THURSDAY JANUARY 19, 2017

4:00 - 7:00 pm  Setup Session I Posters, Water's Edge

6:00-7:00 pm  Registration

7:00 - 8:00 pm  Opening Session
Session Chair: Lingjun Li, University of Wisconsin-Madison
Salons ABCD

7:00-7:05 pm  Opening Remarks, Jonathan Sweedler, University of Illinois, Urbana

7:05-8:00 pm  PLENARY LECTURE: Donald Hunt, University of Virginia
Immunotherapy of Cancer and the Role of Mass Spectrometry: an Overview and New Results

8:00-10:00 pm  Reception
Water's Edge

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

Matthew Baird
Wichita State University

Harris Bell-Temin
University of Pittsburgh

Amanda Buchberger
University of Wisconsin-Madison

Robert Burleigh
University of Oxford

Kaylee Castle
Florida A&M University

Sam Choi
George Washington University

Kellen DeLaney
University of Wisconsin-Madison

Andrea Figueroa-Montiel
CICESE

Elva Fridjonsdottir
Uppsala University

Ali Hadi
University of Denver

Oleg Karaduta
University of Arkansas

Chelsea Kendall
Florida A&M University

Christine Kirkpatrick
University of North Carolina

Zdenek Kukacka
University of Konstanz

Christopher Lietz
UC, San Diego

Yang Liu
University of Wisconsin

George Sarkis
University of Florida

Denise Medeiros Selegato
São Paulo State University (UNESP)

Kelly Wormwood
Clarkson University

Qing Yu
University of Wisconsin-Madison

Yeni Yung
University of Illinois
Speakers – please arrive ½ hour before your session begins to load your presentation

FRIDAY JANUARY 20, 2017

7:00 - 8:30 am Setup Session I Posters & Continental Breakfast, Water’s Edge

8:30-11:00 am Unique Challenges for Measurements of Endogenous Peptides: Sequence Analysis, Peptide Stability and Discovery
Session Chair: Lloyd Fricker, Albert Einstein School of Medicine
Salons ABCD

8:30-9:00 am Robert Kennedy, University of Michigan
Observation of Peptide Dynamics in vivo Evoked by Behavior and Optogenetic Stimulation using LC-MS

9:00-9:30 am Kurt Boonene, K.U. Leuven
Peptidomics in Neuroendocrine Research

9:30-10:00 am Lingjun Li, University of Wisconsin-Madison
Multi-Faceted Approach for Functional Discovery of Neuropeptides

10:00-10:15 am Coffee Break, Outside Salons ABCD

10:15-11:30 am Informatics for Peptidome Discovery
Session Chair: Stephen Barranes, University of Alabama
Salons ABCD

10:15-10:45 am Nuno Banderia, UC San Diego
Spectral Network for de novo Sequencing

10:45-11:15 am Andy Christie, University of Hawaii
In Silico Prediction of Crustacean Peptidomes

11:15-11:30 am Marshall Bern, Protein Metrics
Bacterial Peptidoglycan Analysis Using a Proteomics Search Engine

11:30-11:45 am Group Photo

11:45- 1:00 pm Group Lunch (provided by ASMS)
Blue Heron Deck
Speakers – please arrive ½ hour before your session begins to load your presentation

FRIDAY JANUARY 20, 2017

<table>
<thead>
<tr>
<th>1:00-3:00 pm</th>
<th>Peptide Processing and Post-Translational Modifications</th>
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<tbody>
<tr>
<td>1:00-1:30 pm</td>
<td>Vivian Hook, UC San Diego</td>
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<td>1:30-2:00 pm</td>
<td>James Checco, University of Illinois</td>
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<td>2:00-2:30 pm</td>
<td>Lloyd Fricker, Albert Einstein School Medicine</td>
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<td>2:30-3:00 pm</td>
<td>Beatrix Ueberheide, NYU</td>
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<td>3:00-7:00 pm</td>
<td>Free Time</td>
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<tr>
<th>7:00-8:00 pm</th>
<th>KEYNOTE LECTURE and Poster Presentations</th>
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<tr>
<td>7:00-7:45 pm</td>
<td>KEYNOTE LECTURE: Dominic Desiderio, University of Tennessee</td>
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<tr>
<td>7:45-8:10 pm</td>
<td>6 Highlighted Poster Presentations (3 min each plus 1 min transition)</td>
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<td></td>
<td>Bruce Southey, University of Illinois, Urbana</td>
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<td></td>
<td>Matt Baird, Wichita State University</td>
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<td>Amanda Buchberger, University of Wisconsin-Madison</td>
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<td>Christopher Lietz, UCSD</td>
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<td>Qing Yu, University of Wisconsin-Madison</td>
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<td>Sven Van Bael, KU Leuven</td>
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<tr>
<td>8:10-10:10 pm</td>
<td>Poster Session I &amp; Reception</td>
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<td>Poster Titles are listed on page 7</td>
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</table>

Water's Edge
7:00 - 8:30 am  Setup Session II Posters & Continental Breakfast, *Water's Edge*

**8:30-10:15 am**  
**Peptide Imaging Using Mass Spectrometry**  
Session Chair: Stanislav Rubakhin, *University of Illinois, Urbana*  

8:30-9:00 am  **Per Andréén, Uppsala University**  
Sample Handling, Quantification and Imaging of Brain Signalling Molecules

9:00-9:30 am  **Peter Verhaert, Delft University of Technology**  
Tissue Imaging of Neuropeptides using MALDI Orbitrap MS

9:30-10:00 am  **Ron Heeren, Maastricht University**  
High Resolution MS Imaging

10:00-10:15 am  **Coffee Break, Outside Salons ABCD**

**10:15 -12:00 pm**  
**Emerging Tools and Applications**  
Session Chair: Andre Venter, *Western Michigan University*  

10:15-10:45 am  **Carlito Lebrilla, UC-Davis**  
Peptidomic and Glycopeptidomic Analysis of Bioactive Compounds in Human Milk

10:45-11:15 am  **Jay Forsythe, College of Charleston**  
Proto-Peptidomics: The First Peptides in Darwin's Warm Little Pond

11:15-11:45 am  **David Clemmer, Indiana University**  
Developing IMS-MS Techniques for following Structural Transitions in Peptides in Solution and in the Gas Phase

11:45– 12:00 pm  **Ryan Julian, UC-Riverside**  
Identifying Isomerization and Epimerization in Peptides from Crystallins with Radical Directed Dissociation

12:00-1:15 pm  **Lunch, on your own**
### SATURDAY JANUARY 21, 2017

**1:15-3:15 pm**
**Peptide Therapeutics**
Session Chair: Fanyu Meng, Merck Co.

<table>
<thead>
<tr>
<th>Time</th>
<th>Speaker</th>
<th>Affiliation</th>
<th>Title</th>
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<tbody>
<tr>
<td>1:45-2:15 pm</td>
<td><strong>Albert Lebedev</strong>, Moscow State University</td>
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<td>Discovery of New Antibiotics from Frogs -- <em>de novo</em> Sequencing of Long Natural Non-Tryptic Peptides</td>
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<td>2:15-2:45 pm</td>
<td><strong>Michal Bassani-Sternberg</strong>, Ludwig Cancer Research Center</td>
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<td>Direct Identification of Neoeontigens using In-Depth Immunopeptidomics of Melanoma Tissues for the Development of Anti-Tumor Immunotherapy</td>
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<td>2:45-3:00 pm</td>
<td><strong>Leslie Hicks</strong>, UNC</td>
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<td>The PepSAVI-MS Pipeline for Natural Product Bioactive Peptide Discovery</td>
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<td>3:00-3:15 pm</td>
<td><strong>Asoka Ranasinghe</strong>, BMS</td>
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<td>Automated Structural Characterization of Therapeutic Cyclic Peptides and Their Metabolites in Drug Discovery</td>
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<td>3:15-7:00 pm</td>
<td>Free Time</td>
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### 7:00-8:00 pm
**KEYNOTE LECTURE and Poster Presentations**
Session Chair: Ron Heeren, Maastricht University

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<th>Time</th>
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<tr>
<td>7:00-7:45 pm</td>
<td><strong>KEYNOTE LECTURE: Richard Caprioli</strong>, Vanderbilt University</td>
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<td>Protein and Peptide Imaging MS</td>
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<td>7:45-8:10 pm</td>
<td><strong>6 Highlighted Poster Presentations (3 min each plus 1 min transition)</strong></td>
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<td><strong>Kellen DeLaney</strong>, University of Wisconsin-Madison</td>
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<td>Mass Spectrometric Quantitation and Imaging of Neuropeptide Expression Levels in Crustacean Tissue and Circulating Fluid Resulting from Food Intake</td>
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<td><strong>Elena Romanova</strong>, University of Illinois, Urbana</td>
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<td>Strategies for Peptidome Characterization in Non-Model Species</td>
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<td><strong>Elva Fridjonsdottir</strong>, Uppsala University</td>
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<td>Structure-Specific Peptide Transmission and Processing in a Model of Parkinson’s Disease and L-DOPA-Induced Dyskinesia</td>
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<td><strong>Andre Venter</strong>, Western Michigan University</td>
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<td>Improving DESI-MS Analysis of Proteins and Peptides</td>
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<td><strong>Barbara Larsen</strong>, DuPont Co.</td>
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<td>Study of Protein Oxidation in Freeze-Dried Cells during Long-Term Storage</td>
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<td><strong>Fengfei Ma</strong>, University of Wisconsin-Madison</td>
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<td>Alteration of Brain Region-Resolved Peptidome in Response to Cocaine Intoxication and Withdrawal</td>
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### 8:10-10:10 pm
**Poster Session II & Reception**
**Poster Titles are listed on page 10**
*Water's Edge*
Speakers – please arrive ½ hour before your session begins to load your presentation

**SUNDAY JANUARY 22, 2017**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>7:00 - 8:30 am</td>
<td>Remove Poster by 10:15 am&lt;br&gt;Continental Breakfast, <em>Water's Edge</em></td>
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<td>8:30-9:30 am</td>
<td><strong>Peptidomic Approaches to Biomarker Discovery and New MS</strong>&lt;br&gt;<strong>Strategies for Peptide Analysis</strong>&lt;br&gt;Session Chair: Carlito Lebrilla, <em>UC Davis</em></td>
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<tr>
<td>8:30-9:00 am</td>
<td><strong>Johan Gobom, Göteborg University</strong>&lt;br&gt;Peptide Biomarkers in Neurodegenerative Diseases.</td>
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<td>9:00-9:15 am</td>
<td><strong>Richard Drake, Medical University of South Carolina</strong>&lt;br&gt;Prostate Cancer-Associated Peptide and Glycan Co-Localizations in FFPE Tissues by MALDI-FTICR Imaging Mass Spectrometry</td>
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<td>9:15-9:30 am</td>
<td><strong>Francisco Fernandez-Lima, Florida International University</strong>&lt;br&gt;Strategies for Discovery and Targeted Analysis Using nESI-TIMS-TOF MS and nESI-TIMS-FT-ICR MS</td>
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<td>9:30-11:30 am</td>
<td><strong>Single-cell Neuropeptidomics</strong>&lt;br&gt;Session Chair: Peter Verhaert, <em>Delft University</em></td>
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<td>9:30-10:00 am</td>
<td><strong>Susanne Neupert, University of Cologne</strong>&lt;br&gt;Single Cell Peptidomics of Insects</td>
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<td>10:00-10:15 am</td>
<td><strong>Coffee Break, Outside Salons ABCD</strong></td>
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<td>10:15-10:45 am</td>
<td><strong>Antony Stretton, University of Wisconsin-Madison</strong>&lt;br&gt;Mass Spectral Mapping of Neuropeptides in Worms</td>
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<td>10:45-11:15 am</td>
<td><strong>Peter Nemes, George Washington University</strong>&lt;br&gt;Trace-level Metabolite-Peptide-Protein Detection in Single Cells using High-Resolution Mass Spectrometry</td>
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<td>11:15-12:15 pm</td>
<td><strong>KEYNOTE LECTURE and Closing Remarks</strong>&lt;br&gt;Session Chair: Per Andren, <em>Uppsala University</em></td>
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<tr>
<td>11:15-12:00 am</td>
<td><strong>KEYNOTE LECTURE: Jonathan V. Sweedler, University of Illinois, Urbana</strong>&lt;br&gt;Measuring Signaling Peptides One Cell at a Time</td>
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<tr>
<td>12:00-12:15 am</td>
<td><strong>Closing Remarks, Lingjun Li, University of Wisconsin-Madison</strong></td>
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Isomeric Characterization of D-Amino Acid Containing Peptides and N-Linked Glycopeptides by Differential Ion Mobility Spectrometry; Matthew Baird¹; Graham Delafield²; Zhe Wang³; Si Wu³; Alexandre Shvartsburg⁴; ¹, Wichita, KS; ²Univeristy of Oklahoma, Norman, OK; ³Wichita State Univeristy, Wichita, KS

Identification of Novel Protein-Peptide Interactions via Differential Mass Spectrometry; Harris Bell-Temin¹; Steven Mullett¹; Andrey Bondarenko²; Nathan A. Yates¹; ¹Univ of Pitt School of Health Sciences, Pittsburgh, PA; ²Infoclinika, Bellevue, WA

Bacterial Peptidoglycan Analysis Using a Proteomics Search Engine; Marshall W. Bern¹; Kelsi Sandoz²; Richard Beniston³; Stephane Mesnage³; ¹Protein Metrics, San Carlos, CA; ²NIH/NIAID Rocky Mountain Laboratories, Hamilton, MT; ³University of Sheffield, Sheffield, UK

Qualitative and Quantitative Analysis of Crustacean Neuropeptides after Hypoxia Exposure; Amanda Buchberger¹; Kellen DeLaney¹; Yang Liu¹; Kylie Helfenbein¹; Lingjun Li¹; ¹University of Wisconsin-Madison, Madison, Wisconsin

Metabolomics Approach to Identify Novel Compounds in Response to Water Stress in Grape; Kaylee Castle¹; Ramesh Katam²; ¹, Tallahassee, FL; ²Florida Agricultural and Mechanical University, Tallahassee, FL

Ultrahsensitive CE-nanoESI-MS for Small Populations of Neurons in the Mouse Cortex; Sam Choi¹; Eric Corcoran¹; Marta Zamarbide¹; Chiara M Manzini¹; Peter Nemes¹; ¹George Washington University, Washington, DC

Exploring Possible Biomarkers for Smith-Lemli-Opitz Syndrome (SLOS) using a Mass Spectrometry-based Proteomic Investigation; Emmalyn Dupree¹; Kelly Wormwood¹; Megan Borland¹; Jeanne Ryan²; Laci Charette²; Alisa Woods¹; ²; Costel Darie¹; ¹Biochemistry and Proteomics Group, Department of Chemistry and Biomolecular Science, Clarkson University, Potsdam, NY; ²Center for Neurobehavioral Health, SUNY Plattsburgh, NY

Strategies for Discovery and Targeted Analysis Using nESI-TIMS-TOF MS and nESI-TIMS-FT-ICR MS; Francisco Fernandez-Lima, Florida International University

De novo Sequencing of a Conotoxin from Conus brunneus with Insulin Release Activity; Andrea Figueroa-Montiel¹; Johanna Bernáldez¹; Samanta Jiménez¹; Leslie Otero¹; Pavel Lugo¹; Carolina Álvarez-Delgado¹; Lourival Domingos Possani¹; Fernando Zamudio²; Luis Javier González³; Alexei Fedoróvich Licea-Navarro¹; ¹CICESE, Ensenada, Baja California; ²Instituto de Biotecnología (UNAM), Cuernavaca, Mexico; ³Center for Genetic Engineering and Biotechnology, La Habana, Cuba

Novel Conopeptide rs15a from Conus Regularis with Eight Cys, 3? and Two Hydroxyprolines was Identified in the Venom Gland Transcriptome; Luis Javier González²; Andrea Figueroa-Montiel¹; Samanta Jiménez²; Jesús A. Beltrán²; Carlos A. Brizuela²; Johanna Bernáldez²; Alexei Licea-Navarro¹; ¹CICESE, Ensenada-Ensenada-Tijuana, México

Deciphering Disease-associated Proteolytic Networks with 18O-Peptide Coding; Markus Hardt; Forsyth Institute, Cambridge, MA
FRIDAY, JANUARY 20
8:10 - 10:10 pm
POSTER SESSION I
Water’s Edge
Poster Session I: Setup up by 7:00 pm on Thursday
Remove at 10:00 pm on Friday

12 Novel Conotoxin of the I2-Superfamily Isolated from Conasprella Ximenesii shows Antimicrobial Activity vs M. tuberculosis; Samanta Jimenez1; Andrea Figueroa-Montiel1; Johanna Bernádez1; Luis Javier González2; Jesús A. Beltrán1; Carlos A. Brizuela1; Alexei Licea-Navarro1; 1CICESE, Carretera Ensenada-Tijuana 3918, México; 2Laboratorio de Espectrometría de Masas, Departamento de Proteómica, La Habana, Cuba., La Habana, Cuba

13 Metaproteomics Data Processing Pipe-Line: Application to the Study of Function of Gut Microbiome in Chronic Kidney Disease; Oleg Karaduta1; Boris Zybaylov1; 1UAMS, Little Rock, AR

14 Analysis of Xylem Tissue and Sap Proteome of Grape Reveal Possible Tolerance Mechanism to Pierce Disease; Chelsea Kendall1; Ramesh Katm2; 1Florida A&M University, Tallahassee, FL; 2Florida AM University, Tallahassee, FL

15 Rapid Solid Phase Extraction of Peptides from Biofluids Utilizing Automated Liquid Handler with Dispersive Pipette Extraction; Lim Lee1; Todd Mullis1; 1IMCS, Columbia, South Carolina

16 Lithium Modulation of Regulated Neuropeptide Secretion in Adrenal Medullary Chromaffin Cells of the Sympathetic Nervous System; Christopher B. Lietz1; Thomas Toneff1; David J. Gonzalez2; Vivian Hook1; 1University of California, San Diego, La Jolla, CA

17 Multifaceted Mass Spectrometric Investigation of Neuropeptide Changes in Blue Crab, Callinectes sapidus, in Response to Ocean Acidification; Yang Liu1; Amanda Buchberger1; Lingjun Li1; 1University of Wisconsin-Madison, Madison, Wisconsin

18 Development of an Integrated Proteomic and Metabolomic Imaging Technique using MALDI-MS; Ayaka Maeda-Murayama1; Ayumi Yamaguchi1; Yoshinori Fujimura1; Hiroyuki Wariishi1; Daisuke Miura1; 1Kyushu University, Fukuoka, Japan

19 Novel Proteolytic Peptides Derived From Neurogranin as Potential Biomarkers for Traumatic Brain Injury; George Sarkis1; Gainesville, FL

20 A Bioinformatics Pipeline for Genome Sequence-based Characterization of Neuropeptidomes; Bruce R. Southey1; Elena V. Romanova1; Jonathan V. Sweedler1; Sandra L. Rodriguez-Zas1; 1University of Illinois, Urbana, IL

21 Characterization of Neuropeptide-amidating Enzymes in Caenorhabditis elegans by Mass Spectrometry; Sven Van Bael1; Jan Watteyne1; Kurt Boonen1; Wouter De Haes1; Liliane Schoofs1; Steven J. Husson1; Liesbet Temmerman1; 1KU Leuven, Leuven, Belgium; 2University of Antwerp, Antwerp, Belgium

22 Mass Spectrometry Based Structural Characterization of Spider PeptidePh?1?; Kelly Wormwood1; Armand Ngounou Weti1; Marcus Vinicius Gomez1; Costel Darie1; 1Clarkson University, Potsdam, NY; 2Institute of Education and Research Santa Casa Belo Horizonte-Laboratory of Toxins, Belo Horizonte, Brazil
23 Development of a Fast Enzymatic Digestion Protocol for Characterization of Modified Human Insulin; Rong-Sheng Yang1; Fanyu Meng1; Weijuan Tang1; Huaming Sheng1; Li-Kang Zhang1; Bing Mao1; 1Merck Research Laboratories, Rahway, NJ

24 Discovery and Identification of O-Glycosylated Signaling Peptides from Mouse Pancreatic Islets; Qing Yu1; Alejandra Canales1; Matthew S Glover1; Rahul Das1; Yang Liu1; Mark P Keller1; Alan D Attie1; Lingjun Li1; 1University of Wisconsin-Madison, Madison, Wisconsin
A Novel Triple Quadrupole Mass Spectrometry Method for the Quantitative Measurement of Free 4-HNE and 4-HHE In Cells and Tissues; Hadi Ali¹; Kristofer Fritz¹; ¹University of Colorado Denver, Aurora, CO

02 The Missing Link – Bioactive Micropeptides as By-products of Cellular Processes – Discovery by a Bioinformatics Approach; Stephen Barnes¹; J Edwin Blalock¹; Chiquito Crasto²; ¹University of Alabama at Birmingham, Birmingham, AL; ²Center for Biotechnology and Genomics, Texas Tech University, Lubbock, TX

03 Microscope Ion Imaging of Complex Surfaces and Biological Samples Using the Pixel Imaging Mass Spectrometry Camera; Robert Burleigh¹; Mark Brouard¹; Michael Burt¹; Ang Guo¹; Steve Thompson²; ¹Physical & Theoretical Chemistry department, University of Oxford, Oxford, UK; ²SAI Manchester, Manchester, UK

04 Mass Spectrometric Quantitation and Imaging of Neuropeptide Expression Levels in Crustacean Tissue and Circulating Fluid Resulting from Food Intake; Kellen DeLaney¹; Lingjun Li¹; ¹University of Wisconsin-Madison, Madison, WI

05 Prostate Cancer-associated Peptide and Glycan Co-localizations in FFPE Tissues by MALDI-FTICR Imaging Mass Spectrometry; Richard R Drake¹; Alyson Black¹; Kim Norris-Canada¹; Peggi M Angel¹; ¹Medical University of South Carolina, Charleston, SC

06 Structure-specific Peptide Transmission and Processing in a Model of Parkinson's Disease and L-DOPA-induced dyskinesia; Elva Fridjonsdottir¹; Anna Nilsson¹; Henrik Wadensten¹; Alan Crossman²; Per Svenningsson²; Erwan Bezard³; Per Andrén³; ¹Uppsala University, Uppsala, Sweden; ²Motac Neuroscience, Manchester, UK; ³Karolinska Institutet, Stockholm, Sweden; ³Université de Bordeaux, Bordeaux, France

07 The PepSAVI-MS pipeline for Natural Product Bioactive Peptide Discovery; Leslie M. Hicks¹; Christine L. Kirkpatrick¹; David Pritchard¹; Nicole C. Parsley¹; Yufeng Liu¹; David W. Hoskin²; Lindsey N. Shaw³; ¹UNC - Chapel Hill, Chapel Hill, NC; ²Dalhousie University, Halifax, Canada; ³University of South Florida, Tampa, FL

08 Automated Differential Analysis for Peptide Components in Biological Matrixes; Serhiiv Hnatyshyn¹; Asoka Ranasinghe³; Andrew Worth³; Adrienne Tymiak¹; ¹BMS Co., Princeton, NJ; ³Dalhousie University, Halifax, Canada

09 Zebrafish Peptidomics: Comparison of Peptide Extraction Methods; Kristen A. Van Camp¹; Geert Baggerman¹; Ronny Blust¹; Steven J. Husson¹; ¹Systemic Physiological & Ecotoxicological Research (SPHERE), University of Antwerp, Antwerp, Belgium; ²Flemish Institute for Technological Research (VITO), Mol, Belgium

10 Identifying Isomerization and Epimerization in Peptides from Crystallins with Radical Directed Dissociation; Ryan R. Julian¹; Yana Lyon¹; ¹University of California, Riverside, Riverside, CA

11 Screening and Synthesis of MALDI Matrix towards Phosphopetidomics; Chihiro Kawano¹; Takanori Ishii¹; Yoshinori Fujimura¹; Mitsuru Shindo¹; Hiroyuki Wariishi¹; Daisuke Miura¹; ¹Kyushu University, Fukuoka, Japan
**Optimization of LC-MS and MALDI-MSI Techniques for the Identification and Characterization of Peptides in Medicago truncatula**; Caitlin Keller1; Erin Gemperline2; Alyssa Eisold1; Junko Maeda1; Dhileepkumar Jayaraman1; Michael R. Sussman1; Jean-Michel Ané1; Lingjun Li1; 1University of Wisconsin-Madison, Madison, WI; 2Dow AgroSciences, Indianapolis, IN

**Natural Product Bioactive Peptide Discovery using the PepSAVI-MS Pipeline**; Christine L. Kirkpatrick1; David Pritchard1; Nicole C. Parsley1; Leslie M. Hicks1; 1University of North Carolina at Chapel Hill, Chapel Hill, NC

**Peptide Epitope Characterization of Human ?-Galactosidase by online SPR - Affinity Mass Spectrometry**; Zdenek Kukacka1, 2; Marius Iurascu1, 2; Mary Murphy3; Jeff Bornheim3; Lorenzo Altamore4; Anna Maria Papini3, 5; Michael Przybylski3, 2; 1Steinbeis Centre Biopolymer Analysis and Biomedical Mass Spectrometry, Rüsselsheim am Main, Germany; 2University of Konstanz, Konstanz, Germany; 3Reichert-Ametek Technologies, Buffalo; 4University of Florence, Florence, Italy; 5University of Cergy-Pontoise, Cergy-Pontoise, France

**Study of Protein Oxidation in Freeze-Dried Cells During Long-Term Storage**; Barbara S. Larsen1; Ron Agee2; Michael Dauner1; Kurt Fenster1; Chris Holland3; Cathy Kalbach1; Sunny Li1; Buffy Stahl2; 1The DuPont Company, Wilmington, DE; 2DuPont, Madison, Wi; 3DuPont, Wilmington, DE

**Alteration of Brain Region-resolved Peptidome in Response to Cocaine Intoxication and Withdrawal**; Fengfei Ma1; Pingli wei1; Jingxin Wang1; Vaishali Bakshi1; Brian Baldo1; Lingjun Li1; 1Univ of Wisconsin-Madison, Madison, WI

**Hydroxyl Radical Footprinting with PLIMB (Plasma-Induced Modification of Biomolecules): A Novel Tool for Structural Mass Spectrometry**; Benjamin B. Minkoff1; Joshua Blatz2; Daniel Benjamin1; Faraz Choudhury1; J. Leon Shohet1; Michael R. Sussman1; 1University of Wisconsin-Madison, Madison, WI

**Automated Structural Characterization of Therapeutic Cyclic Peptides and Their Metabolites in Drug Discovery**; Asoka Ranasinghe1; Serhiy Hnatyshyn1; Eugene Cicimaro1; Silvi Chacko1; Celia D’Arienzo Celia D’Arienzo1; Timothy Olah1; Adrienne Tymiak1; Marshall M. Siegel1; Gary Walker1; 1Bristol-Myers Squibb Company, Princeton, NJ; 2MS Mass Spec Consultants, Fair Lawn, NJ

**Investigation of Cellular Chemical Heterogeneity of the Brain Using Mass Spectrometry**; Stanislav Rubakhin1; Elizabeth K. Neumann1; Carloine K. Hu1, 3; Karen P. Maruska2; Russell D. Fernald2; Justn S. Rhodes1; Neil L. Kelleher3; Jonathan V. Sweedler1; 1University of Illinois at Urbana-Champaign, Urbana-Champaign, IL; 2Stanford University, Stanford, CA, USA; 3Harvard University, Cambridge, MA, USA; 4Northwestern University, Evanston, IL, USA
Improving DESI-MS Analysis of Proteins and Peptides; Andre Venter¹; Elahe Honarvar¹; Wisam Alisawi¹; Vageesha Gunawardana¹; ¹Western Michigan University, Kalamazoo, MI

Pseudomonas aeruginosa Proteomics for Modeling Multispecies Biofilms; Yeni P Yung¹; S Lee McGill²; Stephanie M Cologna¹; Hui Chen¹; Ross P Carlson²; Luke Hanley¹; ¹University of Illinois at Chicago, Chicago, IL; ²Montana State University, Bozeman, MT
Directory of Participants

Hadi Ali
University of Colorado
12850 Montview Blvd
Aurora, CO
hadi.ali@ucdenver.edu

Jose Antonio Allue
Araclon Biotech S.L.
Via Hispanidad 21
Zaragoza, Spain
jallue@araclon.com

Per E. Andren
Uppsala University
Dept. of Pharm. Biosci.,
Biomolecular Imaging and
Proteomics
BMC, Box 591
Uppsala, Sweden
per.andren@farmbio.uu.se

Matthew Baird
Wichita State University
1845 Fairmount
Wichita, KS
mbaird1991@gmail.com

Nuno Bandeira
UCSD
9500 Gilman Drive
CSE
La Jolla, CA
bandeira@ucsd.edu

Stephen Barnes
University of Alabama
452 McCallum Bldg.
1918 University Blvd.
Birmingham, AL
sbarnes@uab.edu

Michal Bassani-Sternberg
Max-Planck Institute
Am Klopferspitz 18
Martinsried, Germany
bassani@biochem.mpg.de

Harris Bell-Temin
University of Pittsburgh
30501 5th Ave
BST3 9103
Pittsburgh, PA
hbb16@pitt.edu

Marshall W. Bern
Protein Metrics
3333 Coyote Hill Rd.
Palo Alto, CA
bern@proteinmetrics.com

Kurt Boonen
K.U. Leuven
Animal Physiology and
Neurobiology Section
Naamsestraat 59 - Box 2465
Leuven, Netherlands
kurt.boonen@kuleuven.be

Amanda Buchberger
University of Wisconsin
777 Highland Ave.
Madison, WI
abuchberger@wisc.edu

Robert Burleigh
University of Oxford
Central Research Laboratory
Oxford, United Kingdom
robert.burleigh@jesus.ox.ac.uk

Mark Cancilla
Merck & Co., Inc
770 Summeytown Pike
PO Box 4, WP75A-203
West Point, PA
mark_cancilla@merck.com

Richard M. Caprioli
Vanderbilt University
Mass Spec Research Center
9160 MRB III, 465 21st Ave. S.
Nashville, TN
r.caprioli@vanderbilt.edu

Kaylee Castle
FAMU
17500 Mahan Dr
Tallahassee, FL
kaylee1.castle@famu.edu

James Checco
University of Illinois
405 N Mathews Ave
2614 Beckman Institute
Urbana, IL
checco@illinois.edu

Sam Choi
George Washington University
800 22nd St NW
Suite 4000
Washington, DC
choib19@gwu.edu

Andy Christie
University of Hawaii
1993 East-West Rd., PBRC 103B
Honolulu, HI
christie@pbrc.hawaii.edu

David E. Clemmer
Indiana University
Chemistry Department
800 E Kirkwood Ave
Bloomington, IN
clemmer@indiana.edu

Ulrik De Lichtenberg
Novo Nordisk A/S
Novo Nordisk Park
G8.2.22
Maaloev, Denmark
ulic@novonordisk.com

Kellen Delaney
University of Wisconsin
2308 University Ave Apt 50
Madison, WI
kdelaney3@wisc.edu

Dominic M. Desiderio
University of Tennessee
847 Monroe Avenue, Room 117
Memphis, TN
ddesiderio@uthsc.edu

Richard R Drake
University of South Carolina
Department of Cell and Molecular
Pharmacology
173 Ashley Avenue
Charleston, SC
draker@musc.edu

Emmalyn Dupree
Clarkson University
Dept of Chem & Biomol Science
8 Clarkson Ave
Potsdam, NY
dupreeej@clarkson.edu

Francisco Fernandez Lima
Florida International University
Dept Chemistry AHC4-233
11200 SW 8th St
Miami, FL
fernandfl@fiu.edu

Andrea Figueroa-Montiel
CICESE
Carretera Ensenada-Tijuana No.
3916
Zona Playitas
Ensenada, Mexico
figuerm@cicese.edu.mx

Jermaine Ford
US EPA
109 TW Alexander Dr
Durham, NC
ford.jermaine@epa.gov
Directory of Participants

Jay Forsythe  
College of Charleston  
Chemistry and Biochemistry  
66 George Street  
Charleston, SC  
forsythejg@cofc.edu

Lloyd D. Fricker  
Albert Einstein School Medicine  
1300 Morris Park Ave  
Bronx, NY  
lloyd.fricker@einstein.yu.edu

Elva Fridjonsdottir  
Uppsala University  
Box 591  
Uppsala, Sweden  
Elva.Fridjonsdottir@farmbio.uu.se

William Funk  
Northwestern University  
680 N Lake Shore Drive  
Suite 1400  
Chicago, IL  
w-funk@northwestern.edu

Ying Ge  
University of Wisconsin  
1300 University Avenue  
SMI 130  
Madison, WI  
ge2@wisc.edu

Johan Gobom  
University of Gothenburg  
Institute of Neuroscience and Physiology  
Neurochemistry lab  
Moelnadal, Sweden  
johan.gobom@neuro.gu.se

Luis Javier González  
Center for Genetic Engineering and Biotechnology  
Ave 31 e/158 y 190  
Cubanacán. Playa Havana, Cuba  
luis.javier@cigb.edu.cu

Elisha Goonatilleke  
University of California  
One Shields Ave  
Chemistry Dept.  
Davis, CA  
elisha77@gmail.com

Mads Gronborg  
Novo Nordisk A/S  
Novo Nordisk A/S  
Novo Nordisk Park, Building E5.1.12 (MDGR)  
Maeloev, Denmark  /mdgr@novonordisk.com

Markus Hardt  
Forsyth Institute  
245 First Street  
Cambridge, MA  
markushardt@gmail.com

Kevin Hayden  
Virgin Instruments Corp.  
261 Cedar Hill Street  
Suite 100  
Marlborough, MA  
kevin.hayden@simultof.com

Ron M.A. Heeren  
Maastricht University  
Universiteitsringel 50  
Maastricht, Netherlands  
r.heeren@maastrichtuniversity.nl

Jack Henion  
Advion  
19 Brown Rd  
Ithaca, NY  
henionj@advion.com

Leslie M. Hicks  
University of North Carolina  
125 South Road  
CB#3290  
Chapel Hill, NC  
lmhicks@unc.edu

Serhiy Hnatyshyn  
Bristol-Myers Squibb  
Rt. 206 & Provinceline Rd.  
M.S. 14-08  
Princeton, NJ  
serhiy.hnatyshyn@bms.com

Vivian Hook  
UCSD  
9500 Gilman Drive, MC0719  
La Jolla, CA  
vhook@ucsd.edu

Donald F. Hunt  
University of Virginia  
Chemistry Department  
McCormick Road  
Charlottesville, VA  
dfh@virginia.edu

Steven Husson  
University of Antwerp  
Groenenborgerlaan 171  
Antwerpen, Belgium  
steven.husson@uantwerpen.be

Samanta Jimenez  
CICESE  
Carretera Ensenada-Tijuana 3918  
Zona Playitas  
Ensenada, Mexico  
samanta.jimenez.foles@gmail.com

Ryan R. Julian  
UCSD  
Department of Chemistry  
Riverside, CA  
ryan.julian@ucr.edu

Kazuo Kanaya  
Ono Pharmaceutical  
6400 Sanger Road  
Orlando, FL  
k.kanaya@ono.co.jp

Oleg Karaduta  
UAMS  
325 Jack Stephens Drive  
Biomed 1, B421  
Little Rock, AR  
okkaraduta@uams.edu

Ramesh Katam  
FAMU  
1530 MLK Blvd  
Florida A&M University  
Tallahassee, FL  
ramesh.katam@famu.edu

Chihiro Kawano  
Kyushu University  
3-1-1, Maidashi, Higashiiku  
Fukuoka, Japan  
kawano.chihiro@gmail.com

Caitlin Keller  
University of Wisconsin  
5029 Sheboygan Ave Apt 115  
Madison, WI  
caitlin.keller@wisc.edu

Chelsea Kendall  
FAMU  
1601 S. Martin L. King Jr. Blvd.  
Tallahassee, FL  
chelsea1.kendall@famu.edu
Robert Kennedy
University of Michigan
930 North University
Ann Arbor, MI
chem-esc@umich.edu

Christine Kirkpatrick
University of North Carolina
125 South Road
Chapel Hill, NC
ckirkpat@live.unc.edu

Kristopher Kirmess
C2N Diagnostics
4340 Maryland Ave
Apt. 12C
St. Louis, MO
kkirmess@c2ndiagnostics.com

Gerald Koncar
Thermo Fisher Scientific
5034 Silver Charm Ter
Wesley Chapel, FL
gerald.koncar@thermofisher.com

Zdenek Kukacka
Steinbeis Center for Biopolymer Analysis and Biomedical MS
Marktstrasse 29
Steinbeis Center for Biopolymer Analysis and Biomedical Mass Spectrometry
Rüsselsheim, Germany
kukacka.zdenek@gmail.com

Mohanraja Kumar
University of South Florida
4202 E Fowler Ave
CHE 205
Tampa, FL
kumarr@usf.edu

Barbara S. Larsen
The DuPont Company
CR&D
Experimental Station 228/120
Wilmington, DE
barbara.s.larsen@dupont.com

Albert T. Lebedev
Moscow State University
Organic Chemistry Department
Leninskie Gory 1/3
Moscow, Russian Federation
a.lebedev@org.chem.msu.ru

Carlito Lebrilla
University of California
1 Shields Ave
Chemistry Dept
Davis, CA
cblebrilla@ucdavis.edu

Andrew Lee
IMCS
541 Main Street
Suite 117
Columbia, SC
lee@imcstips.com

Hong Li
Rutgers University
205 S. Orange Ave
CC F1226
Newark, NJ
liho2@rutgers.edu

Lingjun Li
University of Wisconsin School of Pharmacy
777 Highland Avenue
Madison, WI
lli@pharmacy.wisc.edu

Shuzhao Li
Emory University
615 Michael Street,
Rm 205R
Atlanta, GA
shuzhao.li@gmail.com

Christopher Lietz
UCSD
9500 Gilman Drive
MC0719
La Jolla, CA
clietz@ucsd.edu

Yang Liu
University of Wisconsin
4725 Sheboygen Ave
APT 238
Madison, WI
lysheila0726@gmail.com

Cory Lytle
Bruker Daltonics
8839 Marlamoor Lane
West Palm Beach, FL
Cory.Lytle@bruker.com

Fengfei Ma
University of Wisconsin
777 Highland Avenue
Madison, WI
fma9@wisc.edu

Christian Madsen
Novo Nordisk A/S
Novo Nordisk Park
E5.1.06
Maaloev, Denmark
ctom@novonordisk.com

Ayaka Maeda
Kyushu University
3-1-1, Maidashi, Higashiku
Fukuoka, Japan
rb19uptoyou@gmail.com

Roy Martin
Waters Corporation
100 Cummings Center, Ste. 407N
Beverly, MA
roy_martin@waters.com

Melinda McFarland
FDA-CFSAN
5100 Paint Branch Pkwy
HFS-707
College Park, MD
melinda.mcfarland@fda.hhs.gov

Fanyu Meng
Merck & Co., Inc
RY818-B221
Rahway, NJ
fanyu_meng@merck.com

Benjamin Minkoff
University of Wisconsin
425 Henry Mall
Madison, WI
bminkoff@wisc.edu

Daisuke Miura
Kyushu University
3-1-1, Maidashi, Higashiku
Fukuoka, Japan
daipon@agr.kyushu-u.ac.jp

Henrik Molina
Rockefeller University
New York, NY
henrik.molina@gmail.com

Nagarjuna Nagaraj
Max-Planck Institute
18a, Am Klopferspitz,
Martinsried
Munich, Germany
nagaraj@biochem.mp.de
Directory of Participants

Peter Nemes
George Washington University
800 22nd Street, NW
Suite 4000
Washington, DC
petern@gwu.edu

Susanne Neupert
University of Illinois
405 North Mathews Avenue
Urbana, IL
mail@susanne-neupert.de

Anna Nilsson
Uppsala University
Box 591
Zaragoza, Spain
anna_m_nilsson@hotmail.com

Samuel Oguta
Araclon Biotech S.L.
Via Hispanidad 21
Zaragoza, Spain
sogueta@araclon.com

Tibor Pechan
Mississippi State University
Institute for Genomics,
Biocomputing and Biotechnology
650 Stone Blvd
Mississippi State, MS
tp25@msstate.edu

Olga Pechanova
Mississippi State University
650 Stone Blvd
Mississippi State, MS
olga@igbb.msstate.edu

Asoka Ranasinghe
Bristol-Myers Squibb
P.O. Box 4000
Princeton, NJ
asoka.ranasinghe@bms.com

Elena Romanova
University of Illinois
405 N. Mathews Av.
Urbana, IL
romanova@illinois.edu

Stanislav Rubakhin
Beckman Institute, UIUC
405 N. Mathews Av.
Urbana, IL
roubakhi@illinois.edu

Victor Ryzhov
Northern Illinois University
Dept. of Chemistry & Biochemistry
FW 425
Dekalb, IL
ryzhov@niu.edu

George Sarkis
University of Florida
1149 South Newell Drive
Gainseville, FL
georgemr@ufl.edu

Jan Schrader
Max-Planck Institute
Am Klopferspitz 18
Max-Planck Institute for
Biochemistry
Planegg, Germany
schrader-jan@t-online.de

Denise Medeiros Selegato
São Paulo State University (UNESP)
R. Pio XI, 1500 - Alto da Lapa - CEP
Sao Paulo, Brazil
denisemselegato@gmail.com

Melissa Sherman
IP Group, Inc.
1105 North Market Street
Suite 1800
Wilmington, DE
Melissa.Sherman@ipgroup-inc.com

Stacy Shollenberger
Sigma Aldrich
595 N Harrison Rd
Bellefonte, PA
stacy.shollenberger@sial.com

Matthew Skaley
SCIEX
1201 Radio Rd.
Redwood City, CA
matthew.skaley@sciex.com

Robbert Slebos
Moffitt Cancer Center
13131 USF Magnolia Drive
MRC-2067B
Tampa, FL
robbert.slebos@moffitt.org

Bruce Southey
University of Illinois
1207 W. Gregory Dr.
Urbana, IL
southey@illinois.edu

Paul Speir
Bruker Daltonics, Inc.
40 Manning Rd.
Billerica, MA
paul.speir@bruker.com

Bruce Stanley
Penn State Coll Medicine
Section of Research Resources
H093
500 University Drive
Hershey, PA
bstanley@psu.edu

Hanno Steen
Harvard Medical School/Children's Hospital Boston
Department of Pathology
320 Longwood Avenue
Boston, MA
hanno.steen@childrens.harvard.edu

Antony O. Stretton
University of Wisconsin
Department of Zoology
1117 West Johnson Street
Madison, WI
aostrett@wisc.edu

Michael R. Sussman
University of Wisconsin
8761 Hidden Valley Road
Cross Plains, WI
msussman@wisc.edu

Jonathan Sweedler
University of Illinois
Department of Chemistry, 63-5
600 South Mathews Avenue
Urbana, IL
sweedler@scs.uiuc.edu

Jeremiah Tipton
BioTech & OMICSx Solutions , LLC
323 Java Way
Knoxville, TN
tipton77@gmail.com

Adrienne Tymiak
Bristol-Myers Squibb
P.O. Box 4000
Mailstop L14-05
Princeton, NJ
adrienne.tymiak@bms.com
Directory of Participants

Beatrix Ueberheide  
New York University  
430 East 29th Street  
Alexandria, Suite 860  
New York, NY  
Beatrix.Ueberheide@nyumc.org

Sven Van Bael  
K.U. Leuven  
Naamsestraat 59  
Leuven, Belgium  
sven.vanbael@bio.kuleuven.be

Michael J. Van Stipdonk  
Duquesne University  
600 Forbes Ave Dept of Chemistry and Biochem  
Pittsburgh, PA  
Vanstipdonkm@duq.edu

Andre Venter  
Western Michigan University  
3114 Wood Hall  
Department of Chemistry  
Kalamazoo, MI  
andre.venter@wmich.edu

Peter D. Verhaert  
Delft University of Technology  
Dept. Biotechnology, Analytical Biotechnology, Kluyver Laboratory, Julianalaan 67  
Netherlands Proteomics Centre  
Delft, Netherlands  
p.d.e.m.verhaert@tudelft.nl

Marvin Vestal  
Virgin Instruments Corp.  
261 Cedar Hill Street  
Suite 100  
Marlborough, MA  
marvin.vestal@simultof.com

Brent Watson  
ASMS Office  
2019 Galisteo St., Bldg 1-1  
Santa Fe, NM  
brent@asms.org

Anja Wehner  
Max-Planck Institute  
Am Kloperspitz 18  
Max-Planck Institut for Biochemistry  
 Martinsried, Germany  
wehner@biochem.mpg.de

Brad Williams  
Waters Corporation  
100 Cummings Center, Suite 407N  
Beverly, MA  
brad_williams@waters.com

Wendy Zhong  
Merck & Co., Inc  
126 E. Lincoln Ave.  
Rahway, NJ  
wendy.zhong@merck.com

Witold M Winnik  
US EPA  
109 TW Alexander Drive  
D305-02  
Research Triangle Park, NC  
winnik.witold@epa.gov

Kelly Wormwood  
Clarkson University  
Biochemistry & Proteomics Group  
Box 5810, Dept of Chem & Biomol Sci  
Potsdam, NY  
wormwokl@clarkson.edu

Jun Yan  
Novo Nordisk A/S  
Novo Nordisk Park  
Maaloev, Denmark  
juyx@novonordisk.com

Rong-Sheng Yang  
Merck & Co., Inc  
126 E. Lincoln Avenue  
PO BOX 2000 RY818-C208  
Rahway, NJ  
rong-sheng.yang2@merck.com

Qing Yu  
University of Wisconsin  
905 Eagle Heights  
Apt B  
Madison, WI  
qingypharma@gmail.com

Yeni Yung  
University of Illinois  
845 W Taylor St  
Bldg 619 M/C 111 SES Room 4500  
Chicago, IL  
yyung2@uic.edu

Xiaozhe Zhang  
MPI for Biological Cybernetics  
Spemannstrabe 38  
Tubingen, Germany  
zhangxz@dicp.ac.cn