Speakers – please arrive ½ hour before your session begins to load your presentation

THURSDAY, JANUARY 23

4:00 - 7:00 pm  **Setup all posters, Captiva West**

6:00-7:00 pm  **Registration**

7:00 – 7:10 pm  **Opening Remarks**, Jarod Grossman and Anthony Macherone  
*Captiva East*

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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</table>
| 7:10 - 8:10 pm | **Keynote Lecture**  
*Captiva East* |                  |
| 7:10-8:10 pm  | **Using the Blood Exposome to Discover Causes of Chronic Human Diseases**;  
Stephen M. Rappaport, *University of California, Berkeley* |                  |
| 8:10-10:00 pm | **Reception**  
*Captiva West* |                  |

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

- **Emmalyn Dupree**  
  *Clarkson University*
- **Cassandra Herbert**  
  *University of Cincinnati*
- **Sathisha Kamanna**  
  *Indian Institute of Science*
- **Jeremy Koelmel**  
  *Yale University*
- **Iqbal Mahmud**  
  *Univ. of Florida*
- **Ons Ousji**  
  *UQAM*
- **Leah Schneider**  
  *University of North Texas*
- **Xinyue Zhang**  
  *Stanford University*
Speakers – please arrive ½ hour before your session begins to load your presentation

FRIDAY, JANUARY 24

7:00 - 8:30 am  Continental Breakfast, Captiva West

8:30-10:15 am  The Utility of the Exposome
Captiva East

8:30-9:15 am  Keynote Lecture: Using High-Throughput Non-Targeted Analysis to Map the Exposome; Jon Sobus, U.S. EPA

9:15-9:45 am  Exposomics to Study Health and Disease; Doug Walker, Mount Sinai School of Medicine

9:45-10:15 am  NIH/NIEHS Vison and Strategies to Characterize the Exposome; David Balshaw, NIEHS

10:15-10:45 am  Coffee Break, Captiva West

10:45 am - 12:15 pm  Sources of Exposure

10:45-11:15 am  Epigenetics and Fetal Development: Recent Updates and Challenges Surrounding PFAS Exposure; Jacqueline Bangma, University of North Carolina

11:15-11:45 am  The Human Toxome Meeting the Exposome: How Mechanistic Toxicology Helps Making Sense of Omics Data; Andre Kleensang, Johns Hopkins University School of Public Health

11:45-12:15 pm  Assessment of Food Contaminants in Biological Matrices: From Targeted Towards Exposome-Scale Approaches; Benedikt Warth, University of Vienna

12:15-12:30 pm  Group Photo

12:30 - 1:30 pm  Group Lunch, provided by ASMS
Sand Dollar Plaza

1:30-2:30 pm  The Microbiome

1:30-2:00 pm  Integrating Multi-“Omics”- Mass Spectrometry-Based Methods to Characterize Oral Carcinogenesis; Silvia Balbo, University of Minnesota

2:00-2:30 pm  Insect and Animal Models to Study the Microbiome; Justin Cross, Memorial Sloan Kettering Cancer Center

2:30 – 7:00 pm  Free Time
FRIDAY, JANUARY 24

7:00 – 8:00 pm
Submitted Talks
Captiva East
Three Short Talks, 12 minutes each followed by 3 minutes for Q&A
Six Highlight Talks, 3 minutes each

7:00 – 7:15 pm  Poster #1; Untargeted Profiling of Serum Metabolites, Nutrients, and Toxins in an Exposomic Investigation of the Isle of Wight Multigenerational Birth Cohort; Thilani M Anthony; Michigan State University, East Lansing, MI

7:15 – 7:30 pm  Poster #9; Systemic Effects of Gamma Ionizing Radiation in Radiation Sensitive Tissues; Srujana Golla; Icahn School of Medicine at Mount Sinai, New York, NY

7:30 – 7:45 pm  Poster #13; Automated PFAS Annotation Using FluoroMatch: Application to Sources of PFAS Exposure; Jeremy Koelmel; Yale University, New Haven, CT

Highlight Talks
7:45 – 7:48 pm  Poster #3; Are we Doing Non-Targeted Analysis Right? A Progress Report from the Benchmarking and Publications for Non-Targeted Analysis Working Group; Stephan A Baumann; Agilent Technologies, Inc., Alpharetta, GA

7:48 – 7:51 pm  Poster #7; Improvements in Gas Chromatography Mass Spectrometry-Based Non-Targeted Analysis Workflows through Integration of Supervised Learning Techniques for Signal Quality Assessment; Kristin A Favela; Southwest Research Institute, San Antonio, TX

7:51 – 7:54 pm  Poster #15; Technology Developments in Fourier Transform Mass Spectrometry Imaging for Model Organism Exposomic Studies; Franklin E. Leach III; University of Georgia, Athens, GA

7:54 – 7:57 pm  Poster #17; A Landscape of Fusobacterium-Modulated Metabolism in Oral Cancer; Iqbal Mahmud; Department of Pathology, Immunology and Laboratory Medicine, Gainesville, FL

7:57 – 8:00 pm  Poster #19; Identification of Glucuronidated Biotransformation Products in Fish Exposed to Wastewater Effluent using Untargeted High-Resolution Mass Spectrometry; Jonathan D. Mosley; Center for Environmental Measurement & Modeling, U.S. Environmental Protection Agency, Athens, GA

8:00 – 8:03 pm  Poster #23; Simplifying Non-Target Analysis and Improving Peak Match Confidence with Gas Chromatography - High Resolution-TOFMS and Improved Data Processing Strategies; Todd Richards; LECO Corporation, St Joseph, MI

8:00-10:00 pm
Poster Session I & Reception
Odd-Numbered Posters Present
Captiva West
SATURDAY, JANUARY 25

7:00 - 8:30 am  Continental Breakfast, Captiva West

8:30-10:30 am  Measuring the External Exposome I
  Captiva East

  8:30-9:00 am  Keynote Lecture: Non-Targeted Analysis: Environmental Chemistry in the Age of Computational Mass Spectrometry; Lee Ferguson, Duke University

  9:00-9:30 am  The Placental Exposome; Alex Chao, ORISE U.S. EPA

  9:30-10:00 am  The DBP Exposome: Uncovering the Ubiquitous and Mostly Unknown Exposure in Drinking Water; Susan Richardson, University of South Carolina

  10:00-10:30 am  The Dental Exposome; Manish Arora, Icahn School of Medicine at Mt. Sinai

  10:30-10:45 am  Coffee Break, Captiva West

10:45-11:45 am  Measuring the External Exposome II

  10:45-11:15 am  Utilizing LC-IMS-MS for the Untargeted Analysis of PerfluoroAlkyl Substances (PFAS) in Environmental and Biological Samples; Erin Baker, North Carolina State University

  11:15-11:45 am  Using Metabolomics to Characterize the Exposome; David Graham, Johns Hopkins University School of Medicine

11:45-1:30 pm  Lunch on your own
Speakers – please arrive ½ hour before your session begins to load your presentation

SATURDAY, JANUARY 25

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<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>1:30-3:00 pm</td>
<td><strong>Open-Access Resources for Toxicity/Exposure Predictions and Feature Identification</strong>&lt;br&gt;Captiva East</td>
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<tr>
<td>1:30-2:30 pm</td>
<td><strong>Keynote Lecture: Comptox Chemicals Dashboard</strong>, Antony Williams, US EPA</td>
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<td>2:30-3:00 pm</td>
<td><strong>Exposure Data and Gap-filling Methods</strong>, Katherine Phillips, US EPA</td>
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<td>3:00 - 3:15 pm</td>
<td><strong>Coffee Break</strong></td>
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<td>3:15-4:45 pm</td>
<td><strong>The Exposome and the Public</strong></td>
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<tr>
<td>3:15-3:45 pm</td>
<td><strong>Toxicity and Exposure Models</strong>, John Wambaugh, US EPA</td>
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<td>3:45-4:15 pm</td>
<td><strong>P2i™ and Exposome (Preconception to infancy)</strong>, David Humphrey, The Forum Institute</td>
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<tr>
<td>4:15-4:45 pm</td>
<td><strong>Improving Maternal Health Outcomes</strong>, Jeannie Conry, FIGO</td>
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<tr>
<td>4:45 -7:00 pm</td>
<td><strong>Free Time</strong></td>
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Speakers – please arrive ½ hour before your session begins to load your presentation

SATURDAY, JANUARY 25

7:00 – 8:00 pm
Submitted Talks
Captiva East
Three Short Talks, 12 minutes each followed by 3 minutes for Q&A
Five Highlight Talks, 3 minutes each

7:00 – 7:15 pm Poster #18; **Metabolic Changes in Response to a High Fat High Cholesterol Dietary Exposure Reveals Atherosclerosis Biomarkers in Liver;** Biswapiya Biswahas Misra; *Wake Forest School of Medicine, Winston-Salem, NC*

7:15 – 7:30 pm Poster #26; **Targeted and Untargeted Interrogation of the Human Serum Albumin Cys34 Adductome for Quantification and Discovery of Environmental Exposures;** Joshua W Smith; *Johns Hopkins University, Baltimore, MD*

7:30 – 7:45 pm Poster #28; **Deep Sequencing Revealed Potential Microbial Exposure in Hospital Air;** Xinyue Zhang; *Stanford University, Palo Alto, CA*

Highlight Talks

7:45 – 7:48 pm Poster #4; **Sick Building Syndrome: A Bottom-Up Evaluation of Anthropogenic Compounds Found in Common Household Dust;** Stephan A Baumann; *Agilent Technologies, Inc., Santa Clara, CA*

7:48 – 7:51 pm Poster #16; **Validating Medication Use via Metabolomics Analysis in Clinical Trials: How the Exposome Enhances Precision Medicine;** Jia Li; *University of Alabama, Birmingham, AL*

7:51 – 7:54 pm Poster #20; **Liquid Chromatography-Ion Mobility-High Resolution Mass Spectrometry for Analysis of Pollutants in Indoor Dust: Identification and Predictive Capabilities;** Lauren Mullin; *Waters Corporation, Milford, MA*

7:54 – 7:57 pm Poster #22; **Environmental Electrophiles: Relevance of Exposures through Drinking Water Treated with Chemical Oxidants;** Carsten Prasse; *Johns Hopkins University, Baltimore, MD*

7:57 – 8:00 pm Poster #24; **Simultaneous Analysis of Multiple Classes of Organic Compounds Using SIFT-MS;** Mitch Rubenstein; *US Air Force, Dayton, OH*

8:00-10:00 pm
Poster Session II & Reception
Even-Numbered Posters Present
Captiva West
SUNDAY, JANUARY 26

7:00 - 8:30 am  Continental Breakfast, Captiva West

8:30-10:00 am
The Future of the Exposome
Captiva East

8:30-9:00 am  Systems Biology and the Exposome; Gary Miller, Columbia University

9:00-9:30 am  Understanding the Relationship between the Environment and Metabolism: Opportunities and Challenges for the Omic Sciences; Gary Patti, Washington University in St. Louis

9:30-10:00 am  The Future of the Exposome; Jenna Hua, Million Marker

10:00-10:15 am  Coffee Break, Captiva West

10:15-11:00 am  Closing Remarks, Jarod Grossman and Anthony Macherone
POSTERS
Captiva West Ballroom
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 Untargeted Profiling of Serum Metabolites, Nutrients, and Toxins in an Exposomic Investigation of the Isle of Wight Multigenerational Birth Cohort; Thilani M Anthony¹; Wilfried J. J. Karmaus²; Su Chen³; Susan Ewart⁴; Syed Hasan Arshad⁵, 6, 7; John W Holloway⁸; Hongmei Zhang⁵; A. Daniel Jones¹; ¹Department of Biochemistry and Molecular Biology, Michigan State University, East Lansing, Michigan; ²Division of Epidemiology, Biostatistics, and Environmental Health, School of Public Health, University of Memphis, Memphis, Tennessee; ³Department of Mathematical Sciences, University of Memphis, Memphis, Tennessee; ⁴Department of Large Animal Clinical Sciences, College of Veterinary Medicine, Michigan State University, East Lansing, Michigan; ⁵Clinical and Experimental Sciences, Faculty of Medicine, University of Southampton, Southampton, United Kingdom; ⁶The David Hide Asthma and Allergy Research Centre, Isle of Wight, United Kingdom; ⁷NIHR Respiratory Biomedical Research Unit, University Hospital Southampton, Southampton, United Kingdom; ⁸Human Development and Health, University of Southampton, Southampton, United Kingdom

2 Nontarget Screening for Comprehensive Characterization of Chemical Exposure: GCxGC-HRMS with Complimentary Ionization Techniques; Viatcheslav Artaev; LECO Corporation, St Joseph, MI

3 Are we Doing Non-Targeted Analysis Right? A Progress Report from the Benchmarking and Publications for Non-Targeted Analysis Working Group; Stephan A Baumann; Agilent Technologies, Inc., Alpharetta, GA

4 Sick Building Syndrome: A Bottom-Up Evaluation of Anthropogenic Compounds Found in Common Household Dust; Marcus Kim¹; Stephan A Baumann¹; Dayue Shang²; ¹Agilent Technologies, Inc., Santa Clara, CA; ²Environment Canada, North Vancouver, BC

5 Quantifying Microplastic Hazard and Exposure in the Human Fetal Environment; Zoe Coates Fuentes¹; Douglas I Walker¹; ¹Icahn School of Medicine at Mount Sinai, New York, NY

6 Effects to the Human Proteome Due to Legacy Chemical Exposure in the Great Lakes; Emmalyn Dupree¹; Bernard Crimmins¹; Thomas Holsen¹; James Paganò²; Brooke Thompson³; Krista Christensen⁴; Michelle Raymond⁵; Jonathan Meiman⁶; Costel C Darie¹; ¹Clarkson University, Potsdam, NY; ²SUNY Oswego, Oswego, NY; ³Wisconsin Department of Health Services, Madison, WI

7 Improvements in Gas Chromatography Mass Spectrometry-Based Non-Targeted Analysis Workflows through Integration of Supervised Learning Techniques for Signal Quality Assessment; Kristin A Favela¹; Michael J Hartnett¹; Andrew J Schaub¹; Jake A Janssen¹; Adam K Van Horn¹; Steven R Westbrook²; David W Vickers²; Keith S Pickens²; ¹Southwest Research Institute, San Antonio, TX

8 Protein Adducts in Newborn Dried Blood Spots are Associated with Exposure to PM2.5 and Ozone during Pregnancy; William Funk¹; Nathan Montgomery¹; Anny Xiang²; Rob Mcconnell³; Ting Chou³; ¹Northwestern University, Chicago, IL; ²Southern California Permanente Medical Group, Pasadena, CA; ³University of Southern California, Los Angeles, CA

9 Systemic Effects of Gamma Ionizing Radiation in Radiation Sensitive Tissues; Srujana Golla¹; Douglas I Walker¹; Frank Gonzalez²; ¹Icahn School of Medicine at Mount Sinai, New York, NY; ²National Cancer Institute, NIH, Bethesda, MD

10 LC-MS Based Detection of Ribonucleoside Changes upon Benzo[A]Pyrene Exposure; Cassandra Herbert; University of Cincinnati, Cincinnati, OH
POSTERS
Captiva West Ballroom
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ODD-numbered posters present during the Friday Poster Session
EVEN-numbered posters present during the Saturday Poster Session

11 Investigation and Characterization of the Jumping Translocation Breakpoint (JTB) Protein using Mass Spectrometry based Proteomics; Madhuri Jayathirtha1; Devika Channaveerappa1; Kangning Li1; Costel C. Darie1; 1Clarkson University, Potsdam, NY

12 Mass Spectrometry-Based Proteomics and Metabolomics Analysis for the Detection of Biological and Disease Progression Markers; Sathisha Kamanna; Flinders University, Adelaide, Australia

13 Automated PFAS Annotation Using FluoroMatch: Application to Sources of PFAS Exposure; Jeremy Koelmel, Matthew Paige, Paul Stelben, Elizabeth Lin, Juan Aristizabal, John Bowden, Krystal Pollitt; Yale University, New Haven, CT

14 Automatically Classifying Airborne Exposures Using Gas Chromatography High Resolution Mass Spectrometry of Passive Samplers, Neural Networks, and EPA Compound Databases; Jeremy Koelmel1; Alex Chen1; Alexander Aksenov2; Elizabeth Lin1; Fiona O'brienc; Jieqiong Zhou1; Koustav Ganguly3; Swapna Upadhyay3; Kirill Veselkov4; Vasilis Vasiliiou1; Krystal G. Pollitt1; Yale University, New Haven, CT; 2University of California, San Diego, CA; 3Karolinska Institutet, Solna, Sweden; 4Imperial College London, South Kensington, United Kingdom

15 Technology Developments in Fourier Transform Mass Spectrometry Imaging for Model Organism Exposomic Studies; Heather Flanagan-Steet1; Donald F. Smith2; Richard Steet1; Franklin E. Leach III3; 1Greenwood Genetic Center, Greenwood, SC; 2National High Magnetic Field Laboratory, Tallahassee, FL; 3University of Georgia, Athens, GA

16 Validating Medication Use via Metabolomics Analysis in Clinical Trials: How the Exposome Enhances Precision Medicine; Jia Li1; Landon S. Wilson1; Amie Mcclain1; Rebecca Howell1; Taylor F. Berryhill1; Ceren Yarar1; Stephen Barnes1; 1University of Alabama, Birmingham, AL

17 A Landscape of Fusobacterium-Modulated Metabolism in Oral Cancer; Iqbal Mahmud1; Sasanka Sekhar Chukkapalli2; Ann Pregulske-Fox3; Timothy J. Garrett4; 1Department of Pathology, Immunology and Laboratory Medicine, Gainesville, Florida; 2Department of Periodontology, Gainesville, FL; 3Department of Oral Biology, University of Florida, Gainesville, FL; 4Department of Pathology, Immunology and Laboratory Medicine, Gainesville, FL

18 Metabolic Changes in Response to a High Fat High Cholesterol Dietary Exposure Reveals Atherosclerosis Biomarkers in Liver; Biswapriya Biswavas Misra1, 2; Clayton S. Bloszies3; Sobha R. Puppala1, 2; Anthony G. Comuzzie2, 4; Michael C. Mahaney5; John L. Vandeberg5; Laura A. Cox1, 2, 6; Oliver Fiehn3, 7; Michael Olivier1, 2, 6; 1Center for Precision Medicine, Department of Internal Medicine, Section on Molecular Medicine, Wake Forest School of Medicine, Winston-Salem, NC; 2Department of Genetics, Texas Biomedical Research Institute, San Antonio, TX; 3West Coast Metabolomics Center, UC Davis Genome Center, Davis, CA; 4The Obesity Society, Silver Spring, MD; 5South Texas Diabetes and Obesity Institute and Department of Human Genetics, The University of Texas Rio Grande Valley School of Medicine, Brownsville, TX; 6Southwest National Primate Research Center, Texas Biomedical Research Institute, San Antonio, TX; 7Department of Molecular and Cellular Biology, University of California, Davis, CA
POSTERS
Captiva West Ballroom
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EVEN-numbered posters present during the Saturday Poster Session

19 Identification of Glucuronidated Biotransformation Products in Fish Exposed to Wastewater Effluent using Untargeted High-Resolution Mass Spectrometry; Jonathan D. Mosley; Marina G. Evich; Ioanna Ntaï; Jenna E. Cavallin; Dan L. Villeneuve; Gerald T. Ankley; Timothy W. Collette; 1Center for Environmental Measurement & Modeling, U.S. Environmental Protection Agency, Athens, GA; 2Thermo Fisher Scientific, San Jose, CA; 3Center for Computational Toxicology & Exposure, U.S. Environmental Protection Agency, Duluth, MN

20 Liquid Chromatography-Ion Mobility-High Resolution Mass Spectrometry for Analysis of Pollutants in Indoor Dust: Identification and Predictive Capabilities; Lauren Mullin; Robert Dilorenzo; Karl Jobst; Robert Plumb; Eric Reiner; Leo W.Y. Yeung; Ingrid Ericson Jogsten; 1Waters Corporation, Milford, MA; 2Department of Physiology and Experimental Medicine, The Hospital for Sick Children, Mouse Imaging Centre, Toronto, Ontario; 3Memorial University of Newfoundland, St. John's, NL; 4Ontario Ministry of the Environment, Conservation and Parks, Toronto, Ontario; 5MTM Research Centre, Örebro University, Örebro, Sweden

21 Studying the Metabolism of Bisphenol A Analogs by LC-HRMS/MS; Ons Ousiji; Lekha Sleno; 1University of Quebec in Montreal, Montreal, QC

22 Environmental Electrophiles: Relevance of Exposures through Drinking Water Treated with Chemical Oxidants; Carsten Prasse; Zhuoyue Zhang; 1Johns Hopkins University, Baltimore, MD

23 Simplifying Non-Target Analysis and Improving Peak Match Confidence with Gas Chromatography - High Resolution-TOFMS and Improved Data Processing Strategies; Todd Richards; James Carlson; Joseph E. Binkley; 1LECO Corporation, St Joseph, MI

24 Simultaneous Analysis of Multiple Classes of Organic Compounds Using SIFT-MS; Mitch Rubenstein; Anthony V. Qualley; 1US Air Force, Dayton, OH; 2UES, Dayton, OH

25 Development and Validation of a Dietary Biomarker Panel Reflecting Multiple Foods; Nanna Vidkjaer; Alastair Ross; Carl Brunius; Rikard Landberg; Otto Savolainen; Chalmers University of Technology, Gothenburg, Sweden

26 Targeted and Untargeted Interrogation of the Human Serum Albumin Cys34 Adductome for Quantification and Discovery of Environmental Exposures; Joshua W Smith; Robert N O'Meally; Derek Ng; Thomas W Kensler; Robert N Cole; 1Department of Environmental Health and Engineering, Bloomberg School of Public Health, Johns Hopkins University, Baltimore, MD; 2Department of Biological Chemistry, School of Medicine, Johns Hopkins University, Baltimore, MD; 3Department of Epidemiology, Bloomberg School of Public Health, Johns Hopkins University, Baltimore, MD; 4Translational Research Program, Fred Hutchinson Cancer Research Center, Seattle, WA

27 Top-Down Proteomics Reveals Alterations in Liver Protein Profiles of C57Bl/6 Mice Exposed to Traffic-Generated Emissions and a High Fat Diet; Leah J Schneider; Rachel Koerber; Joann Lucerno; Jacob Mcdonald; Amie Lund; 1University of North Texas, Denton, TX; 2Lovelace Biomedical and Environmental Research Institute, Albuquerque, NM
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28 Deep Sequencing Revealed Potential Microbial Exposure in Hospital Air; Xinyue Zhang1; Chao Jiang1; Michal Snyder1, 2; 1Stanford University, Palo Alto, CA; 2Stanford Center for Genomics and Personalized Medicine, Palo Alto, CA

29 Proteomic Analysis of Human Breast Milk to Reveal Potential Protein Biomarkers for Breast Cancer; Danielle Whitham1; Roshanak Aslebagh1; Devika Channaveerappa1; Brian Penetcost2; Kathleen F. Arcaro2; Costel C. Darie1; 1Clarkson University, Potsdam, NY; 2University of Massachusetts, Amherst, MA

30 A Permethrin Metabolite is Associated with Adaptive Immune Responses in Gulf War Illness; Utsav Joshi1; Jim E Evans1; Sarah Oberlin1; Teresa Darcey1; Adam Cseresznye1; Andrew Keegan1; Fiona Crawford1; Michael Mullan1; Laila Abdullah1; 1Roskamp Institute, Sarasota, FL