73rd ASMS Conference on Mass Spectrometry & Allied Topics, June 1 – 5, 2025
WEDNESDAY NETWORKING SESSIONS & EVENING WORKSHOPS

WEDNESDAY NETWORKING SESSIONS, 12:00 - 1:00 pm

Two networking sessions will be held in different sections of the Poster-Exhibit Hall (look for signage)

Networking Session 01: SAMs (South Asians in Mass Spec): Career Transitions: Strategies for Growth and Success in Mass Spectrometry

Presiders: Presiders: Baljit Ubhi, Prasanna Ashok Kumar

Poster-Exhibit Hall, 12:00-1:00 pm

Navigating career transitions in mass spectrometry can be both challenging and rewarding, offering opportunities to explore diverse roles across academia, industry, consulting, and leadership. This workshop, hosted by South Asians in Mass Spectrometry (SAMS), aims to equip attendees - bench scientists as well as those seeking opportunities in consulting or commercial roles - with practical strategies for professional growth and success.

Our panel will feature distinguished professionals who have navigated significant career shifts, sharing personal experiences and lessons learned. Participants will gain insights into leveraging transferable skills, identifying new opportunities, and overcoming common challenges faced during transitions. The session will also emphasize the importance of diversity and inclusion, highlighting the unique experiences of South Asian professionals in the field.

The workshop includes an introduction to SAMS, outlining our mission to foster collaboration, promote innovation, and support professional development within the mass spectrometry community. An engaging panel discussion will be followed by an interactive Q&A, allowing attendees to connect directly with panelists. Additionally, an informal networking session will provide a platform for building meaningful professional relationships.

Ideal for students, early-career scientists, and seasoned professionals, this session offers valuable insights for anyone considering or navigating a career transition in mass spectrometry. Join us to explore new pathways, gain practical advice, and expand your professional network.

Key Highlights:

1. Diverse panel of experts from academia, industry, government and consulting
2. Networking opportunities with sponsored giveaways.

Networking Session 02: Career Opportunities for Chinese Students and Scholars

Presiders: Ling Hao, Hui Zhang

Poster-Exhibit Hall, 12:00-1:00 pm

With the rapid development of mass spectrometry technologies and the increasing applications to academic research, medicine, industry, and regulatory agencies, a growing number of mass spectrometrists including thousands of Chinese students and scholars are trained. The workshop for Career Development Opportunities for Chinese Students and Scholars aims to provide career perspectives to students and scholars to learn the career paths at different career stages. We will invite four speakers from academia, clinic, industry, and regulatory agencies to share their experiences for career development. We will also assemble a group of discussion panelists to answer questions from the audience. We believe the workshop is beneficial to both students and scholars of all ASMS members and potential employers. The workshop will provide opportunities for students and scholars to prepare for their career development during and after mass spectrometry training and help them to set up career goals in the field of mass spectrometry

WEDNESDAY EVENING WORKSHOPS, 5:45 - 7:00 pm

01 The Complementary Role of Ambient Ionization Methods in Analytical Science

Ambient Sampling & Ionization Interest Group

Presiders: Jacob Jordan, Chris Gill, Rabi Musah

Room 307-308

This workshop is intended to foster discussions about the topic of ambient ionization, a field that includes research, development and the application of many common methods of sampling and ionization for mass spectrometry. Prior workshop discussions have consistently brought up the question of how much validation is necessary for novel ambient ionization approaches and the complementary role of novel ambient ionization methods in analytical science with respect to the more widely used LC-MS approaches. We plan to continue these discussions in order to reach a consensus within the ambient ionization community and to demonstrate the complementary role of novel ambient ionization methods to those of LC-MS methods for routine measurements. The workshop will consist of lightning talks by students, professors, and industry experts in the field of ambient ionization and a panel discussion with experts that are involved in the validation and regulation process. The lightning talks will introduce attendees to cutting-edge developments in the field, whereas the panel discussion will aim to address the challenges and current solutions to addressing the barriers for validating and applying ambient ionization methods. We hope that these discussions will aid in identifying room for advancement in the very broad field of ambient ionization.

WEDNESDAY EVENING WORKSHOPS, 5:45 - 7:00 pm

02 The Interface of Biomarker Discovery, Clinical Algorithm Development and Regulatory Oversight

Clinical Chemistry Interest Group
Presiders: Timothy Collier, Matthew Crawford
Room 309-310

The increasingly multiplexable nature of liquid chromatography-mass spectrometry has made it a powerful tool for the discovery of not just single analyte biomarkers but also make possible the use of statistical algorithms to translate the simultaneous measurement of multiple analytes into indicators of patient health status and prognosis. As such, regulatory agencies including the NY State Department of Health and potentially the FDA, have begun to require descriptions of assay development processes, including the description of any statistical processes and software tools to derive analytical algorithms, from simple statistical approaches up to advanced artificial intelligence, machine learning, and/or natural language processing approaches. Regulatory agencies are also requiring detailed descriptions of discovery, test, and validation cohorts, power calculations to justify cohort sizes, and justification of said calculations.

These requirements have implications not only for commercial laboratories seeking to introduce a test to the market, but also for the academy, where most new biomarker discovery occurs. By encouraging discussion among workshop attendees and a panel of thought leaders in the field representing academic, government, and commercial laboratories, attendees should emerge with an understanding of new regulatory requirements on algorithms used in clinical measurements and what practices laboratories can adopt to meet these new requirements and enhance the translation of academic research into industry application.

03 Overcoming Challenges in Modern Ion Mobility

Ion Mobility MS Interest Group
Presiders: Christopher Chouinard, Elyssia Gallagher
Room 314-317

Ion mobility-mass spectrometry (IM-MS) has emerged as a powerful technique for chemical, biological, and environmental analysis over the last two decades. But despite significant advances in instrumentation, methods, and data analysis by commercial and academic researchers, there remain challenges to its routine implementation (i.e., sensitivity, resolution, data complexity, etc.). In this workshop, a brief opening presentation will describe the basics of modern ion mobility and highlight the biggest challenges in the field; we expect this presentation to be helpful for those hoping to learn more about ion mobility. Next, 4-5 speakers covering a variety of IM hardware/applications will present brief (~5 mins) research vignettes emphasizing new approaches to dealing with the highlighted challenges. Importantly, we aim for these presentations to spark curiosity amongst the audience members. Finally, the speakers will form a panel to motivate discussion of the future directions of ion mobility in light of these current challenges. We expect this format will encourage participation and learning for novice and expert users alike.

04 Single-cell proteomics by Mass Spectrometry: Best Practises and Current Challenges

Independent
Presiders: Erwin Schoof, Aline Martins, Samuel Payne
Ballroom II

With the mind-boggling pace of technical developments, single-cell proteomics by Mass Spectrometry (scp-MS) is a field poised for major discoveries across all life science in the very near future. As a field still very much in its infancy, there is an ever-increasing need for standardization, and clear communication about protocols, data acquisition parameters and performance statistics. This workshop will aim to gather some of the leading experts in the field, and run as a guided roundtable discussion to explore key aspects such as: 1) "labeled vs. label-free", 2) DIA library matching, friend or foe?, 3) Sample preparation options, 4) The future of scp-MS: throughput vs. depth and PTMs, 5) How we are going to apply scp-MS in the future - what real biological questions can we unlock using scp-MS?

We will recruit ~5-7 leading experts for the roundtable, with track record spanning all major aspects (technological developments, sample preparation, biological application and computational modeling), and prepare ample questions to be discussed in a facilitated manner and guided by the three listed workshop presiders. Industry representatives from e.g. Bruker, ThermoFisher, Cellenion, Evosep, etc. will also be invited to participate. Questions and feedback from the audience will be encouraged, to enable interactive and stimulating discussions on timely topics that are relevant for the field's future long-term success.

05 Ion Trap MS: Using Trapping Mass Analyzers Beyond Mass Analysis

Ion Trap MS Interest Group
Presider: Kenneth Lee
Ballroom I

Mass Spectrometry (MS) has evolved as an analytical technique to measure more chemical information than just mass. Various instrumental advances—including advances in ionization, gas-phase dissociation, and gas-phase chemistry—have provided unique experiments that position MS as a powerful tool for the analysis of chemical structures. A key player in these developments is the idea of trapping and interrogating ions. Primarily the 3D and linear quadrupole ion traps have demonstrated remarkable flexibility and utility in performing a wide variety of gas-phase measurements and experiments because of their ability to probe and analyze ions in one device. Recently, however, other trap-based mass analyzers that are typically viewed as only high-resolution mass analyzers have demonstrated similar capabilities of ion isolation and dissociation, as well as measure collision cross sections and perform charge deconvolution.

This workshop will feature research groups that are developing chemical analysis methods using trap-based mass analyzers. Some examples include measuring collision cross sections using an FT-ICR and single-ion charge measurements using an Orbitrap. Each group representative will provide a short overview of the method, followed by an open discussion with the presenters serving as panelists. The main discussion points will focus on looking back to what drove these unique ion trap innovations and looking forward to where ion trap innovation is progressing and where it could address unsolved analytical needs. The goals of this workshop are to first, provide context and perspective on the unique role ion traps in MS for those who

are less familiar with ion trap MS, and second, provide an opportunity for discussion for potential future directions of ion traps beyond standard mass analysis.

06 Harmonizing Lipidomics through an Interactive Checklist

Lipids & Lipodomics Interest Group
Presiders: Jeff McDonald, Jace Jones
Ballroom III

The Lipidomics Minimal Reporting Checklist has been established and is continuously curated by the Lipidomics Standard Initiative (LSI) an interest group affiliated with the International Lipidomics Society (ILS). The checklist is based on consensus-driven guidelines for lipidomics implemented in a publicly available web-based questionnaire. Its main purpose is to describe all essential steps of lipidomic experiments in a standardized way. The checklist output, a PDF document, is intended to assist editors and referees in reviewing research studies containing lipidomic data. The checklist can be viewed as guideline on 'good lipidomics practice' for both new and experienced lipidomic investigators. The checklist covers preanalytics, lipid extraction, analytical platform, lipid identification and quantitation, quality control, method validation, and reporting summary. In addition to reviewing the ILS checklist, we will also provide examples of lipidomic reporting in literature highlighting the need for increased consensus and oversight for lipidomic research.

07 MS Imaging: Challenges and Recent Developments in Sample Preparation

Imaging MS Interest Group
Presiders: Andreas Roempp, Katerina Djambazova
Ballroom IV

Sample preparation is an integral part of any mass spectrometry imaging workflow. Approaches are very diverse and depend (among others) on the sample's characteristics, how it's prepared, and the employed MSI approach. We will cover the initial steps of the MS imaging workflow - from sample procurement and storage, up to tissue pre-treatment and matrix application (if any). Major topics will be tissue preservation/handling, sectioning, on-tissue modifications, and matrix application.

We are interested in discussing challenges that arise when developing protocols for the extraction of metabolites, lipids, glycans, and other analytes from biological specimens before MSI. Here, presenters are encouraged to share on negative results and failed experiments to encourage lively discussions among the workshop presenters and the audience.

This workshop aims to highlight established and novel methods that allow for the interrogation of historically understudied molecular classes, and/or samples that pose a challenge to standard MSI sample workflows.

Organization:
This workshop will be presented in two parts. First, multiple speakers will briefly describe their methodologies, including the pros and cons, for sample preparation in a series of flash talks. Second, the speakers will serve as a panel for a general discussion with the audience on the challenges that exist within the field, where they will identify opportunities and discuss future strategies. The audience is encouraged to come prepared with questions and ideas. An online tool will be used to ensure direct participation of the audience.

08 Metaproteomics: Less is (Balti)more

Independent
Presiders: Robert Hettich, Mary Lipton, Timothy Griffin
Room 336

Mass spectrometry-based metaproteomics research has experienced rapid growth due to its ability to help characterize complex microbial communities and is likely to become a central approach for understanding dynamic microbiome functions. Despite its value, metaproteomics offers analytical and bioinformatic challenges beyond those encountered in traditional, single-organism MS-based proteomics. Metaproteomics researchers who have participated in international metaproteomics conferences will initiate the brainstorming sessions to both inform and facilitate participation in a discussion about some specific opportunities to help propel this field forward. Various research groups attending the conference will also participate in the discussion. As a coordinated research effort, a global initiative has been developed for the dissemination of metaproteomics fundamentals and microbiome research applications. Members of the Metaproteomics Initiative (www.metaproteomics.org) will present updates on two recent CAMPI (Critical Assessment of Metaproteome Investigation) benchmark studies on sample preparation and functional annotations, and future projects that will be designed to propel this field forward. To highlight other on-going community effort in metaproteomics, panel members will also provide highlights on the International Metaproteomics Symposium and global challenges.

09 Cutting-Edge Structural Proteomics and Interactome Analysis: Advances in Covalent Labeling, Crosslinking, and Emerging Technologies

Covalent Labeling & Cross-Linking Interest Group
Presider: Saiful Chowdhury
Room 339-340

Crosslinking technology and covalent labeling have gained increasing popularity due to their ability to study protein structures and interactions in their native environments. While these techniques have primarily been applied in focused experimental settings, expanding their capabilities requires new tools and innovative applications. To push the boundaries of structural proteomics and interactome research, novel strategies must be explored.

This session will highlight emerging crosslinking and covalent labeling approaches and their role in advancing protein structural biology and interactome analysis. A particular emphasis will be placed on applications in in vivo settings, where these techniques offer unique advantages in capturing dynamic protein interactions within living systems. This year, we will explore how the combination of multiple complementary techniques can enhance our understanding of complex proteomes and biological networks. The session will begin with a series of short presentations featuring groundbreaking research and novel methodologies. These talks will be followed by an interactive discussion, facilitated by expert panelists who will provide insights into the latest advancements, technical challenges, and future directions of the field.

Attendees will have the opportunity to engage with leading researchers, ask questions, and contribute to discussions on how to further develop and integrate these technologies for broader applications. By bringing together experts in crosslinking, covalent labeling, and structural proteomics, this session aims to foster collaboration, inspire innovation, and

shape the next generation of tools for studying protein interactions in complex biological systems.

10 Entrepreneurship in Mass Spectrometry: Non-Traditional Pathways for Scientific Innovation

Independent
Presiders: Lindsay Pino, Paula Burton
Room 341-342

Mass spectrometry (MS) has revolutionized fields such as drug discovery, diagnostics, and biomarker research. However, the entrepreneurial potential within MS remains underexplored by many scientists. This workshop aims to illuminate the opportunities for innovation and entrepreneurship in the MS field. Attendees will learn about pathways to commercializing MS technologies, from developing instrumentation and consumables to creating applications in healthcare, environmental science, and beyond.

The session will feature insights from successful MS entrepreneurs and experts who transitioned from academia to business. Topics will include navigating startup ventures, industry collaborations, intellectual property management, and funding strategies like grants and venture capital. The format will include short presentations followed by an interactive panel discussion with ample opportunities for audience engagement during Q&A and networking.

This workshop is ideal for those curious about translating their research into impactful business ventures or collaborating with industry partners. By demystifying the entrepreneurial process and sharing real-world experiences, the session will inspire attendees to explore new avenues for advancing science through entrepreneurship.

11 Plastics, Polymers, and Replacement Chemicals Part 2: Tracking the Right Compounds in Humans and the Environment

Energy & Biofuels, Exposomics, and Polymeric Materials Interest Groups
Presiders: Pablo Gago-Ferrero, Nina Zhao, Ruth Marfil-Vega
Room 343-344

This workshop will take a deep dive into the challenges and opportunities posed by plastics, polymers, and replacement chemicals to address sustainability and (eco-)toxicological effects. With growing concerns over the impact of emerging and unknown contaminants, we will critically examine whether we are looking at the right chemicals in exposomics research and connection with their fate in the environment.

Designed as a participatory workshop, the session will feature short, focused talks addressing key questions, followed by in-depth discussions. A major theme will be the role of databases in identifying plastic-associated compounds: what exists, what is used, where the gaps lie, and what is needed for the future. By bringing together experts from different disciplines, the session aims to foster critical dialogue and advance collaborative efforts in environmental exposomics.

12 Forensics & Homeland Security: Emerging Technology for the Forensic Chemist

Forensics & Homeland Security Interest Group
Presider: Ryan Bain
Room 345-346

Emerging technology which is nearing commercialization (or has recently been commercialized) which has been demonstrated on forensic and homeland security applications will be the focus of this session. Emphasis will be placed on breakout discussions focused on: A) emerging technology being embedded in the forensic laboratory, B) issues adapting workflows to emerging technology, C) particularly challenging analyses which are currently not being addressed, and D) measurements that could not be made previously which have been made possible by new mass spectrometry systems. There will be talks from those working on beta and first-generation versions of new instrumentation, applications of new sources on existing technology, and practical examples from forensic practitioners currently integrating these technologies.

13 Current Hot Topics in Bioanalysis from Hybrid Assays, Biomarker Assay Validation to AI

Regulated Bioanalysis Interest Group
Presiders: Jian Wang, Wenkui Li, Fabio Garofolo
Room 347-348

The RBIG workshop at ASMS this year will discuss current challenging topics in Bioanalysis with experts in Pharmaceutical and CRO industry and regulatory agencies to provide insights, guidance, and perspectives.

1. Update on hybrid LC-MS/MS assays: novel PK bioanalytical approaches in the bioanalysis of various ADCs (revisiting with new strategies) - bioanalytical strategies illustrated by case studies.
2. HRMS vs QQQ for Oligo/ASO analysis (Discovery to Regulated): There has been a recent explosion of interest in oligonucleotide therapeutics. This includes siRNA, antisense oligos (ASOs) and even oligo conjugates (ARCs/AOCs). This has led to an increased emphasis and need for developing sensitive and selective Bioanalytical methods.
3. FFP validation of biomarker assays.
4. Value of incurred samples in the bioanalytical method cross validations from the perspective of regulatory requirements and the operations in pharmaceutical and CRO companies.
5. Trackability of internal standards for small and large molecules.
6. AI - Using AI to help in data processing of LCMS data as well as report generation: AI can be a huge advantage in helping to improve efficiency and accuracy of bioanalytical data. This is a relatively new field and there are several companies working with various partners to investigate this area. Questions are should we centralize this effort (with various vendors - maybe similar to skyline) or do we let each company identify the best path forward and work independently with various providers. When is the right time to get involved or move forward with this area.

14 JASMS - The Life Cycle of a Manuscript and Joining the Reviewer Pipeline

Independent
Presiders: Jenny Brodbelt, Facundo Fernandez
Room 349-350

Launched in 1990, the Journal of the American Society for Mass Spectrometry (JASMS) is a premier science journal that covers all aspects of mass spectrometry, including fundamentals, instrumentation and applications of mass spectrometry in all fields (chemistry, biology, physics, geology, environmental science, and life sciences, among others). This Workshop will focus on the "nuts and bolts" of the manuscript submission and review pipeline of JASMS. It will cover how manuscripts are handled - from the time a manuscript is first submitted to the time the paper is published. The critical role of the reviewers in this process will be featured, including tips for being a great reviewer.