

Your Name: \_\_\_\_\_



## **Membrane Proteins and Their Complexes: Mass Spectrometry and Beyond**

Organized by

Michael T. Marty, *University of Arizona*,  
Wendy Sandoval, *Genentech* & Julian Whitelegge, *UCLA*

33<sup>rd</sup> Sanibel Conference on Mass Spectrometry  
January 19 – 22, 2023  
*Island Grand Tradewinds, Captiva, FL*

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**Sanibel Committee**

Xiuxia Du  
UNC at Charlotte

Sharon Pitteri  
Stanford University

Richard Rogers  
Umoja Biopharma

Sarah Rogstad  
FDA

**THURSDAY, JANUARY 19**

4:00 - 7:00 pm     **Setup all posters, *The Pavilion***

6:00 - 7:00 pm     **Registration**

7:00 - 7:10 pm     **Opening Remarks**, Michael T. Marty, Wendy Sandoval & Julian Whitelegge  
*The Pavilion*

**7:10 - 8:10 pm**  
**Keynote Lecture**

**Mass Spectrometry of Membrane Proteins in Complex with Lipids**  
**Art Laganowsky, *Texas A&M University***

Session Chair: Julian Whitelegge  
*The Pavilion*

**8:10-10:00 pm**  
**Reception**  
*The Pavilion*

**The following students received an ASMS Student Travel Award.  
Congratulations!**

**Julia Hesselbarth**  
Johannes Gutenberg University Mainz

**Virginia James**  
University of Texas at Austin

**Brock Juliano**  
University of Michigan

**Philip Lacey**  
The Ohio State University

**Xiaoxuan Lin**  
The University of Chicago

**Neil McCracken**  
Indiana University

**Robert Schrader**  
Texas A&M University

**Qianjie Wang**  
Michigan State University

**Guozhi Zhang**  
The University of Arizona

**FRIDAY, JANUARY 20**

7:00 - 8:30 am **Continental Breakfast**, *The Pavilion*

<p><b>8:30 - 9:30 am</b> <b>Membrane Protein Sample Preparation</b> Session Chair: Oliver Hale <i>The Pavilion</i></p>
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8:30 - 9:00 am Native Top-Down Mass Spectrometry with Electrons and Collisions of Membrane Protein Complexes, **Joseph Loo**, *UCLA*

9:00 - 9:30 am Surface Induced Dissociation of Membrane Peptides and Proteins from Nanodiscs and Micelles, **Vicki Wysocki**, *Ohio State University*

9:30 - 10:00 am **Coffee Break**, *The Pavilion*

<p><b>10:00 am – 11:50 am</b> <b>Instrumentation</b> Session Chair: Mowei Zhou</p>
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10:00 - 10:20 am Deorphanizing Tough Membrane Targets Using Recombinant Extracellular Vesicles, **Shengya Cao**, *Genentech*

10:20 – 10:50 am Hydrophobic Protein Analysis in Industry: From Native-MS to High Throughput-MS Therapeutic Project Support, **Iain Campuzano**, *Amgen*

10:50 – 11:20 am Membrane Protein Complexes and their Environments, **Nina Morgner**, *Goethe University Frankfurt*

11:20 – 11:50 am Developments in the Analysis of Membrane Proteins on Orbitrap Platforms, **Rosa Viner**, *Thermo Fisher Scientific*

11:50 -12:05 pm **Group Photo**

12:05 - 1:15 pm **Group Lunch**, provided by ASMS  
*The Pavilion*

**1:15-2:15 pm**

**Ion Mobility**

Session Chair: Kelly Hines

- 1:15 – 1:45 pm Collision Induced Unfolding of Membrane Proteins and their Complexes,  
**Brandon Ruotolo**, *University of Michigan*
- 1:45 – 2:15 pm Probing Gibbs Energy Landscape of Proteins: Variable Temperature-ESI and Ion  
Mobility-High Resolution Mass Spectrometry, **David Russell**, *Texas A&M University*

**2:15 - 2:55 pm**

**Submitted Talks**

Session Chair: Kelly Hines

- 2:15 – 2:35 pm Single Cardiomyocytes Membrane Protein Content,  
**Jenny Van Eyk**, *Cedar Sinai Medicial Center*
- 2:35 – 2:55 pm Imaging Mass Spectrometry of Integral Membrane Proteins,  
**Kevin Schey**, *Vanderbilt University*
- 2:55 – 7:00 pm **Free Time**

**7:00 – 8:20 pm**

**Submitted Talks**

Session Chair: Fanny Liu

- 7:00 – 7:20 pm Exploring the Pharmacology of GPCRs by Native MS Results in Identification of  
Endogenous Ions that Serve as Positive Allosteric Modulators,  
**Idlir Liko**, *OMass Therapeutics*
- 7:20 – 7:40 pm High-level Daptomycin Resistance is Supported by Increased Membrane Fluidity in  
*Staphylococcus aureus* with Defective Phosphatidylglycerol Synthesis,  
**Kelly Hines**, *University of Georgia*
- 7:40 – 8:20 pm Two-minute Flash Talks from the Odd-Numbered Posters, *see Poster List on page 7*

**8:20-10:00 pm**

**Poster Session I & Reception**  
**Odd-Numbered Posters Present**  
*The Pavilion*

**SATURDAY, JANUARY 21**

7:00 - 8:30 am **Continental Breakfast**, *The Pavilion*

**7:30 - 8:30 am**  
**Fully Integrated Native MS Workflow Discussion Panel, optional**  
Vicki Wysocki, *Ohio State University*  
*The Pavilion*

**8:30 - 10:00 am**  
**Membrane Mimetics**  
Session Chair: Chloe Martens

8:30 - 9:00 am Native MS and Lipidomics for Measuring Membrane Protein-Lipid Interactions in Heterogeneous Nanodiscs, **Michael T. Marty**, *University of Arizona*

9:00 - 9:30 am Gabor Transform Tools for Mass Spectrometry Characterization of Nanodiscs and Membrane Proteins, **James Prell**, *University of Oregon*

9:30 - 10:00 am Integrative Structural Mass Spectrometry to Interrogate Amphipol-Protein Assemblies and Inform on the Molecular Mechanism of Outer Membrane Protein Biogenesis, **Antonio Calabrese**, *University of Leeds*

10:00 - 10:30 am, Coffee Break

**10:30 - 12:00 pm**  
**Biophysical Characterization**  
Session Chair: Carter Lantz

10:30 - 11:00 am MS and EM - A Marriage Made in the Membrane?,  
**Frank Sobott**, *University of Leeds*

11:00 - 11:30 am Unlocking the Functional Dynamics of Membrane Transporters by HDX-MS,  
**Argyris Politis**, *University of Manchester*

11:30 - 12:00 pm Protein Interactions in Synaptic Vesicles and in the Neuronal Synapse Studied by Structural Mass Spectrometry,  
**Carla Schmidt**, *HALOmem, Martin Luther University Halle-Wittenberg*

12:00 - 1:30 pm Lunch on your own

**SATURDAY, JANUARY 21**

**1:30 – 3:00 pm**

**Proteomics**

Session Chair: Si Wu

- 1:30 – 2:00 pm How Does a Single Mutation in the Membrane Protein CFTR Cause the Disease Cystic Fibrosis, **John Yates**, *Scripps Research Institute*
- 2:00 – 2:30 pm Maintaining Higher-Order Structure while Removing Non-Covalent Associations for Effective Electrospray Ionization of Integral Membrane Proteins, **Julian Whitelegge**, *UCLA*
- 2:30 – 3:00 pm Ultraviolet Photodissociation for Analysis of Membrane Protein Complexes, **Jennifer Brodbelt**, *University of Texas*
- 3:00 - 3:30 pm Coffee Break

**3:30 – 4:50 pm**

**Membrane Protein Structural Biology and Biophysics**

Session Chair: Wendy Sandoval

- 3:30 – 3:50 pm 3D Structure Determination of Protein Complexes Using Matrix-Landing Mass Spectrometry, **Josh Coon**, *University of Wisconsin*
- 3:50 – 4:20 pm Transmembrane Helices Mediate the Formation of a Stable Ternary Complex Composed of Cytochrome b5, Cytochrome B5 Reductase and Stearoyl-Coa Desaturase-1, **Ming Zhou**, *Baylor College of Medicine*
- 4:20 – 4:50 pm Direct Determination of Organization of Membrane Protein and Lipids from Intact Customizable Lipid Bilayers, **Kallol Gupta**, *Yale University*

**7:00 - 8:20 pm**

**Submitted Talks II**

Session Chair: Melanie Odenkirk

- 7:00 – 7:20 pm Deciphering the Allosteric Regulation of the NBD1 Domain of CFTR Channel by HDX-MS and Single-Molecule FRET, **Chloe Martens**, *Université Libre de Bruxelles*
- 7:20 – 7:40 pm A Tailored Approach for the Analysis of Membrane Proteins from Tissue Using Native Nano-DESI Mass Spectrometry, **Emma Sisley**, *University of Birmingham*
- 7:40 – 8:20 pm 2-minute Flash Talks from Even-Numbered Posters, *see Poster List on page 7*

**8:20-10:00 pm**

**Poster Session II & Reception**  
**Even-Numbered Posters Present**  
*The Pavilion*

**SUNDAY, JANUARY 22**

7:00 - 8:30 am **Continental Breakfast**, *The Pavilion*

**8:30-10:00 am**  
**Glycosylation and Lipids**  
Session Chair: Fabio Gomes  
*The Pavilion*

8:30 – 9:00 am MS Support for Membrane Protein Efforts in Structural Biology,  
**Wendy Sandoval**, *Genentech*

9:00 – 9:30 am MS-Based Investigations of Social and Anti-Social Distancing at the Cell Surface,  
**Cathy Costello**, *Boston University School of Medicine*

9:30 – 10:00 am Fingerprinting the Unique Lipidome of Membrane Proteins,  
**Erin Baker**, *North Carolina State University*

10:00 - 10:15 am, Coffee Break

**10:15 – 11:15 am**  
**Keynote Lecture**  
  
**Membrane Proteins in Context**  
**Carol Robinson**, *University of Oxford*  
  
Session Chair: Michael T. Marty  
*The Pavilion*

11:15 - 11:30 am **Closing Remarks**, Michael T. Marty, Wendy Sandoval and Julian Whitelegge

## POSTERS

The Pavilion

Setup up all posters by 7:00 pm on Thursday

ODD-numbered posters present during the Friday Poster Session

EVEN-numbered posters present during the Saturday Poster Session

- 1 **Mapping an Allosteric Response in a TonB Dependent Transporter Using Hydrogen Exchange in *E. coli* Outer Membranes;** Michael C Baxa<sup>1</sup>; Adam M. Zmyslowski<sup>1, 2</sup>; Isabelle A Gagnon<sup>1</sup>; Tobin R Sosnick<sup>1</sup>; <sup>1</sup>*University of Chicago, Chicago, IL*; <sup>2</sup>*Evozyne LLC, Chicago, IL*
- 2 **Charge Deconvolution and Peak Assignment for Native MS on Metal-Ion-Containing Complexes;** Marshall W. Bern<sup>1</sup>; Ignat Shilov<sup>1</sup>; Christian Heckendorf<sup>1</sup>; Yun Zhu<sup>2</sup>; David Russell<sup>2</sup>; Arthur D Laganowsky<sup>2</sup>; <sup>1</sup>*Protein Metrics, Cupertino, CA*; <sup>2</sup>*Texas A&M University, College Station, TX*
- 3 **Structure Relaxation Approximation (SRA): A Framework for Elucidating Protein Structures with Ion Mobility Spectrometry;** Christian Bleiholder<sup>1</sup>; Mengqi Chai<sup>2</sup>; Fanny C Liu<sup>1</sup>; <sup>1</sup>*Florida State University, Tallahassee, FL*; <sup>2</sup>*Washington University, Saint Louis, MO*
- 4 **Automated Native Mass Spectrometry Screening of Membrane Proteins for Structural Biology Applications;** Natalia De Val<sup>1</sup>; Scott Kronewitter<sup>2</sup>; Paul Gazis<sup>3</sup>; Mick Greer<sup>4</sup>; Weijing Liu<sup>3</sup>; Rosa Viner<sup>3</sup>; Olufemi Adeyemi<sup>5</sup>; Albert Konijnenberg<sup>5</sup>; <sup>1</sup>*Thermo Fisher Scientific, Frederick, MD*; <sup>2</sup>*Thermo Fisher Scientific, Cambridge, Massachusetts*; <sup>3</sup>*Thermo Fisher Scientific, San Jose, California*; <sup>4</sup>*Thermo Fisher Scientific, Austin, TX*; <sup>5</sup>*Thermo Fisher Scientific, Eindhoven, Netherlands*
- 5 **Structure and Stability of Human MT2A and Transthyretin Mutants: Gas-Phase and Solution-Phase;** Liqi Fan<sup>1</sup>; David H Russell<sup>1</sup>; <sup>1</sup>*Texas A&M University, College Station, TX*
- 6 **Elucidating Protein-Ligand Interactions in Cell Lysates Using High Throughput Hydrogen Deuterium Exchange Mass Spectrometry with Integrated Protein Thermal Depletion;** Mulin Fang<sup>1</sup>; Oliver Wu<sup>1</sup>; Kellye A. Sutton<sup>1</sup>; Si Wu<sup>1</sup>; <sup>1</sup>*University of Oklahoma, Norman, OK*
- 7 **Understanding the Role of Estrogen Receptor- $\alpha$  Proteoforms and Their Complexoforms in the Membrane;** Fabio P. Gomes<sup>1</sup>; John R. Yates<sup>1</sup>; <sup>1</sup>*The Scripps Research Institute, La Jolla, CA*
- 8 **Analysis and Imaging of Aquaporin-0 Assemblies Directly from Eye Lens Tissue with nano-DESI;** Oliver J Hale<sup>1</sup>; Helen J Cooper<sup>1</sup>; <sup>1</sup>*University of Birmingham, Birmingham, United Kingdom*
- 9 **A Roadmap for SNARE Complex Assembly: Mass Spectrometry Uncovers Intermediates and "Off-Pathway" Complexes;** Julia Hesselbarth<sup>1</sup>; Carla Schmidt<sup>1</sup>; <sup>1</sup>*Johannes Gutenberg University Mainz, Department of Chemistry - Biochemistry, Mainz, Germany*
- 10 **Monitoring the Preservation of Native Structure Throughout Mass Spectrometry Experiments Using Orbitrap Collision Cross Section Measurements;** Virginia K James<sup>1</sup>; Jennifer S. Brodbelt<sup>1</sup>; <sup>1</sup>*University of Texas at Austin, Austin, TX*
- 11 **Mutant Cycle Analysis Reveals Membrane Protein-Lipid Interactions;** Hiruni S Jayasekera<sup>1</sup>; Megan Ewbank<sup>1</sup>; Michael T Marty<sup>1</sup>; <sup>1</sup>*The University of Arizona, Tucson, AZ*
- 12 **Development of Improved Methodologies for the Native Top-Down Mass Spectrometry of Transmembrane Proteins;** Brock R Juliano<sup>1</sup>; Brandon T Ruotolo<sup>1</sup>; <sup>1</sup>*University of Michigan, Ann Arbor, MI*
- 13 **Characterizing Membrane Proteins with Mass Photometry and Membrane Mimetics;** Gogulan Karunanithy<sup>1</sup>; Zornitsa Kofinova<sup>1</sup>; Caolan Browne<sup>2</sup>; Philip Kitchen<sup>2</sup>; Candice Mach<sup>3</sup>; Sofia Ferreira<sup>1</sup>; <sup>1</sup>*Refeyn, Oxford, United Kingdom*; <sup>2</sup>*Aston University, Birmingham, United Kingdom*; <sup>3</sup>*Refeyn, Boston, MA*



## POSTERS

The Pavilion

Setup up all posters by 7:00 pm on Thursday

ODD-numbered posters present during the Friday Poster Session

EVEN-numbered posters present during the Saturday Poster Session

- 14 **Deciphering Solution and Gas Phase Interactions Using Native Mass Spectrometry;** Til Erik Kundlacz<sup>1</sup>; Carla Schmidt<sup>1,2</sup>; <sup>1</sup>*Martin-Luther-Universität Halle-Wittenberg, Interdisciplinary Research Center HALOmem, Institute for Biochemistry and Biotechnology, Halle (Saale), Germany;* <sup>2</sup>*Johannes Gutenberg University Mainz, Department of Chemistry - Biochemistry, Biocenter II, Mainz, Germany*
- 15 **Electron Capture Charge Reduction Improves Resolution of Intact Nanodiscs in Native Mass Spectrometry;** Philip C. Lacey<sup>1,2</sup>; Marius M Kostelic<sup>1,2</sup>; Sophie R. Harvey<sup>1,2,3</sup>; Jared B. Shaw<sup>4</sup>; Vicki H. Wysocki<sup>1,2,3</sup>; <sup>1</sup>*The Department of Chemistry and Biochemistry, The Ohio State University, Columbus, OH;* <sup>2</sup>*Resource for Native MS Guided Structural Biology, The Ohio State University, Columbus, OH;* <sup>3</sup>*Campus Chemical Instrumentation Center, The Ohio State University, Columbus, OH;* <sup>4</sup>*e-MSion, Inc., Corvallis, OR*
- 16 **Digital-Waveform Technology and Electron Capture Dissociation on a Q-TOF-based Instrument Provides Sequence and Structure Information on Native Protein Ions;** Carter Lantz<sup>1</sup>; Robert Schrader<sup>1</sup>; David H Russell<sup>1</sup>; <sup>1</sup>*Texas A&M University, College Station, TX*
- 17 **A Critical Evaluation of Detergent Exchange Methodologies for Native Mass Spectrometry of Membrane Proteins;** Iliana Levesque<sup>1</sup>; Brock R. Juliano<sup>1</sup>; Kristine F. Parson<sup>1</sup>; Brandon T Ruotolo<sup>1</sup>; <sup>1</sup>*University of Michigan, Ann Arbor, MI*
- 18 **Folding Stability at the Anion-Binding Site Distinguishes Motor Prestin from Its Homologous Anion Transporters as Revealed by HDX-MS;** Xiaoxuan Lin<sup>1</sup>; Patrick Haller<sup>1</sup>; Navid Bavi<sup>1</sup>; Nabil Faruk<sup>2</sup>; Eduardo Perozo<sup>1,3</sup>; Tobin R Sosnick<sup>1,4,5</sup>; <sup>1</sup>*Department of Biochemistry and Molecular Biology, The University of Chicago, Chicago, IL;* <sup>2</sup>*Graduate Program in Biophysical Sciences, The University of Chicago, Chicago, IL;* <sup>3</sup>*Grossman Institute for Neuroscience, Quantitative Biology and Human Behavior, The University of Chicago, Chicago, IL;* <sup>4</sup>*Prizker School for Molecular Engineering, The University of Chicago, Chicago, IL;* <sup>5</sup>*Institute for Biophysical Dynamics, The University of Chicago, Chicago, IL*
- 19 **Proteome and Lipidome of Complex I Deficient Cells and Their Mitochondria;** Vanessa Linke<sup>1,2</sup>; Agnieszka Chacinska<sup>1,2</sup>; <sup>1</sup>*Laboratory of Mitochondrial Biogenesis, IMol Polish Academy of Sciences, Warsaw, Poland;* <sup>2</sup>*ReMedy International Research Agenda Unit, IMol Polish Academy of Sciences, Warsaw, Poland*
- 20 **Towards Integrating Tandem-Trapped Ion Mobility Spectrometry/Mass Spectrometry, Collision-Induced Dissociation, and Parallel-Accumulation Serial Fragmentation for Top-Down Analysis of Viral Glycoproteins;** Fanny C Liu<sup>1</sup>; Thais Pedrete<sup>1</sup>; Jusung Lee<sup>1</sup>; Christian Bleiholder<sup>1</sup>; <sup>1</sup>*Florida State University, Tallahassee, FL*
- 21 **Structural Basis for Lipid and Copper Regulation of the ABC Transporter MsbA;** Jixing Lyu<sup>1</sup>; Chang Liu<sup>2</sup>; Tianqi Zhang<sup>1</sup>; Samantha Schrecke<sup>1</sup>; Elam P. Nicklaus<sup>1</sup>; Charles Packianathan<sup>1</sup>; Georg K. A. Hochberg<sup>3,4</sup>; David Russell<sup>1</sup>; Minglei Zhao; <sup>1</sup>*Texas A&M University, College Station, TX;* <sup>2</sup>*University of Chicago, Chicago, IL;* <sup>3</sup>*Max Planck Institute for Terrestrial Microbiology and Department of Chemistry, University of Marburg, Marburg, Germany;* <sup>4</sup>*Center for Synthetic Microbiology (SYNMIKRO), Department of Chemistry, University of Marburg, Marburg, Germany*
- 22 **The (PERK)s of Understanding ER Stress: Characterizing a Transmembrane Sensor Linked with Diabetes Using MS-based Thermal Shift Assays;** Neil Mccracken<sup>1</sup>; Whitney Smith-Kinnaman<sup>1</sup>; Stephane Pelletier<sup>1</sup>; Ronald Wek<sup>1</sup>; Amber Mosley<sup>1</sup>; <sup>1</sup>*Indiana University, Indianapolis, IN*

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EVEN-numbered posters present during the Saturday Poster Session

- 23 **Affinity Selection Mass Spectrometry for Membrane Proteins;** Philip Nevin; *Astrazeneca, Molndal, Sweden*
- 25 **Assessing the Influence of Nanodisc Assembly Conditions on the Uptake of Bacterial and Mammalian Lipid Extracts;** Melanie Odenkirk<sup>1</sup>; Guozhi Zhang<sup>1</sup>; Michael T Marty<sup>1</sup>; <sup>1</sup>*University of Arizona, Tucson, AZ*
- 24 **Deciphering Hierarchical Organization of Proteins & Lipids Involved in Neuronal Exocytosis Using Lipid Bilayer Native Mass Spectrometry;** Aniruddha Panda<sup>1,2</sup>; Kallol Gupta<sup>1,2</sup>; <sup>1</sup>*Yale Nanobiology Institute, West Haven, CT*; <sup>2</sup>*Department of Cell Biology, New Haven, CT*
- 26 **Non-Covalent Complexes Involving Cytochrome P450 Captured Within Lipid Nanodiscs Reveal Insights into P450-Containing System Drug Interactions;** Kristine F Parson<sup>1</sup>; Brandon T Ruotolo<sup>1</sup>; <sup>1</sup>*University of Michigan, Ann Arbor, MI*
- 27 **Traffic-Generated Emissions Exposure and High-Fat Diet Consumption Alter Protein Expression Associated with Antioxidant Activity and Cell Death in C57Bl/6 Mice;** Leah J Schneider<sup>1,2</sup>; Bea Penaredondo<sup>1</sup>; Lanie Stanley<sup>1</sup>; Yuan Lin<sup>3</sup>; David Butcher<sup>3</sup>; Lissa Anderson<sup>3</sup>; Amie K Lund<sup>1</sup>; <sup>1</sup>*University of North Texas, Denton, TX*; <sup>2</sup>*CFD Research Corporation, Dayton, OH*; <sup>3</sup>*National High Magnetic Field Laboratory, Tallahassee, Florida*
- 28 **Modified Ion Source for Improved Collisional Activation of Protein Complexes;** Robert L. Schrader<sup>1</sup>; Thomas Walker<sup>1</sup>; David H Russell<sup>1</sup>; <sup>1</sup>*Texas A&M University, College Station, TX*
- 29 **Mass Spectrometric Analysis of Charged Microdroplet-Mediated Cardiolipin-Cytochrome C Complex;** Cheyenne P Sircher<sup>1</sup>; Ashton Taylor<sup>1</sup>; Theresa Evans-Nguyen<sup>1</sup>; <sup>1</sup>*University of South Florida, Tampa, FL*
- 30 **Development of *in vivo* Hydrogen-Deuterium Exchange/MS with applications to a TonB-Dependent Transporter and Other Proteins;** Xiaoxuan Lin<sup>1</sup>; Adam M. Zmyslowski<sup>1</sup>; Isabelle A Gagnon<sup>1</sup>; Robert Nakamoto<sup>2</sup>; Tobin R Sosnick<sup>1</sup>; <sup>1</sup>*University of Chicago, Chicago, IL*; <sup>2</sup>*University of Virginia, Charlottesville, VA*
- 31 **Revealing the Driving Force for the Function of a mega-Dalton Chaperone by Native Mass Spectrometry;** He M Sun<sup>1</sup>; Thomas Walker<sup>2</sup>; David H Russell<sup>2</sup>; Arthur D Laganowsky<sup>2</sup>; <sup>1</sup>*Texas A&M University, College Station, TX*; <sup>2</sup>*Texas A&M University, College Station, TX*
- 32 **Top-Down Proteomics Profiling of Membrane Proteins in *Arabidopsis thaliana* Leaf, Stem, and Root Tissues;** Stephanie Thibert<sup>1</sup>; Jesse Wilson<sup>1</sup>; Vimal Balasubramanian<sup>1</sup>; Deseree Reid<sup>1</sup>; John Melchior<sup>1,2</sup>; Kim Hixson<sup>1</sup>; Tanya Winkler<sup>1</sup>; Roza Wojcik<sup>1</sup>; Aivett Bilbao<sup>1</sup>; <sup>1</sup>*Pacific Northwest National Laboratory, Richland, WA*; <sup>2</sup>*University of Cincinnati, Cincinnati, OH*
- 33 **Evaluation of Mitochondrial Content in Plasma Extracellular Vesicles;** Ai Nguyen<sup>1</sup>; Illarion Turko<sup>1</sup>; <sup>1</sup>*Institute for Bioscience and Biotechnology Research, Rockville, MD*
- 34 **Membrane Protein Structure and Binding Interactions in Cells Using Covalent Labeling Mass Spectrometry;** Zachary J. Kirsch<sup>1</sup>; Xiao Pan<sup>1</sup>; Thomas Tran<sup>1</sup>; Lynmarie K. Thompson<sup>1</sup>; Eric M. Graban<sup>2</sup>; Robert C. Vaughan<sup>2</sup>; Richard Vachet<sup>1</sup>; <sup>1</sup>*University of Massachusetts Amherst, Amherst, MA*; <sup>2</sup>*QuarryBio, Tallahassee, FL*

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EVEN-numbered posters present during the Saturday Poster Session

- 35 **Capillary Zone Electrophoresis Mass Spectrometry for Characterization of Membrane Proteins;** Qianjie Wang<sup>1,2,3</sup>; Peter Lundquist<sup>1,2</sup>; Liangliang Sun<sup>3</sup>; <sup>1</sup>*Department of Biochemistry and Molecular Biology, Michigan State University, East Lansing, MI;* <sup>2</sup>*Plant Resilience Institute, Michigan State University, East Lansing, MI;* <sup>3</sup>*Department of Chemistry, Michigan State University, East Lansing, MI*
- 36 **Epitope mapping of Anthrax Protective Antigen (PA) in Human Serum Samples Using High Throughput HDX-MS;** Si Wu; *University of Oklahoma, Norman, OK*
- 37 **Lipidomic Lipid Exchange Mass-Spectrometry (LX-MS) to Survey the Membrane Proteins Lipid Environment;** Guozhi Zhang<sup>1</sup>; Melanie T Odenkirk<sup>1</sup>; Michael T Marty<sup>1</sup>; <sup>1</sup>*University of Arizona, Tucson, AZ*
- 38 **Novel Cleavable Surfactants for Top-down Proteomics of Membrane Proteins;** Kyle Brown<sup>1</sup>; Morgan Gugger<sup>1</sup>; Bifan Chen<sup>1</sup>; Tania Guardado<sup>1</sup>; Ziqing Lin<sup>1</sup>; David Moreno<sup>1</sup>; Song Jin<sup>1</sup>; Yanlong Zhu<sup>1</sup>; Ying Ge<sup>1</sup>; <sup>1</sup>*University of Wisconsin-Madison, Madison, WI*
- 39 **Cupric ions Selectively Modulate TRAAK-Phosphatidylserine Interactions;** Yun Zhu<sup>1</sup>; Samantha Schrecke<sup>1</sup>; Shuli Tang<sup>1</sup>; Melanie T Odenkirk<sup>2</sup>; Thomas Walker<sup>1</sup>; Lauren Stover<sup>1</sup>; Jixing Lyu<sup>1</sup>; Tianqi Zhang<sup>1</sup>; David H Russell<sup>1</sup>; Erin S; <sup>1</sup>*Texas A&M University, College Station, TX;* <sup>2</sup>*The University of Arizona, Tucson, AZ;* <sup>3</sup>*The University of North Carolina at Chapel Hill, Chapel Hill, NC*
- 40 **Role of Membrane Phospholipids in Flavor Development and Off-Odor Formation;** Joshua Zyzak<sup>1</sup>; Li Li Zyzak<sup>1</sup>; <sup>1</sup>*Eastern Kentucky University, Richmond, KY*



## UPCOMING EVENTS

June 4 – 8, 2023

### **71st ASMS Conference on Mass Spectrometry and Allied Topics**

George R. Brown Convention Center (GRB) | Houston, Texas

**Abstract Deadline is February 3, 2023**

More information at <https://www.asms.org/conferences/annual-conference>

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October 13 - 17, 2023

### **38<sup>th</sup> Asilomar Conference on Mass Spectrometry Computational Mass Spectrometry**

Asilomar Conference Center | Pacific Grove, CA

Organizers

Nuno Bandera, *UC, San Diego*, David Fenyo, *New York University* and Olga Vitek, *NEU*

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### **2023 Fall Workshop**

#### **Lipidomics – The Essentials to the Cutting Edge**

Date and Location TBD

Organizers

Timothy Garrett, *University of Florida* and Jace Jones, *University of Maryland*