	Mayer, Paul Michael.....	ThP36 726	McDonald, Stephen.....	TP25 421
Mason, Ronald.....	WP19 345	Mayeux, Charly.....	TP02 030	McDonald, Stephen.....	TP18 262
Massé, Daniel.....	TP31 587	Mayhew, Chris A.....	ThP26 521	McDonald, Thomas.....	MP26 531
Masselon, Christophe.....	ThP23 476	Maylin, George.....	MP30 625	Mcdonnell, Liam.....	WP12 218
Masselot, Alexandre.....	TP28 502	Maynard, Steve.....	MP30 627	McDonnell, Liam A.....	WP09 141
Masselot, Alexandre.....	TP22 350	Mayrand-Provencher, Laurence.....	ThP29 612	McDonough, John.....	TP26 458
Massi, Jennifer.....	ThP27 544	Maze, Josh.....	ThP06 093	McDowall, Mark.....	WP36 699
Massi, Jennifer.....	TP37 757	Maze, Joshua.....	ThP06 099	McDowall, Gary.....	ThP09 161
Masson, Jean-François.....	ThP04 041	Maze, Joshua.....	ThP06 094	McDuff, Francois-Olivier.....	ThP18 315
Massoni, Sam.....	TP08 130	Maze, Joshua.....	ThP07 110	McDunn, Jonathan.....	TP30 568
Massonnet, Philippe.....	TP33 653	Mazhar, Sahar.....	WP36 701	McElnay, James.....	MOC pm 3:30
Mastuda, Shuichi.....	MP33 678	Mazhar, Sahar.....	ThP17 280	Mcewan, Murray J.....	ThP29 603
Masujima, Tsutomu.....	MP04 065	Maziarz, Margaret.....	TOC am 08:30	McEwen, Charles.....	ThP04 051
Masujima, Tsutomu.....	ThP28 579	Mazock, John.....	MP17 342	McEwen, Charles.....	TP34 668
Masujima, Tsutomu.....	MP33 678	Mazur, Dmitry.....	WP03 031	Mcewen, Charles N.....	ThOA pm 2:50
Masujima, Tsutomu.....	MP32 660	Mazzarino, Monica.....	WP08 135	McEwen, Charles N.....	ThP07 113
Masujima, Tsutomu.....	ThP14 252	Mazzega, Elisa.....	WP06 092	McEwen, Charles N.....	TP04 062
Masujima, Tsutomu.....	TP29 556	Mazzoleni, Lynn.....	MP35 717	McEwen, Charles N.....	ThP31 637
Masukevich, Sergey.....	TP04 084	Mazzotti, Fabio.....	TP34 690	McEwen, Dr. Charles.....	MP15 264
Masumoto, Hiroshi.....	WP32 599	Mazzucchelli, Gabriel.....	ThP23 453	McFarland, Melinda A.....	ThP25 516
Masyuko, Rachel.....	ThP04 040	Mazzucchelli, Gabriel.....	MP23 459	McFee, William.....	TOH am 09:50
Matern, Dietrich.....	MP09 179	Mazzucchelli, Gabriel.....	ThP09 154	McGee, William M.....	TP02 042
Matern, Dietrich.....	WP07 106	Mazzucchelli, Gabriel.....	ThP16 272	McGibbon, Graham A.....	ThP27 557
Matern, Dietrich.....	WP07 107	Mbeunkui, Flaubert.....	WP08 130	Mcginley, Michael.....	MP13 244
Mathe, Ewy A.....	WP18 312	Mbeunkui, Flaubert.....	TP29 538	McGinley, Michael.....	MP07 134
Mather, Joanne.....	MP25 519	Mcalister, Graeme.....	TOA am 09:30	Mcginley, Michael.....	MP06 095
Matheron, Lucrece.....	WP30 572	McAlister, Graeme.....	TP04 077	McGinnis, A. Cary.....	MP14 258
Mathew, Anna.....	WP17 311	McAlister, Graeme.....	TOE am 10:10	McGinnis, A. Cary.....	MOD am 10:10
Mathew, Robin.....	WP36 693	McAlister, Graeme C.....	TP28 508	McGrath, Sara C.....	WP19 343
Mathewson, Travis.....	WP13 228	McAllister, Fiona E.....	TP19 284	McGraw, Dennis.....	WP15 272
Mathias, Rommel.....	MOA pm 3:10	McAlpin, Casey.....	WP07 116	McGuire, Jeffrey.....	TP24 395
Mathias, Rommel.....	TP19 286	McArdell, Christa.....	WOF am 09:30	McHale, Kevin.....	WP17 301
Mathieu, Richard E.....	WP07 102	McBride, Eileen.....	ThOF pm 4:10	McHale, Kevin J.....	TP24 414
Mathieu, Richard E.....	WP07 099	McBride, Andrew.....	TOB pm 3:30	McIlvin, Matthew.....	ThP25 519
Mathur, Abhinav.....	WP32 598	McBride, William.....	TP18 273	McIntire, Greg.....	ThP29 593

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

McIntire, Gregory.....	MP01 004	Medana, Claudio.....	ThP28 571	Merrill, Mike.....	WP06 077
McIntosh, Alistair.....	MOC am 09:50	Medard, Guillaume.....	WP35 670	Merritt, Thomas J. S.....	TP24 408
McIntyre, Doug.....	ThP07 119	Medema, René H.....	MOA am 09:50	Merryman, Evan S.....	TP22 353
McIntyre, Will.....	MP21 396	Medin, Jeffrey A.....	WP09 139	Mertens, Bart J.....	ThP23 471
McKay, Matthew.....	WP33 618	Medzhiradzsky, Katalin F.....	TOD am 09:30	Mertens, Koen.....	WP28 514
McKee, Thomas.....	TP21 333	Meek, Claudia.....	WP06 089	Mertens, Koen.....	ThP17 292
Mckeith, Holly.....	WP13 228	Meeker, Larry.....	MP32 659	Mertins, Philipp.....	WOA am 10:10
McKemie, Daniel.....	MP30 628	Meerholz, Klaus.....	WP37 733	Mertins, Philipp.....	TOD pm 3:30
McKenna, Amy.....	ThOG pm 3:50	Megger, Dominik.....	ThP22 413	Mesaros, Clementina.....	TP24 407
McKenna, Amy M.....	WP05 045	Megger, Dominik.....	ThP22 412	Mesaros, Clementina.....	TP24 393
McKennen, Christopher.....	TP21 322	Mehcref, Yehia.....	TP36 737	Mesaros, Clementina.....	TP29 550
McKenzie, Christine.....	WP34 650	Mehcref, Yehia.....	ThP20 376	Mesaros, Clementina.....	WP17 306
McKenzie, Christine J.....	WP30 544	Mehl, John T.....	MP25 507	Mesker, Wilma.....	WP12 218
McKenzie, Donald L.....	WP15 257	Mehta, Anand.....	TOB pm 3:10	Mesker, Wilma E.....	ThP23 471
McKenzie, Donald L.....	WP15 264	Mehta, Anand.....	WP09 137	Mesmin, Cedric.....	ThP23 476
Mckeown, Alan.....	MP06 105	Meier-Schellersheim, Martin.....	WP36 692	Mess, Jean-Nicholas.....	WP33 643
McKew, John.....	TP25 443	Meijer, Alexander B.....	WP28 514	Mess, Jean-Nicholas.....	TP08 135
McKinney, Kimberly Q.....	MP27 555	Meijer, Alexander B.....	ThP17 292	Mess, Jean-Nicholas.....	ThP29 616
McLafferty, Fred W.....	WOC pm 2:50	Meijer, Annemarie H.....	WP31 585	Mess, Jean-Nicholas.....	MP25 494
McLaren, David.....	TP21 307	Meiler, Jens.....	MP21 398	Mess, Jean-Nicholas.....	TP08 140
McLaren, David.....	WOD pm 3:10	Meiring, Hugo D.....	TP10 176	Mess, Jean-Nicholas.....	ThP29 612
McLean, Brendan.....	TP28 512	Meissen, John.....	TOF am 08:50	Mess, Jean-Nicholas.....	ThP29 617
McLean, James.....	ThOF pm 2:30	Méjean, Marie.....	MP11 220	Mess, Jean-Nicholas.....	WP33 640
McLean, John.....	TOF pm 3:10	Méjean, Marie.....	TP03 051	Mess, Jean-Nicholas.....	WP33 631
McLean, John.....	TP24 390	Mejía Ospino, Enrique.....	ThOG pm 3:30	Mess, Jean-Nicholas.....	ThP29 614
McLean, John.....	MP29 588	Mejía-Ospino, Enrique.....	WP05 054	Messick, Kirsten.....	ThP21 388
McLean, John.....	TP04 066	Mejía-Ospino, Enrique.....	TP21 321	Mestdagh, Helene.....	TP04 070
McLean, John.....	MOB am 09:10	Melechco Carvalho, Valdemir.....	WP07 111	Mestecky, Jiri.....	ThOD am 09:30
McLean, John.....	ThP28 585	Melacheruvu, Dattatreya.....	TP17 249	Mester, Zoltan.....	MP07 139
McLean, John A.....	WP38 747	Mellal, Mourad.....	ThP23 476	Mester, Zoltan.....	MP03 053
McLean, John A.....	WP38 751	Melles, Daniel.....	TP25 424	Metalnikov, Pavel.....	TP37 755
McLean, John A.....	ThP25 486	Mellis, Alexandra.....	WP01 002	Metz, Bernard.....	TP10 176
McLeod, Elizabeth.....	TP35 697	Mellors, J. Scott.....	MOB am 09:30	Metz, Thomas.....	TP33 652
McLuckey, Morgan N.....	TP04 080	Melo, Fernanda.....	MP26 543	Meuwis, Marie Alice.....	ThP09 154
McLuckey, Scott.....	TP07 126	Meltzer, Paul S.....	WP18 312	Meuwis, Marie-Alice.....	MP23 459
McLuckey, Scott.....	MP21 402	Melvin, James.....	TP19 287	Meuwis, Marie-Alice.....	ThP23 453
McLuckey, Scott.....	ThOC pm 3:30	Mendoza, Luis.....	MP18 373	Meyer, Audrey.....	TP27 497
McLuckey, Scott.....	ThP35 699	Mendoza, Luis.....	TP28 525	Meyer, Audrey.....	MOE am 09:30
McLuckey, Scott.....	TP02 028	Mendrick, Donna.....	ThP28 588	Meyer, Dylan.....	TP11 204
McLuckey, Scott.....	ThP14 256	Mendrick, Donna.....	TP24 383	Meyer, Helmut.....	ThP22 412
McLuckey, Scott.....	MP15 273	Menezes Saidemberg, Daniel.....	TOG pm 2:50	Meyer, Helmut E.....	ThP04 034
McLuckey, Scott A.....	MOB am 08:50	Meng, Chen.....	MP29 585	Meyer, Helmut E.....	ThP22 413
McLuckey, Scott A.....	TP02 042	Meng, Da.....	WP34 644	Meyer, Jesse.....	ThP09 149
McLuckey, Scott A.....	TP02 029	Meng, Da.....	TP12 209	Meyer, Kevin.....	TP37 756
McMahon, Chris.....	MP33 681	Meng, Jia-Ming.....	MOA pm 4:10	Meyer, Markus.....	MP09 176
McMahon, Kelly.....	TP28 519	Meng, Juncal.....	ThP10 182	Meyer, Markus.....	TP29 546
McMahon, Matthew.....	WP14 247	Meng, Min.....	ThOC am 08:30	Meyer, Markus.....	TP30 575
McMaster, Christopher.....	MP29 579	Meng, Min.....	ThP29 608	Meyer, Markus.....	TP36 716
McMillen, Chelsea L.....	TP07 124	Meng, Min.....	TP26 469	Meyer, Matthew.....	ThP17 299
McNally, Jonathan.....	ThP29 606	Meng, Min.....	MP13 245	Meyer, Matthew.....	TP21 332
McNally, Jonathan.....	ThP29 592	Meng, Min.....	ThP29 592	Meyer, Melissa.....	WP06 070
McNamara, John.....	MP11 215	Meng, Min.....	TP08 162	Meyer, Timothy.....	WP18 322
McNeill, Eric.....	WP37 731	Meng, Tzu-Ching.....	ThP18 316	Meyers, Kevin.....	TP19 276
McNeil-Schwalm, Carla.....	MP27 564	Meng, Zhaojing.....	TP08 158	Meymaris, Allysen.....	ThP29 607
McNew, Brita.....	MP12 225	Menger, Robert.....	MP10 199	Meymaris, Allysen.....	MP01 027
McNew, Brita.....	TP34 689	Mennito, Anthony.....	WP05 051	Mezhebovsy, Tanya.....	TOC pm 2:30
McNew, Brita.....	ThP11 191	Menoni, C.S.....	ThP06 103	Miao, Yunan.....	MP22 431
McNicholas, Matt T.....	MP17 331	Menschaert, Gerben.....	TP17 254	Miao, Yunan.....	WP21 380
McNulty, Dean.....	WP34 651	Menschaert, Gerben.....	TP22 355	Michael, Belford.....	ThP07 110
McPhail, David.....	WP12 220	Menschaert, Gerben.....	ThP34 683	Michaelis, Elias.....	ThP28 577
McQueen, Peter D.....	WP33 623	Menschaert, Gerben.....	ThP34 676	Michaelis, Mary Lou.....	ThP28 577
McShane, Adam.....	ThP24 478	Merchant, Kalpana.....	TP13 213	Michalski, Annette.....	WOE am 10:10
McShane, Adam.....	ThP24 479	Merchant, Mark.....	ThP21 388	Michan, Shaday.....	WP28 495
McShane, Adam.....	MP23 462	Mercier, Catherine.....	TP28 505	Michel, Christian.....	MP24 476
McShane, Adam Jay.....	WP27 480	Mercken, Marc.....	TP19 280	Michelsen, Klaus.....	WP14 241
Mehcref, Yehia.....	ThP20 367	Mercola, Mark.....	MOA pm 2:30	Michielsens, Servaas.....	ThOE pm 3:10
Mehcref, Yehia.....	WP26 470	Merel, Sylvain.....	TP31 604	Michon, Josee.....	WP33 643
Mehcref, Yehia.....	WP26 460	Merel, Sylvain.....	MP31 629	Michon, Josée.....	ThP29 612
Mehcref, Yehia.....	TP21 317	Merid, Yonathan.....	ThP05 053	Midey, Anthony.....	MP06 121
Mehcref, Yehia.....	TP35 692	Meriin, Anatoli B.....	WP28 493	Mierzwa, Jerzy.....	TP32 613
Mehcref, Yehia.....	TP35 702	Merkley, Eric.....	MP20 389	Miguet, Laurent.....	ThP22 428
Mehcref, Yehia.....	ThP19 357	Merrihew, Gennifer.....	MOA am 08:30	Mikhailov, Victor A.....	WP23 412
Mehcref, Yehia.....	WP32 598	Merrihew, Gennifer.....	TP08 133	Mikkelsen, Jens D.....	TP19 283
Mechtler, Karl.....	MP06 126	Merrihew, Gennifer E.....	WP31 582	Miksovska, Jaroslava.....	TP09 167
Mechtler, Karl.....	WP34 660	Merrill, Anna E.....	WOE am 09:50	Miladi, Mahsan.....	TP06 110
Mechtler, Karl.....	WP30 541	Merrill, Anna E.....	WP33 608	Miladi, Mahsan.....	TP09 164
Mechtler, Karl.....	ThP34 682	Merrill, Anna E.....	TOA am 08:30	Miladinovic, Sasa.....	WP31 595
Mechtler, Karl.....	TP18 275	Merrill, Anna E.....	ThP13 232	Miladinović, Saša M.....	TP08 142

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Miladinović, Saša M.	TP17 252	Miura, Daisuke	WP12 221	Monge, Maria	WP17 292
Miladinović, Saša M.	TP21 310	Miura, Daisuke	WP19 341	Monge, Maria	TP24 389
Milagre, Cintia	TP34 679	Miura, Hiroya	MP25 496	Monkkonen, Lucas	WP23 420
Milagre, Humberto	MP08 165	Miwa, Teruhiko	WP07 105	Monkonnen, Lucas	MP17 336
Milagre, Humberto	TP34 679	Miwa, Teruhiko	WP07 114	Monks, Paul S.	MP16 321
Milasinovic, Slobodan	WP12 195	Miyagawa, Haruhiko	ThP11 201	Monks, Terrence	WP26 472
Milasinovic, Slobodan	ThP36 714	Miyagi, Masaru	WP22 391	Monod, Michel	ThP13 242
Miliotis, Tasso	ThP21 398	Miyagi, Masaru	MP29 600	Monroe, Eric	TP09 169
Milla, Carlos	ThP29 594	Miyaji, Atsuko	MP23 448	Monroe, Matthew	TP33 652
Millar, Alan	WOD pm 3:10	Miyamoto, Suzanne	MOD am 09:30	Monroe, Matthew E.	MP24 483
Miller, Christine	TP33 647	Miyamoto, Suzanne	ThOC am 09:50	Monsey, John	MOF am 09:30
Miller, Jessica	WP18 313	Miyauchi, Yukiko	MP11 213	Monteiro, Alvaro	TP08 157
Miller, KellyAnn	ThP25 512	Miyawaki, Izuru	TP29 556	Montenegro Burke, Rafael	MP29 588
Miller, Lance	TP08 130	Miyoshi, Daisuke	MP13 233	Montero Collado, Vladimir	ThP06 090
Miller, Marcus	TP31 602	Mizanur, Rahman	TP35 706	Montgomery, Helen	ThP25 493
Miller, Marcus	ThP27 544	Mize, Todd	WP23 412	Moochhala, Shabbir	TP24 386
Miller, Marcus	TP31 600	Mizuno, Hajime	MP04 065	Moon, Dae Won	ThP31 644
Miller, Michael R.	ThP25 512	Mizuno, Hajime	ThP28 579	Moon, Jeong Hee	ThP05 055
Miller, Rebecca	TP35 691	Mizuno, Hajime	MP32 660	Moon, Jeong Hee	ThP05 071
Miller, Ronald A.	ThOD pm 4:10	Mizuno, Hajime	MP33 678	Moon, Myeong Hee	ThP09 141
Miller, Scott	WP14 246	Mizuno, Nancy K.	TP26 465	Moon, Pyong-Gon	TP35 705
Miller, Vaughn	MP02 036	Mizuno, Ryoko	MP09 178	Moore, Benjamin	ThP35 697
Miller, Vaughn	WP08 127	Mjaavatten, Olav	ThP23 456	Moore, Benjamin	ThP12 223
Miller, Vaughn	ThP01 012	Mo, Huanbiao	ThOC pm 4:10	Moore, Blake P.	ThOD am 09:30
Millet, Anne	ThOE am 09:50	Mo, Jingjie	WOH am 08:30	Moore, Bradley S.	MP34 707
Milliken, Jenna E.	WP06 084	Mo, Shunyan	ThP31 643	Moore, D. Ray	MP03 059
Millis, Kevin	WP33 613	Moch, J. Kathleen	ThOB pm 4:10	Moore, David	ThP35 700
Mills, Clare	WP19 344	Mochizuki, Naoki	TP37 739	Moore, David	WP33 626
Mills, David	WP19 349	Modarelli, Jody M.	MP28 570	Moore, Jessica L.	MP10 191
Mills, Gordon	TOD pm 3:30	Moehring, Thomas	TP14 218	Moore, Jessica L.	MP10 190
Mills, Mark	ThP05 059	Moeller, Roy	TP04 054	Moore, Melissa J.	TP28 522
Milton, Dafydd	MP06 128	Moeller, Roy	MP15 271	Moore, Robin	MP25 507
Min, Lie	ThP24 480	Moench, Paul	MP17 340	Moore, Roger	ThP09 147
Minamisawa, Toshikazu	ThP20 368	Moffat, John	TOD pm 4:10	Moore, Ronald	TOD pm 3:30
Minardi, Carina	ThOA pm 3:30	Moffett, Ryan	ThP11 206	Moore, Ronald	TP12 209
Miner, Kyle	MP20 389	Moghaddas Gholami, Amin	MP29 582	Moore, Ronald	WP34 644
Ming, Xun	TP29 532	Moghaddas Gholami, Amin	MP29 581	Moore, Ronald	WOA am 08:50
Minkoff, Benjamin	ThOE pm 3:30	Moghaddas Gholami, Amin	MP19 383	Moore, Ronald J.	WP27 484
Minkoff, Benjamin	MP32 664	Moghaddas Gholami, Amin	MP29 585	Moore, Ronald J.	MOA am 10:10
Minner, Sarah Minner	MP10 202	Moghieb, Ahmed	MP26 538	Moore, Ronald J.	MP26 542
Minnich, Anne	ThOD pm 2:30	Mohammed, Hisham	WP28 496	Moorman, Matthew	MP08 163
Mino, Warren	TP04 083	Mohammed, Shabaz	MP06 119	Moorthy, Ganesh	TP25 436
Minohata, Toshikazu	TP30 569	Mohammed, Shabaz	WP31 586	Moorthy, Ganesh	WP06 094
Minohata, Toshikazu	WP08 121	Mohammed, Shabaz	WP30 541	Mootha, Vamsi	MOF pm 3:30
Minor, Elizabeth	WP04 037	Mohammed, Shabaz	WP31 583	Morad, Yuval	MP19 383
Minthon, Lennart	TP19 280	Mohammed, Shabaz	WP30 572	Morad, Yuval	MP29 581
Mirabelli, Mario Francesco	ThP04 044	Mohammed, Shabaz	MOA am 09:50	Morad, Yuval	MP29 582
Miranda, Cristobal	TP24 416	Mohammed, Shabaz	MP06 098	Morad, Yuval	ThP34 675
Mirhom, Youssef W.	MP34 691	Mohammed, Yassene	WP31 585	Moradian, Annie	TP22 342
Mirica, Liviu	MP22 438	Mohimani, Hosein	MP34 707	Moraes, Fabricio Edgar de	MP32 666
Mirjankar, Nikhil	TP35 703	Mohr, Susanne	MP11 216	Moraff, Carol	MP06 121
Mirnezami, Reza	ThP04 042	Mohsin, Sheher	TP31 604	Morag, Mati	MP17 338
Mirokhin, Yuri	TP23 368	Mohsin, Sheher Bano	MP31 632	Morais, Erica	TOG am 09:50
Mirokhin, Yuri	ThP34 669	Moini, Mehdi	MP29 603	Morais Cardozo, Karina Helena	WP07 111
Mirokhin, Yuri	MP19 384	Moini, Mehdi	MP30 605	Moran, Dawn	ThP25 519
Mirokhin, Yuri	MP18 368	Moini, Mehdi	WOA pm 3:30	Morandi, Gregory	WP11 183
Mirokhin, Yuri	WP31 592	Moise, Adrian	ThP14 255	Mordehai, Alex	ThP28 584
Mirzaei, Hamid	MP18 357	Mojica, Wilfrido	ThP22 421	Mordehai, Alex	MP01 006
Mirzaei, Mehdi	ThOE pm 2:30	Mok, Yu Keung	MP34 712	Mordehai, Alex	TP33 652
Misharin, Alexander	MP16 304	Molaioni, Francesco	MP30 614	Mordehai, Alex	WP38 740
Mishra, Prachi	WP18 312	Molden, Rosalynn	TP22 345	Mordehai, Alex	TP33 657
Mishra, Usha	TP20 300	Moldoveanu, Zina	WP32 601	Mordehai, Alexander	TOG am 08:50
Misonne, Xavier	WP33 643	Moldoveanu, Zina	ThP19 330	Mordehai, Alexander	WP38 753
Misonne, Xavier	WP33 640	Molina, Henrik	MP09 168	Mordehai, Alexander	TP33 647
Mistrik, Robert	MP03 045	Molina, Henrik	MP24 478	Mordehai, Alexander	MOB am 09:10
Mistrik, Robert	ThOB am 10:10	Molins, Claudia	ThP25 496	MOREAU, Stephane	WP07 110
Mitamura, Kuniko	TP26 452	Mollah, Sahana	MP24 466	Moreau, Stéphane	TP37 746
Mitchell, Christopher	WP12 203	Mollan, Todd	WP30 556	Moreau, Stéphane	WP07 098
Mitchell, Kylie	TP23 372	Mollan, Todd	WP30 557	Moreau, Stéphane	TP31 585
Mitchell, Todd W.	TP33 642	Molloy, Mark	WP33 618	Moreau, Stéphane	TP26 464
Mitchell, Todd W.	MP12 229	Molloy, Mark	TP18 259	Moree, Wilna	WP12 217
Mitran, Sorin	MP16 301	Molloy, Mark	WP27 488	Morel, Francois M. M.	ThP13 240
Mitran, Sorin	TP28 506	Molloy, Mark P.	MP26 545	Morel, Isabelle	MP30 617
Mitrovic, Bojan	TP04 055	Molnar, Laszlo	ThP28 560	Moresco, James	ThP17 286
Mitsuhiro, Kanazawa	ThOB am 09:50	Molzahn, Lars	TP28 520	Morgan, Alicia	WP12 209
Mittler, Ron	MP04 072	Mommen, Geert P.M.	TP10 176	Morgan, Chris	MOD pm 3:30
Mitulovic, Goran	ThP34 691	Monaco, Marie E.	ThP28 569	Morgenstern, David	TP11 203
Mitulović, Goran	ThP13 242	Mondeguer, Florence	ThP25 518	Morgner, Nina	WP23 411
Miura, Daisuke	ThP04 032	Monge, Maria	TP24 394	Morgon, Nelson H.	WP38 735

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Morgon, Nelson H.....	TP33 658	Mriziq, Khaled.....	MP06 108	Muntean, Felician.....	MP15 271
Moriceau, Julie.....	WP08 125	Mrsich, Milan.....	MOA pm 3:50	Muntel, Jan.....	ThOD am 10:10
Moriguchi, Naoki.....	WP11 180	Mrozinski, Peter.....	ThP11 203	Muntel, Jan.....	TP08 147
Morimoto, Kentaro.....	MP18 358	Msallaty, Zaher.....	ThP17 293	Murakami, Yoshinori.....	ThP19 338
Morin, Eric.....	MP01 024	Mu, Ruipu.....	WP03 022	Murase, Masaki.....	MP18 360
Morin, Louis-Philippe.....	WP33 631	Mu, Ting-Wei.....	WP28 501	Murase, Masaki.....	MP18 358
Morin, Louis-Philippe.....	WP33 643	Mu, Zhaomei.....	ThP22 418	Murayama, Kazutaka.....	ThP19 340
Morin, Louis-Philippe.....	ThP29 611	Muccio, Donald D.....	MP22 425	Murgu, Michael.....	MP34 696
Morin, Louis-Philippe.....	TP08 140	Muchena, John.....	ThP20 366	Murphy, Francis.....	TP35 712
Morin, Louis-Philippe.....	WP33 640	Muddiman, David C.....	TP35 700	Murphy, James.....	TP05 099
Morin, Paul.....	WOH am 08:30	Muddiman, David C.....	WP11 177	Murphy, James.....	TP04 065
Moritz, Robert.....	MP09 168	Muddiman, David C.....	MP30 618	Murphy, James.....	MP06 124
Moritz, Robert.....	TOH pm 4:10	Muddiman, David C.....	ThP05 060	Murphy, James.....	WOD pm 3:10
Moritz, Robert L.....	TP28 501	Muddiman, David C.....	TP35 711	Murphy, Jason.....	ThP09 144
Moritz, Robert L.....	MOC am 08:50	Muddiman, David C.....	MP23 441	Murphy, Jim.....	TOF am 09:30
Moritz, Robert L.....	MP18 373	Muddiman, David C.....	WP10 158	Murphy, Jim.....	ThP07 118
Moritz, Robert L.....	TP28 525	Muddiman, David C.....	ThP06 091	Murphy, Jim.....	ThP08 131
Morla, Aymeric.....	WP08 125	Muddiman, David C.....	TP21 328	Murphy, Jim.....	ThP28 573
Morlock, Gertrud.....	ThP06 107	Muddiman, David C.....	TP21 329	Murphy, Keeley.....	ThP13 244
Morokuma, Hidetoshi.....	TP05 088	Muddiman, David C.....	TP35 699	Murphy, Keeley.....	MP02 032
Morokuma, Hidetoshi.....	TP05 092	Muddiman, David C.....	ThP09 155	Murphy, Keeley.....	ThP12 228
Morosi, Lavinia.....	WP11 191	Muddiman, David C.....	TP21 327	Murphy, Keeley.....	ThP29 607
Morra, Franca.....	TP31 597	Muddiman, David C.....	ThOF am 09:10	Murphy, Keeley.....	ThP12 226
Morré, Jeffrey.....	MP34 701	Muelleder, Michael.....	TP33 661	Murphy, Madigan.....	TP31 594
Morré, Jeffrey.....	TP24 401	Muellerbeck, Matthias.....	ThOB pm 3:30	Murphy, Robert.....	WP24 432
Morreau, Hans.....	WP12 218	Mueller, Benjamin F.....	ThP08 129	Murphy, Robert C.....	WP06 073
Morris, Ayodele.....	MP01 004	Mueller, Geoffrey A.....	WP19 346	Murphy, Stephane.....	ThP12 224
Morris, Ayodele.....	ThP29 593	Mueller, Markus.....	TP08 152	Murphy, Steve.....	ThP08 133
Morris, Frank.....	TP25 420	Mueller, Markus.....	WP31 593	Murphy, Steve.....	ThP10 179
Morris, Frank.....	TP25 428	Mueller, Martin.....	MP24 482	Murphy, Steve.....	TP08 148
Morris, Jeffrey.....	MP19 386	Mueller, Mathias.....	TP14 218	Murr, Annette.....	TP19 277
Morris, Mike.....	TP01 002	Mueller, Rolf.....	MP03 051	Murray, Christopher.....	ThP18 321
Morris, Mike.....	ThOA am 10:10	Muesing, Mark.....	ThOB pm 3:10	Murray, David.....	WOB pm 4:10
Morris, Mike.....	TP04 086	Mugoni, Vera.....	ThP28 571	Murray, David.....	MP09 175
Morris, Robert.....	MP24 468	Muguruma, Miho.....	MP23 448	Murray, David.....	WP24 423
Morris, Ron.....	MOE pm 3:30	Mühl, Adolf.....	WP07 108	Murray, Justin.....	ThP10 182
Morrisey, Brian.....	ThP22 415	Muir, Tom.....	ThOH am 08:50	Murray, Kermit K.....	ThP10 175
Morrison, Lindsay.....	MOG am 08:30	Muir, Tom.....	TP22 346	Murray, Kermit K.....	MP18 364
Morrison, Lindsay.....	WP23 416	Muirhead, Laura.....	MP10 204	Murray, Kermit K.....	WP05 050
Morrissey, Barbara.....	MP30 626	Muirhead, Laura.....	TP04 086	Murray, Kermit K.....	ThP30 626
Mortensen, Grith.....	WP19 345	Mukherjee, Arnab.....	MP20 389	Murray, Kermit K.....	WOE pm 4:10
Moruz, Luminita.....	MP06 126	Mukherjee, Gargee.....	WP34 661	Murray, Kermit K.....	ThP05 072
Morzan, Ezequiel M.....	ThP05 052	Mukhopadhyay, Suchetana.....	WP32 600	Murray, Kermit K.....	ThP05 053
Moschidis, Emmanouil.....	MP19 386	Mulder, Lennart.....	ThP22 417	Murray, Paul.....	WP10 167
Moseley, Arthur.....	ThP25 487	Mulier, Kristine.....	TP24 398	Murray, Paul.....	TP01 001
Moseley, Arthur.....	ThP28 573	Mulier, Kristine E.....	TP23 366	Murray, Paul.....	TP01 002
Moseley, Hunter N. B.....	TP23 365	Mullaney, Ian.....	WP17 303	Murria, Priya.....	WP05 057
Moseley, M Arthur.....	MP18 371	Mullangi, Vennela.....	WP22 391	Murthy, Shashi.....	WP31 575
Moseley, M. Arthur.....	MOA pm 2:50	Mullen, Christopher.....	TP01 019	Musapelo, Thabiso.....	ThP30 626
Moseley, M. Arthur.....	ThP17 302	Mullen, Christopher.....	ThP06 101	Muskat, Tassilo.....	TP01 004
Moseley, M. Arthur.....	TOF am 09:30	Mullen, Christopher.....	MP29 596	Musselman, Brian.....	WP37 721
Moseley, Richard.....	MP16 297	Muller, Hendrik.....	WP05 060	Musselman, Brian.....	TOE pm 3:50
Mosely, Jackie.....	MP17 343	Muller, Ludovic M.....	WP09 148	Musselman, Brian.....	WP37 719
Mosely, Jackie A.....	TP06 120	Muller, Ludovic M.....	WP23 421	Musselman, Brian.....	WP37 718
Moshin, Jenny.....	TP29 535	Muller, Ludovic M.....	TP07 125	Musselman, Brian D.....	ThP26 520
Moskal, Joseph R.....	MP29 597	Muller, Markus.....	WP32 604	Musselman, Brian D.....	MP17 342
Moskala, Robert.....	MP34 687	Muller, Markus.....	WOB pm 3:30	Mustacich, Debbie J.....	TP26 468
Moskovets, Eugene.....	ThP30 628	Müller, David.....	MP15 278	Mustacich, Debbie J.....	TP24 403
Moss, Christopher.....	TP21 340	Müller, David.....	MP15 284	Musunuri, Sravani.....	MP26 539
Moss, Ryan.....	MP33 676	Müller, David.....	MP15 277	Muthana, Mohammed S.....	TP32 618
Mossine, Valeri V.....	MP34 706	Müller, Manuel.....	TP22 346	Muthusamy, Nagendran.....	TP21 327
Mostovenko, Ekaterina.....	WP35 678	Müller, Markus.....	MP23 458	Muydermans, Serge.....	MP23 443
Motari, Edwin M.....	ThP19 350	Müller, Martin.....	ThP17 285	Myaing, Myint Zu.....	ThP25 508
Motti, Luigi.....	WP08 134	Müller, Mathias.....	MP21 409	Myers, Brittany.....	MP36 743
Motti, Luigi.....	TP29 554	Müller, Rolf.....	MP04 079	Myers, Brittany.....	MP36 744
Motti, Luigi.....	MP31 638	Müller, Stephan.....	MP15 263	Myers, Matt.....	TP08 160
Motti, Luigi.....	MP31 637	Müller-Zülow, Bernd.....	ThP09 145	Myhr, Kjell-Morten.....	ThP22 433
Mou, Si.....	WP30 545	Mulligan, Christopher.....	MP30 624	Mylott Jr., William.....	WP33 624
Mougeot, Jean-Luc.....	MP27 555	Mulligan, Christopher.....	TP32 616	Mylott, William R.....	MP26 534
Moulder, Robert.....	MP28 568	Mulligan, Christopher C.....	MP30 622	Mylott, William R.....	TP25 449
Moura, Sidnei.....	MP34 692	Mulligan, Christopher C.....	WP19 328	Mysling, Simon.....	WOB pm 2:30
Moura, Sidnei.....	MP24 473	Mullin, Lauren.....	TP31 579	Myung, Seung-Woon.....	TP34 678
Mouritsen, Jeppe.....	TOH pm 4:10	Mullock, Steve.....	MP16 321	N Eberlin, Marcos.....	MP06 102
Movahed, Navid.....	TP24 398	Mulvana, Daniel.....	WP06 097	Na, Chan-Hyun.....	WP30 561
Mowry, Curtis.....	MP08 163	Mulvana, Daniel.....	MP06 085	Na, Keun.....	WP35 675
Moyano, Ana Lis.....	TP27 482	Munaretto, Juliana S.....	ThP27 555	Na, Seungjin.....	MP18 367
Moyano, Daniel F.....	ThP02 024	Mundt, Max.....	WP34 662	Na, Seungjin.....	WP21 381
Mraz, Jaroslav.....	ThP21 401	Muneeruddin, Khaja.....	WP28 490	Naboulsi, Wael.....	ThP22 412
Mrazek, Hynek.....	WOB pm 3:10	Muntean, Felician.....	TP04 054	Nachi, Ridha.....	ThP21 408

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Naegele, Edgar	TP31 596	Neeson, Kieran	WP12 208	Nguyen, Mai	MP01 028
Nagadoi, Aritaka	TP09 166	Neeson, Kieran	TP37 750	Nguyen, Tung Vi	TP31 589
Nagano, Hisashi	ThP26 524	Neeson, Kieran	TP33 627	Nguyen, UyenThao	ThOC am 09:50
Nagao, Tatsuhiko	WP19 341	Neeson, Kieran J.	TP33 626	Nguyen, Van Sang	MP34 712
Nagaprashantha, Lokesh Dalasanur	ThP33 667	Negassa, Abdissa	TP18 267	Nguyen, Vu	WP25 436
Nagaraj, Nagarjuna	TP17 253	Nehmé, Benjamin	WP33 622	Nguyen, Vu	TP06 094
Nagaraj, Nagarjuna	WOE am 10:10	Neilson, Karlie	ThOE pm 2:30	Ni, Chi-Kung	ThP31 647
Nagaraju, Kanneboyina	WOD pm 4:10	Nelsestuen, Gary	TP18 265	Ni, Chi-Kung	ThP31 648
Nagel, Jane	ThP09 144	Nelsestuen, Gary	TP36 733	Ni, Jinsong	ThP03 026
Nagore, Linda	TP20 302	Nelsestuen, Gary	WP27 481	Ni, Wenqin	WOG pm 3:30
Nagore, Linda	MP08 152	Nelson, Chad	WOA pm 3:50	Niadzelka, Anton	MP29 581
Nagornov, Konstantin	TP20 299	Nelson, Eric	ThP06 086	Niadzelka, Anton	ThP34 675
Nagornov, Konstantin	WOF pm 3:30	Nelson, Jenny	WP19 338	Niadzelka, Anton	MP29 582
Nagornov, Konstantin	ThP06 082	Nelson, Maria	WP18 316	Niadzelka, Anton	MP19 383
Nagornov, Konstantin	TP03 050	Nelson, Robert	ThOG pm 3:50	Nian, Huiqing	MP31 641
Nagornova, Natalia S.	WOG am 09:30	Nemati, Reza	ThP24 479	Nian, Huiqing	MP31 640
Nagtalon, Dennis	ThP07 119	Nemati, Reza	MP23 462	Nicholas, Gina	MP33 681
Nagtalon, Dennis	WP16 283	Nemes, Peter	TOB am 09:30	Nichols, Charles	ThP36 719
Nagy, Lauren	TP19 290	Nemes, Peter	WP37 720	Nichols, Charles	TP02 035
Nahon, Laurent	TP03 051	Nene, Sameer	ThP07 119	Nichols, Jason J.	TP27 496
Naik, Hemanta R.	WP12 194	Neo, Edmond	ThP07 119	Nichols, Kelly	TP27 496
Nairn, Angus C.	TP19 296	Neo, Jason	WP35 679	Nichols, William	MP36 740
Naito, Junpei	ThP05 065	Neo, Jason	WP25 450	Nicholson, Jeremy	TP24 384
Naito, Yasuhide	MP18 364	Nepomuceno, Angelito I.	TP21 327	Nicholson, Jeremy K.	ThP28 567
Nakagawa, Katsuhiko	ThP11 201	Nepomuceno, Angelito I.	TP21 329	Nicholson, Judith	WP33 618
Nakagawa, Tetsuya	WP11 173	Nesvizhskii, Alexey	WP31 578	Nickerson, Richard	ThP05 068
Nakagawa, Tetsuya	WP11 171	Nesvizhskii, Alexey	MP27 564	Nicklay, Joshua J.	MP10 186
Nakajima, Chihiro	MP08 160	Nesvizhskii, Alexey	WP31 581	Nicklay, Joshua J.	MP10 190
Nakajima, Hideki	WP07 114	Nesvizhskii, Alexey	TOD pm 2:50	Niclou, Simone	WP11 193
Nakajima, Hideki	WP07 105	Nesvizhskii, Alexey	ThOH am 09:30	Nicol, Gordon	ThP17 304
Nakamura, Junya	ThP04 032	Nesvizhskii, Alexey	TP17 249	Nicol, Gordon R.	MP26 526
Nakamura, Yoshitaka	ThP25 489	Nesvizhskii, Alexey	WOB pm 2:30	Nicola, Carla	MP34 692
Nakanishi, Tsuyoshi	WP17 296	Nesvizhskii, Alexey	TP28 523	Nicolai, Bart	ThOE pm 3:10
Nakatani, Eri	WP23 420	Nesvizhskii, Alexey	ThP34 674	Nicolardi, Simone	MP23 454
Nakaya, Shuichi	ThP19 340	Nesvizhskii, Alexey	MP29 602	Nicolardi, Simone	ThP23 471
Nakayama, Hiroshi	MP14 257	Nesvizhskii, Alexey I.	TP28 525	Nicolas, Arnel	TP28 526
Nakayama, Hiroshi	MP14 256	Neta, Pedatsur	WP31 592	Nicora, Carrie	MP26 542
Nakayama, Shoji	TP31 590	Nethero, William C.	TP26 455	Nicora, Carrie D.	WP27 484
Nakazawa, Shiori	WP22 399	Neu, Volker	MP15 263	Nie, Shuai	MP11 207
Nakazawa, Shiori	WP24 426	Neubauer, Cajetan	ThP28 570	Nie, Song	ThP21 384
Nakazawa, Takashi	MP23 448	Neubauer, Stefan	WP17 300	Nie, Song	WP26 466
Naldrett, Mike	MP23 460	Neubauer, Stefan	ThP29 599	Nie, Song	ThP22 424
Nalli, Sandro	MP07 142	Neubauer, Stefan	WP17 295	Nie, Song	MP27 561
Nally, Jordan	WP06 086	Neubert, Thomas	WP31 587	Nie, Zongxiu	ThP06 097
Nam, Won Seok	WP06 076	Neubert, Thomas	MP29 601	Nie, Zongxiu	ThP12 222
Nan, Hu	MP31 651	Neuhaus, Horst	ThP22 413	Niederkofler, Eric E.	MP25 503
Nance, Gwen	WP15 273	Neumann, Steffen	ThOB am 09:10	Nielen, Michel W.F.	ThP05 054
Nandwana, Vikas	WP02 003	Neumann, Steffen	WP13 229	Nielen, Michel W.F.	TP37 771
Nanney, Lillian B.	MP10 186	Neuroimaging Initiative, Alzheimer's Dis.	TP19 296	Nielsen, Christoffer T.	TP19 292
Nantz, Michael H.	TP23 365	Neve, Richard	WP33 632	Nielsen, Erik	TP17 245
Napoli, Anna	TP34 690	Neveu, John	WP28 504	Nielsen, Jeff	MOE am 10:10
Narasimhachary, Santhosh	WP14 247	Neveu, John	TP21 314	Nielsen, Michael L.	TP06 121
Narayanan, Manikandan	MP29 577	Nevin, Laura M.	WP37 713	Nielsen, Peter A.	MP06 119
Narayanan, Sreekala	WP06 081	Newbold, Jane	MP09 170	Niemann, Heiner	ThOA am 09:30
Narayanasamy, Suresh	ThP18 314	Newland, Kirk	ThP21 408	Niemi, Lydia	TP31 594
Narayanasamy, Suresh	ThP18 312	Newman, Dianne	ThP28 570	Nien, Pei-Yung	WP07 104
Narla, Goutham	ThP17 280	Newman, Jennifer	TP31 589	Nier, Keith	ThOH pm 3:50
Narla, Goutham	WP36 701	Newsome, Andrew	MP34 698	Nier, Keith	ThOH pm 3:10
Narum, David L.	ThOB pm 4:10	Newsome, G. Asher	WP37 732	Nies, Brian	MOH pm 3:10
Nascimento, Heliara L.	TOG am 09:50	Neyer, David	ThP08 134	Nieves, Edward	TP18 267
Nash, John	TP02 037	Ng, Brandon H.	WP36 695	Nieves, Edward	ThP23 460
Nash, Tara	ThOE pm 4:10	Ng, Gordon	WP24 439	Niggam, Sanjay	TP23 376
Nath, Avindra	TP21 324	Ng, Wai Ning	ThP15 266	Niggebrugge, Adlai	TP26 472
Natrasany, Sarah	MP33 682	Ngo, Ben	WP27 486	Niggebrugge, Adlai	TP25 441
Nauli, Surya	MP10 187	Ngo, Ben	MP06 120	Niggeloh, Verena	MP23 444
Navare, Arti	WP28 495	Ngo, Benjamin	MP15 289	Nightlinger, Nancy	ThOC am 09:10
Navarro, José Fernández	ThP34 685	Ngounou, Armand	MP29 594	Nika, Heinz	WP34 664
Navarro, Pedro	WP31 595	Ngounou Wetie, Armand	TP36 732	Nikitin, Frederic	WOB pm 3:30
Navarro, Pedro	TOD pm 3:50	Ngounou Wetie, Armand G.	ThP22 437	Nikitin, Frédéric	TP08 152
Nazarov, Erkinjon	WP38 741	Ngounou Wetie, Armand G.	ThP22 439	Nikitin, Frédéric	MP23 458
Ndiaye, Sega	ThP02 025	Ngounou Wetie, Armand G.	ThP22 438	Nikitin, Frédéric	WP31 593
Ndiaye, Sega	WP24 440	Nguyen, Amelia	MOA am 10:10	Nikolaev, Eugene	WOF pm 3:30
Nedelkov, Dobrin	MP25 503	Nguyen, An	TP29 539	Nikolaev, Eugene	MP16 310
Needham, Brittany	MP12 231	Nguyen, An	TP29 537	Nikolaev, Eugene	ThP06 082
Needham, Shane	ThP08 130	Nguyen, Andrew	WP34 655	Nikolaev, Eugene	MP17 356
Needham, Shane	WP27 478	Nguyen, Crystal	TP25 438	Nikolaev, Eugene	TP03 050
Neely, Benjamin	WP11 192	Nguyen, Hong Hanh	ThP25 514	Nikolaev, Eugene	WP21 383
Neely, Benjamin	TP36 728	Nguyen, Huy	MP01 003	Nikolaev, Eugene	TOA pm 3:30
Neerinx, Pieter	ThP17 291	Nguyen, Huy	ThP06 094	Nikolaev, Eugene	WOF am 08:30

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Nikolaev, Eugene.....	ThP06 092	Noriega, Mary C.....	TP31 581	Oda, Yoshiya.....	MP18 359
Nikolaev, Eugene.....	TP20 299	Norman, Richard.....	WP23 407	Oda, Yoshiya.....	TP22 352
Nikolaev, Eugene.....	ThP14 262	Normark, Johan.....	WP18 316	Oda, Yoshiya.....	MP18 360
Nikolaev, Eugene.....	ThP34 679	Nørregaard Jensen, Ole.....	MP32 662	Odermatt, Juergen.....	ThOG am 09:50
Nikolaev, Eugene.....	MP16 317	Norris, Andrew.....	TP18 273	Odinga, Sinje Odinga.....	MP10 202
Nikolau, Basil J.....	MP34 702	Norris, James.....	WP11 188	O'Donoghue, Patrick.....	MP29 586
Nikolayev, Alexander.....	WP18 323	Norris, Jeremy.....	TP08 143	Odwin-DaCosta, Shelly.....	TP24 391
Nikolic, Dejan.....	MP34 686	Norris, Jeremy L.....	WP10 162	Oe, Tomoyuki.....	TP20 298
Nikolos, Ioannis.....	ThP01 002	Norris, Jeremy L.....	ThP04 033	Oellerich, Thomas.....	ThP22 425
Nikolos, Ioannis.....	TP05 103	Norris, Jeremy L.....	WP12 199	Oetjen, Janina.....	ThP04 036
Nikolos, Ioannis.....	ThP06 079	Nose, Holliness.....	TP02 048	Oetting, William.....	TP18 265
Nikolov, Miroslav.....	TP22 354	Noun, Manale.....	ThOE am 09:10	Ogiwara, Atsushi.....	TP36 734
Nilsson, Anna.....	WP11 184	Nouri-Nigjeh, Eslam.....	TP21 337	Ogiwara, Atsushi.....	TP36 736
Nilsson, Anna.....	ThOF am 09:50	Nouri-Nigjeh, Eslam.....	MP25 510	Oglesbee, Devin.....	WP07 106
Nilsson, Anna.....	WP10 161	Nouri-Nigjeh, Eslam.....	ThP22 421	Oglesbee, Devin.....	MP09 179
Nilsson, Calle.....	MP30 607	Nouwens, Amanda.....	ThP15 266	Oglesbee, Devin.....	WP07 107
Nilsson, Carol.....	ThP19 345	Novak, Jan.....	WP32 601	Ogletree, Martin L.....	MP26 529
Nilsson, Carol L.....	WP35 677	Novak, Jan.....	ThOD am 09:30	Ogmundsdottir, Helga.....	TP27 495
Nilsson, Carol L.....	MP10 200	Novak, Jan.....	ThP19 330	Ogorodnikova, Elena.....	MP27 559
Nilsson, Carol L.....	MP29 597	Novak, Jan.....	ThP19 349	Ogorzalek Loo, Rachel.....	WP09 147
Nilsson, Carol L.....	MP35 716	Novak, Petr.....	MP22 437	Ogorzalek Loo, Rachel.....	ThP25 514
Nilsson, Karin B.....	MP10 200	Novak, Petr.....	MP21 393	Ogorzalek Loo, Rachel R.....	WOG pm 2:50
Nilsson, Ulrika.....	WP26 465	Novak, Petr.....	TP10 175	Ogorzalek Loo2, rachel.....	TP18 259
Ninfa, Alex.....	TP24 418	Novak, Petr.....	MP21 401	Ogura, Mayu.....	WOA am 08:30
Ning, MingMing.....	ThP34 673	Novick, Paul A.....	WP14 240	Ogura, Tairo.....	ThP07 115
Ninomiya, Satoshi.....	MP17 339	Novick, Scott.....	MP21 384	Ogura, Tairo.....	TP08 161
Nirudodhi, Sasidhar N.....	MP22 433	Novick, Scott.....	WOH am 09:50	Ogura, Tairo.....	TP31 590
Nishikawa, Kyle.....	MP01 028	Novoselov, Konstantin.....	MP16 304	Ogura, Tairo.....	MP03 044
Nishikaze, Takashi.....	MP18 358	Novoselov, Konstantin.....	ThP05 058	Ogura, Tairo.....	MP26 536
Nishikaze, Takashi.....	MP08 166	Nowak, Sascha.....	WP37 711	Ogurtsov, Aleksey.....	MP18 372
Nishikaze, Takashi.....	ThP19 329	Nowlin, Dawn.....	ThOH am 09:10	Oh, Joo Yeon.....	ThP05 071
Nishima, Wataru.....	TP35 695	Nozaki, Kazuyoshi.....	WP15 262	Oh, Joo Yeon.....	ThP05 055
Nishimura, Kazushige.....	TP05 088	Nsouli, Bilal.....	ThOE am 09:10	Oh, Myung Jin.....	TP15 235
Nishimura, Kazushige.....	TP05 092	Ntai, Ioanna.....	ThP25 510	Oh, Myung Jin.....	TOC pm 3:50
Nishimura, Yoshifumi.....	TP09 166	Ntai, Ioanna.....	TP16 244	Oh, Myung Jin.....	ThP19 346
Nishiumi, Shin.....	MP27 563	Ntai, Ioanna.....	WP35 684	Oh, Sungwhan.....	ThOC pm 2:50
Nishiumi, Shin.....	ThP28 583	Núñez, Alberto.....	ThP13 238	O'Hair, Richard A. J.....	WOC pm 3:30
Nishshanka, Upul.....	TP37 753	Núñez, Estefania.....	TP05 095	O'Hair, Richard A. J.....	WOG am 10:10
Nislow, Corey.....	TP24 409	Núñez, Antonio.....	WP33 629	Ohashi, Yoko.....	ThP20 368
Nita-Lazar, Aleksandra.....	MP29 577	Nunn, Brook.....	MP24 468	Ohira, Masayoshi.....	MP06 089
Nita-Lazar, Aleksandra.....	WP36 692	Nuriel, Tal.....	MP29 599	Ohkubo, Masataka.....	TP02 045
Niu, Ben.....	TP09 168	Nurkiewicz, Tim.....	TP21 311	Ohkubo, Masataka.....	MP16 314
Niu, Shuai.....	MOG pm 4:10	Nusinow, David.....	TOA am 09:30	Ohlmeyer, Michael.....	ThP17 280
Niu, Xinnan.....	MP28 575	Nusinow, David P.....	TOE am 10:10	Ohlmeyer, Michael.....	WP36 701
Niwayama, Satomi.....	MP24 481	Nutu, Magdalena.....	TP19 280	Ohlund, Leanne.....	WP17 297
Nixon, Chris.....	ThP10 180	Nwosu, Charles.....	TP35 713	Öhrfelt, Annika.....	TP19 280
Nizzia, Jamie.....	TP32 616	Nyakas, Adrien.....	TOF am 09:10	Öhrfelt, Annika.....	TP21 323
Njoya, Nadine.....	WP14 235	Nyakas, Adrien.....	MP13 249	Ojima, Noriyuki.....	TP08 161
Nkholise, Dineo L.....	MP34 706	Nyalwidhe, Julius.....	WP26 474	Ojima, Noriyuki.....	ThP25 493
Nobe, Yuko.....	MP14 256	O'Prey, Shane.....	MP16 297	Okada, Fumio.....	MP23 448
Nobe, Yuko.....	MP14 257	O'Connor, Peter.....	WP30 567	Okrasa, Krzysztof.....	ThP24 484
Noble, Lelia.....	WP09 138	O'Leary, Adam E.....	MP30 622	Oktem, Berk.....	ThP30 628
Noble, Suzanne.....	WP12 217	O'Shea, Thomas.....	MP02 032	Oktem, Berk.....	ThP07 117
Noble, William Stafford.....	WP31 582	Obar, Robert.....	WP28 509	Oktem, Berk.....	ThP26 523
Nofsinger, Brian.....	TP08 130	Oba-Shinjo, Sueli.....	ThP22 431	Oktem, Berk.....	ThP05 058
Nogueira Eberlin, Marcos.....	TP33 620	Obbels, Jens.....	TOF pm 2:30	Okuda, Koji.....	ThP11 202
Nogueira, Guilherme P.....	MP06 102	Obeid, Wassim.....	ThOG am 09:30	Okumu, Anna.....	ThP08 137
Noh, Mi-Jung.....	TP31 598	Oberer, Lukas.....	WP15 275	Okusa, Kensuke.....	MP06 089
Nohra, Mireille.....	ThP29 612	Oberholster, Anita.....	MP33 680	Okuyama, Torayuki.....	WP07 114
Nold, Michael.....	WP31 590	Oberreit, Derek.....	WP38 739	Okuyama, Torayuki.....	WP07 105
Nold, Michael J.....	ThOB pm 4:10	Obolensky, Oleg.....	MOG pm 3:30	Olah, Tim.....	MP25 507
Nold, Michael J.....	ThP17 302	O'Brien, Dr Rob.....	MP15 285	Olah, Timothy.....	WP27 487
Nolte, Hendrik.....	WP29 525	O'Brien, John.....	MP12 231	Olah, Timothy.....	MOE am 08:30
Nolting, Dirk.....	TP14 218	O'Brien, John.....	TP11 199	Olaitan, Abayomi.....	ThP11 195
Nolting, Dirk Nolting.....	WP30 541	O'Brien, Rob.....	TP03 052	Olaitan, Abayomi.....	MP15 269
Nomerotski, Andrei.....	ThP05 068	O'Brien, Rob.....	ThP07 114	Olaitan, Abayomi.....	MP15 268
Nomura, Naruaki.....	WP11 171	O'Connor, Charles J.....	TP10 186	Oldenburg, Thomas.....	WP05 049
Nomura, Naruaki.....	WP11 173	O'Connor, Christine.....	ThOB pm 2:50	O'Leary, Adam.....	MP30 624
Nonami, Hiroshi.....	WP07 115	O'Connor, David.....	TP26 472	O'Leary, Michael.....	MP36 736
Nonami, Hiroshi.....	MP17 339	O'Connor, Peter.....	MOH pm 2:50	Oleschuk, Richard.....	TP04 078
Nonnecke, Brian.....	MP33 675	O'Connor, Peter.....	WOE am 09:10	Oleschuk, Richard.....	TP04 082
Noon, Kathleen R.....	ThP24 481	O'Connor, Peter.....	TP09 170	Olinares, Paul D. B.....	WP23 418
Nor Eddine, Sounni.....	MP10 198	O'Connor, Peter.....	ThOF pm 4:10	Olinares, Paul Dominic B.....	WP28 507
Nording, Malin.....	TP24 396	O'Connor, Peter.....	MP31 648	Oliphant, Joe.....	ThP06 077
Nording, Malin.....	WP17 302	O'Connor, Peter.....	ThP12 220	Olivares, Daniel.....	MP35 716
Nordstrom, Anders.....	MP06 086	O'Connor, Peter B.....	MP23 445	Oliveira, Regina.....	WP16 287
Norheim, Randolph.....	ThP06 081	O'Connor, Richard.....	TP26 460	Olivera, Baldomera.....	WP31 577
Noriega, David M.....	TP28 527	Oda, Yoshiya.....	MP18 358	Oliveri, Paolo.....	ThOA am 09:30

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Olivier, Marie-Françoise	MP04 075	Orlando, Ron	ThP20 359	Owens, Kevin	MP08 157
Olivier, Michael	ThP09 169	Orlando, Ron	ThP19 348	Owens, Kevin G.	MP08 167
Olivieri da Silva Frozza, Caroline	MP24 473	Oroskar, Anil	WP19 353	Oyler, Benjamin	TP26 458
Olivos, Hernando	WP12 208	Oroskar, Anil	WP07 113	Ozawa, Tomoyuki	WP12 207
Ollensch, Julian	MP12 222	Oroskar, Asha	WP07 113	Ozbal, Can	MP02 036
Ollikainen, Elisa	WP30 574	Oroskar, Asha	WP19 353	Ozbal, Can	WP08 127
Olney, Terry	MP16 307	O'Rourke, Delia	TP35 706	Ozcan, Sureyya	ThOC am 09:50
Olney, Terry	ThP06 094	Orrego, Jorge Armando	ThOG pm 3:30	Ozcan, Sureyya	TP35 704
Olney, Terry	ThP07 110	Orrego-Ruiz, Jorge Armando	WP05 054	Ozcan, Sureyya	MP27 556
Olney, Terry	MP01 003	Orschell, Christie M.	MP10 206	Ozdemir, Abdil	TP04 058
Olofsson, Ulrika	MP31 645	Ortega, Joaquin	WOH am 08:50	Ozgen, Hasan	WP07 101
Olsen, Jesper V.	TP06 121	Ortega, Mireia	TP28 498	Ozgen, Hasan	MP07 149
Olsen, Ole H.	WP28 514	Ortega, Mireia	ThP08 138	Ozgen, Hasan	MP07 150
Olsen, Seth	ThP35 705	Orton, Daniel	MP20 389	Ozog, Allison R.	ThP01 016
Olson, John	WP30 556	Orton, Daniel	TP33 652	Pacepavicius, Grazina	MP31 631
Olson, Loren	TP25 427	Orton, Daniel	WP34 644	Pachl, Fiona	MP24 487
Olson, Loren	WP15 265	Orugunty, Ravi	WP06 082	Pachl, Fiona	TP04 072
Olson, Loren	MOE am 09:50	Orugunty, Ravi	TP26 466	Packer, Nicolle	WOG pm 2:30
Olson, Loren	TP25 428	Ory, Daniel S.	WP06 090	Packer, Robert	MP34 704
Olson, Loren Y.	MP02 033	Osaka, Yusuke	ThP07 115	Packer, Roger	ThP19 337
Olson, Matthew T.	ThP22 427	Osei, Michael	ThP28 562	Padda, Bhupinder	ThP36 723
Olsson, Fredrik	WP24 434	Oser, Harald	ThP06 094	Padden, Juliet	ThP22 413
Olszewski, Leonard	MOD pm 3:10	Oser, Harald	MP16 307	Padgaonkar, Amol	WP28 513
Olszowy, Pawel	WP34 667	Oser, Harald	ThP06 093	Padmanaban, Arunkumar	MP23 450
Olszowy, Pawel	ThP18 325	Oser, Harald	ThP06 102	Padovan, Júlio	MP20 391
Olvera, Narcisco	TOD pm 3:30	Oser, Harald	TP08 132	Padovan, Julio C.	WP28 507
Olvera, Natalie	TP29 547	Oser, Harald	ThP06 099	Padovan, Julio C.	WOG pm 2:30
Omarsdottir, Sesselja	TP27 495	Osgood, Mark	TP04 057	Padovan, Julio C.	WP23 418
O'Meally, Robert	TP12 208	Osgood, Sarah	MP26 531	Paehler, Axel	MOE pm 3:10
Omenn, Gilbert	MP27 564	Oshimura, Mitsuo	MP26 533	Paehler, Axel	MP02 031
Omenn, Gilbert	ThP22 418	Osorio, Cristina	TP21 325	Paek, Eunok	WP21 381
Omid, Maryam	MP10 202	Osorio, Hugo	WP26 473	Paek, Eunok	MP18 367
Ondrey, Frank	ThP22 426	Ossipova, Elena	ThP19 332	Paek, Han	TP37 764
Ondrey, Frank G.	TP28 511	Ossola, Reto	TP21 310	Paeng, Ki-jung	ThP32 664
O'Neal, Wanda	WP26 461	Ossola, Reto	TP17 252	Paetz, Christian	MP03 052
Ong, Chye Sun	MP34 712	Oster, C.	ThP06 103	Pagels, Shirin	MP25 506
Ong, Shao-En	WP33 609	Østergaard, Ole	TP19 292	Paglia, Giuseppe	TOF am 09:30
Ong, Ta-Hsuan	WP09 149	Ostrand-Rosenberg, Suzanne	ThP09 157	Paglia, Giuseppe	TP23 361
Ongena, Marc	WP12 215	Ostrand-Rosenberg, Suzanne	TP14 220	Pagliarini, David	WP29 528
Ono, Masaya	TP08 163	Ostrand-Rosenberg, Suzanne	TOE am 08:30	Pagliarini, David J.	MOA pm 3:30
Ono, Masaya	ThP23 469	Ostrinskaya, Alla	TP02 041	Pagliarini, David J.	ThP13 232
Onodera, Jun	ThP11 202	Ostrowski, Lawrence	WP28 500	Pagliarini, David J.	WOG am 09:50
Onodera, Masafumi	WP07 105	Oswald, Isabelle P.	MP04 063	Pagliarini, David J.	MOA am 09:10
Onodera, Masafumi	WP07 114	Otake, Andrea	ThP22 431	Pagnotti, Loubna	ThP31 637
Onorato, Joelle	ThOD pm 2:30	Otake, Koichiro	WP32 599	Pagnotti, Vincent S.	ThP31 637
Onsongo, Getiria	TP28 514	Oteiza, Fabian	WP37 715	Pagnotti, Vincent S.	TP04 062
Onsongo, Getiria	MP24 474	Otsuka, Yoichi	ThP05 065	Pagnotti, Vincent S.	ThOA pm 2:50
Onsongo, Getiria	TP17 248	Otsuka, Yuya	ThP20 368	Pagnotti, Vincent S.	ThP07 113
Onsongo, Getiria	MP18 370	Ott, Karsten	TP31 599	Pai, Pei-Jing	ThP23 451
Onsongo, Getiria	MP29 583	Otter, Don	WP19 340	Paik, Young-Ki	WP35 675
Onwujekwe, Obinna	MP30 606	Otto, Mike	MP10 194	Paik, Young-ki	ThP22 418
Oomens, Jos	ThP35 701	Otto, Mike	MP10 193	Pailleux, Floriane	ThP22 442
Oomens, Jos	WOG am 08:30	Ouafik, L Houcine	ThP02 025	Pailleux, Floriane	ThP07 112
Oomens, Jos	ThP35 694	Ouellet, Alexandre	MP30 615	Pailleux, Floriane	TP25 440
Oomens, Jos	WOG am 08:50	Ouyang, Chuanzi	ThP15 267	Paine, Martin R. L.	MP36 722
Oomens, Jos	WOG am 09:10	Ouyang, Hui	WP38 739	Paiva, Anthony	ThP10 172
Ooms, Bert	WP16 285	Ouyang, Yongzhong	WP20 364	Paiva, Anthony	WOD am 09:50
Opdam, Mark	ThP22 416	Ouyang, Zheng	TP34 688	Pajkovic, Natasa	WOD am 08:30
Openshaw, Matthew	WP30 564	Ouyang, Zheng	MP17 331	Pakrasi, Himadri B.	MOA am 10:10
Openshaw, Matthew E.	TP35 708	Ouyang, Zheng	MP17 330	Pakrasi, Himadri B.	MP21 412
Opiteck, Gregory J.	MP26 529	Ouyang, Zheng	TOA pm 2:50	Palacio Lozano, Diana Catalina	ThOG pm 3:30
Oppenheim, Frank	TP18 270	Ouyang, Zheng	ThP30 627	Palakodeti, Dasaradhi	WP17 307
Oppenheimer, Jim	ThP11 209	Ouyang, Zheng	ThP20 373	Palaniswamy, Sundaram	MP07 145
Oppermann, Felix	ThP22 425	Ouyang, Zheng	TP34 686	Palazoglu, Mine	TP24 412
Oppermann, Madalina	TP21 323	Ouyang, Zheng	TP37 745	Palella, Venkat	WP28 513
Oppermann, Madalina	WP33 629	Ouyang, Zheng	TP04 080	Paley, Martyn	WP11 172
Opsahl, Jill Anette	ThP22 432	Ouyang, Zheng	TP04 079	Palma, Camila	MP26 543
Opsahl, Jill Anette	ThP23 452	Ouyang, Zheng	TP34 689	Palma, Mario Sergio	TOG pm 2:50
Opsomer, Eric	ThP16 272	Ouyang, Zheng	TP05 091	Palma, Pierangela	WP20 361
Oren, Moshe	TP22 354	Ovchinnikova, Olga	MP15 272	Palma, Pierangela	TP31 606
Orfanopoulos, Ioannis	TP05 097	Ovchinnikova, Olga S.	ThOA am 09:50	Palmbiad, Magnus	WP35 678
Orfanopoulos, Ioannis	ThP01 002	Ovchinnikova, Olga S.	TP04 076	Palmbiad, Magnus	MP23 457
Orfanopoulos, Ioannis	TP05 103	Oveland, Eystein	ThP23 452	Palmbiad, Magnus	WP31 585
Orfanopoulos, Ioannis	MP17 350	Oveland, Eystein	ThP22 433	Palmer, Andrew	WP10 165
Orlando, Ron	MP06 129	Ovod, Vitaliy	ThOD pm 3:30	Palmer, Andrew D.	WP10 164
Orlando, Ron	WOC am 10:10	Ovsy, Olexandra	ThOD am 08:30	Palmer, Andrew D.	WP09 153
Orlando, Ron	ThP20 360	Owen, Benjamin	ThOG am 10:10	Palmer, Andrew D.	MP11 208
Orlando, Ron	TP35 694	Owen, Benjamin	ThP32 657	Palmer, Jessica	TP29 548
Orlando, Ron	Special	Owens, Jeffery	MP15 288	Palmer, Martin	ThP06 089

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Palmer, Martin.....	ThOB am 08:50	Park, Hyejung.....	MP12 222	Patrick, Jeffrey S.....	WP05 063
Palmisano, Giuseppe.....	ThP19 342	Park, Hyeokun.....	ThP11 212	Patrick, Jeffrey S.....	MP34 695
Palsosn, Bernhard O.....	TP23 361	Park, Jae-Eun.....	MP31 650	Patrie, Steven.....	TP12 211
Palsosn, Runolfur.....	ThOC am 10:10	Park, Ji-Won.....	TP24 400	Patten, Calvin.....	ThP11 214
Palvannanathan, Raman.....	WP14 249	Park, Ji-Won.....	TP24 392	Patterson, Garth.....	ThP26 527
Palvannanathan, Raman.....	WP14 248	Park, Jong-Hyok.....	ThP27 537	Patterson, Heath.....	WP09 157
Palvannanathan, Raman.....	WP14 250	Park, Jong-Moon.....	TP21 308	Patterson, Michael.....	MOH pm 3:10
Palvannanathan, Raman.....	ThP27 549	Park, Jun-Hyun.....	MP31 650	Patterson, Nathan Heath.....	MP10 185
Pamala, Jacobson.....	MP13 238	Park, Kyu Hwan.....	MP08 153	Patterson, Rainey.....	WP18 317
Pamelard, Fabien.....	ThOF am 10:10	Park, Kyu Hwan.....	MP08 155	Patti, Revathi.....	WP28 513
Pamelard, Fabien.....	ThP03 029	Park, Lani.....	ThP21 403	Pau, Stanley.....	MP15 290
Pamelard, Fabien.....	ThP02 023	Park, Melvin.....	TP33 634	Paulaitis, Michael E.....	MP27 562
Pamelard, Fabien.....	WP11 193	Park, Melvin.....	WOC am 09:50	Paulech, Jana.....	WP30 554
Pamuku, Matt.....	TP32 615	Park, Melvin A.....	WP38 746	Pauli, Guido.....	MP34 686
Pan, Chongle.....	WP29 527	Park, Melvin A.....	WP38 745	Paull, Tanya.....	ThP18 319
Pan, Chongle.....	WP32 603	Park, Seijin.....	ThP09 167	Paull, Tanya T.....	WP28 492
Pan, Chongle.....	ThP25 502	Park, SeongSoo.....	TP31 598	Paulo, Esther.....	WP28 498
Pan, Jingxi.....	MP22 424	Park, SeungYoung.....	TP31 598	Paulo, Joao.....	WP28 509
Pan, Jingxi.....	ThP04 037	Park, Soo-Chul.....	MP33 677	Paulo, Joao A.....	TP18 266
Pan, Jiongwei.....	MP13 248	Park, Sung-Gun.....	ThP30 626	Paulovich, Amanda.....	MOD am 08:30
Pan, Kuan-Ting.....	ThP18 316	Park, Sung-Gun.....	ThP05 072	Paulovich, Amanda.....	ThP17 298
Pan, Ning.....	WP30 540	Park, Tae Seung.....	TP23 374	Paulovich, Amanda.....	TOD pm 3:30
Pan, Shenmin.....	WP35 669	Park, Yeon-seung.....	ThP09 142	Paulovich, Amanda.....	MP26 541
Pan, Susu.....	TP34 673	Park, Young Mok.....	WP35 675	Paulovich, Amanda.....	TP21 334
Pan, Susu.....	WP20 362	Parker, Alex P.....	WP17 297	Paulovich, Amanda G.....	MP26 544
Pan, Wen-Harn.....	MP03 042	Parker, Benjamin.....	WOG pm 2:30	Pavana Kumari, Madireddy.....	ThP19 335
Pan, Xiang.....	ThP12 222	Parker, Benjamin.....	ThP25 507	Pawliuk, Robert.....	TP08 162
Pan, Yi.....	ThP01 008	Parker, Benjamin.....	ThP17 294	Pawlowski, Jake W.....	WP23 410
Pan, Yi.....	TP21 307	Parker, Carol.....	MP21 408	Pawlus, Alison D.....	MP34 688
Pan, Yuanjiang.....	TP01 018	Parker, David.....	MP17 343	Pawson, Tony.....	TOE am 09:30
Pan, Yuanjiang.....	ThP30 623	Parker, Eric.....	ThOE am 09:30	Pawson, Tony.....	WP36 685
Panayannage, Deepika.....	WP03 023	Parker, Evan.....	TP36 735	Payne, Samuel.....	ThP34 690
Panchagnula, Venkateswarlu.....	WP18 315	Parker, Glendon.....	WOA pm 3:50	Payne, Samuel.....	TP12 209
Panchal, Mai.....	MP10 184	Parker, Kenneth.....	TP18 270	Peacock, Samantha.....	ThP07 120
Panchal, Rekha.....	TOH pm 3:30	Parker, Kenneth.....	MP08 158	Peacock, Samantha.....	MP24 488
Panchaud, Alexandre.....	TOC am 09:50	Parker, Sarah.....	ThP23 463	Peake, David.....	ThP28 590
Panda, Saroj.....	WP05 066	Parmar, Mita.....	WP37 707	Peake, David.....	TP23 382
Panda, Saroj.....	ThOG pm 4:10	Paron, Igor.....	TOD pm 2:30	Peake, David.....	MP04 062
Pande, Vijay S.....	WP14 240	Parren, Paul.....	TOH am 09:10	Peake, David.....	MP03 045
Panderi (Panteri), Irene (Eirini).....	WP11 186	Parsawar, Krishna.....	WOA pm 3:50	Peake, David.....	MP12 225
Panderi (Panteri), Irene (Eirini).....	WP09 138	Parshintsev, Jevgeni.....	WP37 727	Peake, David A.....	ThP28 591
Pandey, Akhilesh.....	MP24 478	Parsons, Lisa.....	TP35 706	Péan, Michel.....	MP04 063
Pang, Shaokun.....	WP08 129	Parthun, Mark.....	ThP18 324	Pearson, Roger.....	ThP11 194
Panic, Tanya.....	ThP34 691	Parthun, Mark.....	TP08 156	Pearson, Terry.....	WOD pm 2:50
Panić-Janković, Tanja.....	ThP13 242	Partyka, Jan.....	ThP07 109	Pease, Joseph.....	ThP13 245
Panin, Alexandre.....	TP37 755	Pasa-Tolic, Ljiljana.....	TP12 209	Pease, Joseph.....	ThP13 246
Panne, Ulrich.....	WP09 150	Pasa-Tolic, Ljiljana.....	MP34 707	Peck, Andrew.....	TP20 301
Panne, Ulrich.....	MP17 352	Pasa-Tolic, Ljiljana.....	TP16 242	Pedada, Kiran.....	TP26 456
Pannell, Lewis.....	ThP22 419	Paša-Tolić, Ljiljana.....	ThP05 067	Pedas, Pai.....	MP32 662
Pannell, Lewis.....	TP18 272	Paša-Tolić, Ljiljana.....	TOH am 08:30	Pedder, Randall.....	MP15 293
Pannell, Lewis.....	WP26 455	Paša-Tolić, Ljiljana.....	TP16 243	Pedder, Randy.....	MP17 342
Pannell, Lewis.....	TP35 712	Paša-Tolić, Ljiljana.....	WP34 644	Peddicord, Michael.....	WP14 246
Pantazatos, Dionysios.....	WP09 138	Pascal, Bruce.....	WP22 386	Peden-Adams, Margie.....	ThP28 575
Pantazatos, Dionysios.....	WP11 186	Pascal, Bruce.....	WP22 389	Pedersen, Kamilla Sofie.....	TP19 283
Pantazides, Brooke.....	ThP26 525	Pascal, Bruce.....	WOH am 09:50	Pederson, Dan.....	TP26 472
Pantazides, Brooke.....	MOD am 09:10	Pascal, Bruce.....	MOF pm 3:10	Peebles, Bruce.....	ThP27 546
Paola Granados, Diana.....	MP28 573	Pascal, Bruce D.....	WP36 697	Peer, Markus.....	TP30 575
Papanastasiou, Dimitris.....	ThP06 079	Pascal, Bruce D.....	WP21 384	Pêgas Henriques, João Antonio.....	MP24 473
Papanastasiou, Dimitris.....	ThP01 002	Pastore, Athos A.....	TP34 681	Peh, Pok Khiang.....	MP01 017
Papanastasiou, Dimitris.....	TP05 103	Patel, Avinash.....	ThP09 163	Pejaver, Vikas.....	WP32 600
Papanastasiou, Dimitris.....	TP05 097	Patel, Bhavinkumar.....	TP21 314	Pekov, Stanislav.....	TP20 299
Papanastasiou, Dimitris.....	MP17 350	Patel, Ekta.....	ThP14 251	Pekov, Stanislav.....	WOF pm 3:30
Papanikolaou, Konstantinos.....	ThOC am 09:30	Patel, Jinal.....	WOA am 10:10	Pellerin, Mario.....	TP26 472
Papoušková, Barbora.....	MP06 101	Patel, Jinal.....	ThP10 179	Pellerin, Mario.....	TP25 441
Papoušková, Barbora.....	MP01 012	Patel, Nisha.....	WP35 672	Pelletier, Nathalie.....	TP08 149
Papov, Vladimir.....	WP26 475	Patent, Alexander.....	TP23 372	Pelletier, Nathalie.....	MP01 021
Pappin, Darryl.....	ThP07 120	Pathak, Khyati.....	ThP16 276	Pelletier, Nathalie.....	MP01 024
Pappin, Darryl D.....	TP08 145	Pathirana, Charles.....	WP14 246	Pelletier, Nathalie.....	MP06 088
Paquin, Réal.....	TP27 484	Patil, Nital.....	MP34 690	Pelliccioli, Achille.....	ThP17 282
Paquin, Réal.....	ThP01 001	Patil, Ujwal S.....	TP10 186	Pelot, Robert.....	TP21 312
Paradiso, Angelo.....	ThOD am 09:10	Patil, Ujwal S.....	TP11 195	Pelot, Robert.....	WP29 515
Paraschiv, Gabriela.....	WP07 108	Patkin, Adam J.....	ThP11 198	Peltz, Gary.....	TP24 388
Parent, Stéphane.....	TP19 280	Patrick, Amanda.....	WP30 542	Pena de Ortiz, Sandra.....	TP24 397
Parikh, Nikunj.....	WP08 127	Patrick, Jeff.....	WP19 333	Peng, Bo.....	MOG am 10:10
Park, Arum.....	ThP23 457	Patrick, Jeffrey.....	TP24 402	Peng, Chao.....	WP29 536
Park, Cade.....	MP01 004	Patrick, Jeffrey.....	MOE pm 3:50	Peng, Chen.....	TP28 524
Park, Chang Won.....	MP08 154	Patrick, Jeffrey.....	TP24 387	Peng, Gao.....	ThP27 550
Park, Hajeung.....	WP19 346	Patrick, Jeffrey S.....	ThOG am 08:50	Peng, Gao.....	TP37 748
Park, Hyejung.....	MP12 221	Patrick, Jeffrey S.....	TP23 358	Peng, Hong.....	MP27 557

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Peng, Hong	ThP18 327	Peters, Sara B.	ThP22 411	Picard, Pierre	ThP01 001
Peng, Jun	MP04 068	Peters, Wibke	MP07 149	Picard, Pierre	TP27 484
Peng, Junmin	ThP17 290	Peters, Wibke	ThOG am 08:50	Picard, Pierre	ThP29 595
Peng, Junmin	WP30 561	Petersen, Catherine E.	MP36 745	Picard, Pierre	MP02 035
Peng, Junmin	ThP23 467	Petersen, Jørgen	MP32 662	Picard, Pierre	ThP10 177
Peng, Li	MP21 394	Peterson, Amelia C.	ThOE pm 3:30	Picaud, Sarah	TOE am 09:30
Peng, Lijuan	ThP21 400	Peterson, Dave	TOE pm 3:10	Pichiorri, Flavia	MP27 562
Peng, Ling	MP36 735	Petit, Vanessa W.	MP10 184	Pichler, Peter	ThP34 682
Peng, Mao	WP32 597	Petitte, James N.	TP21 329	Pichler, Peter	TP18 275
Peng, Tao	TP19 291	Petitte, James N.	TP35 711	Pichler, Peter	MP06 126
Peng, Ying	TP12 207	Petrareanu, Catalina	TP21 336	Pickford, Russell	ThP28 580
Peng, Ying	TP12 206	Petre, Aiina Brandusa	WP07 108	Pierce, Sarah	TP37 764
Peng, Zhenlei	MP36 749	Petric, Martin	MP16 324	Piersma, Sander	WP34 665
Pengelley, Stuart	WP26 456	Petrignani, Annemieke	WOG am 09:10	Pierson, Elizabeth E.	MP16 313
Pengelley, Stuart	MP24 486	Petritis, Konstantinos	TP08 129	Pierson, Jonathan	WP05 048
Penn, Charles W.	MOC am 09:50	Petritis, Konstantinos	MP26 541	Pierson, Nicholas A.	TP33 636
Pennathur, Subramaniam	WP17 311	Petritis, Konstantinos	ThP15 264	Pietsch, Christian	MP36 734
Pennington, Stephen	ThP22 415	Petrotchenko, Evgeniy	MP21 408	Pijnenburg, Christ	WP06 095
Pentek, Daniel	MP34 704	Petrotchenko, Evgeniy	MP21 406	Pike, Erica	TP30 566
Pepin, Robert	MOG am 10:10	Petrotchenko, Evgeniy	TP11 196	Pike, Erica	MP07 134
Percy, Andrew	TOA am 10:10	Petrotchenko, Evgeniy	MP20 390	Pike, Ian	WP27 482
Percy, Andrew	WP16 289	Petrotchenko, Evgeniy	WP28 499	Pike, Ian	TP19 281
Percy, Andrew	MP19 375	Petrotchenko, Evgeniy	MP21 405	Pike, Ian	TP19 295
Perdivara, Irina	TP36 720	Petrotchenko, Evgeniy	MOF am 09:10	Pikuleva, Irina A.	ThP24 477
Pereira, Alexandre da Costa	MP10 196	Pettelkau, Jens	MP21 409	Pilau, Eduardo	TP10 190
Pereira, Rosana	TOG am 09:50	Petyuk, Vladislav	MP26 540	Pileggi, Vince	TP31 589
Perez, Carlos	WP22 389	Petyuk, Vladislav A.	MP26 540	Pillai, Manoj	MP34 683
Perez, Consuelo J.	ThP04 044	Petzold, Christopher J.	TOA am 09:50	Pillai, Manoj	WP25 452
Perez, Jose	WP17 292	Petzold, Jenny	MP10 193	Pilo, Alice	TP07 126
Perez, Kimberly	WP09 138	Pevzner, Pavel	TP16 243	Pimenov, Alexandre	MP01 016
Perez del Valle, Carlos	ThOE am 09:50	Pevzner, Pavel	TP16 242	Pimenov, Alexandre	WP06 085
Perez Pacheco, Manuel	TP28 524	Pevzner, Pavel	ThP34 679	Pimentel, Adam	MP08 163
Pergantis, Spiros	TP05 105	Pevzner, Pavel	ThP34 677	Pinguet, Jeremy	MP10 188
Perkin, Christopher	ThP29 616	Pevzner, Pavel A.	MP34 707	Pinguet, Jérémy	TP29 540
Perkins, George	WP37 710	Peyssonneaux, Olivier	MP16 320	Pinhancos, Rebeca	TP02 026
Perkins, George	ThP27 536	Pfaff, Samuel L.	ThOA am 09:10	Pinkse, Martijn W.	ThP15 263
Perkins, George	ThOA pm 3:50	Pfannkoch, Edward	TP29 541	Pinney, Kevin	WP05 065
Perkins, George	WP37 715	Pfannkoch, Edward	WP20 371	Pinnick, Veronica	ThOE am 08:50
Perkins, George	WP37 716	Pfeifer, Heike	ThP22 425	Pinnick, Veronica	TP05 090
Perkins, George	ThP27 551	Pfeiler, Georg	ThP23 470	Pinnick, Veronica	MP35 718
Perkins, George	MP09 177	Pfeuffer, Kevin	ThOA pm 3:10	Pino, Lindsay	ThP01 011
Perkins, George	MP34 704	Pham, Catherine	ThP10 176	Pinto, Danica Glenda	WP12 194
Perkins, George	WP37 714	Pham, Hung	WP05 048	Pinto, Mariana	MP26 543
Perkins, George	WP37 717	Pham, Thang	WP34 665	Pinto, Paulo Marcos	MP24 473
Perl, Alexander E. Perl	ThP22 425	Pham, Victoria	TP22 350	Piotrowski, Mary	MP02 039
Perlman, David H.	MP28 569	Pham, Victoria	TP28 502	Piotrowski, Mary	MP02 038
Perlman, David H.	TP23 380	Pham, Victoria	WP34 656	Pippin, Anika	TP26 475
Perlman, David H.	WP36 693	Pham, Wellington	WP12 206	Pirger, Zsolt	TP34 665
Perlman, David H.	WP29 524	Pham Tuan, Hai	TP30 574	Pirhalla, Jill	WP11 175
Perlman, David H.	ThP13 240	Phan, Trang	MP36 746	Pirkl, Alex	TP04 060
Pérot-Taillandier, Marie	TP06 122	Phelan, Vanessa	MP04 069	Pirkle, James	MOA am 09:30
Perou, Charles M.	ThOD am 08:30	Phelan, Vanessa	WP12 217	Pirman, David	ThOD pm 2:50
Perreault, Claude	MP28 573	Philip, Cole	MP24 478	Pirmoradian Najafabadi, Mohammad	TP04 071
Perreault, Hélène	TP36 726	Phillip, Elsy	MP25 505	Pirro, Valentina	ThOA am 09:30
Perreita Netto, Annibal D.	WP38 735	Philip, Thomas	ThP13 243	Pirrone, Gregory	MP22 414
Perry, Michael J.	ThP25 497	Phillips, Courtney	ThP27 551	Pirrotte, Patrick	TP08 129
Person, Jonathan R.	WP19 328	Phillips, David A.	MP25 503	Pischetsrieder, Monika	WP20 365
Person, Maria	ThP18 319	Phillips, Jonathan	WP26 475	Pittenauer, Ernst	MP34 705
Person, Maria D.	WP28 492	Phinney, Brett	MP09 168	Pitteri, Sharon	MP14 262
Persson, Rita	TP19 280	Phinney, Brett	WP33 620	Pitti, Robert	TP22 350
Persson, Rita	TP21 323	Phinney, Brett S.	ThP09 148	Pivnica-Worms, Helen	WP30 571
Peru, Kerry	MP31 644	Phinney, Karen	TP08 150	Piyankarage, Sujeewa C.	ThP09 166
Peru, Kerry M.	WP04 039	Phinney, Karen	ThP23 446	Plasencia, Manolo	WP30 571
Peshkin, Leonid	TP28 508	Phinney, Karen	WP19 352	Plasencia, Manolo D.	WP30 565
Pessah, Isaac N.	TP26 474	Phinney, Karen	TP30 560	Plasencia, Manolo D.	MOF am 09:50
Pessah, Isaac N.	WOF pm 3:10	Phinney, Karen	TOC pm 4:10	Plass, Wolfgang	MP16 324
Peterman, Scott	WP32 601	Phinney, Karen W.	TP36 721	Platner, Charlotte	WP01 002
Peterman, Scott	MP25 503	Phu, Lilian	ThP18 307	Platt, Stephen	ThP06 089
Peterman, Scott	WP32 602	Pi, Na	TP26 459	Pleasance, Steve	MP25 520
Peterman, Scott	ThOC am 09:10	Pi Parra, Na	WP16 283	Pleiman, Jennifer K.	ThP22 422
Peterman, Scott	WP26 474	Piatkivskiy, Andrii	TP02 036	Plett, Artur	MP10 206
Peterman, Scott	ThOD am 09:30	Picard, Didier	WP36 698	Plomley, Jeffrey	WP06 085
Peterman, Scott	ThP21 385	Picard, Pierre	ThP10 178	Plomley, Jeffrey	MP01 016
Peterman, Scott	MP25 501	Picard, Pierre	TP30 576	Plona, Zach	TP21 322
Peterman, Scott	TP22 351	Picard, Pierre	ThP27 535	Plot, Virginia	TP21 306
Peterman, Scott	TP21 309	Picard, Pierre	TP29 529	Plou, Philippe	WP17 305
Peterman, Scott	TP08 131	Picard, Pierre	TP30 577	Ploy, Marie Cécile	ThP23 444
Peterman, Scott	ThP34 673	Picard, Pierre	MP01 025	Ploy, Marie-Cécile	ThOB pm 3:50
Peters, Jonathan	TP01 004	Picard, Pierre	WP05 062	Plumb, Robert	WP16 286

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Plumb, Robert.....	TP25 451	Post, Harm.....	ThP17 291	Prieto Conaway, Maria.....	MP04 062
Plumb, Robert.....	WP18 318	Post, Jeremy.....	WP19 332	Prieto Conaway, Maria C.....	WP08 122
Plumb, Robert S.....	MP25 519	Post, Jeremy.....	MP26 522	Prikhodchenko, Peter.....	WP02 008
Plumel, Marine.....	TP21 306	Potter, Matthew.....	ThP32 660	Prince, John.....	MP11 217
Plummer, Chelsea E.....	ThP36 712	Potter, Oscar.....	MP25 512	Prince, John.....	TP28 516
Plummer, Francis A.....	MP06 094	Potter, William Z.....	TP19 296	Prince, John.....	WP33 636
Plummer, Natalie.....	WP18 322	Potts, Alexandra.....	WP36 698	Pringle, Steven.....	TP04 086
Plymire, Daniel.....	TP12 211	Potts, Gregory K.....	WP34 646	Pringle, Steven.....	ThOA am 10:10
Poch, Gregory.....	WP06 082	Potts, Gregory K.....	ThOB pm 2:30	Prins, John.....	TP29 530
Poch, Gregory.....	TP26 466	Potts, Warren.....	TOC am 08:30	Prinz, Mechthild.....	MP30 604
Podar, Mircea.....	WP36 686	Pötzl, Jörg-Ulrich.....	TOB am 08:30	Prior, Ian.....	WP33 610
Poder, Jacob.....	TP17 245	Pourkarimi, Ehsan.....	MP29 595	Priyasantha, Kd.....	TP08 155
Podgorski, David.....	ThOG pm 3:50	Poussigue, Frédéric.....	WP38 736	Progent, Frederic.....	MP16 320
Podgorski, David C.....	WP05 045	Poutma, John.....	WP01 002	Prokaeva, Tatiana.....	WP29 516
Podgorski, David C.....	TP33 655	Powell, David.....	MP10 189	Prokai, Laszlo.....	ThP29 602
Podgrudkov, Dmitry.....	ThP14 262	Powell, David.....	WP18 317	Prokai, Laszlo.....	ThP33 667
Podhorodecki, Lisa.....	ThP08 136	Powell, David.....	TP23 378	Prokai, Laszlo.....	WP14 238
Podtelejnikov, Alexandre.....	TP17 245	Powell, Kendall.....	TP08 130	Prolla, Tomas.....	WP29 528
Pogue, Joshua.....	TP04 055	Powell, Mark.....	TOC am 08:30	Proskurowski, Giora.....	MP24 468
Pohl, Chris.....	WP24 442	Powell, Matthew.....	TP21 341	Prosser, Simon.....	WP25 451
Pohl, Chris.....	WP24 444	Powell, Matthew.....	TP34 666	Prosser, Simon J.....	ThP12 221
Pohl, Chris.....	TP35 698	Powell, Matthew.....	WP11 181	Protzel, Chris.....	WP34 661
Poirier, Dave.....	WOF am 09:10	Powell, Matthew.....	ThP28 589	Provencher, Gilles.....	ThP29 601
Poisson, Lionel.....	TP03 051	Powell, Matthew.....	TP12 212	Prueksaritanont, Thomayant.....	WP15 281
Polaczek, Christine.....	MP15 280	Powell, Matthew J.....	TOB am 09:10	Prunier, Rich.....	ThP06 077
Polaczek, Christine.....	WP38 754	Powers, Thomas.....	WP11 192	Przybylski, Michael.....	MP23 443
Polanco, Gloria.....	MP27 553	Powers, Thomas.....	WP09 137	Przybylski, Michael.....	WP07 108
Polfer, Nick.....	TP02 031	Powers, Thomas.....	TOB pm 3:10	Przybylski, Michael.....	WP28 491
Polfer, Nicolas.....	ThP36 718	Pozmogova, Galina.....	MP13 247	Przybylski, Michael.....	ThP14 255
Polfer, Nicolas.....	ThP35 698	Pozniak, Christine.....	TOD pm 4:10	Przybylski, Michael.....	ThP09 145
Polfer, Nicolas.....	TP23 378	Pradeep, T.....	TP02 021	Pu, Hai.....	WP08 119
Polfer, Nicolas.....	ThP20 381	Pradeep, T.....	WP12 194	Pu, Hai.....	TP37 769
Polfer, Nicolas.....	WP30 542	Pradhan, Sujana.....	MP03 055	Pu, Yi.....	WP28 493
Polfer, Nicolas.....	ThP35 706	Prado, Mindy.....	WP23 402	Pu, Yi.....	TP33 634
Politis, Argyris.....	WP23 411	Prakash, Amol.....	TP22 351	Pu, Yi.....	ThP20 378
Pollins, Alonda C.....	MP10 186	Prakash, Amol.....	MP25 503	Pucci, Vincenzo.....	MP07 146
Pollock, Toni.....	TP08 162	Prakash, Amol.....	WP32 602	Puchades Garcia, Cristina.....	MP22 429
Polman, Katja.....	MP23 457	Prakash, Amol.....	ThOC am 09:10	Puckeridge, Max.....	WP30 554
Polovkov, Nikolai.....	MP36 724	Prakash, Amol.....	WP26 457	Pudenzi, Marcos A.....	TOG am 09:50
Poluektov, Yuri.....	ThP08 127	Prakash, Amol.....	ThP34 673	Puel, Olivier.....	MP04 063
Polyakova, Olga.....	WP03 031	Prakash, Amol.....	TP21 309	Pukala, Tara.....	MP21 403
Pomerantz, Steven.....	MP18 365	Prakash, Amol.....	MP25 501	Pulliam, Chris.....	TP34 686
Pomes, Anna.....	WP19 346	Prakash, Amol.....	TP08 131	Puri, Neelu.....	ThP23 449
Pomiès, Christelle.....	TP33 640	Prakash, Amol.....	WP32 601	Purkar, Anjali.....	TP20 302
Pomozov, Timofey.....	MP16 323	Prakash, Amol.....	ThP21 385	Purkayastha, Babu.....	MP06 108
Ponniah, Gomathinayagam.....	TP14 224	Prakash, Chandra.....	ThOF am 08:50	Purnell, Jonathan.....	TOC am 09:30
Ponthus, Jeremie.....	WP05 052	Prakesh, Amol.....	ThOD am 09:30	Purves, Randy W.....	ThP01 016
Ponthus, Jérémie.....	WP05 059	Prasad, Meera.....	ThOD am 08:30	Purvine, Samuel O.....	MP34 707
Poon, Tiffany.....	ThOA am 09:10	Prasad, Meera.....	WP31 584	Purwaha, Preeti.....	TP25 433
Poor, Taylor A.....	MOF am 09:50	Prasad, Satendra.....	ThP06 084	Purzner, Teresa.....	ThP17 303
Poothong, Sukalya.....	TP24 413	Prasad, Satendra.....	TP05 101	Puschner, Birgit.....	TP26 474
Pope, Jackson.....	MP04 070	Prasad, Satendra.....	ThP06 102	Puschner, Birgit.....	WOF pm 3:10
Pope, R. Marshall.....	ThP25 505	Prasad, Satendra.....	ThP01 018	Putluri, Nagireddy.....	WP18 312
Pope, R. Marshall.....	WP28 506	Prasad, Satendra.....	ThP01 016	Pyun, Jae-Chul.....	WP02 011
Pope, R. Marshall.....	WP26 458	Prasad, Satendra.....	ThP06 094	Pyun, Jae-Chul.....	WP02 012
Popot, Marie-Agnès.....	WP17 305	Prasain, Jeevan.....	MP03 059	Qaio, Hui.....	WP06 080
Popov, Igor.....	WOF pm 3:30	Pratt, Brian.....	TP28 525	Qamar, Saadia.....	MOF am 08:30
Popov, Igor.....	MP17 356	Preau, James.....	ThP21 405	Qi, Fei.....	ThOG am 09:10
Popov, Igor.....	TP03 050	Prenni, Jessica.....	MP03 049	Qi, Jessica.....	MP18 365
Popov, Igor.....	ThP34 679	Prenni, Jessica.....	MP04 071	Qi, Yulin.....	WOF am 09:10
Popov, Igor.....	ThP06 082	Prenni, Jessica.....	ThOE pm 2:50	Qian, Jiang.....	TP11 195
Popov, Igor.....	ThP14 262	Prenni, Jessica.....	WP26 459	Qian, Jian-Qin.....	WP14 234
Popov, Igor.....	TP20 299	Prenni, Jessica.....	TP05 099	Qian, Kejun.....	MP36 749
Popov, Igor.....	WP21 383	Prenni, Jessica E.....	ThOB am 09:30	Qian, Kuangnan.....	WP05 051
Popovic, Relja.....	ThOH am 10:10	Prentice, Boone.....	TP02 028	Qian, Pei-Yuan.....	ThP25 491
Porbeck, Frank.....	ThP06 107	Prentice, Boone M.....	TP02 029	Qian, Sun.....	ThP27 550
Porcella, Steve F.....	ThOB pm 4:10	Preston, J.....	WP19 336	Qian, Weijun.....	WOA am 08:50
Porcelli, Steven.....	ThP23 460	Preston, Ryan.....	WP24 432	Qian, Wei-Jun.....	MP24 483
Porta, Francesco.....	MP09 179	Preussner, Jens.....	MP24 476	Qian, Wei-Jun.....	MP26 540
Porta, Tiffany.....	MP30 608	Previs, Stephen.....	MP29 592	Qian, Wei-Jun.....	MP26 542
Porta, Tiffany.....	MOC am 10:10	Previs, Stephen.....	TP21 307	Qian, Wei-Jun.....	WP27 484
Portelius, Erik.....	TP19 280	Previs, Stephen.....	WOD pm 3:10	Qian, Wei-Jun.....	MOA am 10:10
Porter, John.....	WP22 394	Prevost, Michele.....	TP32 617	Qian, Wen-Jian.....	ThP14 258
Porter, Ned.....	ThP28 585	Prey, Joshua.....	TP26 460	Qian, Xiaohong.....	WP27 485
Portner, Christoph.....	MP31 647	Pridatchenko, Marina L.....	ThP34 691	Qian, Xiaohong.....	MP08 162
Poschmann, Gereon.....	ThP23 454	Prideaux, Brendan.....	WP11 183	Qian, Xuemin.....	ThOH am 08:30
Possemato, Anthony.....	WP33 632	Prieto, DaRue A.....	ThP19 352	Qian, Yichao.....	WOF am 08:50
Possemato, Anthony.....	WP34 668	Prieto, Mari.....	TOB am 08:50	Qiao, Hui.....	TP04 082

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Qiao, Hui	WP03 017	Raftery, Daniel	MP03 041	Rane, Shailendra	MP06 112
Qiao, Hui	WP06 079	Raftery, Daniel	ThP22 414	Rane, Shailendra	MP34 689
Qiao, Jana	TOD pm 3:30	Rahman, Md. Matiur	ThP30 620	Rane, Shailendra	MP11 219
Qiao, Jana	WOA am 10:10	Rahman, A. F. M. Motiur	TP37 768	Ranger, Maxime	ThP29 617
Qiao, Jinping	TP25 444	Rahman, G. M. Mizanur	TP32 615	Rangiah, Kannan	WP17 306
Qiao, Liang	WOE pm 3:30	Rahman, M. Ziaur	TP28 510	Rangiah, Kannan	WP17 307
Qiao, Liang	TP34 677	Rahman, Md. Obaidur	WP07 115	Rangelova, Kalina	WP19 345
Qin, Ann	ThP21 395	Rahman, Md. Obaidur	MP17 339	Ranjan, Priya	MP32 669
Qin, Feng	WP20 366	Rainger, G. Ed.	MP11 208	Rao, Prahlad	ThP09 169
Qin, Suzi	WP20 356	Rainville, Paul	WP18 318	Rao, Ramesh	TP33 627
Qin, Suzi	TP37 772	Rainville, Paul	TP04 065	Rao, Ramesh	ThP27 532
Qin, Weijie	MP08 162	Rainville, Paul	MP26 532	Rao, Ramesh	ThP27 533
Qiu, Haibo	MP25 509	Rainville, Paul	TP25 451	Rao, Srinivasa	TP35 698
Qiu, Xiongxiang	WP06 078	Rainville, Paul	WP16 286	Rao, Srinivasa	WP24 442
Qiu, Xiongxiang	WP20 368	Rainville, Paul	ThP29 598	Rao, Srinivasa	WP24 444
Qiu, Xiongxiang	TP37 742	Rainville, Paul	WOD pm 3:10	Rao, Wei	MP30 623
Qiu, Yanling	TP31 583	Rainville, Paul	ThP08 131	Rao, Wei	ThP02 022
Qiu, Yu	WP03 025	Rainville, Paul D.	WP15 280	Raphael, Itay	TP20 302
Qu, Haiou	TP10 186	Rainville, Paul D.	TP25 421	Rapp, Erdmann	TP36 731
Qu, Jun	TP18 255	Rainville, Paul D.	WP13 232	Rappold, Brian	MP01 015
Qu, Jun	TP18 257	Raja, Robert	ThP32 660	Raptakis, Emmanuel	ThP01 002
Qu, Jun	WP29 534	Rajagopalan, Sudha	WP06 081	Raptakis, Emmanuel	TP05 097
Qu, Jun	ThP22 421	Rajendiran, Thekkelnaycke	TP35 710	Raptakis, Emmanuel	ThP06 079
Qu, Jun	TP21 337	Raju, Eldho	TP25 426	Raptakis, Emmanuel	TP05 103
Qu, Jun	MP25 510	Raju, Shruti	MP34 689	Rardin, Brent	ThP26 527
Qu, Yi	TP12 209	Raju, Shruti	MP11 219	Rasam, Pratap	MP34 689
Qu, Yi	WOA am 08:50	Raju, Shruti	MP06 112	Rasam, Pratap	MP06 112
Qu, Yi	WP34 644	Rajwa, Bartek	TOH pm 2:50	Rasam, Pratap	MP11 219
Qu, Yi	MOA am 10:10	Rakov, Sergey	ThP27 536	Rasam, Pratap	ThP27 539
Qu, Zhe	WOA am 09:30	Rakov, Sergey	WP37 714	Rasam, Pratap	ThP11 200
Qu, Zhe	MP34 706	Ralsler, Markus	TP33 661	Rasam, Pratap	MP34 690
Quadri, Syeda S.	MP03 056	Ramadan, Ahmed A.	TP32 618	Rashid, Faraz	WP25 452
Quadroni, Manfredo	WP36 698	Ramagiri, Suma	TP24 385	Rashid, Mohammed	ThP28 568
Quan, Shu	MP21 405	Ramagiri, Suma	TP25 428	Raska, Milan	ThP19 349
Quang, Changyu	ThP13 233	Ramakrishnan, Rathi	MP10 204	Raska, Milan	ThP19 330
Quang, Changyu	TP26 455	Ramakrishnan, Vikram R.	TOA am 09:50	Raska, Milan	ThOD am 09:30
Quanico, Jusal	TOB pm 2:30	Ramaley, Corinne	MP03 057	Raska, Milan	WP32 601
Quao, Hui	TP04 056	Raman, Gurusamy	MP31 635	Raskind, Alexander	MP19 381
Quek, Siew-Young	WP19 340	Ramanathan, Arvind	TP23 372	Rasmussen, Matthew	ThP32 655
Quek, Sue-Ing	MP26 542	Ramanathan, Dil	TP25 426	Rasmussen, Morten	MP21 394
Quiason, Cristine	WP11 179	Ramanathan, Lakshmi	MOE pm 2:50	Rastinejad, Fraydoon	MP22 440
Quinkert, Zachary	WP23 418	Ramanathan, Ragu	MOE pm 2:50	Rastogi, Neha	ThP18 324
Quinkert, Zachary T.	WP28 507	Ramanathan, Ragu	TP25 420	Rastogi, Neha	TP08 156
Quinn, John	ThP12 216	Ramanathan, Ragu	TP25 428	Rath, Chris	TOG pm 2:30
Quinn, John P.	ThP06 081	Ramao, Anelisa	ThP22 431	Rath, Christopher	MP04 069
Quinn, Robbie	MP04 069	Rambla-Alegre, Maria	WP19 329	Rath, Christopher M.	TOB pm 4:10
Quinn, Ryan	ThOH am 09:50	Ramero, Maureen	WP07 098	Rathbun, Wayne	WP05 048
Quinones, Beatriz	ThP25 517	RAMERO, Maureen	WP07 110	Rathje, William	ThP34 692
Quinton, Loic	TP07 127	Ramero, Maureen	TP26 464	Rathore, Deepali	TP09 165
Quinton, Loic	ThP16 272	Ramireddy, Rajasekharreddy	TP10 174	Ratnayake, Chitra	MP15 287
Quinton, Loic	TP33 653	Ramirez, Nelson	TP28 527	Ratsameepakai, Waraporn	ThP32 663
Quyuyumi, Arshed	MP04 060	Ramirez, Sabra	ThP10 181	Ratsep, Peter	MP14 260
Ra, Hoon	ThP26 520	Ramirez-Alvarado, Marina	WOB pm 4:10	Rattke, Janine	WP09 142
Rabinovitch-Deere, Christine	TP24 419	Ramos, Luis	WOD am 09:10	Raught, Brian	MP29 602
Rabuck, Jessica N.	TP33 645	Ramos Catharino, Rodrigo	WP11 190	Rault, Matthieu	ThP27 541
Race, Alan	ThP04 049	Rampler, Evelyn	WOC am 10:10	Rauniyar, Navin	MP29 598
Race, Alan	WP10 165	Ramsey, J Michael	MP15 290	Rauniyar, Navin	ThP09 162
Race, Alan M.	WP10 164	Ramsey, J. Michael	TP28 506	Rauschecker, Mitra L.	ThOD pm 3:50
Race, Alan M.	WP09 153	Ramsey, J. Michael	MOB am 09:30	Rauterberg, Ernst W.	TP30 570
Race, Alan M.	MP11 208	Ramsey, J. Michael	ThP06 104	Ravichandran, Akshaya	TP08 159
Rad, Ramin	WP28 509	Ramsey, J. Michael	MP16 300	Ravina, Bernard	TP19 279
Rad, Ramin	TOA am 09:30	Ramsey, J. Michael	MP16 299	Ravnsborg, Christian	MP06 128
Rad, Ramin	TP28 508	Ramsey, J. Michael	MP16 301	Ravnsborg, Christian	TP17 245
Rad, Ramin	TP04 077	Ramsey, J. Michael	MP16 302	Rawlinson, Catherine	WP17 303
Radabaugh, Melissa R.	MP26 525	Ramsey, J. Michael	MP16 303	Rawlinson, Catherine	WP17 304
Radau, Sonja	TOD pm 3:10	Ramu, Kumar	WP06 074	Rawlinson, Catherine	TP23 363
Raddatz, Christian R.	MP16 329	Ramu, Kumar	TP25 438	Ray, Julie A.	MOC am 09:30
Radford, Sheena E.	MOF pm 4:10	Ran, Xiaorong	MP34 709	Ray, Kevin	ThP14 254
Radhakrishnan, Sridhar	TP24 405	Ran, Xiaorong	MP34 708	Ray, Kevin	MP26 526
Radi, Krisztina	MP09 170	Ran, Xiaorong	WP19 324	Ray, Kevin	MP26 525
Radivojac, Predrag	WP32 600	Ranasinghe, Asoka	MOE am 08:30	Ray, Patricio	WOD pm 4:10
Radivojac, Predrag	WP31 588	Rand, Kasper D.	TP15 227	Ray, Somak	WP35 676
Radivojac, Predrag	MP21 400	Rand, Kasper D.	WP22 395	Ray, Somak	ThP22 430
Radvanyi, François	ThP23 476	Randall, Shan	ThP09 155	Ray, Steven	ThOA pm 3:10
Raeder, Helge	TP19 284	Randall, Shan M.	ThP06 091	Ray, Steven J.	Special
Raether, Oliver	MP24 491	Randall, Shan M.	TP21 327	Ray, Steven J.	MOB am 10:10
Raffaelli, Andrea	TP30 567	Randall, Shan M.	MP23 441	Rayavarapu, Sree	WOD pm 4:10
Rafferty, David	TP04 083	Randau, Lennart	MP21 410	Raymond, Kimiyo	MP09 179
Raftery, Daniel	TP23 371	Rane, Abhijit	MP19 379	Raymond, Kimiyo	WP07 106

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Raymond, Kimiyo M.....	WP07 107	Rejtar, Tomas.....	WP35 673	Rice, Scott A.....	MP36 722
Rayner, Julian C.....	ThOB pm 4:10	Remes, Philip.....	TOA am 09:30	Rich, Virginia.....	ThP25 500
Razavi, Morteza.....	WOD pm 2:50	Remes, Philip.....	MP16 309	Richard, Damien.....	TP29 540
Razunguzwa, Trust.....	WP11 181	Remes, Philip.....	TOA pm 2:30	Richard, Vachet.....	WP23 417
Razunguzwa, Trust.....	ThP28 589	Remes, Philip M.....	TP05 093	Richards, Alicia.....	ThP13 231
Razunguzwa, Trust.....	TP21 341	Remes, Philip M.....	ThP06 102	Richards, Alicia L.....	ThP34 684
Razunguzwa, Trust.....	TP34 666	Remes, Philip M.....	ThP06 093	Richardson, Brenna M.....	MOA pm 2:50
Re, Suyong.....	TP35 695	Remily-Wood, Elizabeth.....	TP08 157	Richardson, Brenna M.....	ThP17 302
Read, Erik.....	TOC pm 4:10	Rempel, Don.....	MP22 438	Richardson, Jason.....	TP15 228
Reardon, Kenneth.....	ThP09 167	Rempel, Don.....	TP09 168	Richardson, Jason.....	ThP25 495
Reavis, Joshua A.....	TP22 353	Rempel, Don.....	MP22 423	Richardson, Keith.....	TP01 001
Rebec, Monica.....	TOH pm 3:10	Rempel, Don L.....	MOF am 09:50	Richardson, Keith.....	WP10 167
Rebuffat, Sylvie.....	TP06 122	Rempel, Don L.....	ThP12 218	Richardson, Keith.....	ThP06 089
Recenti, Daniele.....	MP31 637	Ren, Bailuo.....	MP25 504	Richardson, Susan.....	WP03 029
Recenti, Daniele.....	MP31 638	Ren, Da.....	ThP33 668	Riches, Eleanor.....	WP05 052
Recenti, Daniele.....	TP29 554	Ren, Da.....	ThP25 495	Riches, Eleanor.....	MP36 741
Reda, Louis.....	WP37 709	Ren, Jia.....	ThP20 374	Richrath, Brigitte.....	MP06 111
Redaschi, Nicole.....	WP32 606	Ren, Jian Min.....	ThP33 666	Richter, Florian.....	MOH am 09:10
Redden, Jacina.....	TP27 486	Ren, Jian Min.....	WP34 659	Richter, Hagen.....	MP21 410
Reddivari, Lavanya.....	TP24 405	Ren, Jianhua.....	ThP14 257	Ricke, Nathan.....	ThP32 655
Reddy, Christopher.....	ThOG pm 3:50	Ren, Jianhua.....	ThP36 723	Rickert, Keith.....	ThP10 182
Reddy, Christopher M.....	WP05 045	Ren, Jianhua.....	ThP36 722	Ridder, Lars.....	WP15 252
Reddy, E. Premkumar.....	WP28 513	Ren, Jianmin.....	WP29 531	Ridge, Douglas P.....	ThP36 711
Reddy, M. V. Ramana.....	WP28 513	Ren, Yan.....	MP27 565	Ridgeway, Mark.....	WP38 745
Reddy, Murali.....	WP20 360	Ren, Yue.....	TP04 080	Ridgeway, Mark.....	TP33 634
Reddy, Sharanya.....	MP09 177	Ren, Yue.....	MP17 330	Ridgeway, Mark.....	WP38 746
Reddy, Sharanya.....	ThP27 536	Renard, Bernhard.....	TP28 504	Ried, Thomas.....	WP33 614
Reddy, Sharanya.....	WP37 714	Renard, Bernhard Y.....	WOB am 09:50	Riedel, Jens.....	MP17 352
Reddy, Sharanya.....	ThOA pm 3:50	Renfrow, Matthew B.....	WP32 601	Riedeman, James.....	WP14 235
Redlich, Britta.....	WOG am 09:10	Renfrow, Matthew.....	ThP19 349	Riedeman, James.....	WP05 056
Redmond, Bruce.....	TP25 432	Renfrow, Matthew.....	ThP21 385	Riekkola, Marja-Liisa.....	WP37 727
Redwine, James.....	ThP35 699	Renfrow, Matthew.....	TP08 143	Riener, Joerg.....	ThP27 552
Reeber, Steven L.....	TP31 592	Renfrow, Matthew B.....	ThP19 330	Rietpietsch, Thomas.....	MP19 377
Reece, Jennifer.....	ThP36 719	Renfrow, Matthew B.....	ThOD am 09:30	Rieux, Laurent.....	MP06 128
Reece, Jennifer.....	MP35 715	Renfrow, Matthew B.....	MP22 425	Rijkers, Erikjan.....	ThP18 310
Reed, Barbara.....	TP24 413	Renfrow, Matthew B.....	TP35 702	Riley, Catherine.....	WP07 102
Reed, Janiel J.....	MP36 721	Reschke, Brent.....	TP21 341	Riley, Catherine P.....	WP07 099
Reed, Jon.....	WP29 515	Reschke, Brent.....	WP11 181	Riley, Nicholas M.....	WP34 646
Reed, Jon.....	TP21 312	Reschke, Brent.....	TP34 666	Rimmer, Mary Ashley.....	WP22 387
Reed, Ralph.....	TOC am 09:30	Reschke, Brent.....	ThP28 589	Rimnacova, Lucie.....	ThP21 401
Rees, Jon.....	ThP26 526	Reschke, Brent R.....	TOB am 09:10	Rinaldo, Piero.....	MP09 179
Rees, Jon.....	WP07 116	Reschke, Brent R.....	ThP05 054	Rinaldo, Piero.....	WP07 107
Reese, Kristen.....	ThP28 576	Resemann, Anja.....	ThP19 339	Rinaldo, Piero.....	WP07 106
Reeve, Nathaniel.....	ThP13 236	Resemann, Anja.....	TOH am 08:50	Rinehart, Jesse.....	MP29 586
Regiani, Thais.....	MP32 656	Resemann, Anja.....	WP24 429	Ringrose, Jeffrey.....	ThP17 291
Regiani, Thais.....	ThP25 492	Resemann, Anja.....	ThP19 356	Rinner, Oliver.....	TP08 142
Rehder Silinski, Melanie A.....	MP34 694	Resemann, Anja.....	WP24 434	Rinner, Oliver.....	TP21 310
Rehman, Shazia.....	MP07 140	Resetca, Diana.....	MP22 435	Rinner, Oliver.....	TP17 252
Reich, Fraser.....	MP16 321	Ressom, Habtom.....	WP26 460	Risinger, John I.....	MP25 501
Reichert, Michael.....	MP03 052	Ressom, Habtom.....	MP03 046	Risk, Brian.....	MP24 479
Reichert, Matthew.....	WP03 023	Retif, Chris.....	MOB am 09:50	Risk, Brian.....	MP19 374
Reid, Gavin.....	MOG am 08:50	Retke, Brandon.....	WP06 077	Ristic, Goran.....	WP38 741
Reid, Gavin.....	ThP28 564	Reuben, James.....	ThP22 418	Ritchey, Debbie.....	MP22 431
Reid, Gavin E.....	MP11 216	Reuschel, Scott.....	ThP29 592	Riter, Leah.....	TP31 601
Reifschneider, Olga.....	WP11 174	Reuschel, Scott.....	ThP29 608	Ritzau, Steve.....	ThP06 077
Reifschneider, Olga.....	ThP05 070	Reuschel, Scott.....	MP13 245	Rivera, Andrea.....	WP09 147
Reifschneider, Olga.....	ThP03 027	Reuschel, Scott.....	TP08 162	Rivera, Keith.....	ThP07 120
Reifschneider, Olga.....	ThP04 047	Rey, Martial.....	WOH pm 3:10	Rizvi, Toqueer.....	TP26 463
Reifschneider, Olga.....	ThP05 056	Reymond, Jean-Louis.....	MP13 249	Rizzo, David.....	TOB am 10:10
Reifschneider, Olga.....	WP23 409	Reynolds, James.....	TP34 669	Rizzo, David G.....	WP09 155
Reilly, Cavan.....	WP18 320	Reynolds, James.....	TP34 671	Rizzo, Thomas.....	ThP35 696
Reilly, James P.....	MP21 400	Reynolds, James.....	ThP01 019	Rizzo, Thomas R.....	WOG am 09:30
Reilly, Peter T. A.....	TP05 098	Reynolds, Robert.....	ThP13 236	Roach, Michael.....	TP25 446
Reilly, Peter T. A.....	TP05 109	Reyzer, Michelle.....	WP12 206	Roark, Joe.....	MP19 379
Reimschuessel, Renate.....	TP37 753	Reyzer, Michelle L.....	WP12 199	Rob, Tamanna.....	WP22 393
Reiner, Eric.....	MP31 630	Reyzer, Michelle L.....	WP12 202	Rob, Tamanna.....	WOH pm 3:30
Reiner, Eric J.....	WOF am 09:10	Rhee, David.....	MP26 526	Rob, Tamanna.....	WOH am 09:30
Reinhardt, Timothy.....	MP33 675	Rhee, Hyun-Woo.....	MOF pm 3:30	Robbins, Philips W.....	ThP19 350
Reinhold, Vernon.....	TP36 717	Rhee Paeng, Insook.....	ThP32 664	Robbins, Winston.....	ThOG pm 3:50
Reinhold, Vernon.....	TP36 718	Rhoads, Timothy W.....	ThP13 232	Robbins, Winston.....	WP05 053
Reinhoud, Nico.....	WP15 260	Rhodes, Jonathan M.....	MP27 554	Robbins, Winston.....	WP05 061
Reinhoud, Nico.....	ThP18 317	Rhodus, Nelson.....	ThP22 426	Robert, Bailey.....	MOD pm 4:10
Reis, Celso.....	WP26 473	Rhodus, Nelson L.....	TP28 511	Roberts, Allison.....	WP01 002
Reiss, Caroline.....	TP23 375	Riaz, Abrar.....	TP04 083	Roberts, Dominic.....	WP37 707
Reiter, Karine.....	ThOB pm 4:10	Riba-Garcia, Isabel.....	MP19 386	Roberts, Dominic.....	TP33 627
Reiter, Lukas.....	TP21 310	Ribeiro, Fabio.....	ThOG pm 2:30	Roberts, Dominic.....	ThP27 532
Reiter, Lukas.....	TP08 142	Ribeiro, José Antônio.....	MP05 084	Roberts, Dominic.....	TP33 626
Reiter, Lukas.....	TP17 252	Ricard, Cindy.....	TOE pm 3:10	Roberts, Dominic.....	ThP27 533
Reitz, Richard E.....	MP09 171	Rice, Robert H.....	ThP09 148	Robertson, Fredika.....	ThP22 418

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Robichaud, Guillaume	MP30 618	Rogers, Janet	ThP23 447	Rosen, Steven	ThP23 448
Robichaud, Guillaume	ThOF am 09:10	Rogers, John	ThP18 321	Rosenberger, George	WP36 688
Robichaud, Guillaume	WP10 158	Rogers, John	WP33 617	Rosenberger, George	TP28 499
Robichaud, Guillaume	ThP05 060	Rogers, John	ThP23 449	Rosenberger, George	TOH pm 4:10
Robichaud, Guillaume	WP11 177	Rogers, John	TP11 197	Rosenberger, George	WP31 595
Robinette, Steven L.	TP30 570	Rogers, John C.	ThP08 135	Rosenblatt, Kevin	MP26 522
Robinson, Carol	WP23 412	Rogers, John C.	WOA am 09:50	Rosenblatt, Michael	TP08 157
Robinson, Carol V.	WP23 411	Rogers, John C.	TP35 709	Rosenblatt, Michael	TP15 233
Robinson, Carol V.	MOF am 08:50	Rogers, John C.	TOD am 08:50	Rosenblatt, Michael	ThP08 125
Robinson, Carol V.	MP21 401	Rogers, John C.	WP33 613	Rosenblatt, Mike	ThP08 124
Robinson, Errol W.	ThP05 067	Rogers, John C.	WOA am 09:30	Rosenblatt, Mike	ThP08 126
Robinson, Jessica	WP28 496	Rogers, Pamela	ThP21 394	Rosenthal, Liana	TP19 276
Robinson, Mary	MP30 625	Rogers, Rich	ThOC am 09:10	Rosenvold, Katja	MP33 681
Robinson, Michelle	WP30 566	Rogers, Richard	MOD pm 4:10	Rosing, Hilde	WP15 252
Robinson, Phillip	WOE am 09:30	Rogowska-Wrzesinska, Adelina	MP32 662	Rosnack, Kenneth	ThP27 533
Robinson, Sarah	MP36 745	Rogstad, Sarah	MOF pm 3:50	Rosowski, Kristin	ThP22 413
Robinson, Veronica G.	MP34 694	Rogulina, Svetlana	MP29 586	Rosowski, Kristin Rosowski	ThP22 412
Robinson, Veronica G.	TP26 470	Rohan, Thomas E	TP18 267	Ross, Helen	MP26 541
Robles, Maria S	TOE am 09:10	Rohde, Ellen	ThP01 003	Ross, Jennifer	MOD am 08:30
Robotham, Scott A.	ThP19 353	Rohlff, Christian	MP25 497	Ross, Jennifer	MP26 544
Roboz, John	WP28 513	Rohlfing, Frederick	TP19 278	Ross, Mark	TP29 548
Rocca, J.J.	ThP06 103	Rohmer, Marion	TP15 226	Ross, Mark M.	WP19 346
Rocconi, Rodney	ThP22 419	Rohmer, Marion	ThP08 129	Ross, Philip	TP10 184
Rocconi, Rodney	TP35 712	Rohmer, Marion	MP08 159	Ross, Robert	MP14 252
Rochat, Bertrand	MOE am 08:50	Rohrs, Henry W.	WP30 571	Ross III, Charles W.	ThP12 225
Roche, Lucie	TP29 540	Rohrs, Henry W.	WP30 565	Rossomando, Anthony	TOC pm 2:50
Rock, Dan	WP24 433	Roizen, Jennifer	WP37 731	Röst, Hannes	TP28 499
Rocke, David	MP27 556	Rojsajjakul, Teerapat	WP22 398	Röst, Hannes L.	WP36 688
Rocker, Jana	WP26 455	Rojsajjakul, Teerapat	WP22 396	Rostad, Colleen	WOF am 08:30
Rockwood, Alan L.	MOC am 09:30	Rojsajjakul, Teerapat	WP21 382	Rosu, Frederic	ThP35 696
Rodayan, Angela	TP31 588	Rokka, Anne	MP28 568	Rotello, Vincent M.	WP02 003
Roddy, Thomas	TP21 307	Rolando, Christian	TOA pm 3:10	Rotello, Vincent M.	ThP02 024
Roddy, Thomas	WOD pm 3:10	Rolando, Christian	TP12 210	Roth, Jeri	WP31 592
Rodenhuis, Sjoerd	ThP22 417	Rolfs, Joelle	WOE pm 3:10	Roth, Jeri	ThP34 669
Roder, Heinrich	MP09 181	Rolland, Delphine	MP27 564	Roth, Johannes	WP28 497
Roder, Joanna	MP09 181	Rollet, Marion	MP36 746	Rothnagel, Joe	ThP15 266
Rodgers, Mary	TP02 048	Rollman, Christopher	WOA pm 3:30	Rothschild, Kenneth	ThP09 151
Rodgers, Mary T.	TP01 017	Rollman, Christopher	MP30 605	Rotter, Charles	MP02 034
Rodgers, Ryan	WP05 053	Roman, Markus	MP30 609	Rouden, Jacques	TOG am 09:30
Rodgers, Ryan	MOG pm 2:30	Roman, Patrick	MP35 720	Roudier, Martine	MP27 566
Rodgers, Ryan	ThOG pm 3:50	Romanelli, Anthony	MP02 038	Rouse, Jason C.	TP15 236
Rodgers, Ryan	WP05 061	Romanelli, Anthony J.	MP02 033	Rousova, Jana	ThP06 086
Rodgers, Ryan P.	WP05 046	Romanov, Vladimir	MP17 346	Rout, Michael	ThOB pm 3:10
Rodgers, Ryan P.	WP05 045	Romanova, Elena	WP33 615	Rout, Michael P.	TOH am 10:10
Rodgers, Ryan P.	ThP12 217	Romanova, Elena V.	TP08 154	Routhier, Eric	TOC pm 2:30
Rodgers, Ryan P.	TP33 655	Romanova, Elena V.	ThP14 261	Roux, Aurelie	WP23 421
Rodgers P., Ryan	WOC pm 3:10	Romero, Rosario	MP04 070	Roux, Aurelie	TP07 125
Rodgers, Mary T.	WP15 270	Romm, Michelle	WP08 127	Roux, Philippe P.	TOE am 08:50
Rodland, Karin	TOD pm 3:30	Römpf, Andreas	TOB am 08:30	Rowe, Josh	ThP03 026
Rodland, Karin D.	MP26 540	Roncato, Marie-Anne	ThP25 506	Röwer, Claudia	WP34 661
Rodland, Karin D.	MP26 542	Rone, Hassan	ThP32 655	Rowland, Steven	WP05 061
Rodland, Karin D.	WP27 484	Rooney, Michael	ThOF am 08:30	Rowland, Steven	ThOG pm 3:50
Rodnin, Mykola	MP22 427	Roos, David	MP25 504	Roy, Pascal	TP28 505
Rodnina, Marina V.	WP28 512	Roos, David	MP25 506	Roy, Rene	WP17 297
Rodrigue, Marc	ThP23 444	Roos, David	MP25 505	Roy, René	ThP21 399
Rodrigues, Clenilson	MP05 084	Roper, Stephen	TP36 728	Roy, Sushmita	WP29 528
Rodrigues, Silas	WP29 517	Roper, Stephen	WP11 192	Roy, Urmi	TP36 732
Rodriguez, Antony D.	MP22 428	Roqan, Iman	TP34 687	Roy, Urmi	MP29 594
Rodriguez, Yustina	WP05 054	Rosa, Jose Cesar	ThP22 431	Roy, Urmi	ThP22 437
Rodríguez-Blanco, Giovanni	WP18 319	Rosa, Ray	TP21 307	Roy, Urmi	ThP22 439
Rodriguez-Navarro, Jose Antonio	MOE am 09:30	Rosales, Hernando	MP08 164	Roy-Lachapelle, Audrey	WOF pm 3:50
Rodthongkum, Nadrudda	WP02 006	Rosati, Sara	WP24 422	Royland, Joyce E.	TP21 325
Roe, Mikel	WP17 298	Rosati, Sara	TOH am 09:10	Rozbesky, Daniel	MP21 393
Roe, Mikel R.	TOC am 09:10	Roscoe, Mike	TP37 744	Rozbesky, Daniel	MP21 401
Roe, Mikel R.	TP26 465	Rose, Christopher M.	WOE am 09:50	Rozemuller, Annemieke J.M.	ThP23 445
Roehr, Nathan	ThP35 700	Rose, Christopher M.	ThP34 684	Rozsnyai, Andor	ThOA am 10:10
Roehr, Nathan	TP02 031	Rose, Christopher M.	TP08 153	Rozsnyai, Andor	TP01 013
Roempp, Andreas	ThP04 035	Rose, Christopher M.	ThP13 231	Ru, Feng	MP03 054
Roempp, Andreas	WP12 214	Rose, Christopher M.	ThOE pm 3:30	Ruan, Qian	TOG pm 3:50
Roenker, Nicole	WP06 088	Rose, Christopher M.	TOA am 08:30	Rubakhin, Stanislav	ThP03 028
Roenker, Nicole	WP06 087	Rose, Kristie	WP33 620	Rubakhin, Stanislav	ThP22 436
Roenker, Nicole	ThP16 273	Rose, Kristie L.	WP09 155	Rubakhin, Stanislav	WP09 149
Roesch-Ely, Mariana	MP34 692	Rose, Rebecca	WOH am 09:10	Rubakhin, Stanislav S.	ThP14 261
Roesch-Ely, Mariana	MP24 473	Rose, Rebecca	TOE am 08:30	Rubbia-Brandt, Laura	TP21 333
Roest, Hannes	WOB am 10:10	Rose, Rebecca	WP22 394	Rubin, Mark A.	MP26 540
Roest, Hannes	WP31 595	Rose, Rebecca	MP21 396	Rucevic, Marijana	MP28 572
Roest, Hannes	TOH pm 4:10	Rose, Rebecca E.	ThOH am 09:50	Ruczinski, Ingo	WP26 464
Rogers, Chelsea	ThP23 447	Rose, Rebecca J.	MOF pm 2:50	Rudaz, Serge	ThP29 605
Rogers, George	TP23 371	Roseboom, Winfried	MP21 407	Rudaz, Serge	MOE am 08:50

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Rudd, Pauline	TP36 719	Rzeczniczak, Teresa Z.	TP24 408	Sampadi, Bharath	WP34 665
Ruddy, Brian	ThP12 217	Saadi, Amel	WP28 496	Sampaio, Paulo T. B.	TP34 675
Ruddy, Brian M.	WP05 046	Saadi, Karim	TP31 588	Sana, Theodore	ThP33 665
Rudelius, Martina	MP27 551	Saari, Leena	TP37 760	Sana, Theodore	MP19 379
Rudnick, Paul	WP33 620	Saba, Alessandro	TP30 567	Sana, Theodore	ThP28 584
Rudnick, Paul	ThP34 669	Saba, Julian	WP26 474	Sanchez, Laura	TOG pm 2:30
Rudnick, Paul	MP19 384	Saba, Julian	ThP20 375	Sand, Dominik	MP15 279
Rudnick, Paul	MP18 368	Saba, Julian	WP24 444	Sanda, Miloslav	ThP19 354
Rudnick, Paul	WP31 578	Saba, Julian	TP35 698	Sander, Lane	TP30 560
Ruecha, Nipapan	WP02 006	Saba, Julian	ThP21 385	Sander, Madlen	TP01 009
Rueckert, Franz	ThP24 479	Sabidó, Eduard	ThP08 138	Sander, Madlen	MP12 230
Ruffin, Mack T.	MP27 561	Sabidó, Eduard	TP28 498	Sanders, Mark	WP17 301
Ruggles, Kelly	TOD pm 3:30	Sabidó, Eduard	WP28 498	Sanders, Mark	ThP28 568
Ruggles, Kelly V.	TP21 332	Sacco, Randy	MP33 675	Sanders, Nathan	WP38 753
Ruggles, Kelly V.	ThP17 299	Sachsenberg, Timo	MP20 387	Sanders, Nathan	TOG am 08:50
Ruggles, Kelly V.	ThOD am 08:30	Sachsenberg, Timo	MOF am 08:30	Sanderson, Cynthia	WP14 239
Ruhaak, L. Renee	MP27 556	Sadilek, Martin	MOC pm 2:30	Sanderson, Philip	TP25 443
Ruhaak, L. Renee	MOD am 09:30	Sadjadi, Seyed	WP19 336	Sanderson, Russell	TOH am 09:50
Ruhaak, L. Renee	WP19 347	Sadler, Peter	WP30 567	Sandholm, Anna	TP25 430
Ruhaak, L. Renee	ThOC am 09:50	Sadler, Peter J.	MP23 445	Sandhu, Jasmeet	MP30 626
Ruhaak, L. Renee	TP19 290	Sadygov, Rovshan	WP32 607	Sandonato, Beatriz	MP08 165
Ruijken, Marco	WP15 252	Sage, Ashley	ThP01 019	Sandri, Brian	MP27 552
Ruijken, Marco	WP15 253	Sagesaka, Yuko M.	MP32 660	Sands, Caroline J.	ThP28 567
Ruiz-Moyano, Santiago	WP19 349	Saha, Krishnendu	ThP02 024	Sandt, Christophe	ThOE am 09:10
Rumbelow, Stephen	WP12 209	Saha, Margaret	WP01 002	Sangaraju, Dewakar	MP13 243
Rumpler, Marc	WOA pm 4:10	Saha, Subhrakanti	WP07 115	Sanghani, Paresah	TP34 689
Rumsey, Jeanne	TP21 332	Saha, Subhrakanti	ThP30 630	Sanghavi, Kinjal	MP13 238
Rumsey, Jeanne	ThP17 299	Sahaiba, Peyman	TP24 388	Sanguantrakun, Ning	WP05 049
Runnulu, Nalaka	TP18 259	Saidykhhan, Amie	ThP31 634	Sankpal, Umesh T.	WP33 628
Ruokolainen, Miina	WP30 574	Saikusa, Kazumi	TP09 166	Santambrogio, Laura	ThP23 460
Ruotolo, Brandon	TP33 643	Saito, Kazuki	MP03 050	Santana, Wanda	MOA am 09:30
Ruotolo, Brandon	TP33 646	Saito, Kazunori	WP19 341	Santasania, Carmen T.	MOF pm 08:4
Ruotolo, Brandon	MOG pm 4:10	Saito, Mak	ThP25 519	Santiago, Brandon	ThP01 006
Ruotolo, Brandon	TP33 644	Saito, Toshie	ThP08 137	Santiago-Schuebel, Beatrix	TP31 583
Ruotolo, Brandon T.	TP33 630	Sakai, Miho	TP31 603	Santini, Robert E.	MOB am 08:50
Ruotolo, Brandon T.	TP33 645	Sakairi, Minoru	ThP26 524	Santorio, Massimo	ThP28 571
Ruparella, Frenny	TP04 082	Sakamoto, Shigeru	ThP28 583	Santorio, Nanette	WP06 073
Ruprecht, Benjamin	TP08 139	Sakamoto, Shigeru	TP31 603	Santos, Ivan	TP24 397
Ruprecht, Benjamin	WP34 662	Sakamoto, Yuki	ThP11 201	Sap, Karen	ThP18 310
Ruse, Cristian	MP24 488	Sakane, Iwao	ThP14 252	Sapargaliyev, Aldan	MP16 326
Ruse, Cristian I.	ThP07 120	Sakane, Iwao	MP32 660	Sapargaliyev, Yerbol	MP16 326
Rusinga, Farai	WP21 375	Sakthivel, Natarajan	MP31 635	Saraji-Bozorgzad, Mohammad Reza	MOH pm 4:10
Rusling, James	WP35 669	Sakuma, Takeo	WOA pm 3:10	Saraji-Bozorgzad, Mohammad Reza	TP03 053
Russ, Holger	TP21 340	Sakuma, Takeo	MP34 683	Saraji-Bozorgzad, Mohammad Reza	MOH pm 3:50
Russ, Manuela	WP34 661	Sakuma, Takeo	WP04 039	Saraswat, Suraj	MP21 400
Russell, Claire	WP27 482	Sakuma, Takeo	WP15 266	Sarathy, Mani	WP05 068
Russell, Claire	TP19 281	Sakuma, Tomohiro	TP08 163	Sarg, Bettina	ThP17 285
Russell, David	WP02 007	Sakuma, Tomohiro	ThP23 469	Sarg, Bettina	MP24 482
Russell, David	TP33 650	Sakurai-Yageta, Mika	ThP19 338	Sarg, Bettina	WP30 563
Russell, David H.	TP33 636	Salazar, Carolina	ThP28 581	Sarpe, Vladimir	WOH pm 4:10
Russell, David H.	TP33 631	Salazar, Carolina	MP04 072	Sarracino, David	ThP34 673
Russell, David H.	TP33 648	Salekdeh, G. Hosseini	ThOE pm 2:30	Sarracino, David	TP08 131
Russell, David H.	TP33 659	Salih, Bekir	MP23 455	Sarracino, David	WP32 602
Russell, Jared	TP37 754	Salih, Bekir	WP34 653	Sarracino, David	TP22 351
Russell, Jason	ThP08 133	Salih, Bekir	WP34 654	Sarracino, David A	WP26 457
Russell, William K.	MP29 584	Salih, Bekir	TP36 725	Sarracino, David A.	TP21 309
Rutherford, Becky J.	TOA am 09:50	Salih, Bekir	ThP09 150	Sarrión, Nieves	TP05 100
Rutherford Bethard, Jennifer	WP30 553	Sallans, Larry	WP15 272	Sarsby, Joscelyn	WP09 153
Rutherford Bethard, Jennifer	ThP19 347	Salminen, William	ThP28 588	Sarsby, Joscelyn	WP10 165
Rutishauser, Dorothea	WOB am 09:30	Salminen, William	TP24 383	Sarsby, Joscelyn	MP11 208
Ruzicka, Josef	TP23 364	Salovska, Barbora	WP34 649	Sarsby, Joscelyn	WP10 164
Ryabokon, Anna	TP20 299	Salske, Matthew	MP01 015	Sarsby, Joscelyn	ThP04 049
Ryabokon, Anna	WOF pm 3:30	Salter, Bruce	MP15 288	Sartain, Mark	TP26 459
Ryan, Chris	TP18 273	Salter, Tara La Roche	ThP30 633	Sartor, Romain	TP34 677
Ryan, Chris	ThP24 485	Salvador, Arnaud	MP26 527	Sarychev, Igor	WP08 123
Ryan, Christopher M.	WP21 379	Salvador, Arnaud	ThP07 112	Sasaki, Masako	WP19 341
Ryan, Jeanne P.	ThP22 437	Salvador, Arnaud	TP28 505	Sasaki, Takayo	TP22 344
Ryan, Jeanne P.	ThP22 439	Salvato, Fernanda	WP33 638	Sass, Philip	TOC pm 2:30
Ryan, Jeanne P.	ThP22 438	Salve, Akshata	ThP27 539	Sato, Hiroaki	ThP25 493
Rychnovsky, Scott	MP21 404	Salzet, Michel	TP04 087	Sato, Kanta	TP26 452
Rychnovsky, Scott	MP21 411	Salzet, Michel	TOB pm 2:30	Satoh, Takaya	WP11 180
Ryder, John	TP13 213	Samandar, Ella	ThP21 405	Satoh (née Okihara), Rika	TP26 452
Rydevik, Axel	WP15 276	Samant, Maithilee	TP28 513	Satori, Chad	MOE am 09:30
Rydevik, Axel	WP15 274	Samant, Maithilee	MP19 379	Saucier, Cédric	MP33 676
Ryu, Jiyeong	TP37 759	Samanta, Susmita	WP18 312	Sauer, Uwe	WP36 702
Ryu, Min Jeong	TP23 374	Sameulson, John	ThP19 350	Saul, Richard G.	MP08 151
Ryu, Su-Yeol	WP02 011	Samgina, Tatiana	ThP16 278	Sauter, Drew	WP37 734
Ryumin, Pavel	ThP06 092	Samii, Kaveh	MP09 176	Sauter, Guido	MP10 202
Ryzhov, Victor	TP02 036	Samir, Parimal	MP28 575	Sauter III, Andrew	WP37 734

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Sauve, Sebastien	TP32 617	Scheubert, Kerstin	WP13 231	Scholten, Arjen	WP32 597
Sauvé, Sébastien	TP31 587	Schey, Kevin L	WP09 140	Schommer, Vanessa	MP10 193
Sauvé, Sébastien	WP03 014	Schey, Kevin L	WP09 152	Schoofs, Liliane	ThP34 676
Sauvé, Sébastien	WOF pm 3:50	Schiel, John	TOC pm 4:10	Schorge, Tobias	MP06 092
Savage, Mary J	ThOD pm 4:10	Schierwater, Bernd	ThP17 291	Schorck, Francis Joseph	TP33 654
Savage, Stephen	MP10 192	Schiff, Rachel	WP18 312	Schorzman, Allison N.	TP25 439
Savant, Ishani	MOC pm 3:50	Schiffler, Stefan	ThP04 036	Schrader, Wolfgang	WP05 064
Savaryn, John P.	WOD pm 3:30	Schiller, Juergen	MP11 210	Schrader, Wolfgang	WP02 009
Savas, Jeffrey	TP21 318	Schilling, Birgit	TP28 521	Schrader, Wolfgang	ThOG pm 4:10
Savas, Jeffrey	ThP09 162	Schilling, Birgit	ThOD am 08:50	Schraen-Maschke, Susanna	MOD am 08:50
Saveliev, Sergei	ThP08 125	Schilling, Birgit	MOA pm 3:50	Schramm, Thorsten	ThP04 035
Saveliev, Sergei	ThP08 124	Schilling, Birgit	WP30 555	Schramm, Will	MP02 039
Saveliev, Sergei	ThP08 126	Schintu, Nicoletta	WP12 210	Schreiber, Andre	ThP27 529
Savitski, Mikhail	MP29 581	Schintu, Nicoletta	ThOF am 09:50	Schreiber, Andre	WP04 039
Savitski, Mikhail	MP29 582	Schinz, Christian	TOB am 08:30	Schreiner, Dietmar	TP13 216
Savitski, Mikhail	MP19 383	Schirle, Markus	ThP09 144	Schriemer, David	WOH pm 3:10
Savitski, Mikhail	ThP34 675	Schirm, Michael	TP19 296	Schriemer, David	WOH pm 4:10
Savory, Joshua	MOG pm 2:30	Schirmer, Kristin	TP31 593	Schriemer, David C.	TP11 197
Savtchenko, Serguei	TP04 056	Schjødt, Christine B.	WP22 395	Schroeder, David	ThP29 600
Saw, Pyi	MP28 570	Schlaak, Jörg F.	ThP22 412	Schroeder, Tara	TP08 131
Saw Yen, Ow	TP37 769	Schlaak, Jörg F.	ThP22 413	Schroeder, Tara	MP25 503
Sawant, Durvesh	MP34 690	Schlabach, Tim	ThP29 605	Schroer, Kirsten	WP15 275
Sawant, Durvesh	ThP11 200	Schlatzer, Daniela	WP36 701	Schrozman, Allison	WP19 346
Sawant, Durvesh	ThP27 539	Schlatzer, Daniela	ThP23 468	Schubert, Olga	WP31 595
Sawaya, Alexandra C.H.F.	MP34 699	Schlatzer, Daniela M	WP33 642	Schubert, Olga	TOH pm 4:10
Sawhney, Ashish	ThP36 722	Schlatzer, Daniela M	ThP17 280	Schubert, Soeren	ThP25 490
Sawyen, Ow	WP26 456	Schlegl, Judith	ThP34 675	Schubert, Ulrich S.	MP36 734
Saxena, Divya	MP06 112	Schlegl, Judith	MP19 383	Schug, Kevin	WP37 729
Saxena, Gautam	MP19 385	Schlegl, Judith	MP29 581	Schug, Kevin	MP01 012
Saylor, Sarah J.	TP04 062	Schlegl, Judith	MP29 582	Schug, Kevin	MP06 101
Saylor, Sarah J.	ThP07 113	Schlenker, Oliver	ThP24 484	Schug, Kevin	ThP10 181
Scalabrin, Matteo	MP21 396	Schlicht, Kari	MP02 036	Schug, Kevin A.	WP19 325
Scalabrin, Matteo	TOF pm 2:50	Schlicht, Kari	WP08 127	Schuhmacher, Rainer	TP37 747
Scanlan, Christopher	TP35 707	Schlicht, Kari	ThP01 012	Schuhmacher, Rainer	MP33 680
Scarborough, Jerrod	ThP29 604	Schliekelman, Mark	WP06 072	Schuhmacher, Rainer	MP04 077
Scearce-Levie, Kimberley	TOD pm 4:10	Schliep, Jan	WP30 572	Schukken, Ynte	MP33 675
Schaab, Christoph	ThP22 425	Schlomm, Thorsten	MP10 202	Schulman, Howard	TP19 296
Schachterle, Steve	TP04 054	Schlosser, Andreas	WP30 552	Schultz, Brian	ThP04 038
Schachterle, Steve	MP15 271	Schlueter, Hartmut	TP10 182	Schultz, J. Albert	WP10 169
Schaefer, Mathias	TP02 022	Schlüter, Hartmut	MP10 202	Schultz, Jo El	ThP17 297
Schaeffer-Reiss, Christine	ThP09 156	Schmalz, Christina	WOF am 10:10	Schultz, Melissa M.	TP31 594
Schäfer, Karl-Christian	TOB am 08:30	Schmalz, Hans-Günther	TP02 022	Schultze, Kevin	MP16 302
Schäfer, Karl-Christian	ThOA am 10:10	Schmelzel, John	ThOF pm 3:30	Schulz, Michael	WP07 103
Schäfer, Mathias	MP21 409	Schmerberg, Claire	ThP15 269	Schulz, Oliver	TOB am 08:30
Schaffer, Jean E	WP06 090	Schmerberg, Claire	ThP15 268	Schulze, Kerry	WP26 464
Schambeau, Lindsay	TP18 272	Schmidt, Alexander	TP28 520	Schumacher, Brigitte	ThP22 413
Schambeau, Lindsay	ThP22 419	Schmidt, Alexander	TP13 216	Schunter, Alissa	ThP17 288
Schanen, Pierre	TP04 061	Schmidt, Carla	MOF am 08:50	Schürch, Stefan	MP13 249
Schantz, Michele	ThP28 575	Schmidt, Jacob	WOG am 09:50	Schüth, Ferdi	WP02 009
Schänzer, Wilhelm	ThOC am 08:50	Schmit, Pierre-Olivier	WP26 456	Schutzbier, Michael	TP18 275
Schappier, Julie	ThP29 605	Schmit, Pierre-Olivier	WP24 429	Schuurman, Janine	TOH am 09:10
Schares, Elizabeth	MP08 163	Schmitt, Thomas	ThP28 588	Schwab, Nicolas V.	TP34 681
Schasteen, Charles	MP06 104	Schmitz, Oliver J.	MP17 351	Schwalb, David	ThP09 144
Schatz, Frederick	WP36 704	Schmitz, Oliver J.	ThP07 108	Schwamborn, Kristina	MP27 551
Schauer, Kevin	TP05 099	Schnackenberg, Laura	ThP28 588	Schwartz, Alicia M.	WP38 737
Scheeline, Alexander	WP37 734	Schnackenberg, Laura	TP24 383	Schwartz, Robert	TP05 099
Scheerer, Jonathan	MP34 700	Schneede, Joern	WP07 103	Schwarz, Carl	WP08 131
Scheffler, Kai	MP25 518	Schneider, Birgit	TP30 575	Schwarz, Carl	WP37 715
Scheibner, Olaf	TP31 578	Schneider, Birgit	TP29 546	Schwarz, Gunnar	TP10 182
Scheibner, Olaf	WOE am 09:30	Schneider, Brad	WP38 741	Schwarzenberg, Adrián	MP30 616
Scheidenberger, Christoph	MP16 324	Schneider, Bradley	TP33 632	Schwarzer, Martin C.	TP02 022
Scheiffele, Peter	TP13 216	Schneider, Bradley	TP04 078	Schwarzinger, Clemens	WP09 150
Schellenberg, John	WP33 623	Schneider, Bradley	MP02 034	Schwedler, Debbie	MP12 225
Schellenberg, Jonathan	MP03 047	Schneider, Christopher	ThP09 145	Schweiger-Hufnagel, Ulrike	ThP19 339
Schembri, Thérèse	TP31 585	Schneider, Richard	WP15 255	Schweiger-Hufnagel, Ulrike	ThP19 356
Schenauer, Matthew R.	WP24 446	Schneider, Richard	TP23 375	Schwell, Martin	TP03 051
Schenk, Ellen	WP18 319	Schneider, Rick	MOE am 09:50	Schymanski, Emma	WP13 229
Schenk, Emily	TP09 167	Schneider, Thomas	WOE pm 3:10	Scotcher, Jenna	ThP13 241
Schennach, Moritz	TP09 171	Schnier, Paul D.	WP14 241	Scotcher, Jenna	TP22 344
Schepmoes, Athena A.	MP26 542	Schober, Yvonne	ThP04 035	Scotcher, Jenna	MOB pm 3:10
Schepmoes, Athena A.	WP27 484	Schoenherr, Regine	MOD am 08:30	Scotcher, Jenna	TP22 343
Schepmoes, Athena A.	MP26 540	Schoenherr, Regine	TP21 334	Scotcher, Jenna	MP23 452
Scherer, Philipp E.	MP11 213	Schoenherr, Regine M.	MP26 544	Scott, Alison J.	MP10 206
Scherl, Alexander	TP21 333	Schoenling, Drew	WP11 192	Scott, Becky	ThOC am 09:10
Scherl, Alexander	MP09 176	Schoenling, Drew	MP10 192	Scott, Colleen	TP04 055
Scherl, Alexandre	WP32 604	Schoenmaker, Bart	WP35 678	Scott, Gary	WP30 555
Schertzer, Megan	ThP23 467	Schoepfer, Ralf	TOD am 09:30	Scott, Gilbert	WP34 651
Scheubert, Kerstin	MP36 734	Scholle, Michael	MOA pm 3:50	Scott, Nichollas	WOG pm 2:30

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Scott, Ronald.....	MOC pm 2:30	Seok, Anne.....	ThP23 458	Shapiro, John.....	WP36 704
Scrivens, James.....	MP09 170	Seol, Haeri.....	ThP19 337	Shapiro, John P.....	ThP22 411
Scrivens, James.....	WP24 424	Sepelhr, Alireza.....	WP10 162	Shapiro, Michael.....	TP33 638
Scrivens, James.....	TP09 170	Sepelhr, Alireza.....	TOB pm 2:50	Shariatgorji, Mohammadreza.....	ThOF am 09:50
Scrivens, James.....	WP30 567	Sept, David.....	MOF am 09:30	Shariatgorji, Mohammadreza.....	WP12 210
Scrivens, James.....	TP35 707	Serandour, Aurelian.....	WP28 496	Shariatgorji, Mohammadreza.....	WP10 161
Scrivens, James.....	WP35 672	Serang, Oliver.....	WOB am 09:10	Sharma, Anuj.....	MP22 438
Scurr, David.....	ThP02 022	Serang, Oliver.....	TOD am 09:10	Sharma, Arjun.....	TP11 195
Seale, Kevin.....	MP29 588	Sergeant, Nicolas.....	MOD am 08:50	Sharma, Arjun.....	TP10 186
Searle, Brian.....	WP33 620	Sergeev, Dmitry.....	TP02 044	Sharma, Kirti.....	TOD pm 2:30
Searle, Brian C.....	ThP34 671	Serpa, Jason.....	MP21 408	Sharma, Kundan.....	MP21 410
Searle, Brian C.....	TP28 509	Serpa, Jason.....	MOF am 09:10	Sharma, Lokendra K.....	ThP28 578
Sears, Robert.....	TP29 534	Serpa, Jason.....	TP11 196	Sharma, Rajenda.....	ThP29 602
Sechet, Veronique.....	ThP25 518	Serve, Hubert.....	ThP22 425	Sharma, Ritin.....	WP29 523
Sederoff, Ronald.....	TP21 328	Sessler, Nicole.....	WP28 499	Sharma, Vagisha.....	MP19 382
Sedgwick, Iain.....	ThP05 068	Seto, Carmai.....	MP34 683	Sharma, Vaneet K.....	MP13 250
Sedic, Mirela.....	TP18 262	Seto, Carmai.....	WP15 266	Sharp, Joshua.....	TP10 192
Seeberger, Peter H.....	TP36 731	Seto, Carmai.....	WOA pm 3:10	Sharp, Joshua S.....	ThP20 358
Seegers, Susan.....	WP19 355	Setogawa, Hiroshi.....	TP36 734	Sharp, Joshua S.....	WOC am 09:30
Seegmiller, Jesse.....	TP29 535	Setou, Mitsutoshi.....	ThP04 048	Sharp, Joshua S.....	WP33 625
Seegmiller, Jesse.....	ThP21 391	Settineri, Tina.....	TP08 136	Sharp, Joshua S.....	ThP20 360
Seegmiller, Jesse.....	TP29 555	Settineri, Tina.....	MP06 108	Sharp, Joshua S.....	ThP20 359
Seeholzer, Steven H.....	TP21 322	Settineri, Tina.....	ThP08 134	Sharpless, Katherine.....	TP30 560
Seeley, Erin H.....	WP10 162	Seward, Robert J.....	WP16 284	Shavkunov, Alexander.....	MP10 200
Seeley, Erin H.....	TOB pm 2:50	Seyer, Alexandre.....	TP13 215	Shavkunov, Alexander S.....	MP29 597
Seger, Signe T.....	WP22 395	Seyler, Tiffany.....	ThP21 404	Shavkunov, Alexander S.....	MP35 716
Segura, Pedro A.....	TP31 588	Seyler, Tiffany.....	ThP21 407	Shaw, Jared B.....	TOA pm 4:10
Seino, Susumu.....	TP08 161	Seyler, Tiffany H.....	ThP21 406	Shchepunov, Vyacheslav.....	MP16 322
Seino, Susumu.....	MP26 536	Seymour, Sean.....	MOA am 08:50	She, Jianwen.....	WP03 015
Sekimoto, Kanako.....	ThP30 622	Seymour, Sean.....	MP15 287	Shearer, David.....	MP32 670
Sekiya, Sadanori.....	ThP19 338	Seymour, Sean L.....	MP24 467	Shedden, Kerby A.....	MP27 561
Sekiya, Sadanori.....	ThP06 088	Seymour, Berhane.....	ThP17 293	Sheff, Joey.....	WP21 373
Sekiya, Sadanori.....	MP08 161	Sha, Jiahao.....	TP21 330	Sheffield, Carolyn.....	TP30 568
Selenka, Jeffrey.....	MP13 248	Shabanowitz, Jeffrey.....	TP14 223	Sheffield, Peter.....	ThP25 497
Selenka, Jeffrey.....	WP14 239	Shabanowitz, Jeffrey.....	TOH am 09:30	Sheffield, Val C.....	WP28 506
Selevssek, Nathalie.....	WOB am 10:10	Shabanowitz, Jeffrey.....	WP33 611	Sheldon, Curtis.....	WP06 077
Selheim, Frode.....	ThP23 456	Shabanowitz, Jeffrey.....	TP01 019	Sheldon, Curtis.....	ThP21 408
Selim, Mustafa.....	TP29 552	Shabanowitz, Jeffrey.....	TP10 173	Shelkov, Rimma.....	WP02 008
Selin Selen, Ebru.....	WP29 528	Shabhaziyan, Shila.....	ThOE pm 2:30	Shelley, Jacob.....	ThOA pm 2:30
Selinsky, Cheryl.....	MP26 541	Shabonowitz, Jeffrey.....	ThP06 101	Shelley, Jacob T.....	MP17 331
Selvaraj, Suresh.....	WP33 632	Shackman, Holly.....	WP14 246	Shelley, Jake.....	WP37 711
Selzer, Stefan.....	TP19 295	Shaffer, Carrie L.....	MP10 191	Shellie, Robert A.....	MP07 137
Semmes, Oliver.....	ThP28 590	Shaffer, Scott.....	WP33 620	Shema, Efrat.....	TP22 354
Semmes, Oliver.....	WP26 474	Shaffer, Scott.....	TP21 314	Shen, En-Zhi.....	TP21 338
Sempf, Karim.....	MP06 092	Shaffer, Scott A.....	ThP24 482	Shen, En-Zhi.....	MOA pm 4:10
Sen, Indranil.....	WP07 112	Shaffer, Scott A.....	TP19 282	Shen, Han-Ming.....	MP34 712
Senatore, Diego.....	MP31 652	Shaffer, Scott A.....	MP28 574	Shen, Helen.....	MOE pm 2:50
Senda, Naoto.....	MP26 533	Shaffer, Scott A.....	TP28 522	Shen, Helen.....	TP25 428
Seneviratne, Chinthaka A.....	ThP10 175	Shah, Bhavana.....	MOD pm 2:30	Shen, John.....	TP25 443
Sengupta, Shantanu.....	WP18 315	Shah, Dhvani.....	WP16 284	Shen, Lingling.....	WP20 368
Senior, Adam.....	ThP08 132	Shah, Dipti.....	TP19 278	Shen, Miaoqing.....	TP25 422
Senior, Adam.....	MP07 135	Shah, Manesh.....	ThP25 500	Shen, Min.....	WP08 119
Senior, Adam.....	WP08 124	Shah, Manesh.....	ThP25 501	Shen, Rong-Fong.....	MOG pm 3:30
Senior, Adam.....	TP30 563	Shah, Nikhil.....	TP24 389	Shen, Sean.....	ThP22 434
Senior, Adam.....	MP07 136	Shah, Sanah.....	MP24 477	Shen, Shichen.....	ThP22 421
Senior, Adam.....	WP07 109	Shah, Sumit.....	TP24 405	Shen, Steven.....	ThOD am 08:30
Senior, Adam.....	WP08 117	Shah, Vinit.....	WOD pm 3:10	Shen, Wei.....	MOF am 09:30
Senko, Michael.....	WOE am 09:50	Shahidi-Latham, Sheerin K.....	WP11 179	Shen, Wen-Ying.....	ThP18 320
Senko, Michael.....	MOA am 08:30	Shaik, Naveed.....	ThP01 003	Shen, Xiaomeng.....	TP18 257
Senko, Michael.....	WP31 582	Shaikh, Aarif.....	MP24 481	Shen, Xiaomeng.....	TP18 255
Senko, Michael.....	MP24 490	Shalhoub, Joseph.....	TP24 384	Shen, Ying-Ru.....	ThP27 531
Senko, Michael.....	TP05 093	Shalliker, Ross.....	ThP10 183	Shender, Victoria.....	MP27 550
Senko, Michael.....	ThP06 102	Shambaugh, Joe.....	MP18 365	Sheng, Huaming.....	MP32 655
Senko, Michael W.....	MP16 309	Shamburek, Robert D.....	ThOD pm 3:50	Sheng, Morgan.....	ThP18 307
Senko, Michael W.....	TOA pm 2:30	Shan, Baozhen.....	WP31 579	Sheng, Shijun.....	WP08 132
Senko, Michael W.....	TP05 096	Shan, Baozhen.....	WP31 580	Sheng, Simon.....	MP05 083
Senko, Mike.....	TOA am 09:30	Shan, Baozhen.....	ThP34 689	Sheng, Zejuan.....	TOD pm 4:10
Senna-Salerno, Monica.....	MP33 681	Shang, Guangbin.....	MP34 713	Shenk, Tom.....	ThOB pm 2:50
Seo, Bong Kyo.....	MP08 155	Shang, Qiaoxia.....	MP33 672	Sherman, Michael Y.....	WP28 493
Seo, Bong Kyo.....	MP08 153	Shanmugam, Avinash.....	WOB pm 2:30	Sherwood, Robert.....	WP30 559
Seo, Hyelin.....	TP10 180	Shannahoff, Molly.....	ThP25 513	Sherwood, Robert.....	ThP18 328
Seo, Hyunjung.....	MP08 153	Shao, Bing.....	TP37 751	Shevchenko, Ganna.....	MP26 539
Seo, Jong Bok.....	WP29 521	Shao, Bing.....	TP37 758	Shevchenko, Valeriy.....	MP27 560
Seo, Jongcheol.....	TP01 007	Shao, Bing.....	WP37 726	Shevchenko, Valeriy.....	MP27 559
Seo, Jungju.....	TP37 759	Shao, Chun.....	ThP20 363	Shew, Stephen.....	TP26 457
Seo, Seongjin.....	WP28 506	Shao, Chun.....	ThP20 362	Sheynkman, Gloria.....	WOB pm 3:10
Seo, Youjin.....	TP33 651	Shao, Junlong.....	MP26 534	Shi, Eric (Xiangguo).....	TP15 234
Seoane, Felipe.....	TP28 524	Shao, Wenguang.....	WP31 594	Shi, Honglan.....	WP03 022

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Shi, Jiang	WP19 342	Shortreed, Michael	ThP09 169	Silvia, Blacher	MP10 198
Shi, Jingmin	WP30 540	Shou, Wilson	WOD am 09:50	Sim, Ju Hee	TP29 543
Shi, Quan	WP05 067	Shou, Wilson	ThP12 226	Simard, John	TOH am 09:30
Shi, Tujin	MP26 542	Shou, Wilson	ThP10 172	Simek, Petr	ThP21 401
Shi, Tujin	WP27 484	Showalter, Julie	TP25 448	Simeone, Jennifer	ThP29 598
Shi, Tujin	MP26 540	Shrestha, Bindesh	MP17 355	Simicevic, Jovan	TP13 216
Shi, Xiaofeng	TP35 697	Shrestha, Bindesh	WP12 196	Simithy, Johayra	ThP13 236
Shi, Xiaomeng	MP22 414	Shrestha, Bindesh	MP17 354	Simolin, Helena	ThOC pm 3:50
Shi, Xudong	TP18 264	Shrestha, Bindesh	TP34 665	Simon, David	TP04 082
Shi, Yang	WP19 331	Shrestha, Bindesh	TP34 664	Simon, Hannah	WP15 263
Shi, Yao	ThP13 244	Shrestha, Bindesh	TP34 662	Simon, Romain	MP26 527
Shi, Yifan	ThP21 394	Shrestha, Yashaswi	ThP10 179	Simon, Ronald	MP10 202
Shi, Yifan	MP07 142	Shroff, Emelyn H.	MP10 205	Simon, Sharon	ThP08 136
Shiao, Ming-Shi	MP03 042	Shteynberg, David	MP18 373	Simon, Stéphanie	TOH pm 3:50
Shiao, Tze Chieh	ThP21 399	Shteynberg, David	TP28 525	Simon, Yamil	TP15 237
Shiao, Tze Chieh	WP17 297	Shui, Guanghou	TP27 494	Simonian, Margaret	TP18 259
Shibamoto, Shigeaki	ThP27 558	Shukla, Anil	WOA am 08:50	Simón-Manso, Yamil	TP23 368
Shibata, Masateru	WP12 201	Shulaev, Vladimir	ThP28 581	Simón-Manso, Yamil	MP04 061
Shibata, Sayaka	WP28 495	Shulaev, Vladimir	MP04 072	Simons, Brigitte	ThP23 463
Shida, Yasuo	WP07 115	Shulman, Nicholas	WP33 627	Simons, Brigitte	ThP17 299
Shida, Yasuo	MP17 339	Shulman, Nicholas J.	TP28 521	Simons, Brigitte	MP11 215
Shiea, Christopher	TOE pm 3:30	Shvartsburg, Alexandre A.	WP38 742	Simpkins, Joseph	ThP12 224
Shiea, Jentaie	TP34 670	Shvartsburg, Alexandre A.	ThP01 017	Simpson, David	ThP18 314
Shiea, Jentaie	MP17 335	Shwe, Henry	WP36 693	Simpson, David	ThP18 312
Shiea, Jentaie	MP17 356	Shymanovich, Tatsiana	MP34 700	Simpson, Isobel J.	WOF pm 2:30
Shiea, Jentaie	WP07 104	Shyong, BaoJen	MP14 259	Simpson, Kenneth	MP33 675
Shiea, Jentaie	MP17 332	Shyong, BaoJen	MP14 261	Simpson, Richard	ThP28 564
Shiea, Jentaie	MP17 334	Shyti, Reinald	WP09 141	Sinatra, Francy	ThP01 007
Shiea, Jentaie	TP34 667	Si, Dandan	MP34 711	Sinclair, John	WP32 602
Shiea, Jentaie	MP17 333	Sibat, Manoella	ThP25 518	Sindona, Giovanni	TP34 690
Shields, Denis	TOC am 10:10	Sichilongo, Kwenga	MP06 115	Sindona, Giovanni	MP10 186
Shifman, Mark	MP29 586	Sichilongo, Kwenga	MP07 147	Sindona, Giovanni	MP36 729
Shih, Tsung-Ming	TP26 458	Siciliano, Gabriele	TP30 567	Singer, Heinz	WOF am 09:30
Shih, Yang-Chih	ThP27 531	Sickmann, Albert	TOD pm 3:10	Singh, Ajeet	WP18 315
Shih, Ying-Chu	TP18 256	Sickmann, Albert	TP19 285	Singh, Brajesh	WP26 458
Shih-Min A., Huang	MP24 480	Siddiqui, Javed	MP26 540	Singh, Guramrit	TP28 522
Shiki, Shigetomo	TP02 045	Siderenko, Viktoriya	TP29 549	Singh, Karam	WP17 304
Shiki, Shigetomo	MP16 314	Sidhu, Rohini	WP06 090	Singh, Pragma	TOA am 09:50
Shilov, Ignat	WP15 256	Sieg, Scott	ThP23 468	Singh, Rachit	TP05 098
Shim, Jae-Han	ThP27 537	Siegel, Donald	MP30 604	Singh, Rachit	TP05 109
Shima, Keisuke	ThP25 493	Siegel, Marshall M.	ThP20 369	Singh, Rakesh	MP27 557
Shima, Noriaki	WP08 121	Siegel, Marshall M.	TOG pm 4:10	Singhal, Sharad S.	ThP33 667
Shimada, Mariko	MP28 572	Siegel, Marshall M.	WP13 223	Sinz, Andrea	MP21 409
Shimbo, Kazutaka	MP24 472	Siek, Kevin	MOE pm 3:50	Sinz, Andrea	MP21 398
Shimizu, Atsushi	WP15 267	Siek, Kevin	MP31 645	Sioud, Salim	MP17 349
Shimizu, Takao	TP27 478	Siek, Kevin	TP24 387	Sipe, Dave M.	ThP06 106
Shimizu, Takao	ThP28 563	Siek, Kevin	WP05 063	Sjple, Joe	MP07 140
Shimma, Shuichi	WP11 189	Siek, Kevin	ThOG am 08:50	Sirich, Tammy	WP18 322
Shin, Byung-Hee	WP25 450	Siems, William	TP33 625	Sisk, Carrie	TP37 762
Shin, Byung-Hee	MP18 361	Siems, William F.	TOG am 09:10	Sitek, Barbara	ThP22 412
Shin, Eunbi	TP10 180	Sierra-Avila, Cesar A.	MP08 164	Sitek, Barbara	ThP22 413
Shin, Eun-Ho	TP34 678	Sifuentes, Daniel	MP05 084	Sitkovsky, Michail	ThP22 430
Shin, Seung Koo	TP01 007	Sigurdson, Wendy	ThOD pm 3:30	Siu, K. W. Michael	WOG am 08:30
Shin, Sung Chul	MP33 677	Sigurdsson, Baldur	TP27 495	Siu, K. W. Michael	WP38 749
Shindo, Mitsuru	WP12 221	Sikanen, Tiina	WP30 574	Siuciak, Judith A.	TP19 296
Shinholt, Deven	ThP06 080	Sikorski, Timothy	ThP09 165	Siviero, Antonella	TP31 606
Shinholt, Deven	MP16 298	Sikorski, Timothy	WP34 651	Siwick, Deborah A.	TP18 258
Shion, Henry	WP25 447	Silcock, Paul	ThP27 545	Siwick, Deborah A.	TOA am 09:10
Shion, Henry	TOC pm 3:30	Silcock, Paul	ThP27 544	Siwik, Deborah A.	WP33 630
Shiota, Teruhisa	MP36 733	Silinski, Melanie A. Rehder	TP26 470	Sjoelund, Virginia	WP36 692
Shiota, Teruhisa	WP19 326	Silivra, Oleg	ThP06 094	Skaar, Eric P.	MP10 190
Shiota, Teruhisa	WP07 114	Silivra, Oleg	ThP06 099	Skende, Estela	MP06 130
Shiota, Teruhisa	WP07 105	Silivra, Oleg	MP01 003	Skill, Nicholas	ThP22 414
Shipkova, Petia	ThOD pm 2:30	Silivra, Oleg	MP16 307	Skill, Nicholas J.	WP26 467
Shirai, Takashi	ThP19 331	Silla, Juan Carlos	TP05 095	Skinner, Owen	MOB pm 4:10
Shiraishi, Nobuo	MP36 733	Silva, Jeffrey	WP29 531	Skinner, Owen	TP01 008
Shivaswamy, Sushma	TOH am 09:30	Silva, Jeffrey C.	WP34 657	Skinner, Owen S.	WOC pm 2:50
Shively, Carol A.	TP21 319	Silva, Jeffrey C.	WP34 659	Skold, Karl	WP16 290
Shliaha, Pavel	TP33 661	Silva, Jeffrey C.	ThP33 666	Skold, Olof	WP16 291
Shoaf, Tim	WP06 086	Silva, Jeffrey C.	MOA pm 2:50	Sköld, Karl	TP20 303
Shockcor, John	TP18 262	Silva, Jeffrey C.	ThP23 473	Sköld, Karl	WP16 291
Shockcor, John P.	ThOB am 08:50	Silva, Jeffrey C.	WP31 590	Sköld, Olof	WP16 290
Shockcor, John P.	ThP28 582	Silva, Leslie	TP24 406	Skoutelis, Athanassios	ThOC am 09:30
Shoji, Yutaka	MP25 501	Silva, Manori	ThP21 405	Skube, Susan B.	TP22 353
Shomo, Ronald	ThP11 192	Silva, Mariana	ThP25 492	Skulason, Kari	TP27 495
Shong, Minh	TP23 374	Silva, Oleg	TP31 602	Slade, Susan	WP35 672
Short, R. Timothy	TP04 074	Silva Salgueiro, Jessica	WP07 111	Sladkevich, Sergey	WP02 008
Short, Timothy	MP35 720	Silveira, Joshua A.	TP33 636	Slagel, Joseph	MP18 373
Shortreed, Michael	WOB pm 3:10	Silveira, Joshua A.	TP33 659	Slagel, Joseph	TP28 525

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Slamnoi, Stefan	ThP09 145	Smith IV, Archer D.	WOD pm 3:30	Son, InHyuk	ThP11 212
Slamnoi, Stefan	WP28 491	Smits, Melinda M.	WP36 695	Sondalle, Samuel B.	TP07 128
Slavsky, Marina	MP02 032	Snead, Russell	WOC pm 3:50	Song, Boya	WP35 669
Slecza, Bogdan	MP25 507	Snedecor, June	WP30 569	Song, Byoung-Joon	ThP17 305
Sleno, Lekha	TP24 409	Sneekes, Evert-Jan	MP06 128	Song, Chun-Qing	TP21 338
Sleno, Lekha	TP10 178	Sneekes-Vriese, Eveline	MP22 429	Song, Chun-Qing	MOA pm 4:10
Sleno, Lekha	ThP21 399	Snel, Marten F.	ThP20 361	Song, Chunxiao	WP34 647
Sleno, Lekha	WP17 297	Snelling, Jonathon	WP30 567	Song, Ehwang	WP32 598
Sligar, Stephen	WP23 403	Sniatynski, Matthew J.	ThP28 565	Song, Ehwang	ThP19 357
Sloan, Angela	ThP08 136	Snider, Elise	ThP16 273	Song, Ehwang	WP26 470
Slysz, Gordon	ThP34 690	Snider, Jacqueline	TP21 332	Song, Hangtian	TP15 225
Slysz, Gordon	TP33 652	Snider, Jacqueline	ThP17 299	Song, Haowei	TP27 481
Smargiasso, Nicolas	TP33 653	Snijder, Joost	MOF pm 2:50	song, In-Kang	MP22 418
Smargiasso, Nicolas	MP23 459	Snovida, Sergei	TP35 698	Song, James	MP23 442
Smargiasso, Nicolas	ThP09 154	Snovida, Sergei	WP26 474	Song, Jing	WP36 700
Smargiasso, Nicolas	WP12 215	Snovida, Sergei	ThP20 375	Song, Jungmin	ThOH am 08:30
Smargiasso, Nicolas	ThP16 272	Snovida, Sergei	TP35 709	Song, Ligu	ThP32 662
Smargiasso, Nicolas	ThP23 453	Snovida, Sergei	TOD am 08:50	Song, Min	WP06 091
Smid, Marcel	ThP22 417	Snovida, Sergei I.	WOA am 09:50	Song, Min	TP29 543
Smid, Marcel	ThP22 416	Snow, Nicholas	MP03 049	Song, Nelson	ThP08 127
Smid, Marcel	ThOD am 09:10	Snow, Theodore	TP02 034	Song, Qinghua	ThP18 307
Smillie, Troy J.	MP32 659	Snow, Theodore	MP35 715	Song, Qingyu	TOA pm 2:30
Smilowitz, Jennifer	ThP19 341	Snow, Timothy	MP23 447	Song, Sein	ThP27 537
Smirnov, Igor	MP13 247	Snyder, Melissa	MP09 175	Song, Seonghee	MP08 154
Smirnova, Lena	TP24 391	Snyder, Michael	ThP22 418	Song, Si Young	WP35 675
Smit, August B.	ThP23 445	Snyder, Nathaniel	TP24 393	Song, Ting	TOD am 08:30
Smith, Alan	TP29 548	Snyder, Nathaniel W.	MP11 218	Song, Wenyuan	MP32 653
Smith, Archer	ThP25 510	Snyder, Nathaniel W.	TP24 407	Song, Xiaomin	WP27 488
Smith, Brian K.	TOB am 09:30	Snyder, Nathaniel W.	TP29 550	Song, Yang Stella	TP14 222
Smith, Charles	WP11 192	Snyder, Shane	WP03 035	Song, Yuling	TP37 740
Smith, Daryl G.S.	TP28 500	Snyder, Shane	TP31 584	Song, Yuling	WP06 078
Smith, David	WP09 136	Snyder, Shane	MP31 629	Song, Zhihong	MP34 702
Smith, Derek	MP19 375	Snyder, Shane	WP26 472	Soper, Molly T.	TP33 630
Smith, Donald	MOB am 09:50	Snyder, Shane	TP31 604	Sorensen, Dylan J.	MOA pm 3:50
Smith, Donald F.	ThP04 039	Snyder, Shane A.	TP32 614	Sorensen, Paul	TP05 091
Smith, Donald F.	ThP05 064	Sobott, Frank	TP33 637	Sorkin, Alexander	MOF pm 3:50
Smith, Donald F.	TOB am 09:10	Sobott, Frank	TP16 241	Sotokawauchi, Ami	ThP19 340
Smith, Donald F.	ThP05 067	Sobott, Frank	TOF pm 2:30	Souchon, Vincent	WP05 059
Smith, Duncan	WP30 560	Soderblom, Erik	MP18 371	Souda, Puneet	WP21 379
Smith, Duncan	WOA am 09:10	Soderblom, Erik J.	MOA pm 2:50	Souda, Puneet	TP18 273
Smith, Duncan	WP33 610	Soderblom, Erik J.	ThP17 302	Soufi, Boumediene	WP36 703
Smith, Erica	ThOG pm 3:10	Söderquist, Marcus	TP20 303	Soukup, Alexandra	MOE am 09:10
Smith, Erica	ThP32 652	Söderquist, Marcus	TP21 339	Soul, Thomas	ThP26 523
Smith, Erica	ThP32 654	Soellner, Matthew	TP33 645	Soulby, Andrew	TP09 170
Smith, Geoffrey T.	TOD am 09:50	Soelter, Susanne	TP31 582	Soumyanath, Amala	MP34 701
Smith, Jeffrey C.	WP33 621	Soga, Tomoyoshi	MP12 224	Sousa, Eric	WP24 431
Smith, Jeffrey C.	TP27 487	Sohn, Chang Ho	ThP20 371	Sousa, Lenoardo Da Costa	ThP32 658
Smith, Jorge	MP26 522	Soilis, Nicolaos	ThP29 614	Sousou, Nigel	WP37 721
Smith, Julia	MP09 170	Sojo, Luis	MP01 029	South, Christopher	TP21 314
Smith, Leif	TP08 159	Sojo, Luis	MP01 005	Southwick, Katie	ThOD pm 4:10
Smith, Lloyd	WOB pm 3:10	Sokolowska, Izabela	MP29 594	Souza Júnior, Manoel T.	MP05 084
Smith, Lloyd	ThP09 169	Sokolowska, Izabela	TP36 732	Sovova, Zofie	MP21 401
Smith, Lloyd M.	TP07 128	Sokolowska, Izabela	ThP22 439	Sowa, Mathew	WP28 509
Smith, Lucas	TP24 387	Sokolowska, Izabela	TP21 336	Sowole, Modupeola	WOH am 08:50
Smith, Marco	MP14 255	Sokolowska, Sokolowska	ThP22 437	Spaink, Herman P.	WP31 585
Smith, Paula	TP29 544	Solano, Maria I.	MP26 548	Span, Paul	ThP22 416
Smith, Richard	MP20 389	Solga, Anne	WP09 152	Span, Paul N.	ThOD am 09:10
Smith, Richard	WOA am 08:50	Soliman, Victor	MOE pm 3:30	Sparbier, Katrin	ThP25 490
Smith, Richard	MOC am 08:30	Solis, Nestor	WOG pm 2:30	Sparkman, O. David	ThP11 213
Smith, Richard	TOD pm 3:30	Solis, Nestor	ThP25 507	Sparkman, O. David	ThP30 631
Smith, Richard	WP38 753	Solis, Nestor	WP30 554	Sparkman, O. David	ThP11 206
Smith, Richard	MOD am 08:30	Solis, Nestor	ThP17 294	Sparks, Preston	TP25 446
Smith, Richard	TP33 652	Solliven, Arianne	ThP10 183	Sparling, Richard	WP33 623
Smith, Richard D.	ThP06 081	Soliymani, Rabah	MP09 182	Sparling, Richard	WP31 589
Smith, Richard D.	MOA am 10:10	Sollenberg, Ulla	TP20 303	Spassky, Alexander	TP20 299
Smith, Richard D.	WP27 483	Sollic, Morgan	TP31 587	Spassky, Alexander	WOF pm 3:30
Smith, Richard D.	MP26 540	Solnick, Jay V.	MP27 556	Spassky, Alexander	MP17 356
Smith, Richard D.	MP24 483	Solomon, Bruce	ThOA am 08:50	Specht, August	TP14 218
Smith, Richard D.	ThP01 017	Solouki, Touradj	TP09 164	Speck, Dennis	WP37 707
Smith, Richard D.	MP26 542	Solouki, Touradj	ThP11 195	Speller, Abigail	ThP04 042
Smith, Richard D.	ThP34 685	Solouki, Touradj	WP05 065	Spellman, Daniel	MP26 547
Smith, Richard D.	ThP34 690	Solouki, Touradj	MP15 269	Spellman, Daniel S.	ThOD pm 4:10
Smith, Richard D.	TOG am 08:30	Solouki, Touradj	TP06 110	Spellman, Daniel S.	TP19 296
Smith, Richard D.	WP27 484	Solouki, Touradj	MP15 268	Spencer, Jean L.	TP16 240
Smith, Rob	TP28 516	Soltwisch, Jens	ThP04 039	Spencer, Jean L.	TP18 268
Smith, Robert	ThP01 019	Soma, Lawrence	MP30 625	Spencer, Jean L.	WP32 605
Smith, Sheri	WP15 281	Somers, Will	WP24 431	Spencer, Jean L.	TP18 258
Smith, Whitney	TP04 073	Somogyi, Arpad	ThOE am 09:50	Spencer, Michael	TP04 083
Smith, Whitney	TP24 417	Somsen, Govert W.	WOG pm 3:10	Spencer, Mike	WP04 042

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Spencer, Sandra	MP17 344	Staples, Gregory O.	MP22 431	Stevens, Douglas	ThP11 207
Spencer, Sandra	ThP01 004	Staples, Gregory O.	TP36 724	Stevens, Fred	TP24 416
Spengler, Bernhard	TOB am 08:30	Starke-Reed, Pamela E.	ThP28 565	Stevens, J.Fred	TOC am 09:30
Spengler, Bernhard	ThP04 035	Starks, Adrienne M.	WP18 312	Stevens, Jan	MP22 432
Spengler, Bernhard	WP12 214	Starodubtseva, Nataliai	TP20 299	Stevens, Jan F.	MP34 701
Spengler, Bernhard	ThP34 687	Starodubtseva, Nataliai	WOF pm 3:30	Stevens, Jan F.	TP24 403
Sperline, Roger P.	ThP06 104	Starr, James	TP29 552	Stevens, Jan F.	WP15 261
Sperling, Michael	ThP05 070	Stauber, Jonathan	ThP02 023	Stevens, Kyle	MOC am 09:10
Sperling, Michael	ThP03 027	Stauber, Jonathan	ThP03 029	Stevenson, Holly S.	WP18 312
Sperling, Michael	ThP05 056	Stauber, Jonathan	WP11 193	Stewart, Jeremy	ThP12 226
Sperling, Michael	ThP04 047	Stauber, Jonathan	ThOF am 10:10	Stewart, Tyler	ThP19 349
Sperry, Justin	MOB pm 2:30	Stauch, Kelly	MP24 469	Stewart, Tyler J.	ThOD am 09:30
Sperry, Justin B.	TP15 236	Stavenhagen, Kathrin	TP36 731	Steyaert, Sandra	TP17 254
Spicer, Vic.	WP31 589	Stead, Sara	WP37 707	St-Germain Lavoie, David	TP25 440
Spicer, Vic.	WP33 623	Stead, Sara	ThP27 532	Stickle, Dawn	WP33 628
Spicer, Victor	MP32 670	Stead, Sara	TP37 750	Stidham, Ryan W.	TP19 289
Spicer, Victor	ThP05 057	Stead, Sara	ThP27 533	Stigler, Sara	WP15 272
Spicer, Victor	ThP06 090	Stead, Sara	TP33 627	Stiles, Charles D.	WP11 185
Spiecker, Heinrich	ThP09 145	Stecenko, Arlene	WP17 292	Still, Amelia J.	MOA pm 3:30
Spiegelman, Bruce	MOF pm 3:10	Steckler, Caitlin	WP36 697	Still, Amelia J.	ThP13 232
Spier, Paul	WP23 416	Stedwell, Corey	TP02 031	Stindt, Arne	MP17 352
Spinelli, Pietro	WP11 191	Stedwell, Corey	ThP35 706	Stingl, Christoph	ThP22 416
Spitzbarth, Franzika	WP20 370	Steeegers, Eric AP	TP20 304	Stingl, Christoph	ThOD am 09:10
Spitzbarth, Franziska	WP20 367	Steen, Hanno	WOB am 09:10	Stingl, Christoph	TOH am 08:30
Spivak-Lavrov, Igor	MP16 326	Steen, Hanno	ThP09 161	Stingl, Christoph	ThP22 417
Splendore, Maurizio	TP04 054	Steen, Hanno	ThOD am 10:10	Stingl, John	WP28 496
Splendore, Maurizio	MP15 271	Steen, Hanno	TP08 147	Stinnett, Monica W.	ThOD am 09:30
Splevins, Andrew	MP25 520	Steen, Judith	TOD am 09:10	Stinson, Craig	TP02 040
Spraggins, Jeffery	MP10 195	Steen, Judith	WOB am 09:10	Stinson, Craig	TP06 117
Spraggins, Jeffery	TOB am 10:10	Steen, Judith A. J.	TP08 147	Stites, Wesely	MP22 439
Spraggins, Jeffery M.	MP10 186	Steenwyk, Rick	WOD am 09:30	Stobaugh, Jordan	MP06 093
Spraggins, Jeffery M.	WP12 199	Steere, Allen C.	MP29 593	Stocks, Bradley B.	WP21 378
Spraggins, Jeffery M.	WP12 202	Steet, Joe	ThP04 038	Stocks, Bradley B.	TP10 188
Spraggins, Jeffery M.	WP09 155	Steevensz, Aaron	MP23 449	Stocks, Bradley B.	TOF pm 3:50
Sprenger, Ricardo	MP34 696	Steevensz, Aaron J.	WP29 539	Stoddart, Pamela	WP03 030
Sprenger, Richard	ThP34 686	Stefely, Jonathan A.	WOE am 09:50	Stoekli, Markus	WP11 183
Sprenger, Richard R.	MP32 662	Steffen, Björn	ThP22 425	Stoeling, Michael V.	TP26 455
Springer, Michael	TP08 147	Stein, Derek R.	MP06 094	Stokes, Chris	ThP35 695
Sreekumar, Arun	WP18 312	Stein, Stephen	MP18 368	Stokes, Matthew	WP29 531
Sreenivasan, Uma	MP01 008	Stein, Stephen	WP31 592	Stokes, Matthew P.	ThP23 473
Srimany, Amitava	WP12 194	Stein, Stephen	WP31 578	Stokes, Matthew P.	WP34 659
Srinivasan, Prakash	ThOB pm 4:10	Stein, Stephen	MP19 384	Stokes, Matthew P.	ThP33 666
Srinivasan, Tara	WP30 555	Stein, Stephen	TP08 150	Stokes, Peter	MP17 343
Sriranganadane, Dev	MP28 573	Stein, Stephen	ThP34 669	Stoll, Britta	MP21 410
Srivastava, Praveen	WP06 094	Stein, Stephen E.	TP23 368	Stone, John	WP38 752
Srivastava, Praveen	TP25 436	Stein, Stephen E.	TP15 237	Stoodley, Marcus	TP18 259
Srivastava, Sudhir	MP26 540	Stein, Stephen E.	MP04 061	Stopka, Sylwia	TP34 664
Srnka, Anthony	TP25 428	Steinbach, Michael	ThP23 474	Stoudemayer, Melissa	ThP31 640
Szrentić, Kristina	WOF am 08:50	Steinberg, Martin H.	TP18 268	Stout, Steve	TP21 307
Szrentić, Kristina	ThP13 242	Steiner, Carine	TP21 333	Stover, Michele L.	ThP36 712
Staab, Dieter	WP11 183	Steiner, Douglas	TP10 181	Stow, Sarah M.	WP38 751
Staccioli, Serena	MP34 693	Steiner, Robert D.	TP30 572	Strader, Michael	WP30 556
Stacey, Catherine	WP16 284	Steiner, Roger	MP15 263	Strader, Michael	WP30 557
Stacy, Tina	MP15 290	Steinhorst, Klaus	ThP04 036	Strambio De Castillia, Caterina	TP08 152
Staerk, Daniel	MP06 104	Steiniger, David	ThP27 544	Strambio De Castillia, Caterina	WP31 593
Stafford, George	MOC am 08:30	Steiniger, David	ThP27 545	Strassburg, Katrin	TP27 492
Stafford, George	ThP01 014	Stellpflug, Samuel J.	TP29 537	Stratakis, Constantine A.	ThOD pm 3:50
Stafford, George	TP33 652	Stemmler, Elizabeth A.	ThP32 655	Stratford, Robert E.	MP03 056
Stafford, George	WP38 753	Stencel, Katherine	TP31 594	Stratton, Tim	WP15 259
Stafford, George	MOB am 09:10	Stennicke, Henning R.	WP28 514	Stratton, Tim	TP28 517
Stafford, George	TP33 647	Stephan, Christian	ThP22 412	Stratton, Tim	WP15 258
Stafford, George	ThP28 584	Stephen, Andrew G.	MP08 151	Stratton, Tim	MOE pm 2:50
Stafford, George	TOG am 08:50	Stephens, Eric	ThP24 483	Stratton, Tim	MP12 225
Stagliano, Michael	WP03 019	Stephens, Kerry	WP08 124	Stratton, Tim	MP19 377
Stahl, Mark	WP24 431	Stephens, Kerry	MP07 136	Stratton, Tim	TP25 420
Stahl-Zeng, Jianru	WP20 367	Stephens, Kerry	WP08 117	Stratton, Timothy	WP14 245
Stahl-Zeng, Jianru	TP31 599	Stephens, Robert M.	WP18 312	Strauss, Ethan	ThP08 124
Standing, Ken	ThP06 090	Sterk, Saskia S.	TP37 771	Strauss, Ethan	ThP08 126
Standing, Kenneth	MP32 670	Stern, Lawrence J.	MP28 574	Strauss, Joseph	MP04 077
Stanley, Anne	TP21 314	Ste-Rose, Audrey	TP24 409	Strehlow, Jan	ThP04 036
Stanley, Bruce	TP21 314	Steve, Justin	MP06 127	Strickland, Erin C.	TP11 200
Stanley, Scott	MP30 628	Steven, Alasdair	WOF am 09:10	Strickland, Erin C.	TP11 202
Stapels, Martha	WP21 378	Steven, Kelsen	TP21 314	Strittmatter, Nicole	TOH pm 3:10
Stapels, Martha	MP25 521	Steven, Rory	ThP04 049	Strittmatter, Nicole	ThP04 042
Staples, Gregory	WP24 430	Steven, Rory	WP10 165	Stroble, Carol	ThOC am 09:50
Staples, Gregory	WP21 380	Steven, Rory T.	WP10 164	Stroble, Carol	WP19 347
Staples, Gregory	TOC pm 3:50	Steven, Rory T.	MP11 208	Stroh, Fred	MP15 282
Staples, Gregory	TP15 235	Steven, Rory T.	WP09 153	Stroh, Justin	TP33 638
Staples, Gregory	ThP09 147	Stevens, Douglas	WP05 067	Stroman, Maxcy	WP08 127

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Stroud, Dave	TP35 706	Sun, Grace Y	MP34 706	Swarbrick, Michele M.	MP33 679
Strupat, Kerstin	TOB am 08:30	Sun, Guohui	ThP21 389	Swart, Remco	MP06 128
Strupat, Kerstin	ThOF am 09:30	Sun, Haidan	TP21 331	Swatkoski, Stephen	TP19 287
Strupat, Kerstin	WP37 733	Sun, Haidan	MP24 465	Swearingen, Kristian E.	MOC am 08:50
Struwe, Weston	TP33 641	Sun, Haidan	WP30 546	Sweedler, Jonathan	WP33 615
Stuchlova Horynova, Milada	ThP19 349	Sun, Helen	TP31 580	Sweedler, Jonathan	WP09 149
Stucki, Silvan R.	MP13 249	Sun, Helen	TP26 474	Sweedler, Jonathan	ThP03 028
Stückler, Romana	MP04 077	Sun, Helen	WOF pm 3:10	Sweedler, Jonathan	ThP22 436
Stuff, John	WP20 371	Sun, Helen (Qingyu)	ThP27 547	Sweedler, Jonathan V.	TP08 154
Stugan, Daniel	ThP10 182	Sun, Helen (Qingyu)	ThP27 538	Sweedler, Jonathan V.	ThP25 494
Stühler, Kai	ThP23 454	Sun, Hezhi	TP01 018	Sweedler, Jonathan V.	ThP14 261
Stumbaum, Mihaela	WP28 491	Sun, Hui	MP01 007	Sweeney, Daniel L.	WP20 372
Stump, Craig	WP26 472	Sun, Jinchun	ThP28 588	Sweeney, Matt	ThP11 208
Stump, Mike	ThOA am 08:50	Sun, Jinchun	TP24 383	Sweeney, Scott	MP03 059
Stupp, Gregory S.	TP24 414	Sun, Jing	WP36 692	Sweep, Fred	ThP22 416
Sturdevant, Dan	ThOB pm 4:10	Sun, Li	TP25 422	Sweep, Fred C.G.J.	ThOD am 09:10
Sturm, Robert	WP16 288	Sun, Liang	ThP23 447	Sweet, Robert	WP30 570
Stutts, Whitney L.	WP09 143	Sun, Liangliang	WP35 680	Sweet, Robert	TP21 320
Stützer, Alexandra	TP22 354	Sun, Liangliang	WP30 545	Sweetman, Lawrence	TP27 483
Stutzman, John	TP02 028	Sun, Liangliang	WP35 682	Sweredoski, Michael	TP22 342
Stutzman, John	ThOC pm 3:30	Sun, Liangliang	WP35 681	Sweredoski, Michael J.	ThP34 680
Stutzman, John	TP07 126	Sun, Liangliang	TP36 735	Sweredoski, Michael J.	TOD am 09:50
Stutzman, John R.	TP02 029	Sun, Michael Xin	WP06 086	Swift, Christopher	TP02 025
Styles, Iain	WP10 165	Sun, Rachel	WP31 587	Swimley, Michelle	ThP25 517
Styles, Iain B.	WP10 164	Sun, Rui-Xiang	MOA pm 4:10	Swinton, Derrick	TP21 314
Su, Dian	MP26 542	Sun, Ssu-Hsueh	MP36 731	Syage, Jack	ThP27 556
Su, Dian	WOA am 08:50	Sun, Wenjian	WP37 712	Syed, Sarfaraz Uddin Ahmed Hashmi	ThP06 076
Su, Hung	WP07 104	Sun, Xin	WP26 462	Syka, John	ThP06 101
Su, Yuan	TP34 688	Sun, Xuefei	MP26 540	Syka, John	WP31 583
Subbaiah, D.R.C. Venkata	WP28 513	Sun, Yujie	TP21 330	Syka, John	TOH am 09:30
Subbotin, Roman	MP20 391	Sun, Zhe	TP35 701	Syka, John E.P.	TP01 019
Subel, Bethany	TP37 765	Sun, Zhi	MP18 373	Sylvain, Jean Francois	TOE pm 3:10
Subramaniyan, Saravanan	WP14 249	Sun, Zhi	TP28 525	Sylvänne, Tuulia	ThOC pm 3:50
Subramaniyan, Saravanan	WP14 248	Sun, Zhi	TOH pm 4:10	Syms, Richard	MP16 297
Subramaniyan, Saravanan	MP31 635	Sundaresan, Sakthivel	TP32 618	Syring, Michael	ThP15 264
Subramaniyan, Saravanan	ThP27 549	Sung, Kidon	TP37 766	Syromyatnikov, Sergei	WP08 123
Subramaniyan, Saravanan	WP14 250	Sung, Ting-Yi	MP03 042	Szabo, Eszter	MOC pm 3:10
Suckau, Detlev	ThP04 036	Sung, Ting-Yi	TP28 518	Szabo, Eszter	TP30 570
Suckau, Detlev	WP09 142	Sunley, Kevin	TOH am 09:30	Szacherski, Pascal	TP28 505
Suckau, Detlev	WP24 434	Sunner, Jan	TP04 073	Szalay, Dániel	TP01 013
Suckau, Detlev	TOH am 08:50	Sunner, Jan	ThP05 069	Szalay, Dániel	ThOA am 10:10
Sudakov, Michael	ThP06 079	Sunner, Jan	MP29 578	Szalay, Dániel	TP04 086
Sudhir, Putty-Reddy	ThP19 335	Sunner, Jan	TP24 417	Szapacs, Matthew E.	MP25 519
Suematsu, Makoto	WP17 296	Sunny, Nishanth	WP18 317	Szarka, Szabolcs	WP14 238
Sufiita, Joe	MP29 578	Suominen, Tina	MOH pm 2:30	Szarka, Szabolcs	ThP29 602
Sugahara, Kotaro	ThP31 636	Suri, Vipin	WP29 531	Szatmari, Ildiko	TP30 570
Sugai, Toshiki	ThP25 489	Surindar Singh, Gurmeet Kaur	TP26 453	Szatmari, Ildiko	MOC pm 3:10
Sugaya, Masakazu	ThP26 524	Surowiec, Izabella	TP24 396	Sze, Siu Kwan	MP27 565
Sugita, Yuji	TP35 695	Surowiec, Izabella	WP18 316	Sze, Siu-Kwan	MP24 492
Sugiyama, Masuyuki	TP05 088	Surwade, Dr.Manoj	ThP27 542	Szewc, Mark	WP17 301
Sugiyama, Masuyuki	TP05 092	Sussman, Michael R.	ThP22 422	Szewc, Mark	TP23 364
Sugiyama, Naoyuki	MP24 475	Sussman, Michael R.	ThOE pm 3:30	Szewc, Mark	TP24 414
Sugiyama, Naoyuki	WOA am 08:30	Suter, Marc J.-F.	TP31 593	Szonyi, Laszlo	TP30 570
Sugrue, Richard	ThP25 508	Sutton, Chris	WP12 198	Szonyi, Laszlo	MOC pm 3:10
Suh, Hyongwon Danny	WP33 609	Sutton, Jennifer	WP26 457	Sztaray, Balint	ThP36 727
Suh, Joon Hyuk	MP34 714	Sutton, Jennifer	ThP34 673	Sztaray, Balint	ThP36 726
Suh, Jung-Keun	WP25 449	Sutton, Jennifer N.	TP21 309	Sztein, Marcelo	ThP25 501
Suh, Sunglll	WP08 126	Suyama, Motohiro	TP05 107	Szumilinski, Karen	WP33 627
Sui, Hongshu	ThP25 505	Suzuki, Hidezuki	MP03 050	Szymanski, Daniel	MP32 668
Sui, Ping	ThP22 441	Suzuki, Hitoshi	ThOD am 09:30	Szymanski, Wladyslaw	MP16 328
Sukumar, Harikrishnan	WP38 752	Suzuki, Koichi	WP08 121	Ta, Hung Xuan	ThOC pm 3:50
Sukumaran, Siddharth	TP21 337	Suzuki, Koji	MP16 314	Tabata, Kenji	WP15 262
Sullivan, Barbara	WP21 374	Suzuki, Nobuhiro	MP04 072	Tabata, Tsuyoshi	MP18 359
Sullivan, Michael	WP06 082	Suzuki, Takashi	MP11 214	Tabata, Tsuyoshi	MP18 360
Sullivan, Michael	TP26 466	Suzuki, Yasutaka	ThP26 524	Tabata, Tsuyoshi	MP18 358
Sulman, Erick P.	WP35 677	Suzuki, Yayoi	TP31 590	Tabb, David	MP09 168
Sulman, Erik P.	MP29 597	Svane, Simon	WP30 544	Tabb, David	WOB am 08:50
Sultan, Omar	ThP25 517	Svane, Simon	WP34 650	Tabe, Shahram	TP31 589
Sulyok, Michael	TP37 747	Svenningsson, Per	ThOF am 09:50	Tabet, Jean-Claude	ThP36 720
Sulzer, David	TP21 326	Svenningsson, Per	WP12 210	Tabet, Jean-Claude	TP13 215
Sulzer, Philipp	ThP26 521	Svinkina, Tanya	MOF pm 3:30	Tabet, Jean-Claude	MP30 616
Sumandea, Marius	ThP18 318	Svoboda, Michal	MP07 132	Tabet, Jean-Claude	TP06 122
Suming, Chen	WP12 213	Svobodova, Helena	WP27 486	Tachezy, Jan	TP10 175
Summers, Fiona	WP19 345	Svobodova, Helena	MP06 120	Tachibana, Hirofumi	WP19 341
Sumner, Lloyd	TP23 369	Swales, John	ThOF am 08:30	Tachiwana, Hiroaki	TP09 166
Sumner, Lloyd	MP03 050	Swales, John G.	WP11 176	Tackett, Phil	ThP26 527
Sumner, Lloyd	MP03 049	Swaminathan, Jagannath	ThP09 152	Tadano, Jun	WP11 173
Sumner, Susan	TP23 362	Swamy, Bale M.	MP27 554	Tadano, Jun	WP11 171
Sun, Difei	ThP09 159	Swanson, Selene	WP29 526	Tadi, Surendar	TP23 374

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Tadrist, Souria.....	MP04 063	Tanaka, Koichi.....	ThP06 088	Tata, Alessandra.....	TP34 681
Tae, David.....	MP23 442	Tanaka, Koichi.....	MP18 359	Tate, Stephen.....	TP08 141
Taffe, Bonnie.....	WP03 019	Tanaka, Koichi.....	ThP19 338	Tate, Stephen.....	MP24 493
Taguchi, Vince Y.....	WOF am 09:10	Tanaka, Koichi.....	MP08 160	Tate, Stephen.....	MP24 463
Tai, Shih-Shan.....	TP31 586	Tanaka, Koichi.....	MP18 360	Tate, Stephen.....	ThP01 010
Tai, Susan.....	TP30 559	Tanaka, Satoshi.....	MP18 359	Tate, Stephen.....	WP31 576
Tai, Susan.....	TP30 560	Tanaka, Satoshi.....	MP18 358	Tate, Stephen.....	WP36 685
Tai, Susan.....	TP30 561	Tanaka, Satoshi.....	MP18 360	Tate, Stephen.....	TP08 144
Taipale, Mikko.....	WP36 687	Tanassi, Julia T.....	TP19 292	Tate, Stephen.....	ThP14 260
Taipale, Mikko.....	WP36 685	Tang, Bo.....	WP30 540	Taucher, Monika.....	MOH am 09:30
Tajiri, Michiko.....	TP36 722	Tang, Chi.....	WP35 669	Taucher, Paul.....	ThP36 721
Takaba, Hiromitsu.....	TP36 734	Tang, Guomei.....	TP21 326	Taus, Thomas.....	WP30 541
Takaba, Hiromitsu.....	TP36 736	Tang, Haiping.....	ThP23 450	Tautges, Stephanie.....	ThP22 412
Takada, Yasuaki.....	ThP26 524	Tang, Haixu.....	ThP20 376	Tautges, Stephanie.....	ThP22 413
Takahashi, Katsutoshi.....	ThP04 032	Tang, Haixu.....	MP21 400	Tavani, Fabiana.....	MP34 693
Takahashi, Kazuo.....	ThP19 349	Tang, Haixu.....	WP26 470	Tavares, Clint.....	TP11 199
Takahashi, Kazuo.....	ThOD am 09:30	Tang, Haixu.....	TP36 737	Taverna, Domenico.....	TP34 690
Takahashi, Kazuo.....	ThP19 330	Tang, Haixu.....	WP31 588	Taverna, Domenico.....	MP10 186
Takahashi, Maki.....	MP10 187	Tang, Haixu.....	WP32 598	Taverner, Thomas.....	MP20 389
Takahashi, Masakazu.....	MP06 089	Tang, Jianhua.....	ThP05 058	Tawfall, Amanda.....	MP03 049
Takahashi, Ryo.....	TP20 298	Tang, Jonathan.....	TP30 565	Tay, Enoch.....	ThP28 580
Takahashi, Tadahiro.....	MP06 110	Tang, Kai.....	ThP25 508	Taylor, Adrian.....	TP29 535
Takala, Anna.....	MOH pm 2:30	Tang, Keqi.....	TOG am 08:30	Taylor, Adrian.....	TP30 577
Takashima, Yuki.....	WP11 189	Tang, Keqi.....	MP26 542	Taylor, Adrian.....	TP29 555
Takats, Zoltan.....	TP30 570	Tang, Keqi.....	WP27 484	Taylor, Adrian.....	WOA pm 3:10
Takats, Zoltan.....	ThP28 560	Tang, Keqi.....	WP27 483	Taylor, Alan T.....	MP31 648
Takats, Zoltan.....	MOC pm 3:10	Tang, Keqi.....	MOC am 08:30	Taylor, Alan W.....	TP26 468
Takats, Zoltan.....	MP10 204	Tang, Ning.....	MP25 511	Taylor, Amber.....	TP35 699
Takats, Zoltan.....	ThP04 042	Tang, Pingming.....	MP01 001	Taylor, Amber D.....	TP35 700
Takats, Zoltan.....	TOH pm 3:10	Tang, Rui.....	TP21 307	Taylor, Amber D.....	TP35 711
Takáts, Zoltán.....	ThOA am 10:10	Tang, Wanjin.....	TP08 159	Taylor, Carla G.....	TP23 373
Takáts, Zoltán.....	MP04 074	Tang, Weijuan.....	WP05 058	Taylor, Christopher.....	WP28 496
Takáts, Zoltán.....	TP01 013	Tang, Wilfred.....	WP31 583	Taylor, Dennis.....	MP33 676
Takáts, Zoltán.....	TP04 086	Tang, Wilfred.....	ThOB pm 3:30	Taylor, Kristin M.....	ThP25 497
Takatsu, Akiko.....	MP09 178	Tang, Wilfred.....	WP31 577	Taylor, Richard.....	WP22 394
Takayama, Mitsuo.....	WP15 262	Tang, Wilfred.....	TP11 203	Taylor, Sandra.....	ThOC am 09:50
Takayama, Mitsuo.....	ThP30 622	Tang, Xiaofeng.....	ThOG am 09:10	Taylor, Stephen.....	WP04 043
Takeda, Sen.....	WP07 115	Tang, Xiaohu.....	TOF am 09:30	Taylor, Stephen.....	ThP06 076
Takeshi, Bamba.....	ThOB am 09:50	Tang, Xiaonan.....	TP25 450	Taylor, Steve.....	MP15 270
Takeuchi, Aiko.....	MP14 257	Tang, Xilan.....	MP34 713	Tayyari, Fariba.....	MP03 041
Takeuchi, Kohei.....	TP24 412	Tang, Yujie.....	ThP08 137	Tchekhovskoi, Dmitrii.....	MP18 368
Takeuchi, Kohei.....	TOF am 08:50	Tang, Zuojuan.....	ThOD am 08:30	Tchekhovskoi, Dmitrii.....	ThP34 669
Takeuchi, Takae.....	ThP25 489	Taniguchi, Kenichi.....	MP08 160	Tchekhovskoi, Dmitrii.....	WP31 592
Takinami, Koji.....	WP03 026	Tank, Holger.....	TP34 686	Tchekovskoi, Dmitrii.....	MP19 384
Takino, Masahiko.....	WP19 337	Tanner, Meghan.....	ThP22 419	Tcherkezian, Joseph.....	TOE am 08:50
Takvam, Adam.....	WP17 301	Tans, Pieter.....	ThOE am 08:30	Tea, Joy.....	ThP18 307
Talabere, Tiffany.....	MP27 562	Tänzler, Dirk.....	MP21 398	Teague, Matthew.....	TP33 638
Talamantes, Tatjana.....	ThP33 667	Tao, Andy.....	WP28 502	Teale, Phillip.....	ThP21 397
Talbot, Christopher.....	TP36 732	Tao, Hui.....	ThP13 233	Tebbe, Andreas.....	ThP22 425
Tam, Stanley.....	WP28 509	Tao, Li.....	TP15 225	Teffer, Yohannes.....	WP12 197
Tamae, Daniel.....	ThP21 409	Tao, Li.....	MP21 397	Tegeler, Tony.....	MP26 541
Tamanoi, Fuyuhiko.....	ThP09 140	Tao, Nannan.....	ThP19 356	Tegeler, Tony.....	ThP15 264
Tamborindéguy, Cecilia.....	MP33 672	Tao, Shujuan.....	TP35 694	Tegeler, Tony.....	TP08 129
Tamura, Hiroto.....	ThP25 493	Tao, Shujuan.....	WOC am 10:10	Teh, Huey Fang.....	MP32 665
Tamura, Masayoshi.....	TP37 739	Tao, W. Andy.....	ThOE pm 3:50	Teis, David.....	ThP17 285
Tamura, Motoi.....	WP19 337	Tao, W. Andy.....	TP11 194	Teis, David.....	MP24 482
Tan, Aimin.....	WOD am 10:10	Tao, W. Andy.....	WP34 655	Telu, Kelly H.....	TP23 368
Tan, Boon-Huan.....	ThP25 508	Tao, W. Andy.....	WP30 573	Telu, Kelly H.....	MP04 061
Tan, Dan.....	MP21 397	Tao, Weiguo Andy.....	WP29 538	Tembe, Waibhav.....	TP08 129
Tan, Fengji.....	TP21 331	Tao, Weiguo Andy.....	WP34 658	ten Hoor, Klaske A.....	WP33 639
Tan, Guobin.....	MP31 641	Tao, Yeqing.....	TP22 343	Tenzer, Stefan.....	MP24 464
Tan, Haiyan.....	ThP17 290	Tao, Yeqing.....	MP22 440	Teo, Guoci.....	WP36 687
Tan, Haiyan.....	ThP23 467	Tao, Yeqing.....	TP22 344	ter Brugge, Petra.....	WOD pm 3:50
Tan, Ke Jie.....	WP02 008	Tao, Yuanqi.....	MOG pm 2:50	Terada, Hidetoshi.....	MP06 110
Tan, Lei.....	TP06 112	Taohong, Huang.....	ThP27 550	Terada, Koichi.....	ThP26 524
Tan, Lei.....	TP06 113	Taoka, Masato.....	MP14 257	Teramura, Toshio.....	WP15 262
Tan, Lei.....	TP06 111	Taoka, Masato.....	MP14 256	Terés, Silvia.....	MP10 201
Tan, Melvin.....	WP06 082	Taormina, Christopher.....	MP15 293	Termini, John.....	ThP21 409
Tan, Melvin.....	TP26 466	Taouatas, Nadia.....	TP19 283	Termopoli, Veronica.....	WP20 361
Tan, Ming.....	WP23 404	Tarantova, Anna.....	ThP06 085	Termopoli, Veronica.....	TP31 606
Tan, Minjia.....	WP29 535	Tarasov, Kirill.....	ThOC pm 3:50	Terrett, Jonathan.....	MP25 497
Tan, Minjia.....	WP29 536	Tarasova, Irina A.....	ThP34 691	Terterov, Ivan.....	ThP34 679
Tan, Xing Fei.....	MP34 712	Tarlov, Michael J.....	TP15 237	Terunuma, Atsushi.....	WP18 312
Tan, Yanglan.....	ThP20 381	Tarr, Matthew A.....	TP10 186	Teslya, Igor.....	ThP27 557
Tan, Zhijing.....	WP30 547	Tarr, Matthew A.....	TP11 195	Tessaró, Elias.....	WP07 100
Tanaka, Koichi.....	ThP19 329	Tarr, Paul.....	TP23 381	Tessier, Matthew.....	TP10 192
Tanaka, Koichi.....	MP08 161	Tasoglu, Cagdas.....	ThP36 716	Testa, Bernard.....	MOE am 08:50
Tanaka, Koichi.....	MP08 166	Tassetti, Charles-Marie.....	MP16 320	Teubl, Jennifer.....	WP31 584
Tanaka, Koichi.....	MP18 358	Tata, Alessandra.....	TP33 620	Teutenberg, Thorsten.....	MP31 647

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Thach, Serei.....	TP31 589	Thompson, Mary K.....	TOH am 10:10	Tolić, Nikola.....	TOH am 08:30
Thai, Kerri.....	TP24 385	Thompson, Natalie.....	WP24 422	Tollenaar, Rob.....	WP12 218
Thakar, Ketan.....	WP36 696	Thompson, Patricia.....	WP18 313	Tollenaar, Rob A.E.M.....	ThP23 471
Tham, Katja.....	MP19 377	Thompson, Steve.....	ThP05 059	Tollervey, James.....	TP22 351
Thannhauser, Theodore.....	MP33 673	Thompson, Will.....	ThP28 573	Tolley, Luke.....	MP15 291
Thannhauser, Theodore.....	MP33 672	Thompson, Will.....	ThP25 487	Tolner, Else A.....	WP09 141
Thannhauser, Theodore.W.....	MP32 663	Thompson, Will.....	MP18 371	Tolstikov, Vladimir.....	WP18 323
Thatcher, Gregory R. J.....	ThP09 166	Thomsen, Ditte.....	ThP36 719	Tomco, Dajena.....	WP15 270
Thaysen-Andersen, Morten.....	TP36 731	Thorne, Robert.....	WP11 178	Tomer, Kenneth B.....	TP36 720
Thaysen-Andersen, Morten.....	WOG pm 2:30	Thoroddsen, Sigurdur.....	MP17 349	Tomer, Kenneth B.....	WP19 346
Thayumanavan, Sankaran.....	TP10 174	Thorsteinsdóttir, Margret.....	TP27 495	Tomita, Masaru.....	MP12 224
Theberge, Roger.....	TP18 268	Thorsteinsdóttir, Margrét.....	ThOC am 10:10	Tomita, Shigeo.....	TP02 045
Theberge, Roger.....	ThP23 462	Thrall, Brian.....	WOA am 08:50	Tonevitsky, Alexander G.....	WP28 512
Theberge, Roger.....	TP16 240	Threadgill, Graham.....	WP27 489	Tong, Vince.....	WOD am 08:30
Théberge, Marie-Claude.....	MP01 026	Throsby, Mark.....	WP24 422	Tong, Xinchun.....	WOD am 08:30
Théberge, Marie-Claude.....	MP01 019	Thum, Andrea.....	ThOB am 09:10	Tonge, Robert.....	WP36 699
Théberge, Marie-Claude.....	MP01 022	Thurlow, Sophie.....	MP23 452	Tonge, Robert.....	TP28 519
Théberge, Marie-Claude.....	MP01 014	Thurman, Michael.....	TOG pm 3:30	Tonge, Robert.....	ThP22 415
Theis, Jason.....	WOB pm 4:10	Thyagarajan, Arvind.....	WP14 250	Tonkin, Michelle.....	MP21 408
Theis, Jason D.....	ThP23 464	Thyagarajan, Arvind.....	ThP27 549	Toot, Jonathan D.....	TP26 455
Theis, Jason D.....	ThP23 466	Thyagarajan, Janani.....	WP14 248	Topp, Justin D.....	WP31 590
Theriot, Casey.....	TP35 710	Thyagarajan, Janani.....	WP14 249	Toprak, Umut.....	TOD pm 3:50
Theron, Laetitia.....	MP10 188	Thyparambil, Sheeno.....	MP09 169	Topulzu, Ece.....	TP23 360
Therrien, Daniel.....	TP10 181	Thyparambil, Sheeno.....	MP09 172	Torabi, Sheida.....	ThOC pm 4:10
Thevis, Mario.....	WP15 274	Tian, Changhai.....	ThP18 327	Torbett, Neil.....	ThP17 287
Thevis, Mario.....	ThOC am 08:50	Tian, Enbing.....	ThP23 450	Törnqvist, Margareta.....	WP26 465
Thibault, Pierre.....	TP27 494	Tian, Feifei.....	ThP11 189	Torres, Elizabeth.....	TP33 652
Thibault, Pierre.....	TOE am 08:50	Tian, Na.....	TP18 270	Torres, Javier.....	MP27 556
Thibault, Pierre.....	TP33 640	Tian, Yuan.....	TOD pm 3:30	Torres-Saez, Rodrigo.....	TP21 321
Thibault, Pierre.....	MP28 573	Tian, Zhixin.....	TP14 221	Tortorelli, Silvia.....	MP09 179
Thibeault, Denis.....	MP01 009	Tibshirani, Robert.....	MP10 205	Tortorelli, Silvia.....	WP07 107
Thibodeaux, Stefan.....	ThP10 184	Tice, Joseph.....	MP17 342	Tortorelli, Silvia.....	WP07 106
Thiébaud, Didier.....	WP05 059	Tice, Joseph.....	ThP26 520	Toss, Vahur.....	TP04 063
Thiele, Herbert.....	ThP04 034	Tichy, Ales.....	WP34 649	Totten, Sarah.....	WP19 347
Thiele, Herbert.....	ThP04 036	Tielsens, A.G.G.M.....	WOG am 09:10	Totten, Sarah.....	WP19 349
Thiemann, Joachim.....	ThP27 554	Tietel, Zipora.....	TP24 412	Touboul, David.....	WP14 244
Thill, Greg.....	TOC pm 2:50	Tille, Jean-Christophe.....	TP21 333	Touboul, David.....	TP03 051
Thinius, Marco.....	MP15 274	Tiller, Philip.....	WP15 280	Touboul, David.....	MP10 184
Thinius, Marco.....	MP15 275	Tiller, Philip.....	TP25 421	Touboul, David.....	MP11 220
Thissen, Roland.....	ThOE am 09:50	Tillotsen, Cadie.....	ThP09 167	Tousi, Fateme.....	ThP19 333
Thomas, Ancy.....	MP33 681	Tilton, John C.....	WP33 642	Tousi, Fateme.....	TP35 696
Thomas, Aurelien.....	ThP04 041	Timmermans, Annemieke M.....	ThOD am 09:10	Toutoungi, Danielle.....	ThP01 013
Thomas, Aurelien.....	MP10 185	Timmermans-Wielenga, Vera.....	ThOD am 09:10	Toutoungi, Danielle.....	ThP01 019
Thomas, Aurélien.....	WP09 157	Timpe, Leslie.....	ThP22 420	Toutoungi, Danielle.....	ThP01 020
Thomas, Brian F.....	TP23 362	Ting, Alice.....	MOF pm 3:30	Toutoungi, Danielle.....	ThP01 021
Thomas, Courtney R.....	ThP09 140	Ting, Lily.....	WP28 509	Toutoungi, Danielle.....	MOC am 08:30
Thomas, Dafydd.....	MP27 564	Ting, Sonia.....	MP24 468	Tovo Rodrigues, Luciana.....	TP07 125
Thomas, Daniel.....	ThP20 371	Ting, Sonia.....	MP24 490	Tovo Rodrigues, Luciana.....	WP23 421
Thomas, Elizabeth.....	WP33 634	Ting, Ying.....	MOA am 08:30	Tovstiga, Tara E.....	TP01 005
Thomas, Jason.....	ThP09 144	Ting, Ying Sonia.....	WP31 582	Towers, Mark.....	WP10 168
Thomas, Marlene.....	TP21 333	Ting, Zhi Wei.....	ThP27 530	Towers, Mark.....	WP12 208
Thomas, Mathew.....	TOB am 08:50	Tingler, Michael.....	WP33 624	Townsend, R. Reid.....	ThOD am 08:30
Thomas, Mathew.....	TOB pm 3:50	Tintaru, Aura.....	MP36 735	Townsend, R. Reid.....	TP21 332
Thomas, Paul.....	MOB pm 4:10	Tintaru, Aura.....	MP36 746	Townsend, R. Robert.....	ThP17 299
Thomas, Paul.....	ThP25 510	Tipler, Andrew.....	ThP11 198	Townsend, Reid.....	TOD pm 3:30
Thomas, Paul.....	ThP08 128	Tischler, Marc.....	ThP27 541	Townsend, Reid.....	WP30 571
Thomas, Paul.....	TP01 008	Tittlemier, Sheryl.....	TP37 744	Toyoda, Michisato.....	WP11 180
Thomas, Paul.....	ThP23 448	Tjora, Erling.....	TP19 284	Toyoda, Michisato.....	ThP05 066
Thomas, Paul.....	TP34 669	Tobias, Herbert.....	ThP11 214	Tozer, Gillian.....	WP09 136
Thomas, Paul.....	ThOH am 10:10	Tobolkina, Elena.....	WOE pm 3:30	Tozer, Gillian.....	WP11 172
Thomas, Paul M.....	WP35 684	Tobolkina, Elena.....	TP34 677	Trabelsi, Fethi.....	WOD am 10:10
Thomas, Paul M.....	TP16 239	Toby, Timothy.....	MOD pm 2:50	Tracz, Dobryan.....	ThP25 498
Thomas, Paul M.....	WOD pm 3:30	Toda, Shingo.....	WP19 326	Tran, Daniel.....	TP26 462
Thomas, Paul M.....	ThP09 141	Todd, Daniel A.....	ThP31 649	Tran, Denise.....	MP21 403
Thomas, Rebecca.....	TP01 015	Toelgyesi, László.....	TP31 582	Tran, Duc T.....	TP10 179
Thomas, Tiffany.....	TP26 467	Toffoli, Giuseppe.....	WP06 092	Tran, John.....	ThP08 128
Thome, Carolina.....	MP26 543	Tognetti, Vincent.....	TOG am 09:30	Tran, John.....	ThP25 510
Thompson, Alexander J.....	WOF pm 2:30	Tognetti, Vincent.....	WP38 738	Tran, John C.....	WP35 684
Thompson, Charles.....	WP01 002	Toh-Boyo, Gwendoline.....	ThP25 496	Tran, John C.....	ThP09 141
Thompson, Charles.....	MP14 261	Tokarski, Caroline.....	TP12 210	Tran, Thuy.....	MP01 002
Thompson, Christopher.....	WP23 416	Tokarski, Caroline.....	TOA pm 3:10	Tran, Tran.....	MP04 066
Thompson, Christopher.....	MP03 051	Tokar, Rafal.....	ThP25 497	Tran, Vilinh.....	MP04 060
Thompson, Christopher J.....	WP11 185	Tokmina-Lukaszewska, Monika.....	TP23 366	Trapman-Jansen, Anita M.A.C.....	ThOD am 09:10
Thompson, J. Will.....	ThP17 302	Tokmina-Lukaszewska, Monika.....	TP24 398	Travers, Mark.....	TP26 460
Thompson, J. Will.....	TOF am 09:30	Tokuoka, Suzumi.....	ThP28 563	Trede, Dennis.....	MP10 202
Thompson, J. Will.....	MP09 168	Tokuoka, Suzumi.....	TP27 478	Trede, Dennis.....	ThP04 036
Thompson, J. Will.....	MOA pm 2:50	Tolic, Nikola.....	TP12 209	Trede, Dennis.....	ThP04 034
Thompson, J. Will.....	TP23 361	Tolic, Nikola.....	TP16 242	Tremblay, André J.....	WP33 622
Thompson, Lee.....	WP26 455	Tolić, Nikola.....	TP16 243	Tremintin, Guillaume.....	WP24 435

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Tremintin, Stacy.....	WP03 020	Tubbs, Kemmons A.....	MP25 503	UniProt Consortium, The.....	WP32 606
Trengove, Robert.....	WP17 303	Tucholska, Monika.....	WP31 581	Unterfenger, Matthew.....	WP05 048
Trengove, Robert.....	ThP27 546	Tuchosika, Monika.....	WP31 576	Unwin, Richard.....	MP19 386
Trengove, Robert.....	TP23 363	Tucker, George.....	WP36 687	Upadhyaya, Pramod.....	TP29 533
Trengove, Robert.....	WP17 304	Tucker, Julie.....	WP23 407	Upadhyaya, Pramod.....	TP29 553
Trent, M. Stephen.....	MP12 231	Tucker, Stephen J.....	MOF am 10:10	Uppal, Annu.....	WP25 452
Tretyachenko, Vyacheslav.....	WOH pm 3:10	Tudor, Andrew.....	TP28 519	Uppal, Karan.....	MP04 060
Tretyakova, Natalia.....	ThP21 403	Tugendreich, Stuart.....	ThP33 666	Uppal, Karan.....	MP04 067
Tretyakova, Natalia.....	MP13 238	Turchetta, Renato.....	ThP05 068	Upton, Mark.....	TP29 536
Tretyakova, Natalia.....	MP13 243	Turecek, Frantisek.....	MOG am 10:10	Urban, Erik.....	ThP36 721
Tretyakova, Natalia.....	ThOH am 08:30	Turecek, Frantisek.....	WOE pm 3:10	Urh, Marjeta.....	ThP08 124
Trevitt, Adam.....	ThP35 709	Turecek, Frantisek.....	MOC pm 2:30	Urh, Marjeta.....	TP15 233
Trevitt, Adam.....	ThP35 705	Turesky, Robert.....	ThP21 400	Urh, Marjeta.....	ThP08 125
Trim, Paul J.....	ThP20 361	Turgeon, Coleman.....	MP09 179	Urh, Marjeta.....	ThP08 126
Trimpin, Sarah.....	ThP31 642	Turiak, Lilla.....	ThP20 363	Urlaub, Henning.....	MOF am 08:30
Trimpin, Sarah.....	TP33 624	Turiak, Lilla.....	ThP20 362	Urlaub, Henning.....	MOH am 09:10
Trimpin, Sarah.....	MP17 337	Turk, Benjamin E.....	TOE am 08:50	Urlaub, Henning.....	MP21 410
Trimpin, Sarah.....	ThP31 641	Turk, John.....	TP27 481	Urlaub, Henning.....	TP22 354
Trimpin, Sarah.....	MP15 292	Türk, Jochen.....	MP31 647	Urlaub, Henning.....	WP28 512
Trimpin, Sarah.....	WOE pm 2:50	Turkin, Igor.....	MP27 559	Urlaub, Henning.....	WP36 696
Trimpin, Sarah.....	TP33 621	Turko, Illarion V.....	ThP24 477	Urlaub, Henning.....	ThP09 160
Trinidad, Jonathan C.....	TOD am 09:30	Turko, Illarion V.....	TP22 356	Urlaub, Henning.....	MP32 661
Triolo, Antonio.....	MP34 693	Turko, Illarion V.....	TP21 313	Urlaub, Henning.....	MP20 387
Triquigneaux, Mathilde.....	WP19 345	Turko, Illarion V.....	MP26 535	Usui, Kiyotaka.....	WP08 121
Trnka, Michael.....	WOE am 09:30	Turner, Heather.....	ThP17 287	Uthayakumar, Rampriya.....	WP14 250
Trojer, Patrick.....	TP22 350	Turner, Jeff.....	ThP17 304	Utsunomiya, Shinichi.....	MP18 359
Trooskens, Geert.....	ThP34 683	Turner, Mark.....	MOC pm 3:30	Utsunomiya, Shin-ichi.....	MP18 358
Trost, Matthias.....	MP28 571	Turner, Meredith E.....	ThP17 302	Utsunomiya, Shin-ichi.....	MP18 360
Troudt, Jolynn.....	MP26 549	Turnipseed, Sherri B.....	ThP13 237	Uys, Joachim.....	WP30 553
Troyer, Dean.....	TOB pm 3:10	Tuskan, Gerald.....	MP32 669	Uzasci, Lerna.....	TP21 324
Trudgian, David.....	MP18 357	Twaddle, Nathan C.....	TP26 477	Uzzell, Jamar.....	MP09 172
True, Lawrence.....	MP27 566	Tyan, Yu-Chang.....	WP26 453	Uzzell, Jamar.....	MP09 169
Trusch, Maria.....	MP10 202	Tyan, Yu-Chang.....	TP18 263	Vaca, Sebastian.....	ThP09 156
Trygg, Johan.....	WP18 316	Tyan, Yu-Chang.....	ThP22 435	Vachani, Anil.....	TP24 407
Trygg, Johan.....	TP24 396	Tyanova, Stefka.....	TOD pm 2:30	Vachet, Richard.....	TP10 183
Tsai, Ah-Lim.....	WP30 556	Tyavanagimatt, Shanthakumar.....	WP15 282	Vachet, Richard.....	MP22 421
Tsai, Chia-Feng.....	TP28 518	Tyers, Mike.....	MP29 602	Vachet, Richard.....	TP10 174
Tsai, Ming-Daw.....	ThP17 282	Tyers, Mike.....	MP20 388	Vachet, Richard.....	WP02 006
Tsai, Ming-Tsang.....	ThP31 647	Tyler, Andrew.....	MP09 177	Vachet, Richard W.....	WP02 003
Tsai, Ping-Ju.....	MP11 209	Tymiak, Adrienne A.....	WOH am 08:30	Vachet, Richard W.....	MP22 430
Tsai, Sheng-Ta.....	ThP19 334	Tysk-Rönnqvist, Marie.....	WP14 236	Vachet*, Richard W.....	ThP02 024
Tsai, Tsung-Heng.....	WP26 460	Tysl Jr., Robert.....	ThP26 520	Vachon, Pascal.....	ThP22 442
Tsai, Ya-Wen.....	TP28 518	Tyson, Gene.....	ThP25 500	Vachon, Pascal.....	TP25 440
Tsai, Yu-Hsuan.....	WP12 204	Tzai, Tzong-Shin.....	WP30 550	Vacratsis, Panayiotis.....	MP23 449
Tsao, Rong.....	WP19 354	Uaesoontrachoon, Kitipong.....	WOD pm 4:10	Vacratsis, Panayiotis O.....	WP29 539
Tsapraillis, George.....	WP26 472	Ubhayasekera, Kumari.....	TP25 425	Vadali, Gouri.....	ThP34 673
Tsarbopoulos, Anthony.....	ThOC am 09:30	Uboh, Cornelius.....	MP30 625	Vadali, Gouri.....	WP26 457
Tsarbopoulos, Anthony.....	MP34 705	Ubukata, Masaaki.....	WP12 201	Vadali, Gouri.....	TP21 309
Tsefrikas, Vikki.....	MP01 027	Ubukata, Masaaki.....	TP01 020	Vafadar-Isfahani, Baharak.....	MP09 170
Tseng, Angel.....	TP25 438	Uchikata, Takato.....	ThP28 583	Vahidi, Siavash.....	TP10 188
Tseng, Chiao-Li.....	MP05 082	Uchikata, Takato.....	ThOC pm 3:10	Vahidi, Siavash.....	TOF pm 3:50
Tseng, Chiao-Li.....	TP17 251	Uchiyama, Toshiyuki.....	MP16 315	Vahidi, Siavash.....	ThP30 625
Tseng, Su-Hsiang.....	ThP27 531	Udeshi, Namrata.....	MOF pm 3:30	Vaikkinen, Anu.....	WP37 727
Tsien, Roger.....	TP21 318	Uebele, Victor.....	ThP10 182	Vaikkinen, Anu.....	WP12 196
Tsonis, Panagiotis.....	MP24 476	Ueberheide, Beatrix.....	ThOB pm 3:30	Vala, Martin.....	WOG am 09:10
Tsou, Chih-Chiang.....	MP27 564	Ueberheide, Beatrix.....	TP11 203	Valaskovic, Gary.....	WP27 486
Tsou, Chih-Chiang.....	WP31 581	Ueberheide, Beatrix.....	TP28 507	Valaskovic, Gary.....	MP06 120
Tsuchihashi, Hitoshi.....	WP08 121	Ueberheide, Beatrix.....	WP31 577	Valaskovic, Gary.....	TP04 068
Tsugawa, Hiroshi.....	WP13 226	Uechi, Guy.....	WP30 570	Valaskovic, Gary.....	MP15 289
Tsui, Tina.....	WP10 162	Ueda, Toshiki.....	ThP28 579	Valentine, David.....	ThOG pm 3:50
Tsukamoto, Taku.....	MP11 214	Ueffing, Marius.....	WP09 142	Valentine, Joan.....	WP23 414
Tsukazaki, Yasuko.....	MP26 533	Ugarov, Michael.....	ThP01 014	Valentine, Stephen.....	TP21 311
Tsuyama, Naohiro.....	MP32 660	Ugarov, Michael.....	ThP01 012	Valentine, Stephen.....	MP22 426
Tsuyama, Naohiro.....	MP33 678	Ugarov, Mikhail.....	MOC am 08:30	Valentino, Rita J.....	TP21 322
Tsuyama, Naohiro.....	MP04 065	Uittenbogaard, Joost P.....	TP10 176	Valkenborg, Dirk.....	TP16 241
Tsuyama, Naohiro.....	ThP28 579	Ujma, Jakub.....	TP01 002	Valkenborg, Dirk.....	MP18 369
Tsybin, Yury O.....	ThP13 242	Ukibe, Masahiro.....	MP16 314	Vallance, Claire.....	ThP05 059
Tsybin, Yury O.....	MP09 176	Ukibe, Masahiro.....	TP02 045	Vallance, Claire.....	ThP05 068
Tsybin, Yury O.....	MOG pm 3:50	Ulas, Gloria N.....	MOC am 09:50	Vallance, Claire.....	ThP04 050
Tsybin, Yury O.....	ThP12 219	Ulbrich, Arne.....	TP08 153	Vallance, Claire.....	TP05 102
Tsybin, Yury O.....	ThP34 691	Ullrich, Robert L.....	MP35 716	Valle de Sousa, Marcelo.....	ThP08 128
Tsybin, Yury O.....	MOB pm 3:50	Umar, Arzu.....	ThP22 417	Valliere-Douglass, John.....	TOH am 09:50
Tsybin, Yury O.....	WOE am 08:50	Umar, Arzu.....	ThP22 416	Vampola, Lisa.....	MP06 106
Tsybin, Yury O.....	WP05 047	Umar, Arzu.....	ThOD am 09:10	Van Agthoven, Maria.....	TOA pm 3:10
Tsybin, Yury O.....	MP09 181	Umbach, Thorsten.....	WP37 733	van Agthoven, Maria.....	ThP12 220
Tu, Chengjian.....	ThP22 421	Unanue, Emil R.....	WP30 565	Van Amerom, Friso.....	ThOE am 08:50
Tu, Chengjian.....	TP21 337	Underwood, Mark.....	WP19 350	Van Amerom, Friso.....	MP35 720
Tu, Chengjian.....	TP18 257	Unger, Steve.....	WP06 082	van Amerom, Friso.....	MP35 718
Tu, Chengjian.....	WP29 534	Unger, Steve.....	TP26 466	Van Amerom, Friso H.W.....	TP05 090

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Van Amsterdam, Peter.....	ThP29 619	Van Riper, Susan K.....	TP28 511	Verani, Claudio N.....	WP15 270
Van Anda, Jennifer.....	WP19 330	Van Sluyter, Steve.....	ThOE pm 2:30	Verano-Braga, Thiago.....	ThP16 277
van Baar, Patricia.....	TP31 578	van Soest, Remco.....	TP08 136	Verano-Braga, Thiago.....	WP34 650
van Bavel, Bert.....	TP33 626	Van Soest, Remco.....	MP06 108	Verano-Brage, Thiago.....	ThP34 686
van Bavel, Bert.....	MP31 639	van Soest, Remco.....	MP06 125	Verbeck, Guido.....	ThOC pm 4:10
van Bennekom, Eric O.....	TP37 771	van Soest, Remco.....	ThP08 134	Verbeck, Guido.....	TP32 609
Van Berkel, Gary.....	MP15 272	Van Stipdonk, Michael J.....	ThP35 701	Verbeck, Guido F.....	MP16 327
Van Berkel, Gary J.....	MP17 341	van Zeijl, René.....	WP12 218	Verbeeck, Nico.....	WP10 166
Van Berkel, Gary J.....	MP17 340	Vanamala, Jairam.....	TP24 405	Verbeeck, Nico.....	WP10 159
Van Berkel, Gary J.....	ThOA am 09:50	Vandell, Victor.....	ThP08 132	Verbeke, Tobin J.....	WP31 589
Van Berkel, Gary J.....	TP04 076	Vandell, Victor.....	MP07 135	VerBerkmoes, Nathan.....	ThP25 501
van Breemen, Richard.....	MP34 698	Vandell, Victor.....	WP08 117	VerBerkmoes, Nathan.....	ThP25 501
van Breemen, Richard.....	MP34 686	Vandell, Victor.....	TP30 563	Verdin, Eric.....	MP29 596
van Breemen, Richard.....	ThP31 643	Vandell, Victor.....	WP08 124	Verenichikov, Anatoly.....	MP16 323
van Breemen, Richard B.....	ThP21 390	Vandell, Victor.....	WP07 109	Verenichikov, Anatoly.....	TP04 067
van Breemen, Richard B.....	WP15 277	Vandell, Victor.....	MP07 136	Vergilino, Roland.....	MP23 449
van Breemen, Richard B.....	TP27 482	Vanden Bussche, Julie.....	MP03 058	Verhaert, Peter D.....	ThP15 263
van Breukelen, Bas.....	WP31 586	vander Voort, Menno.....	TOH pm 2:30	Verheul, Henk.....	WP34 665
van Breukelen, Bas.....	WP32 597	Vanderboom, Patrick.....	MP26 524	Verkerk, Udo.....	WP38 749
Van Criekinge, Wim.....	TP17 254	Vandewalle, Nicolas.....	ThP16 272	Verkerk, Udo H.....	WOG am 08:30
Van Criekinge, Wim.....	ThP34 683	Vanduijn, Martijn.....	TOH am 08:30	Vermeulen Windsant-v.d. Tweel, Annemieke.....	WP06 095
Van Criekinge, Wim.....	TP22 355	Vanduijn, Martijn.....	TP16 243	Vernier, Arnaud.....	WP38 736
Van Damme, Petra.....	TP17 254	Vanhaecke, Lynn.....	MP03 058	Verrijzer, Peter.....	ThP18 310
Van Damme, Petra.....	TP22 355	Vanhaesebroeck, Bart.....	ThP17 287	Vertes, Akos.....	TP34 664
Van de Plas, Raf.....	MP10 195	Vanhoenacker, Gerd.....	WP19 329	Vertes, Akos.....	WP12 196
Van de Plas, Raf.....	WP10 163	VanSchoiack, Andrew.....	TP19 291	Vertes, Akos.....	MP17 354
Van de Plas, Raf.....	WP09 152	Vanselow, Jens T.....	WP30 552	Vertes, Akos.....	MP17 355
Van de Plas, Raf.....	WP10 166	Varela-Ramirez, Armando.....	MP27 553	Vertes, Akos.....	TP34 662
Van de Plas, Raf.....	TOB am 10:10	Varesio, Emmanuel.....	TP25 423	Vertes, Akos.....	TP34 663
Van de Plas, Raf.....	WP10 159	Varesio, Emmanuel.....	MP23 458	Vertes, Akos.....	TP34 665
van den Anker, John N.....	WOD pm 4:10	Varesio, Emmanuel.....	WP31 593	Vertes, Akos.....	TOB am 09:30
Van Den Biggelaar, Maartje.....	WP28 514	Varesio, Emmanuel.....	MP30 608	Vesekov, Kirill.....	ThP28 560
Van Den Biggelaar, Maartje.....	ThP17 292	Varesio, Emmanuel.....	MOC am 10:10	Veselkov, Kirill.....	ThP04 042
van den Bremer, Ewald T.J.....	TOH am 09:10	Varesio, Emmanuel.....	WP13 230	Veselkov, Kirill A.....	MP10 204
van den Heuvel, Jasmin.....	TP21 310	Varesio, Emmanuel.....	TP08 152	Vestal, Marvin.....	MP08 158
Van Den Heuvel, Zach.....	TP08 148	Varfolomeev, Sergei.....	TP20 299	Vethe, Heidrun.....	ThP23 452
Van Den Heuvel, Zachary.....	ThP08 133	Varfolomeev, Sergey.....	WOF pm 3:30	Vežina, Amelie.....	WP17 297
Van Den Heuvel, Zachary.....	ThP10 179	Varga, Elisabeth.....	TP37 747	Via, Laura E.....	WP11 183
van den Toorn, Henk.....	ThP17 291	Vargas, Luiz Henrique.....	MP05 084	Viala, Didier.....	MP10 188
van den Toorn, Henk.....	WP31 586	Varma, Manthena.....	MP02 034	Vialaret, Jerome.....	MOD am 08:50
van den Toorn, Henk.....	WP30 541	Varney, Michelle.....	MP27 557	Vickery, Lillian.....	ThP17 304
van den Toorn, Henk W.P.....	MOA am 09:50	Varón Silva, Daniel.....	TP36 731	Victor, Bjorn.....	MP23 457
van der Burgh, Arthur.....	ThP23 456	Vas, Gyorgy.....	ThOF pm 3:50	Vidal, Marc.....	WP36 685
van der Burgt, Yuri E.M.....	MP23 454	Vasicek, Lisa.....	TP08 131	Vidal-de-Miguel, Guillermo.....	TP23 377
van der Burgt, Yuri E.M.....	ThP23 471	Vasicek, Lisa A.....	MP25 501	Viehland, Larry A.....	TOG am 09:10
van der Gugten, J Grace.....	MP09 180	Vasieva, Olga.....	TP18 262	Viel, François.....	MP01 023
Van Der Kroft, Claartje.....	MP04 080	Vasil'ev, Yury V.....	ThP36 724	Viel, Stéphane.....	MP36 746
van der Meer, A.F.G.....	WOG am 09:10	Vasil'ev, Yury V.....	ThP31 645	Vielguth, Elizabeth.....	TP29 532
van der Meer, Bram.....	MP36 738	Vaudel, Marc.....	TP19 285	Viera, Mariela de S.....	ThP27 555
van der Mijn, Koen.....	WP34 665	Vaudel, Marc.....	TOD pm 3:10	Vijayakumar, Vaishnavi.....	TOC am 10:10
van der Plas-Duivesteyn, Suzanne J.....	WP31 585	Vavrova, Jirina.....	WP34 649	Vikse, Krista.....	WOC pm 3:30
van der Rest, Guillaume.....	WOH pm 2:50	Vaz, Boniek.....	TP34 679	Vilboux, Thierry.....	ThP23 475
van der Schors, Roel C.....	ThP23 445	Vázquez, Jesús.....	TP05 095	Viljanto, Marjaana.....	MP30 627
van der Vies, Saskia M.....	ThP23 445	Vazquez Cobos, Jesus.....	TP17 246	Vilkov, Andrey.....	ThP27 556
van der Zee, Ate G.J.....	WP33 639	Vazquez-Rivera, Emmanuel.....	TP24 415	Villa, Nancy.....	ThP17 301
van der Zwaan, Carmen.....	WP28 514	Vedder, Sven.....	MP06 111	Villalta, Peter.....	TP29 533
van Deurzen, Carolien H.M.....	ThOD am 09:10	Veenstra, Tim D.....	WP18 312	Villalta, Peter.....	MP13 243
Van Dongen, William Douglas.....	MP25 515	Veesler, David.....	MOF pm 2:50	Villalta, Peter.....	TP29 553
Van Dorsselaer, Alain.....	TP21 306	Vega, Karina.....	ThP25 513	Villar, Maria T.....	WP22 387
Van Dorsselaer, Alain.....	ThP09 156	Vegvari, Akos.....	ThOF am 09:30	VILLARD, Claude.....	ThP02 025
Van Dorsselaer, Alain.....	ThP22 428	Veloso, Antonio.....	MP10 201	Villard, Claude.....	WP24 440
van Duijn, Esther.....	WOH am 09:10	Velstra, Berit.....	ThP23 471	Villard, Claude.....	TP31 585
van Dyck, Jeroen.....	TOF pm 2:30	Vemula, Harika.....	MP06 100	Villeneuve, Daniel.....	TP08 135
Van Eyk, Jennifer.....	ThP18 321	Venäläinen, Tapani.....	ThP32 653	Villeneuve, Daniel.....	ThP29 615
Van Eyk, Jennifer.....	ThP23 463	Vendramelli, Robert.....	ThP08 136	Villeneuve, Lance.....	MP24 469
Van Eyk, Jennifer.....	WP27 489	Vendrell, Iolanda.....	ThP17 287	Vincent, Catherine E.....	ThP34 684
Van Eyk, Jennifer.....	TP19 276	Venkat, Vidya.....	MP19 385	Vincent, Catherine E.....	TP02 026
Van Eyk, Jennifer.....	MP19 385	Venkateshwara, Muthusubramanian.....	ThOE pm 3:30	Vincent, Catherine E.....	ThP13 231
van Heesch, Sebastian.....	WP31 586	Venkateshwaran, Muthusubramanian.....	WP09 151	Vincent, William.....	ThP16 274
Van Holthoorn, Frédérique.....	MP25 515	Venkatraman, Vidya.....	ThP18 321	Vincke, Cecile.....	MP23 443
Van Horne, Kc.....	TP25 432	Venot, Andre.....	WOC am 09:50	Viner, Rosa.....	WOA am 09:30
Van Laere, Steven J.....	ThOD am 09:10	Venter, Andre.....	WP19 327	Viner, Rosa.....	WP31 583
Van Natta, Kristine.....	WP08 118	Venter, Andre.....	ThP31 651	Viner, Rosa.....	WP33 629
Van Natta, Kristine.....	WP08 132	Venter, Andre.....	WOE pm 3:50	Viner, Rosa.....	WP24 444
van Nierop, Pim.....	ThP23 445	Ventura, Dan.....	TP28 516	Viner, Rosa.....	ThP23 449
Van Nieuwerburgh, Filip.....	ThP17 306	Venturi, Miro.....	TP21 333	Viner, Rosa.....	ThP08 135
van Noort, Vera.....	MP29 580	Venturini, Gabriela.....	MP10 196	Viner, Rosa.....	WP33 617
van Nostrand, John.....	WP38 749	Vera, Nicholas B.....	MP11 211	Vinogradov, Alexei.....	MP36 724
Van Nostrand, Vincent.....	ThP12 225				

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Vinueza, Nelson.....	ThOG pm 2:30	W. Cary, Jeffrey.....	MP03 058	Wang, Di.....	MP16 308
Vircks, Kyle.....	MP30 624	Waas, Matthew.....	ThP24 481	Wang, Dongxia.....	ThP26 522
Vircks, Kyle E.....	MP30 622	Wacker, Brad.....	MP10 199	Wang, Dongxia.....	ThP26 526
Vissers, Johannes P.C.....	WP36 699	Wada, Shun.....	WP19 326	Wang, Fan.....	ThP06 106
Vissers, Johannes P.C.....	TOF am 10:10	Wada, Yoshinao.....	TP36 722	Wang, Feng.....	TP10 174
Vissers, Johannes P.C.....	TP18 262	Wada, Yoshinao.....	ThOH pm 4:10	Wang, Furong.....	ThP11 189
Vissers, Johannes P.C.....	MP27 558	Waelkens, Etienne.....	WP10 159	Wang, Gaigai.....	TP21 330
Vissers, Johannes PC.....	TP08 139	Waelkens, Etienne.....	WP10 166	Wang, Guanbo.....	WP22 392
Vissers, Johannes PC.....	TP20 304	Wager-Miller, James.....	MP15 292	Wang, Guanghui.....	WP29 533
Vissers, Johannes PC.....	MP24 489	Wagner, David.....	ThOF am 09:10	Wang, Guanghui.....	WP03 016
Vissers, Johannes PC.....	ThP22 415	Wagner, David.....	WP11 177	Wang, Guanjuan.....	ThP35 704
Vissers, Johannes PC.....	TP28 519	Wagner, Elsa.....	TP15 229	Wang, Haiping.....	WOD am 08:30
Vissers, Johannes PC.....	WP33 641	Wagner, J. Richard.....	MOH am 10:10	Wang, Haixing.....	TP34 676
Vitek, Olga.....	ThP03 030	Wagner, Ludwig.....	TP18 275	Wang, Haiyan.....	WP05 048
Vitek, Olga.....	TP28 512	Wagner, Michel.....	WP17 297	Wang, Hanliu.....	MP22 415
Vitek, Olga.....	WOB am 10:10	Wagner, Richard J.....	ThP18 315	Wang, Haopeng.....	TP04 069
Vitek, Olga.....	WP31 587	Wagner, Samuel.....	WOB am 09:50	Wang, Haopeng.....	ThOA pm 3:30
Vitek, Olga.....	MOA am 08:30	Wagner, William.....	MP07 142	Wang, Hay-Yan J.....	MP11 209
Vitha, Mark.....	MP03 049	Wagner-Redeker, Winfried.....	MP25 518	Wang, Hong.....	WP06 072
Vlad, Camelia.....	WP28 491	Wagner-Rousset, Elsa.....	TOH am 08:50	Wang, Hongxia.....	ThOC am 09:10
Vladimirov, Gleb.....	ThP06 092	Waidyanatha, Suramya.....	MP34 694	Wang, Hongxia.....	ThP29 592
Vladimirov, Gleb.....	ThP06 082	Waidyanatha, Suramya.....	TP26 470	Wang, Hongxia.....	ThOC am 08:30
Vladimirov, Gleb.....	MP16 310	Waite, Randy.....	ThP06 077	Wang, Hongxia.....	TP25 420
Vlahakis, Chris.....	MP32 667	Wakabayashi, Masaki.....	MP24 475	Wang, Hongxia.....	ThP29 608
Vlahakis, Chris.....	TP23 364	Wakabayashi, Masaki.....	WOA am 08:30	Wang, Hongxia.....	MP25 509
Vlahou, Antonia.....	ThP23 476	Walch, Axel.....	ThP04 036	Wang, Hongxia.....	WP34 663
Voelker, Troy.....	ThP29 608	Walch, Axel.....	WP09 142	Wang, Hongxia (Jessica).....	MP25 502
Voelker, Troy.....	TP26 469	Waldera-Lupa, Daniel.....	ThP23 454	Wang, Huang-Joe.....	ThP23 443
Voets, Olaf.....	ThP18 310	Waldon, Daniel.....	WP11 182	Wang, Huiyong.....	WP33 635
Vogelsang, Maryann.....	WP26 457	Waldron, Karen C.....	MP30 612	Wang, Jerry.....	MP07 148
Vogelsang, Maryann.....	TP08 131	Waldron, Karen C.....	WP08 128	Wang, Jessica.....	TP13 214
Vogelsang, Maryann.....	TP22 351	Wales, Thomas E.....	MP22 419	Wang, Jia.....	TP31 600
Vogelsang, Maryann S.....	TP21 309	Wales, Thomas E.....	WP21 378	Wang, Jia.....	TP37 763
Vogelsang, Maryann S.....	ThP34 673	Walker, Annie.....	WOD am 09:30	Wang, Jiahui.....	WP36 695
Vogeser, Michael.....	TP30 573	Walker, Brian.....	TOB pm 3:30	Wang, Jian.....	WP31 576
Vogl, Thomas.....	WP28 497	Walker, Bruce D.....	MP28 572	Wang, Jian.....	MP06 114
Vogt, Susanne.....	TP29 546	Walker, Gary.....	WP13 223	Wang, Jianing.....	ThP12 222
Voigt, Emily A.....	ThOB pm 2:30	Walker, Gary.....	ThP20 369	Wang, Jianmei.....	TP26 463
Volkening, Jeremy.....	ThOE pm 3:30	Walker, Gary.....	TOG pm 4:10	Wang, Jianqi.....	ThP34 678
Völker, Uwe.....	TP19 277	Walker, Karla.....	TP25 434	Wang, Jianshuang.....	MP25 514
Volkmandt, Walter.....	ThP08 129	Walker, L. DeEtte.....	TP24 389	Wang, Jigang.....	MP34 712
Volland, Hervé.....	TOH pm 3:50	Walker, Nykia.....	MP26 529	Wang, Jijie.....	TP28 528
Vollmer, Martin.....	WP19 329	Walker, S. Hunter.....	TP35 711	Wang, Ji-Jie.....	ThP25 491
Vollmerhaus, Pauline.....	WP15 266	Walker, S. Hunter.....	TP35 700	Wang, Jin.....	TP37 741
Volmer, Dietrich.....	TP30 562	Walker, S. Hunter.....	TP35 699	Wang, Jing.....	TP21 330
Volmer, Dietrich.....	TP34 683	Walker, W. Allen.....	ThP28 561	Wang, Jingxin.....	WP27 476
Volny, Michael.....	WOE pm 3:10	Wallace, Tiffany A.....	WP18 312	Wang, Jingxin.....	WP11 178
Voloshenko, Anna.....	WP02 008	Wallace, William.....	MP15 265	Wang, Jingxin.....	WP26 462
Volz, Trent.....	MP36 745	Wallace, William E.....	MP36 721	Wang, Jinhua.....	WP19 339
von Bergen, Martin.....	TP17 250	Wallace III, William E.....	MP04 061	Wang, Jinyuan.....	WP03 034
von Kreudenstein, Thomas Spreter.....	WP24 439	Wallen, Jamie R.....	WP23 401	Wang, Jinyuan.....	TP37 757
von Stedingk, Hans.....	WP26 465	Waller, Lashanda.....	ThP19 347	Wang, Jinyuan.....	MP06 123
von Sydow, Lena.....	WP14 236	Wallinder, Charlotta.....	WP11 184	Wang, Jiye.....	TP25 428
Voorhees, Kent.....	WP07 116	Walmsley, Scott.....	TOD pm 2:50	Wang, Juan.....	ThP29 608
Vora, Gary.....	ThP08 121	Walmsley, Scott.....	WP31 578	Wang, Jun.....	TP36 727
Vorkas, Panagiotis.....	TP24 384	Walmsley, Scott.....	TP28 523	Wang, Jun.....	TP28 503
Vorontsov, Yegor.....	ThP16 278	Walsh, Callee.....	TP21 341	Wang, Jun.....	WP27 477
Vortmann, Britta.....	WP37 711	Walsh, Callee.....	WP11 181	Wang, Jun.....	WP06 071
Voruganti, Sudhakar.....	ThP23 447	Walsh, Callee.....	ThP28 589	Wang, Junhua.....	ThP28 591
Vos, Anne.....	TP05 104	Walsh, Callee.....	TP34 666	Wang, Junhua.....	TP23 382
Voskobojev, Nick.....	MP09 173	Walte, Andreas.....	MOH pm 4:10	Wang, Junhua.....	MP04 062
Vosloo, Nicola.....	WP37 716	Walte, Andreas.....	TP03 053	Wang, Junhua.....	MP03 045
Voß, Don Marvin.....	ThP22 412	Walters, Clifford.....	WP05 051	Wang, Karen.....	WP24 438
Voss, Don Marvin.....	ThP22 413	Walters, James J.....	ThP14 254	Wang, Ke.....	WP20 366
Vouros, Paul.....	TP33 639	Walters, Jim J.....	MP26 525	Wang, Kefei.....	TP31 580
Vouros, Paul.....	MP13 250	Walther, Dirk M.....	TOA am 08:50	Wang, Kefei.....	ThP27 547
Voytovich, Uliana.....	ThP17 298	Walther, Tobias C.....	MP29 587	Wang, Kefei.....	WOF pm 3:10
Voziyan, Paul.....	MP10 195	Waltrip, James.....	TP25 449	Wang, Kefei.....	ThP27 538
Vrana, Julie.....	ThP23 464	Wang, Alexandre.....	ThP21 391	Wang, Kelly.....	WP15 258
Vredendregt-van den Berg, Mirella.....	WP18 319	Wang, Amy Qiu.....	TP25 443	Wang, Kevin.....	MP10 189
Vreeken, Rob.....	TP27 492	Wang, Beixi.....	ThP31 641	Wang, Kevin.....	MP26 538
Vreeken, Rob J.....	TOF am 10:10	Wang, Bo.....	MP17 337	Wang, Kevin.....	TP21 317
Vrkoslav, Vladimir.....	WP37 727	Wang, Bo.....	MOD pm 2:50	Wang, Laixin.....	MP13 245
Vuitton, Véronique.....	ThOE am 09:50	Wang, Bo.....	TP14 221	Wang, Laixin.....	TP08 162
Vukoti, Krishna.....	MP29 600	Wang, Chengcheng.....	WP27 483	Wang, Lanqing.....	ThP21 407
Vuppugalla, Ragini.....	MP25 507	Wang, Chia-Chen.....	WP02 004	Wang, Lanqing.....	ThP21 406
Vyatkina, Kira.....	ThP34 679	Wang, Chin-Hsiung.....	TP34 667	Wang, Lanqing.....	ThP21 404
Vyatkina, Kira.....	TP16 243	Wang, Chuan.....	MP36 749	Wang, Lei.....	TP22 352
Vyazmin, Sergey.....	ThP34 679	Wang, Da.....	ThP35 698	Wang, Lianchun.....	WOC am 09:30

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Wang, Liang	TOA pm 3:50	Wang, Xusheng	WP30 561	Watanabe, Takao	WP11 171
Wang, Liang	MP16 305	Wang, XuXiao	WP05 064	Watanabe, Takehiro	ThP31 636
Wang, Liang	TP01 014	Wang, Yajuan (Megan)	WP28 501	Waterhouse, Andrew	MP33 680
Wang, Lili	ThP24 477	Wang, Yan	TP14 220	Watrous, Jeramie	TOH pm 2:30
Wang, Lin	TP01 018	Wang, Yan	ThP18 308	Watrous, Jeramie	MP04 069
Wang, Linan	ThP18 324	Wang, Yan-Hong	MP32 659	Watson, Caroline	ThP26 525
Wang, Linna	WP29 538	Wang, Yanjiao	WP37 712	Watson, Caroline	MOD am 09:10
Wang, Lintao	WP24 441	Wang, Yanping	WP28 508	Watson, Clifford	ThP11 193
Wang, Liqun	WP03 025	Wang, Yi	TP15 230	Watson, Joseph	TP26 457
Wang, Meiyao	ThP23 446	Wang, Yi	TP19 293	Watson-Leung, Trudy	WOF am 09:10
Wang, Meiyao	TP21 313	Wang, Ying	MP32 657	Wattenberg, Andreas	TOC pm 3:10
Wang, Meiyao	ThP24 477	Wang, Yingfeng	WP32 603	Watts, Norman	WOH am 09:10
Wang, Miao	TP27 486	Wang, Yingfeng	WP29 527	Weaver, Eric	ThP04 040
Wang, Miao	ThP28 559	Wang, Yinsheng	MP13 242	Weaver, Eric	WP11 187
Wang, Mingxun	ThP34 672	Wang, Yinsheng	WP36 690	Webb, Donna	TP04 066
Wang, Mingxun	MP04 069	Wang, Yinsheng	WP36 691	Webb, Ian	MP21 402
Wang, Mingxun	MP34 707	Wang, Yinsheng	MP13 241	Webborn, Peter	WP11 176
Wang, Mingxun	TOH pm 2:30	Wang, Yinsheng	MP13 240	Webborn, Peter	ThOF am 08:30
Wang, Mingxun	TOB pm 4:10	Wang, Yinsheng	MP13 234	Weber, Frank	ThP22 412
Wang, Mingyao	TP29 533	Wang, Yinsheng	ThP24 483	Weber, Rolf	MP31 652
Wang, Minkun	WP26 460	Wang, Yinsheng	TP29 530	Webster, Scott	TOB pm 3:30
Wang, Nan	WP34 666	Wang, Yinsheng	WP29 519	Wehe, Christoph A.	ThP03 027
Wang, Nan	ThP09 159	Wang, Yinsheng	WP32 599	Wehe, Christoph A.	WP11 174
Wang, Nannan	WP20 363	Wang, Yinsheng	ThP09 168	Wehe, Christoph A.	ThP05 070
Wang, Ning	MOG pm 3:10	Wang, Yi-Sheng	MP16 325	Wehe, Christoph A.	WP23 409
Wang, Pei	MP26 544	Wang, Yiwen	TP27 497	Wehe, Christoph A.	TP25 424
Wang, Pei	MOD am 08:30	Wang, Yiyun (Sherry)	WP26 467	Wehe, Christoph A.	ThP04 047
Wang, Peng	MP01 030	Wang, Yongdong	ThP11 197	Wehe, Christoph Alexander	ThP05 056
Wang, Pengcheng	MP13 241	Wang, Yongdong	TP25 429	Wehr, Angela	ThOF am 08:50
Wang, Pengcheng	ThOE pm 3:50	Wang, Yongdong	WP13 223	Wehres, Nadine	MP35 715
Wang, Phillip	WP16 288	Wang, Yongdong	WP13 227	Wei, Cong	ThP13 243
Wang, Qi	MP36 735	Wang, YongDong	ThP12 221	Wei, Hui	WOH am 08:30
Wang, Qi	MP29 593	Wang, Yongqiang	MP32 663	Wei, John T.	MP26 540
Wang, Qi	TOF pm 3:30	Wang, Yu	ThOG am 09:10	Wei, Juan	ThOF pm 4:10
Wang, Qi	TP36 723	Wang, Yuan	WP30 546	Wei, Lili	MP16 306
Wang, Qian	WP03 021	Wang, Yue-Ting	ThP09 166	Wei, Liping	TP21 338
Wang, Qing	MP32 657	Wang, Yuzhuo	MP16 295	Wei, Pu	TP34 686
Wang, Qingtao	ThP23 450	Wang, Yuzhuo	MP16 296	Wei, Pu	TP34 689
Wang, Quanhui	WP30 546	Wang, Zhaohui	WP30 546	Wei, Pu	TP34 687
Wang, Quanhui	MP27 558	Wang, Zhengfang	ThP11 186	Wei, Pu	TP37 745
Wang, Quanhui	TP21 331	Wang, Zhenghe	WP36 700	Wei, Qing	WP32 601
Wang, Quanhui	TP28 503	Wang, Zhenzhen	WP17 310	Wei, Ru	TP19 279
Wang, Quanhui	MP24 465	Wang, Zhiwei	TP28 527	Wei, Shasha	WP33 612
Wang, Rong	ThP23 465	Wang, Zhuowei	MP27 558	Wei, Siwei	ThP22 414
Wang, Rong	ThP28 569	Wang, Zi	WP32 599	Wei, Wei	TP35 691
Wang, Sheila	WP23 411	Wang, Yi-Sheng	WP02 004	Weidner, Steffen	WP09 150
Wang, Shuai	ThP09 166	Wangsa, Darawalee	WP33 614	Weidner, Steffen M.	MP36 737
Wang, Shun-Chang	ThP17 282	Wanke, Andreas	TP31 582	Weidner, Steffen M.	ThP04 031
Wang, Shunhai	MP25 499	Wanner, Ina	ThP22 434	Weil, David	ThP33 665
Wang, Shunhai	MP23 453	Want, Elizabeth	TP24 384	Weimer, Bart	TOE pm 3:50
Wang, Tiffany	WP26 461	Ward, Christopher	MP26 546	Weiner, Danielle	WP11 183
Wang, Ting	WP05 065	Ward, Jennye	ThP11 193	Weiner, Joel	TP24 411
Wang, Tony	MP18 366	Ward, Ken	MOE am 10:10	Weiner, Russell	MP26 528
Wang, Wan	TP37 772	Ward, Malcolm	TP19 295	Weingarten, Jens	ThP08 129
Wang, Wan	WP20 356	Ward, Malcolm	WP27 482	Weinstein, John	TP24 406
Wang, Wei	WOF am 08:50	Ward, Malcolm	TP19 281	Weinstein, John N.	TP25 433
Wang, Weihai	TP14 223	Ward, Michael D.	MP25 500	Weinstock, Michal	ThP01 009
Wang, Weihai	TOH am 09:30	Wardemann, Hedda	ThOB pm 3:30	Weintraub, Susan	WP31 587
Wang, Weihai	TP10 173	Waridel, Patrice	WP36 698	Weintraub, Susan T.	ThP28 578
Wang, Weimin	TP26 471	Wariishi, Hiroyuki	WP19 341	Weirather, Jason	WP26 458
Wang, Weixun	MP26 529	Wariishi, Hiroyuki	WP12 221	Weis, David	MP22 417
Wang, Weixun	MP26 547	Wariishi, Hiroyuki	ThP04 032	Weis, David	WP21 375
Wang, Weixun	ThOD pm 4:10	Warren, Peter	TOD am 09:10	Weisbecker, Carl	TP01 016
Wang, Wen-horng	WP34 658	Washburn, Michael	TP28 515	Weisbrod, Chad	WP28 495
Wang, Xia	MP09 168	Washburn, Michael	WP29 526	Weiskopf, Andrew	TP15 231
Wang, Xianzhe	WP35 676	Wasslen, Karl	WP33 621	Weiskopf, Andrew	TP15 230
Wang, Xianzhe	WP35 671	Wasslen, Karl	TP27 487	Weiss, Mitchell	WP30 556
Wang, Xiao	TP04 079	Watanabe, Hiroshi	ThP34 676	Weiss, Sharon	TP04 066
Wang, Xiaodong	ThP04 037	Watanabe, Hiroyuki	ThP22 441	Weiss, Victor	MP16 328
Wang, Xiaojing	MP32 669	Watanabe, Jun	TP37 739	Weisz, Daniel A.	MP21 412
Wang, Xiaolin	ThP28 574	Watanabe, Jun	WP03 028	Weisz, Julie	TP19 294
Wang, Xiaomin	TP08 160	Watanabe, Jun	MP36 733	Weller, Harold	ThP12 226
Wang, Xiaorong	MP21 411	Watanabe, Jun	WP19 326	Weller, Harold	WOD am 09:50
Wang, Xiaowei	WP37 726	Watanabe, Jun	WP07 105	Weller, Harold	ThP10 172
Wang, Xin	WP27 485	Watanabe, Jun	WP07 114	Wells, Barrett	ThP24 479
Wang, Xu	MP11 215	Watanabe, Jun	WP03 026	Wells, Edward	WP06 082
Wang, Xueying	WP27 485	Watanabe, Kenichi	WP11 173	Wells, Edward	TP26 466
Wang, Xusheng	ThP23 467	Watanabe, Kenichi	WP11 171	Wells, James	WOD pm 2:30
Wang, Xusheng	ThP17 290	Watanabe, Kyoko	TP25 423	Wells, James	MP24 472

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Wells, Martin.....	MP04 070	Whelan, Stephen.....	ThP23 462	Wilhide, Joshua A.....	WP37 713
Wells, Mitch.....	ThOA am 08:50	Whelan, Stephen A.....	TP18 268	Wilkes, Edmund.....	ThP17 281
Wells, Mitch.....	ThP26 527	Whelan, Stephen A.....	TOA am 09:10	Wilkins, Charles L.....	WP14 247
Wen, Bo.....	MP27 558	Whelan, Stephen A.....	TP18 258	Wilkins, John.....	WP33 623
Wen, Bo.....	TP28 503	Whelan, Stephen A.....	WP32 605	Willard, Belinda.....	MP29 592
Wen, Bo.....	TP21 331	Wherritt, Daniel.....	MP03 050	Willard, Stephanie L.....	TP21 319
Wen, Bo.....	MP24 465	Whetton, Anthony D.....	TP28 519	Wille, Holger.....	MP12 222
Wen, Luhong.....	MP31 646	Whitcomb, Julie.....	ThP03 026	Willets, Matthew.....	WP24 434
Wen, Zhihui.....	WP29 526	White, Eileen.....	WP36 693	Williams, Brad.....	WP26 475
Wen, Zhihui.....	TP28 515	White, Forest.....	TOD pm 3:30	Williams, Brad J.....	ThP17 302
Wendt, Chris.....	MP27 552	White, Iain R.....	MP16 321	Williams, Christopher.....	WP13 227
Wendt, Christine.....	WP18 320	White, Jerry.....	ThP21 390	Williams, Cynthia.....	TP19 290
Wendt, Juergen.....	MP34 695	White, Joleen.....	TP19 279	Williams, Cynthia.....	ThOC am 09:50
Wendt, Juergen.....	WOF pm 2:50	White, Kathryn.....	WOD pm 4:10	Williams, Cynthia.....	MP27 556
Wendt, Jürgen.....	MP07 149	White, Melanie.....	WP30 554	Williams, Danielle.....	MP21 403
Wendt, Jürgen.....	ThOG am 08:30	White, Melanie.....	ThP17 294	Williams, Evan R.....	WOC pm 4:10
Weng, Naidong.....	TP26 471	White, Nick.....	ThOA am 09:10	Williams, Gavin J.....	MP23 441
Wenger, Craig D.....	ThP34 693	White, Robert L.....	TP01 005	Williams, Jared.....	TP13 217
Wenger, Craig D.....	MP22 431	White, Thomas.....	WP37 715	Williams, Jason.....	MP09 168
Wenk, Markus.....	TP27 494	White, Thomas.....	ThOA pm 3:50	Williams, Jason G.....	WP19 346
Wenke, Jamie L.....	WP09 140	Whiteaker, Jeffrey.....	ThP17 298	Williams, Jonathan.....	ThP06 087
Wenkel, Norbert.....	MP31 647	Whiteaker, Jeffrey.....	MP26 541	Williams, Jonathan P.....	TOF am 10:10
Wenner, Maria.....	WP17 303	Whiteaker, Jeffrey.....	TP21 334	Williams, Jonathan P.....	TP02 027
Wentker, Kristina.....	TP10 189	Whiteaker, Jeffrey.....	MOD am 08:30	Williams, Jonathan P.....	TP23 361
Wentker, Kristina.....	WP23 409	Whiteaker, Jeffrey R.....	MP26 544	Williams, Jonathan P.....	TP15 232
Wenzel, Sally.....	TP27 493	Whitehouse, Craig.....	WP37 717	Williams, Lee.....	MP07 135
Wergeland, Stig.....	ThP22 433	Whitehouse, Craig.....	ThOA pm 3:50	Williams, Lee.....	ThP08 132
Wesdemiotis, Chrys.....	MP36 730	Whitehouse, Craig.....	WP37 710	Williams, Lee.....	WP08 117
Wesdemiotis, Chrys.....	MP36 726	Whitehouse, Craig.....	WP37 716	Williams, Lee.....	WP07 109
Wesdemiotis, Chrys.....	MP36 725	Whitehouse, Craig.....	WP37 714	Williams, Lee.....	WP08 124
Wesdemiotis, Chrys.....	MP36 728	Whitelegge, Julian.....	ThP24 485	Williams, Lee.....	MP07 136
Wesdemiotis, Chrys.....	MP36 729	Whitelegge, Julian.....	WP21 379	Williams, Lee.....	TP30 563
Wesdemiotis, Chrys.....	MP36 727	Whitelegge, Julian.....	TP18 273	Williams, Pamela.....	TP21 341
Wesdemiotis, Chrys.....	ThOF pm 2:50	Whiteley, Gordon R.....	MP08 151	Williams, Pamela.....	ThP28 589
Wesolowski, Dennis.....	ThP29 600	Whitmarsh, Samuel.....	ThP32 663	Williams, Pamela.....	WP11 181
Wesseling, Jelle.....	WOD pm 3:50	Whitney, Richard.....	ThP11 201	Williams, Preston.....	MP13 234
West, Andy.....	ThP14 251	Whittek, John.....	TP34 686	Williams, Sheldon M.....	MP33 679
West, Brandi.....	ThP36 726	Wicking, Christianne.....	ThP32 663	Williams, Todd D.....	ThP28 577
West, Christopher M.....	TP35 703	Wickramasekara, Samantha.....	MP12 226	Williams, Tracie.....	MOA am 09:30
West, Danielle.....	WP03 022	Wickramasekara, Samantha I.....	TP24 401	Williamson, Andrew JK.....	TP28 519
West, Graham M.....	WP22 386	Wickremsinhe, Enaksha.....	WP16 287	Williamson, Kurt.....	WP01 002
West, Graham M.....	WP21 384	Wiebe, Don.....	TP29 544	Williamson, William.....	ThOE am 08:30
West, Keith.....	WP26 464	Wiederin, Jayme.....	MP24 469	Willoughby, Ross.....	MP34 687
West, Matthew B.....	TP35 703	Wiederin, Jayme.....	WP34 667	Willoughby, Ross C.....	ThP31 639
West, Paul R.....	TP29 548	Wiederkehr, Andreas.....	WP33 629	Wills, Rebecca.....	WOE am 09:10
West, Raymond.....	MP17 353	Wiegel, Joseph.....	TP29 538	Wilm, Matthias.....	WP35 670
West, Tiffanie.....	WP19 355	Wiegel, Joseph.....	WP08 130	Wilman, Edward.....	ThP05 068
Westin, Lena.....	MP06 087	Wiegand, Andrea.....	MP19 377	Wilmarth, Phillip.....	ThP34 692
Westmacott, Garrett.....	ThP08 136	Wieland, Jamie.....	MP30 624	Wilson, David.....	MP01 028
Westmacott, Garrett.....	ThP25 515	Wiesenberger, Gerlinde.....	MP04 077	Wilson, Derek.....	WOH pm 3:30
Westmacott, Garrett R.....	ThP25 498	Wigginton, Jane.....	MP01 012	Wilson, Derek.....	MP22 435
Westmacott, Garrett R.....	MP06 094	Wiita, Arun.....	WOD pm 2:30	Wilson, Derek.....	WP22 393
Weston, Daniel.....	TP34 671	Wijeratne, Aruna.....	ThP17 297	Wilson, Derek.....	MP22 434
Weston, Leigh.....	WP33 614	Wijeratne, Dona Neloni.....	TP15 229	Wilson, Derek.....	WOH am 09:30
Weston, Leigh.....	ThP08 139	Wijeratne, Dona Neloni.....	MP15 287	Wilson, Ian.....	WP36 699
Westover, Kenneth.....	WP22 400	Wijesuriya, Nilukshi.....	ThP22 423	Wilson, Ian.....	WP18 318
Westphal, Craig.....	TP32 612	Wijeyesekera, Anisha D.....	ThP28 567	Wilson, Ian.....	WP16 286
Westphall, Michael.....	WP29 528	Wikoff, William.....	ThOC pm 2:30	Wilson, John.....	TP08 145
Westphall, Michael S.....	TP02 026	Wikoff, William.....	TP27 480	Wilson, Jonathan.....	WP16 284
Westphall, Michael S.....	ThP13 232	Wiksw, John.....	MP29 588	Wilson, Landon.....	TP23 376
Westphall, Michael S.....	MOA am 09:10	Wilbom, Teresa.....	WP15 273	Wilson, Landon.....	MP03 059
Westphall, Michael S.....	WP33 608	Wildburger, Norelle.....	ThP19 345	Wilson, Landon.....	TP08 143
Westphall, Michael S.....	ThP34 684	Wildburger, Norelle C.....	MP29 597	Wilson, Mary.....	WP26 458
Westphall, Michael S.....	WP34 646	Wildburger, Norelle C.....	MP10 200	Wilson, Michael.....	TP04 064
Westphall, Michael S.....	TP08 153	Wildburger, Norelle C.....	MP35 716	Wilson, Michael.....	MP24 484
Westphall, Michael S.....	MOA pm 3:30	Wildgoose, Jason.....	ThP06 089	Wilson, Michael.....	TP34 684
Westphall, Michael S.....	WOF am 09:50	Wildgoose, Jason.....	ThP06 087	Wilson, Michael.....	ThP11 210
Westphall, Michael S.....	TOA am 08:30	Wildsmith, Kristin R.....	TP19 296	Wilson, Michael.....	MP03 049
Westphall, Michael S.....	ThOE pm 3:30	Wiley, Carmen L.....	WP07 102	Wilson, Mike.....	ThP11 211
Westphall, Michael S.....	ThP13 231	Wiley, Carmen L.....	WP07 099	Wilson, Shannon.....	MP15 291
Westrup, Sebastian.....	TP31 607	Wiley, Joshua.....	ThOA pm 2:30	Wiltshire, Steven.....	TP26 473
Westrup, Sebastian.....	TP37 752	Wiley, Joshua.....	TP34 689	Windisch, Vince.....	TP25 447
Wetherhall, Magnus.....	MP26 539	Wiley, Joshua S.....	TP34 686	Windisch, Vincent.....	ThP21 393
Wetzel, Collin.....	MOH am 08:50	Wilhelm, Mathias.....	MP29 582	Wine, Yariv.....	WP24 427
Wey, Emmanuel.....	ThP25 503	Wilhelm, Mathias.....	MP29 585	Winefield, Robert.....	ThP28 577
Whalley, Andrew.....	MP16 319	Wilhelm, Mathias.....	MP19 383	Wingfield, Paul.....	WOH am 09:10
Wheat, Thomas E.....	MP06 116	Wilhelm, Mathias.....	ThP34 675	Winkler, Jessica.....	MP24 469
Wheat, Tom.....	WP25 447	Wilhelm, Mathias.....	MP29 581	Winkler, Klaus.....	MP15 286
Wheeler, Kevin.....	ThOC am 09:10	Wilhide, Joshua A.....	ThP30 621	Winkler, Paul.....	WP04 039

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Winkler, Robert	ThP05 063	Wooding, Kerry M.	WP06 073	Wu, Long	MOA pm 4:10
Winkler, Stephan	ThP34 682	Woodling, Kellie	MP07 143	Wu, Manhong	TP24 388
Winne, Emily	MOA am 09:30	Woodman, Michael	MP31 632	Wu, Minghuo	MP31 633
Winnik, Witold M.	TP21 325	Woodruff, Prescott	WP18 320	Wu, Najjun	MP01 030
Winograd, Nicholas	ThP04 043	Woods, Alisa	TP36 732	Wu, Qihua	WP03 022
Winter, Benjamin	ThP05 059	Woods, Alisa	MP29 594	Wu, Qing-Qing	WP34 645
Winter, Benjamin	ThP04 050	Woods, Alisa G.	TP21 336	Wu, Ranran	TP01 017
Winter, Gregory T.	WP37 713	Woods, Alisa G.	ThP22 437	Wu, Shari	MP02 037
Winter, Gregory T.	ThP30 621	Woods, Alisa G.	ThP22 439	Wu, Sheng-Huang	ThP14 253
Wirth, Hans-Jürgen	MP07 137	Woods, Alisa G.	ThP22 438	Wu, Shiaw-Lin	TOC pm 2:50
Wirtz, Stefan	ThP04 036	Woods, Amanda	ThP10 180	Wu, Shiaw-Lin	ThP22 418
Wise, Stephen	TP30 560	Woods, Amina S.	WP09 148	Wu, Shiaw-Lin	ThP19 333
Wiseman, Alexander	WOC pm 3:50	Woods, Amina S.	MP12 232	Wu, Shiaw-Lin	MOD pm 3:50
Wiseman, Justin	ThP03 029	Woods, Amina S.	TP07 125	Wu, Shiaw-Lin	WP24 445
Wiseman, Justin	TOH pm 2:50	Woods, Amina S.	WP23 421	Wu, Si	TP12 209
Wiseman, Justin M.	ThP22 427	Woods, Jeremy	TP15 238	Wu, Si	WP34 644
Wishart, David	TP11 196	Woods, Jeremy	WP24 439	Wu, Si	TP16 242
Wishart, David	MOF am 09:10	Woods, Nicholas	TP08 157	Wu, Si	TP16 243
Wishnies, Steve	MP06 110	Woods, Robert	TP10 192	Wu, Si	MP34 707
Wißdorf, Walter	MP15 284	Woods, Jr, Virgil	WP22 397	Wu, Si	TOH am 08:30
Wißdorf, Walter	MP15 280	Woolfitt, Adrian R.	MP26 548	Wu, Sz-Wei	WP02 010
Wißdorf, Walter	MP15 274	Wootton, Christopher	MP23 445	Wu, Wei	TP23 376
Wißdorf, Walter	MP15 279	Worboys, Jonathan	TP08 131	Wu, Wei	TP15 225
Wissdorf, Walter	WP38 754	Wormwood, Kelly L.	ThP22 437	Wu, Weizhen	MP26 529
Wißdorf, Walter	MP15 283	Wormwood, Kelly L.	ThP22 439	Wu, Wells	MOG pm 3:30
Wisztorski, Maxence	TP04 087	Worth, Andrew J.	TP29 550	Wu, Wuhua	ThOG am 09:10
Wisztorski, Maxence	TOB pm 2:30	Woudneh, Million	WP03 016	Wu, Xia	WP28 495
Witowski, Nancy	TP24 398	Wouters, Eloy	ThP06 084	Wu, Xian-Ying	TP25 444
Witt, Matthias	MP10 202	Wouters, Eloy	ThP06 094	Wu, Xiaogang	ThP24 481
Witt, Matthias	MP03 051	Wouters, Eloy R.	ThP06 102	Wu, Xinyu	ThP28 569
Witt, Matthias	WP04 036	Wouters, Eloy R.	TP05 101	Wu, Yiman	TP24 411
Wittrig, Ashley	TP02 038	Wowor, Andy	WP22 390	Wu, Yiman	MP05 081
Wlekliniski, Michael	ThP06 083	Wraith, Stephanie	WP01 002	Wu, Zhe	MOG am 09:50
Wlekliniski, Michael	TP34 680	Wright, Christopher	MP16 297	Wu, Zhiping	ThP17 290
Wode, Florian	TP31 578	Wright, Jill	WP24 431	Wu, Zhiping	ThP23 467
Wodrich, Matthew D.	MOG pm 3:50	Wright, Michael E.	WP36 695	Wu, Zhixiang	MP29 585
Wodtke, Anne	TOG pm 2:30	Wright, Patience	TP07 124	Wu, Zhongchen	WP20 363
Woessner, Annika	WOF am 09:30	Wright, Steven	MP16 297	Wuehr, Martin	TOA am 09:30
Wohleb, Robert	TP30 573	Wright, Yvonne	TP30 557	Wuenshell, Gerald E.	ThP21 409
Wohleb, Robert	MP07 132	Wright, Zachary	TP17 249	Wuest, Bernhard	ThP27 554
Wohlfarth, Ariane	WP08 129	Wrobel, John	MP24 479	Wuest, Bernhard	TP28 513
Wohlgemuth, Ingo	WP28 512	Wrobel, John	MP19 374	Wuest, Bernhard	ThP25 518
Wojcik, Roza	TP23 358	Wroblewski, Matthew	WP27 481	Wuest, Bernhard	MP30 609
Wojtkiewicz, Melinda	WP34 667	Wroblewski, Matthew	TP18 265	Wuest, Bernhard	TP37 747
Wojtkiewicz, Melinda	MP24 469	Wroblewski, Matthew	TP36 733	Wühr, Martin	TP28 508
Wolfe, Alan J.	MOA pm 3:50	Wrona, Mark	ThP06 089	Wujcik, Chad	TP31 601
Wolfe, Derek	MP16 300	Wrona, Mark D.	WP15 280	Wulff, Jacob	WP18 312
Wolfe, Derek	MP15 290	Wrona, Mark D.	TP25 421	Wulff, Shaun	ThP25 496
Wolfe, Derek W.	ThP06 104	Wrona, Mark D.	WP13 232	Wunderlich, Dirk	WP26 456
Wolfe, Lisa	WP26 459	Wu, Baolin	ThP23 474	Wurch, Louie L.	WP36 686
Wolfe, Thomas	MP27 564	Wu, Bo-Shen	ThP27 531	Wurlitzer, Marcus	MP10 202
Wolfert, Robert	TP30 568	Wu, Chia-Lin	ThP20 372	Wurtele, Eve Syrkin	WP05 069
Wolff, Jean-Claude	ThP01 020	Wu, Chia-Lin	ThP31 646	Wurtele, Eve Syrkin	MP34 702
Wolff, Jeremy	WP23 416	Wu, Chieh-Lin	WP02 004	Wüst, Bernhard	ThP27 548
Wolforth, Christopher A.	MP08 151	Wu, Chih-Che	ThP20 370	Wyatt, Shane	ThP10 180
Wolicki, Alex	ThP10 182	Wu, Ching	TP04 057	Wyche, Thomas P.	TP24 415
Wolk, Donna	TP19 288	Wu, Ching	MP06 121	Wylde, James	TP04 083
Wolken, Jill	TP29 544	Wu, Christine	WP33 627	Wylie, Phillip L.	ThP11 196
Wolle, Messay M.	TP32 615	Wu, Christine	TP19 294	Wynne, Paul	ThP07 116
Wollnik, Hermann	TP33 635	Wu, Christine	MOF pm 3:50	Wynne, Paul	WP17 304
Wolski, Witold	WP31 595	Wu, Chunping	WP05 051	Wyse, Donald L.	MP34 688
Wolstenholme, Rosalind	MP30 623	Wu, Cuiling	MP33 674	Wysocki, Vicki	TP19 291
Wong, Jon	ThP27 529	Wu, Di	WP26 468	Wysocki, Vicki	MOG am 08:30
Wong, Mayyen	ThP25 513	Wu, Fang	MP31 636	Wysocki, Vicki	WP23 416
Wong, Philip S.	ThP29 609	Wu, Gang	WP30 556	Wysocki, Vicki	TP06 123
Wong, Richard	WP27 487	Wu, Guangxiang	WP26 467	Wysocki, Vicki	MOF pm 2:30
Wong, Venney	TP04 055	Wu, Hsuan-Wen	MP11 209	Wysocki, Vicki H.	TP14 222
Wongkongkathep, Piriya	WP23 414	Wu, I-Lin	TP06 118	Wysocki, Vicki H.	TP19 288
Wongkongkathep, Piriya	ThP12 223	Wu, Jennifer	MP06 104	Wysocki, Vicki H.	TP01 012
Woo, Nathan	ThP25 517	Wu, Jianglin	MP06 121	Wyttenbach, Thomas	TOF pm 4:10
Woo, Sunghee	WOB pm 2:50	Wu, Jianglin	TP04 057	Xang, Dazhou	ThP11 213
Woo, Woung	MP31 650	Wu, Jianqing	WOB pm 2:50	Xenarios, Ioannis	WP32 606
Wood, Lauren	WP24 431	Wu, Jing	WP26 466	Xia, Cindy	WP33 637
Wood, Paul	TOF am 08:30	Wu, Jing	ThP22 424	Xia, Gang	MP22 425
Wood, Stephen	WP33 621	Wu, Jing-Tao	MP15 289	Xia, Yankai	TP21 330
Wood, Troy	ThP13 239	Wu, Jing-Tao	MP01 010	Xia, Yu	ThP20 373
Wood, Troy	ThP04 038	Wu, Jing-Tao	WP33 637	Xia, Yu	TP06 112
Wood, William W.	TOA am 08:30	Wu, Le-Shin	WOB pm 3:50	Xia, Yu	TP06 117
Woodcroft, Ben	ThP25 500	Wu, Lianming	MP13 246	Xia, Yu	TP06 111

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Xia, Yu.....	ThP36 715	Xu, Ling.....	MP01 010	Yan, Pin.....	MP26 541
Xia, Yu.....	TOA pm 2:50	Xu, Meng.....	WP14 251	Yan, Ping.....	TP21 334
Xia, Yu.....	WOG pm 4:10	Xu, Ping.....	ThP25 488	Yan, Wang.....	MP03 054
Xia, Yu.....	TP06 114	Xu, Shaohang.....	TP21 331	Yan, X. Steven.....	MOE am 10:10
Xia, Yu.....	ThP20 374	Xu, Shaohang.....	MP24 465	Yan, X. Steven.....	WP15 282
Xia, Yu.....	WOC am 08:30	Xu, Wei.....	MP16 306	Yan, Xiaojing.....	WP35 681
Xia, Yu.....	TP02 040	Xu, Wei.....	MP16 316	Yan, Xiaojing.....	WP35 680
Xian, Feng.....	WP30 546	Xu, Wei.....	MP16 295	Yan, Xin.....	TP34 685
Xiang, Feng.....	WP33 616	Xu, Wei.....	MP16 296	Yan, Xinjian.....	TP15 237
Xiang, Ping.....	WP08 119	Xu, Xiaobin.....	WP28 493	Yan, Xinjian.....	ThP34 669
Xiao, Chunying.....	TP33 631	Xu, Xiaoyan.....	MP34 711	Yan, Xinjin.....	MP19 384
Xiao, Gang.....	ThP25 495	Xu, Xiaoyan.....	MP34 713	Yan, Yuetian.....	WP22 390
Xiao, Gang.....	ThP33 668	Xu, Xiaqing.....	WP22 396	Yanes, Rolando E.....	ThP09 140
Xiao, Kevin.....	MP23 456	Xu, Xin.....	TP25 443	Yang, Bing.....	MP21 397
Xiao, Saijin.....	WP20 363	Xu, Yan.....	TP26 454	Yang, Bing.....	MOA pm 4:10
Xiao, Yijin.....	ThP21 409	Xu, Yan Juan.....	MOA am 09:50	Yang, Charles.....	TP31 589
Xiao, Yijin.....	TP25 431	Xu, Yang.....	MP10 187	Yang, Charles.....	MP06 123
Xiao, Yongsheng.....	ThP09 168	Xu, Yanji.....	WP30 561	Yang, Charles.....	WP03 034
Xiao, Yu.....	MP16 294	Xu, Yanji.....	ThP17 290	Yang, Charles.....	TP37 757
Xiaofeng, Qi.....	TP36 734	Xu, Ying.....	ThP25 491	Yang, Charles.....	WP19 348
Xie, Boer.....	TP10 191	Xu, Yingrong.....	TP11 200	Yang, Charles.....	WP04 042
Xie, Dan.....	TP21 307	Xu, Yongmei.....	ThP20 366	Yang, Charles.....	TP37 763
Xie, Dianlin.....	WOH am 08:30	Xuan, Yue.....	WP37 722	Yang, Charles.....	WP03 024
Xie, Fang.....	MP26 540	Xuan, Yue.....	MOA am 08:30	Yang, Charles.....	TP31 597
Xie, Hongwei.....	TP15 238	Xuan, Yue.....	ThP12 227	Yang, Charles.....	ThP27 544
Xie, Hongwei.....	TP35 714	Xuan, Yue.....	ThP12 229	Yang, Charles.....	TP31 600
Xie, Hongwei.....	WP24 439	Xue, Liang.....	TP11 194	Yang, Charles T.....	WP20 369
Xie, Jun.....	MP32 668	Xue, Liang.....	WP34 655	Yang, Chenxi.....	TP18 264
Xie, Mingjie.....	ThP34 688	Xue, Liang.....	ThP11 213	Yang, Chun-Yi.....	ThP18 316
Xie, Mingjie.....	WP31 580	Xue, Liang.....	WP30 573	Yang, Da-Qing.....	TP26 465
Xie, Wei.....	TP18 274	Xue, Liang.....	ThOE pm 3:50	Yang, David.....	WP29 533
Xie, Xiaolei.....	WP26 466	Xue, Peng.....	TP36 727	Yang, Dorothy.....	ThP07 119
Xie, Yongming.....	MP34 711	Xue, Yu.....	MOD pm 3:10	Yang, Feng.....	MP26 540
Xie, Yongming.....	ThP28 574	Yabuki, Masashi.....	WP11 171	Yang, Feng.....	TOD pm 3:30
Xie, Yongming.....	MP34 713	Yabuki, Masashi.....	WP11 173	Yang, Fu quan.....	TP36 727
Xie, Yongming.....	WP20 366	Yabut, Jocelyn.....	MP26 547	Yang, Fuquan.....	TP27 479
Xie, Yongming.....	WP34 647	Yadav, Sunita.....	TP33 639	Yang, Fuquan.....	WP33 612
Xie, Yongming.....	MP13 237	Yager, James D.....	TP24 391	Yang, Hao.....	ThP08 134
Xie, Yongming.....	ThP01 008	Yagnik, Gargey.....	WP12 211	Yang, Heyi.....	MP30 604
Xie, Yongming.....	MP34 710	Yagnik, Gargey.....	WP12 205	Yang, Hongqian.....	WOB am 09:30
Xie, Zhongyu.....	WP29 536	Yahata, Yukinori.....	ThP11 202	Yang, Jane.....	TOG pm 2:30
Xie, Zhongyu.....	WP29 535	Yakkundi, Shirish.....	MOC pm 3:30	Yang, Jeong Soo.....	WP29 530
Ximenes Filho, Edivaldo.....	ThP08 128	Yakshin, Mikhail.....	ThP30 628	Yang, John.....	WP03 022
Xin, Baomin.....	WP27 487	Yalcin, Talat.....	TP06 115	Yang, Jun.....	WP17 308
Xin, Lei.....	TP28 510	Yalcin, Talat.....	ThP36 716	Yang, Juncong.....	TOA am 10:10
Xin, Lei.....	ThP34 689	Yalcin, Talat.....	TP06 119	Yang, Juncong.....	ThP04 037
Xin, Yi.....	MP16 316	Yamabe, Keiko.....	MP11 214	Yang, Junhai.....	ThP04 033
Xing, Chuanhua.....	Special	Yamada, Koji.....	WP19 341	Yang, Junhai.....	WP09 156
Xing, Chuanhua.....	TP18 268	Yamada, Koshi.....	ThP19 349	Yang, Junhai.....	ThP05 061
Xing, Jie.....	ThP27 530	Yamada, Masaki.....	TP27 478	Yang, Junhai.....	WP10 163
Xing, Jie.....	MP01 017	Yamada, Masaki.....	ThP28 563	Yang, Junhai.....	WP10 166
Xing, Jie.....	TP35 701	Yamada, Masuyoshi.....	TP05 088	Yang, Kai-Chih.....	ThP27 531
xing, xiaopeng.....	ThP35 704	Yamada, Masuyoshi.....	TP05 092	Yang, Kui.....	MP12 228
Xiong, Bob.....	TP08 130	Yamada, Mayumi.....	MP23 448	Yang, Li.....	TP11 194
Xiong, Caiqiao.....	ThP12 222	Yamada, Shigeru.....	MP26 533	Yang, Lian.....	WP31 580
Xiong, Caiqiao.....	ThP06 097	Yamada, Takayuki.....	ThP28 583	Yang, Lian.....	ThP34 688
Xiong, Qiang.....	ThP08 123	Yamada, Takayuki.....	MP06 089	Yang, Lian.....	ThP34 689
Xiong, Wei.....	ThP21 402	Yamada, Tesshi.....	TP08 163	Yang, Lian.....	WP31 579
Xiong, Weili.....	ThP09 153	Yamada, Tesshi.....	ThP23 469	Yang, Lifang.....	WP26 474
Xiong, Weili.....	ThP25 502	Yamada, Toichiro.....	WP11 171	Yang, Liping.....	MP22 432
Xiong, Xingchuang.....	MP16 296	Yamada, Toichiro.....	WP11 173	Yang, Liyu.....	WP11 182
Xiong, Xingchuang.....	MP16 306	Yamada, Yoshihiro.....	MP18 359	Yang, Liyu.....	MP26 537
Xiong, Yi.....	MP32 668	Yamagaki, Tohru.....	ThP31 636	Yang, Lulu.....	ThP21 395
Xiongxiang, Qiu.....	MP03 054	Yamaguchi, Seiji.....	TP30 569	Yang, Ming-Hui.....	TP18 263
Xu, Allan.....	TP25 447	Yamaguchi, Shinichi.....	WP19 341	Yang, Ming-Hui.....	WP26 453
Xu, Allan.....	ThP21 393	Yamaguchi, Yoshiki.....	TP35 695	Yang, Ming-Hui.....	ThP22 435
Xu, Chong-Feng.....	TP15 230	Yamamoto, Hideki.....	ThP07 115	Yang, Mo.....	TP05 089
Xu, Fuxing.....	TP01 014	Yamamoto, Naomi.....	ThP25 493	Yang, Panhia.....	MP03 049
Xu, Fuxing.....	TOA pm 3:50	Yamamoto, Yuki.....	MP04 065	Yang, Paul.....	WP04 042
Xu, Fuxing.....	MP16 305	Yamanaka, Sanae.....	MP12 224	Yang, Paul.....	TP31 589
Xu, Guifen.....	MP01 002	Yamashita, Yasuhiro.....	ThP28 566	Yang, Paul.....	ThP27 529
Xu, Guoliang.....	MP34 713	Yamauchi, Yoshio.....	MP14 257	Yang, Paul.....	TP31 597
Xu, Hongliang (Leo).....	TP25 429	Yamauchi, Yoshio.....	MP14 256	Yang, Peng.....	MP34 712
Xu, Hongliang (Leo).....	ThP11 197	Yamazaki, Yuzo.....	ThP25 493	Yang, Pengxiang.....	TOB am 08:50
Xu, Hua.....	ThP16 275	Yamazaki, Yuzo.....	ThP19 340	Yang, Pinguang.....	MP29 594
Xu, Leo.....	WP13 227	Yamazaki, Yuzo.....	WP30 564	Yang, Seung-II.....	TP37 761
Xu, Libin.....	ThP28 585	Yan, Bo.....	ThP02 024	Yang, Seung-ju.....	MP31 634
Xu, Lin.....	ThOF am 08:50	Yan, Hong.....	MP09 182	Yang, Tianjiao.....	TP21 317
Xu, Ling.....	MP15 289	Yan, Lin.....	MP01 013	Yang, Tianjiao.....	ThP20 367

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Yang, Wen Horng.....	WP30 550	Yeom, Jeonghun.....	WP29 518	Young, Nicolas L.....	ThP13 249
Yang, Xi.....	ThP28 588	Yergey, A. Karl.....	ThOH pm 3:10	Young, Nicolas L.....	TP22 343
Yang, Xi.....	TP24 383	Yergey, Alfred L.....	MP12 227	Young, Nicolas L.....	TOF am 09:50
Yang, Xiaoyu.....	TP15 237	Yergey, Alfred L.....	ThOD pm 3:50	Young, Nicolas L.....	MP10 200
Yang, Xiaoyu.....	WP31 592	Yergey, Alfred L.....	ThOH pm 3:10	Young, Nicolas L.....	TP22 344
Yang, Ya.....	ThP22 426	Yergey, Alfred L.....	WP38 740	Young, Nicolas L.....	ThP13 241
Yang, Yanan.....	MP25 512	Yergey, Alfred L.....	TP33 657	Young, Rebeccah.....	TP18 257
Yang, Yanan.....	ThP25 514	Yeung, Anthony.....	TP21 314	Young, Tracy.....	MP14 261
Yang, Yanan.....	TP26 459	Yfantis, Harry G.....	WP18 312	Young, Vincent.....	TP35 710
Yang, Yanling.....	WP30 561	Yi, Ju Eun.....	TP21 308	Youssef, Mohamed.....	WP08 127
Yang, Yijie.....	ThP35 702	Yi, Linda.....	TP15 238	Yu, Cheng-Han.....	ThP18 326
Yang, Yingying.....	MP21 411	Yi, Ming.....	WP18 312	Yu, Chih-Chuan.....	WP18 314
Yang, Yinmeng.....	WP18 312	Yi, Rong.....	MP30 626	Yu, Chongtian.....	TP31 605
Yang, Yong.....	MP32 663	Yi, Wei.....	ThP08 122	Yu, ChuanFei.....	WP24 436
Yang, Zhibo.....	TP02 035	Yi, Zhengping.....	WP33 633	Yu, Chuan-Yih.....	WP32 598
Yang, Zhibo.....	TP02 023	Yi, Zhengping.....	ThP17 293	Yu, Chuan-yih.....	WP26 470
Yang, Zhichang.....	TP21 328	Yim, Yong-Hyeon.....	TP32 608	Yu, Chuan-Yih.....	TP36 737
Yang, Zhihua.....	WP15 270	Yim, Yong-Hyeon.....	TP23 374	Yu, Chuan-Yih.....	ThP20 376
Yang, Zicheng.....	ThP27 547	Yin, Haidi.....	ThP19 344	Yu, Clinton.....	MP21 404
Yang, Zicheng.....	TP04 054	Yin, Haidi.....	ThP19 343	Yu, Deyang.....	TP12 207
Yang, Zicheng.....	TP31 580	Yin, Hongfeng.....	WP24 430	Yu, Fang.....	ThOH am 09:30
Yang, Zicheng.....	ThP27 538	Yin, Hongfeng.....	ThP09 147	Yu, Haiqiang.....	WP08 118
Yang, Zong.....	WP37 723	Yin, Hongfeng.....	MP25 512	Yu, Haoying.....	TP21 337
Yao, Chunxiang.....	WP33 630	Yin, Hongfeng.....	MP22 431	Yu, Haoying.....	MP25 510
Yao, Chunxiang.....	TP18 258	Yin, Hongfeng.....	WP21 380	Yu, Hua.....	ThP28 587
Yao, Jinting.....	WP06 078	Yin, Jie.....	TP37 758	Yu, Jason.....	ThP25 513
Yao, Jinting.....	TP37 740	Yin, John.....	ThOB pm 2:30	Yu, Jian.....	ThP23 473
Yao, Jinting.....	ThP27 528	Yin, Sheng.....	WP23 414	Yu, Jiancheng.....	MP31 646
Yao, Jinting.....	WP20 368	Yin, Wei.....	TP25 444	Yu, Jianlan.....	MP13 237
Yao, Jinting.....	WP03 033	Yiqin, Wu.....	MP31 651	Yu, John.....	MP25 505
Yao, Jinting.....	TP37 742	Yocum, Anastasia K.....	WOB pm 2:30	Yu, John.....	MP25 506
Yao, Jinting.....	TP37 741	Yoder, Andrea.....	TP29 532	Yu, John.....	MP25 504
Yao, Xudong.....	MP23 462	Yogi, Patricia Schneider.....	MP10 196	Yu, Kate.....	TOC am 08:30
Yao, Xudong.....	ThP24 479	Yokoi, Yasuto.....	ThP28 583	Yu, Kate.....	MP32 659
Yao, Xudong.....	WP27 480	Yokoi, Yasuto.....	ThP28 591	Yu, Kebing.....	WP34 656
Yao, Xudong.....	ThP24 478	Yokoi, Yasuto.....	MP12 225	Yu, Kenneth.....	TP24 393
Yao, Zhong-Ping.....	TP34 676	Yokoyama, Shigetoshi.....	WP26 462	Yu, Kuan-lin.....	TP23 379
Yapici, Ipek.....	MOG am 08:50	Yol, Aleer M.....	MP36 728	Yu, Kyung-Sang.....	WP06 076
Yargeau, Viviane.....	TP31 588	Yoo, Chul.....	TP33 623	Yu, Liangli.....	ThP11 186
Yassine, Hussein.....	WP26 472	Yoo, Jisun.....	MP06 091	Yu, Li-Rong.....	ThP17 305
Yates, John R.....	MP29 598	Yoo, Jong Shin.....	TOC pm 3:50	Yu, Li-Rong.....	TP37 766
Yates, Nathan.....	TP21 320	Yoo, Jong Shin.....	MP06 091	Yu, Lu.....	ThP25 504
Yates, Nathan.....	WP30 570	Yoo, Jong Shin.....	WP35 675	Yu, Lu-Gang.....	MP27 554
Yates, Nathan.....	ThP01 011	Yoo, Tag Keun.....	ThP23 457	Yu, Mamie.....	WP33 632
Yates, Nathan A.....	MP26 529	Yoon, Alexander.....	TP26 457	Yu, Peng.....	WP29 520
Yates, Nathan A.....	ThOD pm 4:10	Yoon, Alexander.....	ThP24 485	Yu, Qing.....	ThP15 271
Yates, Sandy.....	MP03 052	Yoon, Hye-Joo.....	TP01 007	Yu, Qing.....	ThP15 270
Yates III, John R.....	ThP17 286	Yoon, Seo Hyun.....	WP06 076	Yu, Shaoxia.....	MP15 289
Yates III, John.....	ThP09 162	Yoon, Sohee.....	ThP05 055	Yu, Shaoxia.....	MP01 010
Yates III, John.....	TP21 318	Yoon, Sohee.....	ThP05 071	Yu, Wei.....	WP29 528
Yates III, John R.....	TP05 096	Yoon, Sung Hwan.....	TP04 064	Yu, Xia.....	TP06 113
Yau, Hoi Kei (Natalie).....	TP35 713	Yoon, Sung Hwan.....	TP34 684	Yu, Xiang.....	WOG pm 2:50
Yau, Kerrm.....	TP34 686	Yoon, Sung Hwan.....	MP17 336	Yu, Xiang.....	ThP20 365
Yauch, Bob.....	TP22 349	Yoon, Sung Hwan.....	MP24 484	Yu, Xiang.....	WOC am 09:10
Yauch, Robert.....	TP28 502	Yoshida, Masaru.....	ThP28 583	Yu, Xiaohong.....	MP25 497
Yavor, Mikhail.....	MP16 324	Yoshida, Masaru.....	MP27 563	Yu, Yanbao.....	MP19 374
Yavor, Mikhail.....	MP16 323	Yoshida, Shigeharu.....	WOA am 08:30	Yu, Yanyan.....	ThP08 122
Ye, Hui.....	TP23 367	Yoshikane, Mitsuha.....	TP31 590	Yu, Yi-Kuo.....	MOG pm 3:30
Ye, Hui.....	ThP15 267	Yoshimasa Tsunoi, Yoshimasa Tsunoi.....	ThP27 541	Yu, Yi-Kuo.....	MP18 372
Ye, Hui.....	WP17 293	Yoshimura, Kentaro.....	WP07 115	Yu, Ying Qing.....	TP36 719
Ye, Hui.....	WP11 178	Yoshioka, Mariko.....	MP36 733	Yu, Ying Qing.....	TP15 232
Ye, Mingliang.....	WP34 647	Yost, Richard.....	MP26 538	Yu, Ying-Qing.....	WP25 447
Ye, Qiuping.....	MP01 002	Yost, Richard.....	ThP01 015	Yu, Ying-Qing.....	WP25 448
Ye, Sha Joshua.....	WP06 080	Yost, Richard.....	MP10 199	Yu, Yongjia.....	MP35 716
Ye, Sha Joshua.....	WP19 354	Yost, Richard.....	WP12 204	Yuan, Cheng-Hui.....	TP33 635
Ye, Sha Joshua.....	WP06 079	Yost, Richard.....	WP18 317	Yuan, Eric.....	WP36 701
Ye, Sha Joshua.....	WP03 017	Yost, Richard.....	MP10 189	Yuan, Gu.....	MP13 235
Ye, Tao.....	MP26 537	Yost, Richard A.....	MOC am 09:30	Yuan, Gu.....	MOH am 09:50
Ye, Vivian Hui.....	WP09 151	Yost, Richard A.....	ThP01 014	Yuan, Long.....	MP25 508
Ye, Xiaoying.....	ThP19 352	Yost, Richard A.....	WP09 143	Yuan, Min.....	WP28 504
Ye Dee, Tay.....	ThP09 163	You, Changjun.....	WP32 599	Yuan, Min.....	WOD am 08:50
Yeh, Li-Tain.....	MP01 028	You, Yeanyoong.....	MP31 634	Yuan, Min.....	ThP17 296
Yeh, Suzie.....	MP14 261	Youhnovski, Nikolay.....	ThP29 611	Yuan, Moucun.....	WP33 624
Yeh, Suzie.....	ThP21 396	Young, Jacque.....	ThP09 153	Yuan, Moucun.....	MP26 534
Yeh, Suzie.....	MP14 259	Young, Lydia.....	MOF pm 4:10	Yuan, Moucun.....	TP25 449
Yen, Gloria.....	WOC pm 3:10	Young, Nicolas.....	MP22 422	Yuan, Xianglin.....	TP12 212
Yen, Roger.....	ThP22 420	Young, Nicolas.....	MP22 440	Yuan, Yuan.....	ThP09 169
Yen, Ten-Yang.....	ThP22 420	Young, Nicolas.....	TP22 345	Yue, Hongfei.....	WP14 251
Yeo, Thong Hiang.....	MP07 144	Young, Nicolas.....	MOB pm 3:10	Yue, Peng.....	WP33 632

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Yue, Xiaoshan.....	WP34 648	Zarth, Adam.....	TP29 542	Zhang, Hao.....	MP23 451
Yue, Xuan-Feng.....	ThP30 625	Zaucke, Frank.....	MP21 398	Zhang, Hao.....	WP30 571
Yuki, Hashi.....	ThP27 550	Zavalin, Andre.....	ThP05 061	Zhang, Hao.....	WP23 403
Yukihira, Daichi.....	WP12 221	Zavalin, Andrey.....	WP09 154	Zhang, Hao.....	TP09 168
Yukihira, Daichi.....	WP19 341	Zavitsanos, Paul.....	TOG pm 3:30	Zhang, Hua.....	TP23 369
Yun, Nayoung.....	TP35 705	Zavras, Athanasios.....	WOG am 10:10	Zhang, Hua.....	MP16 295
Yungster, Nir.....	ThOH am 10:10	Zaw, Thiri.....	WP27 488	Zhang, Hui.....	TOD pm 3:30
Yurek, David.....	ThP10 184	Zawadzka, Anna M.....	ThOD am 08:50	Zhang, Hui.....	MOE am 09:50
Yurong, Guo.....	MP04 069	Zaza, Stefano.....	MP31 642	Zhang, Hui.....	MP02 038
Yurong, Guo.....	TOB pm 4:10	Zedda, Marco.....	WOF am 10:10	Zhang, Hui.....	MP02 039
Yuska, Brad.....	TP25 420	Zee, Barry.....	TOE am 09:50	Zhang, Irene.....	MOA pm 3:10
Yuska, Brad.....	MOE pm 2:50	Zeeberg, David.....	WP16 291	Zhang, Jennifer.....	MP22 416
Yuska, Brad.....	TP25 428	Zeeberg, David.....	WP16 290	Zhang, Ji.....	WP33 637
Yuzawa, Yukio.....	ThP19 330	Zeeman, Gerda G.....	TP20 304	Zhang, Jia.....	WP30 546
Zaarur, Nava.....	WP28 493	Zehr, R. Dan.....	TP23 370	Zhang, Jialing.....	MP10 205
Zabet-Moghaddam, Masoud.....	MP24 481	Zeijl, René J.M. van.....	WP09 141	Zhang, Jianbin.....	MP34 712
Zabrouskov, Vlad.....	ThP25 519	Zeisel, Steven.....	WP18 321	Zhang, Jiang.....	ThP12 223
Zabrouskov, Vlad.....	WOE am 09:50	Zekavat, Behrooz.....	MP15 268	Zhang, Jiang.....	WP23 415
Zabrouskov, Vlad.....	TP05 096	Zekavat, Behrooz.....	MP15 269	Zhang, Jianping.....	MP29 602
Zabrouskov, Vlad.....	MP29 596	Zekavat, Behrooz.....	TP09 164	Zhang, Jianqiu.....	TP08 129
Zabrouskov, Vlad.....	MOA am 08:30	Zekavat, Behrooz.....	ThP11 195	Zhang, Jianqiu (Michelle).....	TP28 527
Zabrouskov, Vlad.....	MOA pm 2:30	Zelesky, Veronica.....	MOE am 09:50	Zhang, Jianyi.....	ThP08 123
Zabrouskov, Vlad.....	WP31 582	Zelesky, Veronica.....	ThP10 185	Zhang, Jin.....	MP24 478
Zabrouskov, Vlad.....	ThP23 449	Zelesky, Veronica.....	WP15 255	Zhang, Jing.....	TP37 758
Zabrouskov, Vlad.....	TP14 218	Zelesky, Veronica A.....	MP02 033	Zhang, Jing.....	TP37 751
Zabrouskov, Vlad.....	MP24 490	Zell, Manfred.....	WP15 268	Zhang, Jinran.....	MP07 148
Zabrouskov, Vlad.....	TP05 093	Zeller, Martin.....	TP14 218	Zhang, Ju.....	MP27 558
Zabrouskov, Vlad.....	TOA pm 2:30	Zemaitaitis, Bozena.....	MOA pm 3:50	Zhang, Ju.....	WP30 546
Zabrouskov, Vlad.....	WP36 689	Zen, Nobuyuki.....	MP16 314	Zhang, Jun.....	WP22 390
Zabrouskov, Vlad.....	TOA am 09:30	Zendong, Zita.....	ThP25 518	Zhang, Jun.....	WP30 546
Zabuga, Aleksandra.....	ThP35 696	Zeng, Hang.....	WP33 626	Zhang, Jun.....	MP22 438
Zacharos, Athanasios.....	ThP06 079	Zeng, Jianing.....	MOC pm 3:50	Zhang, Jun.....	ThP12 226
Zacharos, Athanasios.....	TP05 097	Zeng, Lingfei.....	WP28 502	Zhang, Junmei.....	TP12 211
Zacharos, Athanasios.....	TP05 103	Zeng, Lu.....	ThP10 176	Zhang, Kai.....	WP29 530
Zachova, Katerina.....	WP32 601	Zeng, Qian.....	TP34 673	Zhang, Kai.....	WP21 377
Zaczek, Wojciech.....	MP16 297	Zeng, Rong.....	WP34 645	Zhang, Kai.....	MP22 420
Zagst, Patricia.....	MP06 103	Zeng, Shang.....	WP02 005	Zhang, Kerong.....	MP34 710
Zahedi, René.....	MP23 461	Zenka, Roman.....	MP18 363	Zhang, Kun.....	MOA pm 4:10
Zahedi, René.....	TOD pm 3:10	Zenka, Roman.....	MP26 546	Zhang, Kun.....	MP21 397
Zahedi, René P.....	TP19 285	Zenka, Roman.....	ThP23 466	Zhang, Li.....	TP35 710
Zahradka, Peter.....	TP23 373	Zenka, Roman.....	MP18 362	Zhang, Li.....	MP23 456
Zaia, Joseph.....	ThP20 365	Zenobi, Renato.....	MP13 236	Zhang, Li.....	MP31 640
Zaia, Joseph.....	WOG pm 4:10	Zenobi, Renato.....	MP15 263	Zhang, Linwen.....	TP34 662
Zaia, Joseph.....	TP36 724	Zerega, Yves.....	MP15 270	Zhang, Liwen.....	MP20 392
Zaia, Joseph.....	ThP20 364	Zetterberg, Henrik.....	TP19 280	Zhang, Mei-Jun.....	TP21 338
Zaia, Joseph.....	WOC am 09:10	Zetterberg, Henrik.....	TP21 323	Zhang, Mei-Jun.....	MOA pm 4:10
Zaia, Joseph.....	ThP20 362	Zhai, Bo.....	WP28 509	Zhang, Mengliang.....	ThP11 187
Zaia, Joseph.....	ThP20 363	zhai, huili.....	ThP08 122	Zhang, Ming.....	MP25 510
Zaia, Joseph.....	Special	Zhai, Qianqian.....	MP13 241	Zhang, Ning.....	WP28 508
Zaia, Joseph.....	TP36 723	Zhan, Qiao.....	TP08 162	Zhang, Ning.....	ThP12 222
Zaia, Joseph.....	TOF pm 3:30	Zhan, Song.....	WP20 368	Zhang, Pan.....	MP21 397
Zaikin, Vladimir.....	MP36 724	Zhan, Song.....	TP37 742	Zhang, Qian.....	MP22 422
Zainal, Nur.....	ThP15 266	Zhan, Zhaoqi.....	TP35 701	Zhang, Qian.....	MP22 440
Zaitseva, Irina.....	TP29 549	Zhan, Zhaoqi.....	ThP27 530	Zhang, Qiang.....	MOH am 09:50
Zakoucka, Eva.....	TP10 175	Zhan, Zhaoqi.....	MP01 017	Zhang, Qiang.....	MP13 235
Zaman, Khalil.....	MOE am 08:50	Zhang, Aiping.....	WOD pm 4:10	Zhang, Qibo.....	TP30 568
Zaman, Uzma.....	MP20 387	Zhang, Aming.....	MOD pm 3:10	Zhang, Qingchun.....	WP24 446
Zamay, Anna.....	WP26 454	Zhang, Bai.....	TOD pm 3:30	Zhang, Qiyun.....	MP34 713
Zamay, Galina.....	WP26 454	Zhang, Baichen.....	ThP28 559	Zhang, Rena.....	ThP21 396
Zamay, Tatyana.....	WP26 454	Zhang, Bailin.....	MP24 480	Zhang, Rena.....	MP14 261
Zamboni, Nicola.....	WP36 702	Zhang, Bing.....	MP32 669	Zhang, Rena.....	MP26 547
Zamboni, William.....	TP25 439	Zhang, Bochao.....	TP32 610	Zhang, Rena.....	MP14 259
Zamora, Ismael.....	MOE pm 3:10	Zhang, Boyu.....	MP36 743	Zhang, Sheng.....	WP30 559
Zamora, Ismael.....	MP02 032	Zhang, Chen.....	TP27 491	Zhang, Sheng.....	TOC pm 2:30
Zamora, Ismael.....	MP02 031	Zhang, Chengcheng.....	WP36 705	Zhang, Sheng.....	ThP18 328
Zampieri, Gianfranco.....	WP07 100	Zhang, Chengcheng.....	WP36 694	Zhang, Shenyang.....	MP24 465
Zandkarimi, Fereshteh.....	TP24 401	Zhang, Fan.....	WP36 690	Zhang, Shuai-peng.....	TP18 274
Zanella, Renato.....	ThP27 555	Zhang, Fang.....	TP31 605	Zhang, Shucha.....	WP18 321
Zang, Li.....	TP15 230	Zhang, Guoan.....	MP29 601	Zhang, Shuo.....	TOD pm 4:10
Zang, Lisa.....	WP14 242	Zhang, Guodong.....	WOD am 09:30	Zhang, Su-chun.....	WP17 293
Zang, Xiaoling.....	TP24 389	Zhang, Hailong.....	TP36 718	Zhang, Suhong.....	MP11 218
Zang, Xuejun.....	WP07 113	Zhang, Hailong.....	TP36 717	Zhang, Suhong.....	TP24 393
Zanivan, Sara.....	ThP17 292	Zhang, Haizhen.....	MP26 541	Zhang, Terry.....	WP19 348
Zanon, Stephen.....	TP04 054	Zhang, Han.....	TP12 206	Zhang, Terry.....	TP31 600
Zanon, Stephen.....	MP15 271	Zhang, Hao.....	WP23 402	Zhang, Wanjun.....	MP08 162
Zappacosta, Francesca.....	WP34 651	Zhang, Hao.....	WP23 401	Zhang, Wei.....	TP35 693
Zaragoza, William J.....	ThP25 517	Zhang, Hao.....	MP21 412	Zhang, Weiyang.....	ThP35 707
Zare, Richard.....	WP37 731	Zhang, Hao.....	MOB pm 2:30	Zhang, Wenfang.....	WP37 723
Zare, Richard N.....	MP10 205	Zhang, Hao.....	ThP36 713	Zhang, Wen-Hong.....	TP21 338

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

INDEX OF AUTHORS

Zhang, X. Kate.....	MOD pm 3:30	Zhao, Rui.....	TP12 209	Zhou, Manshui.....	TP33 654
Zhang, Xi.....	WP20 358	Zhao, Rui.....	WP34 644	Zhou, Manshui.....	TP24 389
Zhang, Xi.....	WP20 364	Zhao, Rui.....	MP26 542	Zhou, Manshui.....	WP17 292
Zhang, Xi.....	WP20 357	Zhao, Rui.....	MP26 540	Zhou, Ming.....	TP08 158
Zhang, Xiangmin.....	WP33 633	Zhao, Rui.....	WP27 484	zhou, mingfei.....	ThP35 704
Zhang, Xiangmin.....	ThP17 293	Zhao, Sarah.....	MP30 626	Zhou, Mowei.....	MOF pm 2:30
Zhang, Xiaohua.....	MP16 295	Zhao, Shan.....	TP37 751	Zhou, Mowei.....	TP01 012
Zhang, Xiaolin.....	ThP21 388	Zhao, Song.....	TP25 449	Zhou, Qi.....	WP19 339
Zhang, Xiaoqiang.....	WP37 712	Zhao, Xiaolu.....	TP25 437	Zhou, Ruokun.....	TP17 251
Zhang, Xiaoqun.....	ThOF am 09:50	Zhao, Xiaoming.....	TP31 589	Zhou, Shan.....	WP19 342
Zhang, Xiaotao.....	ThP21 402	Zhao, Xiaoming.....	WP04 042	Zhou, Shaolian.....	ThP08 122
Zhang, Xin.....	ThP29 607	Zhao, Xiaoming.....	TP31 597	Zhou, Shiyue.....	TP35 702
Zhang, Xing.....	ThP12 223	Zhao, Xueqing.....	WP18 321	Zhou, Shiyue.....	TP35 692
Zhang, Xing.....	TP33 625	Zhao, Yan-Xia.....	TP02 046	Zhou, Shiyue.....	WP26 460
Zhang, Xinglei.....	WP20 363	Zhao, Yi.....	WP26 460	Zhou, Tao.....	TP21 330
Zhang, Xinglei.....	TP34 673	Zhao, Yingming.....	WP29 536	Zhou, Wei.....	ThP30 632
Zhang, Xinglei.....	WP20 362	Zhao, Yingming.....	WP29 535	Zhou, Weihong.....	ThP25 505
Zhang, Xingzhong.....	WP19 342	Zhao, Yingming.....	WP29 530	Zhou, Xiang.....	TP26 456
Zhang, Xinyu.....	TOG am 08:30	Zhao, Yinsheng.....	WP19 351	Zhou, Xiaoyu.....	ThP06 078
Zhang, Xu.....	WP03 013	Zhao, Yuejie.....	WOC am 09:50	Zhou, Xue.....	TP25 444
Zhang, Xu.....	WP03 018	Zhao, Yuejie.....	ThP20 366	Zhou, Yafei.....	WP20 363
Zhang, Yan.....	WP27 481	Zhao, Yun.....	WP35 679	Zhou, Ya-Fei.....	TP37 770
Zhang, Yan.....	TP34 673	Zhao, Yunzhu.....	MP35 717	Zhou, YanWen.....	MP08 152
Zhang, Yan.....	TP25 444	Zhao, Zhiyang.....	WP12 197	Zhou, Ying.....	TOF pm 3:30
Zhang, Yangjun.....	WP27 485	Zhen, Eugene Y.....	MP26 530	Zhou, Ying.....	MP12 222
Zhang, Yanhua.....	MP26 531	Zheng, Chen.....	ThP01 008	Zhou, Ying.....	MP12 221
Zhang, Yanni.....	MP09 171	Zheng, Chuanqi.....	TP37 743	Zhou, Yue.....	TP36 727
Zhang, Yaofang.....	MP10 190	Zheng, Chunxiang.....	WP28 495	Zhou, Yueming.....	ThP12 222
Zhang, Yaping.....	ThP22 429	Zheng, Jie.....	ThP25 508	Zhou, Yuping.....	TP10 183
Zhang, Yaping.....	TP27 490	Zheng, Ling.....	TP25 437	Zhou, Zhen.....	MP31 641
Zhang, Yi.....	MP25 502	Zheng, Ming.....	TP24 388	Zhou, Zhen.....	MP31 640
Zhang, Yi.....	WP35 683	Zheng, Naiyu.....	MOC pm 3:50	Zhou, Zhen.....	TP37 770
Zhang, Yi.....	ThP08 135	Zheng, Nancy.....	WP06 070	Zhou, Zhiqin.....	TP23 369
Zhang, Yiming.....	ThP12 222	Zheng, Nancy.....	WP06 071	Zhou, Zhongyue.....	ThOG am 09:10
Zhang, Ying.....	MP22 438	Zheng, Ning.....	MP22 433	Zhou, Zuomin.....	TP21 330
Zhang, Ying.....	TP08 152	Zheng, Ouyang.....	ThP06 078	Zhu, Alex.....	MP25 511
Zhang, Ying.....	WP31 593	Zheng, Qiuling.....	MP23 451	Zhu, Alex.....	MP25 513
Zhang, Ying.....	TP28 515	Zheng, Shuzhen.....	WP29 530	Zhu, Feifei.....	TP36 722
Zhang, Ying.....	MP23 458	Zheng, Suping.....	MP06 122	Zhu, Guijie.....	WP35 682
Zhang, Yinong.....	ThP10 176	Zheng, Xueyun.....	TP33 619	Zhu, Guijie.....	WP35 680
Zhang, Yixuan.....	WP23 405	Zheng, Yupeng.....	ThOH am 10:10	Zhu, Guijie.....	WP35 681
Zhang, Yixuan.....	WP23 406	Zhong, Cathy.....	MP32 667	Zhu, Guili.....	MP34 712
Zhang, Yue.....	ThP22 418	Zhong, Hongying.....	TP03 049	Zhu, Haitao.....	TOD pm 4:10
Zhang, Yuhong.....	MP36 749	Zhong, Jun.....	MP24 478	Zhu, Honghui.....	WP19 354
Zhang, Yulong.....	ThP25 505	Zhong, Ming.....	MP01 007	Zhu, Huaian.....	WP20 366
Zhang, Yun.....	TP19 288	Zhong, Qisheng.....	WP20 368	Zhu, Jianhui.....	ThP21 384
Zhang, Yun.....	TP01 012	Zhong, Quan.....	WP36 685	Zhu, Jianhui.....	ThP19 343
Zhang, Yun.....	MOF pm 2:30	Zhong, Rugang.....	ThP21 389	Zhu, Jianhui.....	ThP22 424
Zhang, Zefeng.....	WP31 596	Zhong, Wenwan.....	WP02 005	Zhu, Jian-kang.....	ThOE pm 3:50
Zhang, Zhe.....	WP23 417	Zhong, Xiaotian.....	WP24 431	Zhu, Jie.....	WP27 489
Zhang, Zhengxiang.....	WP19 324	Zhong, Xuefei.....	TP35 709	Zhu, Kan.....	WP24 438
Zhang, Zheng-Xiang.....	MOE pm 4:10	Zhong, Xuefei.....	TP23 367	Zhu, Kan.....	WP31 594
Zhang, Zhixu.....	TP31 605	Zhong, Xuefei.....	WP17 293	Zhu, Lanlan.....	TP34 673
Zhang, Zhixu.....	MP33 674	Zhong, Yueyang.....	TP33 644	Zhu, Lian.....	ThP17 284
Zhang, Zhixu.....	MP34 709	Zhong, Yueyang.....	TP33 646	Zhu, Liang.....	WP20 362
Zhang, Zhi-Xu.....	MOE pm 4:10	Zhong, Yuhuan.....	MP34 710	Zhu, Liang.....	ThP28 574
Zhang, Zhongqi.....	MOD pm 2:30	Zhou, Baojin.....	MP24 465	Zhu, Li-ji.....	MP26 529
Zhang, Zhongqi.....	TP15 228	Zhou, Bin.....	MP03 046	Zhu, Lin.....	TP25 444
Zhang, Zhongqi.....	ThP25 495	Zhou, Bo.....	MP30 604	Zhu, Linyan.....	TP31 583
Zhang, Zichuan.....	MP08 156	Zhou, Dongmei.....	MP01 028	Zhu, Mengmeng.....	MP32 653
Zhang, Zong-Ping.....	WP06 070	Zhou, Guangchun.....	WP06 087	Zhu, Mingshe.....	TOG pm 3:50
Zhang, Zong-Ping.....	MP06 130	Zhou, Haihong.....	TP21 307	Zhu, Mingshe.....	WP08 129
Zhang, Zong-Ping.....	WP27 477	Zhou, Haihong.....	WOD pm 3:10	Zhu, Ming-Zhi.....	TP24 410
Zhang, Zong-Ping.....	WP06 071	Zhou, Houjiang.....	WP30 541	Zhu, Ning.....	MP32 653
Zhang, Zong-Ping.....	WP06 096	Zhou, Houjiang.....	MP06 098	Zhu, Qiuying.....	TP08 162
Zhao, Haiyi.....	TP28 503	Zhou, Hui.....	TOD am 09:10	Zhu, Qiuying.....	MP13 245
Zhao, Hanqing.....	TP21 338	Zhou, Hui.....	MP34 706	Zhu, Rui.....	TP21 317
Zhao, Hanwei.....	MP25 499	Zhou, Hui.....	TP36 730	Zhu, Shaolong.....	WOH am 09:30
Zhao, Harry.....	TP25 431	Zhou, Jiang.....	MOH am 09:50	Zhu, Xiang.....	TP08 136
Zhao, Harry.....	ThP21 409	Zhou, Jiang.....	MP13 235	Zhu, Xiang.....	MP06 125
Zhao, Harry.....	TP25 450	Zhou, Jing.....	ThP23 473	Zhu, Xiaodong.....	TP26 466
Zhao, Harry.....	TP26 471	Zhou, Jing.....	MP34 712	Zhu, Xiaodong.....	WP06 082
Zhao, Jiuyan.....	TP34 673	Zhou, Jing.....	TP26 466	Zhu, Xiujian.....	TP25 437
Zhao, Lei.....	TP21 334	Zhou, Jing.....	WP06 082	Zhu, Xudong.....	MP07 148
Zhao, Liang.....	TP24 391	Zhou, Keyu.....	WOF pm 3:10	Zhu, Xuling.....	ThP18 328
Zhao, Lijiao.....	ThP21 389	Zhou, Li.....	ThP12 222	Zhu, YaQin.....	ThP22 426
Zhao, Lijiao.....	TP29 533	Zhou, Luying.....	TP37 740	Zhu, Yi.....	ThP23 461
Zhao, Ning.....	ThP36 717	Zhou, Luying.....	TP37 741	Zhu, Yiyang.....	WP30 558
Zhao, Rui.....	TOH am 08:30	Zhou, Manshui.....	ThOE am 09:30	Zhu, Zhenqian.....	ThP32 662

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number



INDEX OF AUTHORS

Zhu, Zhikai.....	ThP19 355	Zimmermann, Ralf.....	WOF pm 2:50	Zrada, Matt.....	WOD am 08:30
Zhu, Zhiliang.....	TP31 583	Zimmermann, Ralf.....	MOH pm 3:50	Zubair, Faizan.....	ThP04 033
Zhuang, Xiaomei.....	MP34 710	Zimmermann, Ralf.....	ThOG am 08:30	Zubarev, Roman.....	ThP19 332
Zhurrov, Konstantin O.....	WP05 047	Zimmermann, Stefan.....	WP38 754	Zubarev, Roman.....	WP26 454
Zhurrov, Konstantin O.....	WOE am 08:50	Zimmermann, Stefan.....	MP15 280	Zubarev, Roman.....	WOB am 09:30
Zhurrov, Konstantin O.....	MOG pm 3:50	Zimmermann, Stefan.....	MP17 347	Zubarev, Roman.....	TP04 071
Zi, Jin.....	TP21 331	Zimmermann, Stefan.....	MP16 329	Zubarev, Roman A.....	ThP33 668
Zi, Jin.....	WP30 546	Zimnicka, Magdalena.....	TP33 649	Zucchetti, Massimo.....	WP11 191
Zieger, Antoine.....	MP28 573	Zink, Erika.....	WP34 644	Zucht, Hans Dieter.....	TP19 295
Ziegler, Emanuel.....	MP29 581	Zink, Jeffrey I.....	ThP09 140	Zuck, Paul.....	ThP10 182
Ziegler, Emanuel.....	MP29 582	Zinnel, Nathanael F.....	TP33 648	Zuniga, Azeret.....	MP03 053
Ziegler, Emanuel.....	ThP34 675	Zirah, Séverine.....	TP06 122	Zuppa, Athena.....	WP06 094
Ziegler, Emanuel.....	MP19 383	Ziskind, Michael.....	TP04 087	Zurek, Gabriela.....	TP24 408
Ziganshin, Rustam.....	MP27 550	Zivkovic, Angela.....	TP24 396	Zuurveld, Marleen.....	WP28 514
Ziganshin, Rustam.....	WP26 469	Zivkovic, Angela.....	ThP19 341	Zvyaga, Tatyana.....	WOD am 09:50
Zilkenat, Susann.....	WOB am 09:50	Zongxiu, Nie.....	WP12 213	Zweigenbaum, Jerry.....	WP37 719
Zima Kropf, Daniela.....	MOE am 10:10	Zott, Roseann.....	TP26 467	Zweigenbaum, Jerry.....	TOE pm 4:10
Zimmer, Jennifer.....	WP27 478	Zou, Hanfa.....	WP34 647	Zweigenbaum, Jerry.....	TOG pm 3:30
Zimmerman, Carl.....	MP06 105	Zou, Peng.....	MOF pm 3:30	Zweynert, Friederike.....	MP10 193
Zimmerman, Tyler.....	MP23 459	Zou, Wei.....	WP03 015	Zwiener, Christian.....	WOF am 10:10
Zimmerman, Tyler A.....	ThP23 446	Zou, Wei.....	WP07 112	Zwier, Timothy.....	ThP35 699
Zimmermann, Nadin.....	TP22 354	Zou, Yun Yun.....	ThP27 529	Zwier, Timothy.....	ThP14 256

Program code: M,T,W, Th = Day O = Oral, P = Poster Time or poster number

