ASMS Fall Workshop
Atmospheric Pressure Ionization: Fundamentals and Applications

November 14 – 15, 2019
Sonesta Philadelphia Rittenhouse Square

Organizers
Rachel O. Loo, University of California, Los Angeles
& Andre Venter, Western Michigan University
THURSDAY, NOVEMBER 14

8:00 – 8:30  Continental Breakfast & Badge pick-up, Wyeth Ballroom Foyer (2nd Floor)
8:30 – 8:35  FUNDAMENTALS - Opening Remarks

SESSION 1: UNDERSTANDING IONIZATION

8:35 – 9:25  01 History of Atmospheric Pressure Spray Ionization, Richard B. Cole, Sorbonne Université
9:25 – 10:15  02 Fundamentals of Gas-Phase Analyte Ion Formation through Charged Liquid or Solid Particles for Analysis by Mass Spectrometry, Charles N. McEwen, University of the Sciences

10:15 – 10:45  Coffee Break

SESSION 2: AMBIENT IONIZATION SOURCES & NATIVE MS

10:45 - 11:35  03 What are Direct and Ambient Ionization Methods?, Andre Venter, Western Michigan University
11:35 - 12:25  04 Introduction to Native Mass Spectrometry: Concepts & Applications, Joseph A. Loo, University of California, Los Angeles

12:25 - 1:45  Group Photo & Lunch hosted by ASMS, Whistler Ballroom (2nd Floor)

SESSION 3: ESI EMITTERS AND CHARGE & STRUCTURE, SOLUTION & GAS PHASE

1:45 – 2:35  05 Charging in Electrospray Ionization, Evan R. Williams, University of California, Berkeley
2:35 – 3:25  06 Gas Phase vs. Solution Phase Contributions to Charging, Structure and Folding, Rachel O. Loo, University of California, Los Angeles

3:25 – 3:55  Coffee Break

SESSION 4: CHARGE & STRUCTURE, SOLUTION & GAS PHASE II

3:55 – 4:55  07 Uncovering Electrospray Mechanisms through Experiments and Molecular Dynamics Simulations, Lars Konermann, University of Western Ontario

5:30 – 6:30  Happy Hour
6:30  Dinner on your own
FRIDAY, NOVEMBER 15

8:00 – 8:30  Continental Breakfast

8:30 – 8:35  APPLICATIONS - Opening Remarks

SESSION 5: UNDERSTANDING IONIZATION II
All talks include 5 minutes of discussion

8:35 – 9:25  09 Negative Ion Electrospray: Anion Attachment and the “Best Match” Model, Richard B. Cole, Sorbonne Université

9:25 – 10:10  10 Manipulating Analyte Charge State Distributions, Rachel O. Loo, University of California, Los Angeles

10:10 – 10:35  Coffee Break

SESSION 6: DESI AND DESI IMAGING
All talks include 5 minutes of discussion

10:35 – 11:25  11 Imaging of Lipids and Metabolites Using Liquid Extraction-Based Ionization Techniques, Julia Laskin, Purdue University

11:25 – 12:15  12 Improving the Detection of Proteins by DESI-MS, Andre Venter, Western Michigan University

12:15 – 1:15  Group Lunch hosted by ASMS, Whistler Ballroom (2nd Floor)

SESSION 7: STUDY OF ELECTROCHEMISTRY
All talks include 5 minutes of discussion

1:15 – 2:05  13 Development and Applications of Electrochemical Mass Spectrometry, Hao Chen, New Jersey Institute of Technology

2:05 – 2:55  14 Reactive Ambient Ionization for Quantitative Mass Spectrometry, Abraham K. Badu-Tawiah, Ohio State University

2:55 – 3:20  Coffee Break

SESSION 8: STRUCTURAL ANALYSIS
All talks include 5 minutes of discussion

3:20 – 4:10  15 Native Mass Spectrometry Analysis of Membrane Proteins and Lipids, Michael Marty, University of Arizona

4:10 – 5:00  16 Sample Prep and nESI Conditions Tailored to Meet Specific Needs, from Glycolipids to Glycoproteins, Catherine E. Costello, Boston University, School of Medicine

5:00 – 5:15  Closing Remarks
These posters will be on display in the back of the workshop room. This is an informal poster session so there is not a set presentation time. The presenters have been instructed to be near their posters during the breaks.

1. **An Emerging Technology for Hit Discovery and Compound Profiling: Comparing Acoustic Mist Ionization-Mass Spectrometry to Conventional High-Throughput Screening Technology**; Arseniy M Belov1; Joseph Kozole1; Carl A Machutta2; Guofeng Zhang2; Melanie V Leveridge2; Luke Ghislain3; Sammy S Datwani3; Roland S Annan1; 1GlaxoSmithKline, Discovery Analytical, Collegeville, PA; 2GlaxoSmithKline, Screening, Profiling and Mechanistic Biology, Collegeville, PA; 3Labcyte, San Jose, CA

2. **Induction Based Fluidics: A Decade of Applications with Discussion of Fundamentals**; Ron Shomo1; Andrew D Sauter, III2; Drew Sauter2; 1Adaptas Solutions, Palmer, MA; 2Nanoliter LLC, Henderson, NV

3. **Mass Spectrometry-Based Study of Diverse Metabolome from Overexpressed Type III Polyketide Synthase and Modifying Enzymes**; Gorkha Raj Giri; South Asian University, New Delhi, India

4. **Effects of Interfacial Surface Interactions on Cone-Jet Mode Electrospray Ionization**; Sau Lan Staats1; Anna Stolzfs1; Eliana Mecray1; Andris Suna1; 1Phoenix S & T, Inc, Chadds Ford, PA

5. **Versatile (applications with) Metalspray in Mass Spectrometry Using an Omniphobic Surface**; Michael C Godwin1; William D. Hoffmann1; 1Texas State University, San Marcos, TX

6. **A Comparison of Electrospray Ionization (ESI) and Paper Spray (PS) Ionization for the Analysis of Polyfluoroalkyl Substances (PFAS)**; Tavleen K. Kochar1; Megan R. Ogorchock1; Gary L. Glish1; 1University of North Carolina, Chapel Hill, NC

7. **Addition of Serine Improves Protein Analysis during DESI-MS**; Roshan Javanshad; Western Michigan University, Kalamazoo, MI

8. **Assessment of Complimentary Atmospheric Pressure Ionization Techniques in Multi-Class Mycotoxin Analysis by LC-HRMS**; Julio Cesar C Espana1; Jairo Arturo Guerrero Dallos1; 1Universidad Nacional de Colombia, Bogota, Colombia

9. **Delayed Desorption Improves Protein Analysis by DESI-MS**; Tara L Maser1; Elahe Honarvar1; Andre Venter1; 1Western Michigan University, Kalamazoo, MI

10. **An Inexpensive Ultrasonic Desorption-Atmospheric Pressure Chemical Ionization for Broadband Liquid Sampling**; Linxia Song1; Yi You2; Nelson Rapalo Perdomo1; Theresa Evans-Nguyen1; 1University of South Florida, Tampa; 2Federal Institute for Materials Research and Testing, Berlin, Germany

11. **Solution Composition Effects on Charge State Distributions of Protein Ions Formed by Negative or Positive Mode Electrospray Ionization Mass Spectrometry**; Muhammad A Zenaidee1; Carter Lantz1; Rachel Ogorzalek Loo1; Joseph A Loo1; 1University of California, Los Angeles, Los Angeles, CA

12. **Differential Analysis of Lipid Signal with Grounded and Charged DESI Emitter Potentials by FT-ICR MS**; Kevin J Zemaitis1; Troy D Wood1; 1University at Buffalo, Buffalo, NY

13. **Deinococcus Radiodurans Transfer RNA Modified Nucleosides are Minimally Impacted UV Radiation**; Ruoxia Zhao1; Spencer Parrish1; Robert Ross1; Balasubrahmanym Addepalli1; Patrick A Limbach1; 1University of Cincinnati, Cincinnati, OH