Welcome to the 62nd ASMS Conference on Mass Spectrometry and Allied Topics. Conference program activities and exhibit booths are in the Baltimore Convention Center. Corporate Member hospitality suites are located in the Hilton Hotel.

SPONSORS

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Closing Event

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Titles in the following sections are provided by authors. The complete abstracts are available online: www.asms.org

The PDF document of proceedings submissions for orals and posters may be viewed online one day after presentation at the conference.

Registration is open 10:00 am - 8:00 pm on Sunday and 7:30 am - 5:00 pm on Monday through Thursday.

Sunday Tutorial Session, 5:00 - 6:30 pm
Exhibit Hall AB, level 1

5:00 - 5:45 pm
Mass Spectrometry in the Pharmaceutical Industry: Everything You Ever Wanted to Know but Were Afraid to Ask

Lucinda Cohen
Merck Research Laboratories

5:45 - 6:30 pm
Imaging Mass Spectrometry

Ron M.A. Heeren
FOM-AMOLF

Sunday Conference Opening, 6:45 - 7:45 pm
Exhibit Hall AB, level 1

Welcome, Jenny Brodbelt,
University of Texas, Austin
ASMS Vice President for Programs

The James Webb Space Telescope: From First Light to the Search for Earth 2.0

Jason Kalirai
Telescope Science Institute

Sunday Welcome Reception, 7:45 - 9:00 pm
Exhibit Hall C-G. Conference name badge is required.

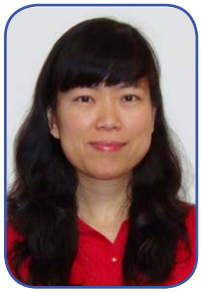
PLENARY SESSIONS

Monday, 4:45 - 5:30 pm
Award Lecture
Exhibit Hall AB, level 1

Award for a Distinguished Contribution in Mass Spectrometry

Richard M. Caprioli
Vanderbilt University

Tuesday, 4:45 - 5:30 PM
Award Lecture
Exhibit Hall AB, level 1



Biemann Medal

Lingjun Li
University of Wisconsin-Madison

Thursday, 4:45 - 5:30 PM
Plenary Lecture
Exhibit Hall AB, level 1

How the Genome Folds

Erez Lieberman Aiden
Baylor College of Medicine and
Rice University

Don't miss

- **ASMS Meeting, Wednesday, 4:45 - 5:30 pm**
  Ballroom I, level 4

  Enjoy a beverage while you applaud awards, hear about new initiatives, and more!

- **Closing Event, Thursday, 6:30 - 9:00 pm**
  National Aquarium

  Let's celebrate! Enjoy all the aquarium has to offer including an Imax film and a dolphin event. Complete your tour with music provided by a talented group of your colleagues. Ticket is required, $30.

Oral Sessions are 8:30 - 10:30 am and 2:30 - 4:30 pm on Monday through Thursday.

Session A (MOA, TOA, WOA, ThOA).....Exhibit Hall AB, level 1
Session B (MOB, TOB, WOB, ThOB).... Room 307-308, level 3
Session C (MOC, TOC, WOC, ThOC)... Room 309-310, level 3
Session D (MOD, TOD, WOD, ThOD)... Room 314-317, level 3
Session E (MOE, TOE, WOE, ThOE)..... Ballroom I, level 4
Session F (MOF, TOF, WOF, ThOF)..... Ballroom II, level 4
Session G (MOG, TOG, WOG, ThOG)..... Ballroom III, level 4
Session H (MOH, TOH, WOH, ThOH)..... Ballroom IV, level 4

Oral Presentations are projected from ASMS computers running Microsoft Office 2010. Speakers are required to use the ASMS computers for their presentations.

Speakers must load presentations at least one day prior to their talks. The speaker room is 330 (behind conference registration area) and is open with a technician according to this schedule:

Sunday: 10:00 am - 8:00 pm
Monday through Wednesday: 7:30 am - 5:00 pm

Posters and Exhibit Booths are in Exhibit Hall C-G. The Hall is open:

Sunday Reception.....7:45 pm - 9:00 pm
Monday - Wednesday .....7:30 am - 8:00 pm
Thursday .....7:30 am – 3:00 pm

Poster Set-Up is 7:30 am on the day scheduled and removal is 7:30 – 8:00 pm on the same day. Posters should not be removed early. Thursday posters must be removed by 3:30 pm. **Refer to the poster numbers in this final program for board assignments.** Presenters should supply pushpins or Velcro to mount their posters.

Poster Sessions are 10:30 am – 2:30 pm, Monday through Thursday. Special "themed refreshments" will be offered 1:30 - 2:30 pm daily.

Poster Authors must be present at posters on scheduled days at these times.

10:30 am - 1:00 pm.....Odd-numbered posters
12:00 - 2:30 pm..... Even-numbered posters

Presenters who must leave a poster unattended should post a return time. Presenters should wear "Poster Presenter" badges which are available at the poster supply counter.

Posters should not be removed before 7:30 pm on Monday, Tuesday and Wednesday. Thursday posters should be removed at 2:30 pm.

Lunch Concessions in the Poster/Exhibit Hall offer a variety of options to dine and network while taking a break from posters. Concessions are open 11:00 am - 2:00 pm, Monday through Thursday.

Exhibitors must staff exhibit booths as follows:

Sunday Reception.....7:45 pm - 9:00 pm
Monday - Thursday .....10:30 am - 2:30 pm

Workshops are 5:45 - 7:00 pm on Monday, Tuesday, and Wednesday. Light refreshments are provided in the pre-function area on level 3.

Dinner Break, 7:00 - 8:00 pm is time for a breath of fresh air before the opening of hospitality suites at 8:00 pm.

Special Program for Undergraduate Students

- **Poster competition**, 7:45 - 9:00 pm, Sunday, Poster/Exhibit Hall
- **Breakfast Tutorial** *"Make the Most of ASMS: What to See, Hear and Do!* 7:00 - 8:15 am, Monday, Room 319 (beverages and pastries provided)
- **Meet the Experts** at lunch tables reserved for undergraduate students, 12:00 - 1:00 pm, Monday, Poster/Exhibit Hall

Free WiFi Access is provided in the Poster/Exhibit Hall. Computers are provided at stations throughout the convention center.

Conference Proceedings will be published online. Visit www.asms.org after July 21 to view or download the Proceedings. Submission to the Proceedings does not constitute publication and does not jeopardize the rights of authors to publish contents of their submissions. **Speaker web casting slides will be printed to PDF and used for speakers who fail to submit.**

Web Casting includes tutorial lectures, plenary lectures, and oral sessions. Web casting will be available to conference attendees for three months after the conference. ASMS does not retain rights to material included in web castings. To access the presentations, go to www.asms.org, select "web casting" on the annual conference page, and enter your last name and the User ID printed on your conference name badge.

Corporate Hospitality Suites may be open 8:00 - 11 pm, Monday through Wednesday. Suites are located in the **Hilton Hotel**.

Career Center is located in the Poster/Exhibit Hall. The Career Center is open to all conference attendees. Applicants and employers must enter resumes and employment opportunities online. There are computers in the center for searching the database of candidates and positions. Interview booths must be reserved one day in advance.

Sunday.....7:45 - 9:00 pm
Monday – Wednesday.....7:30 am - 5:00 pm
Thursday .....7:30 am - 2:30 pm

Guest Registration ($10) includes designated name badge and entrance to the Sunday evening reception. The badge does not gain entrance to oral sessions or the Poster/Exhibit Hall.

Concierge Desk in the conference registration area offers information on transportation, attractions and restaurants.

Corporate Breakfast Seminars are hosted by some Corporate Members. Breakfast seminars are located in the convention center and start at 6:45 am on scheduled day. **Please reserve a seat at company exhibit booths.**

MONDAY	
Company	**Convention Center Location**
AB SCIEX	Room 343-344
AB SCIEX	Room 345-346
AB SCIEX	Room 347-348
Advanced Chemistry Development (ACD)	Room 328
Agilent Technologies	Room 339-340
Bruker Daltonics	Room 338
EMD Millipore	Room 336
LECO	Room 327
Shimadzu	Room 337
TUESDAY	
Company	**Convention Center Location**
AB SCIEX	Room 343-344
AB SCIEX	Room 345-346
Agilent Technologies	Room 339-340
Bruker Daltonics	Room 338
LECO	Room 327
New Objective	Room 328
Phenomenex	Room 329
Prosolia	Room 336
Shimadzu	Room 337
WEDNESDAY	
Company	**Convention Center Location**
AB SCIEX	Room 343-344
Agilent Technologies	Room 339-340
Bruker Daltonics	Room 338
LECO	Room 327
Phenomenex	Room 329
Protea Biosciences	Room 328
Shimadzu	Room 337
Tecan	Room 336
THURSDAY	
Company	**Convention Center Location**
Shimadzu	Room 337
Thermo Scientific	Room 339-340

Media Events

Corporate media sessions are scheduled on Monday and Tuesday for members of the press and financial institutions.

Company	Monday	Hilton Hotel Location
Bruker Daltonics	8:00-9:00 am	Key Ballroom 6
Shimadzu	9:30-10:30 am	Holiday Ballroom 6
AB SCIEX	11:00 -12:00 pm	Key Ballroom 7
Agilent Technologies	1:30-2:30 pm	Key Ballroom 5
Thermo Scientific	3:00-4:00 pm	Holiday Ballroom 1-3
Waters Corporation	4:30-5:30 pm	Key Ballroom 8
Company	**Tuesday**	**Location**
PerkinElmer	9:30-10:30 am	Holiday Ballroom 4-5

Conference Regulations

- Name badge is required for all conference sessions, including the Poster/Exhibit Hall and the employment center.
- No smoking is permitted in the convention center.
- Cell phones must be turned off in oral sessions.
- No photography or recording is allowed in oral sessions or in the Poster/Exhibit Hall.
- Material presented or displayed at the ASMS Conference, including but not limited to orals, posters, workshops, exhibit booths and hospitality suites, is the intellectual property of the presenter and may not be recorded, photographed, quoted, disseminated or transmitted by summary in any form without the express written authority of the author of the material presented. Such materials that are published in print or online must contain appropriate credits for all quotations and photographs.
- The placement of advertising in the meeting area is prohibited. There are poster boards and tables in the Poster/Exhibit Hall for approved announcements. No signs on easels are permitted.
- Hardware, accessories or any items for sale may be displayed only in corporate exhibit booths and hospitality suites.
- No organized activities (even off-site) other than those approved by ASMS are allowed during the conference week (5:00 pm on Sunday through 6:00 pm on Thursday).
- Corporate or institutional logos on slides or posters may appear only one time in the presentation.

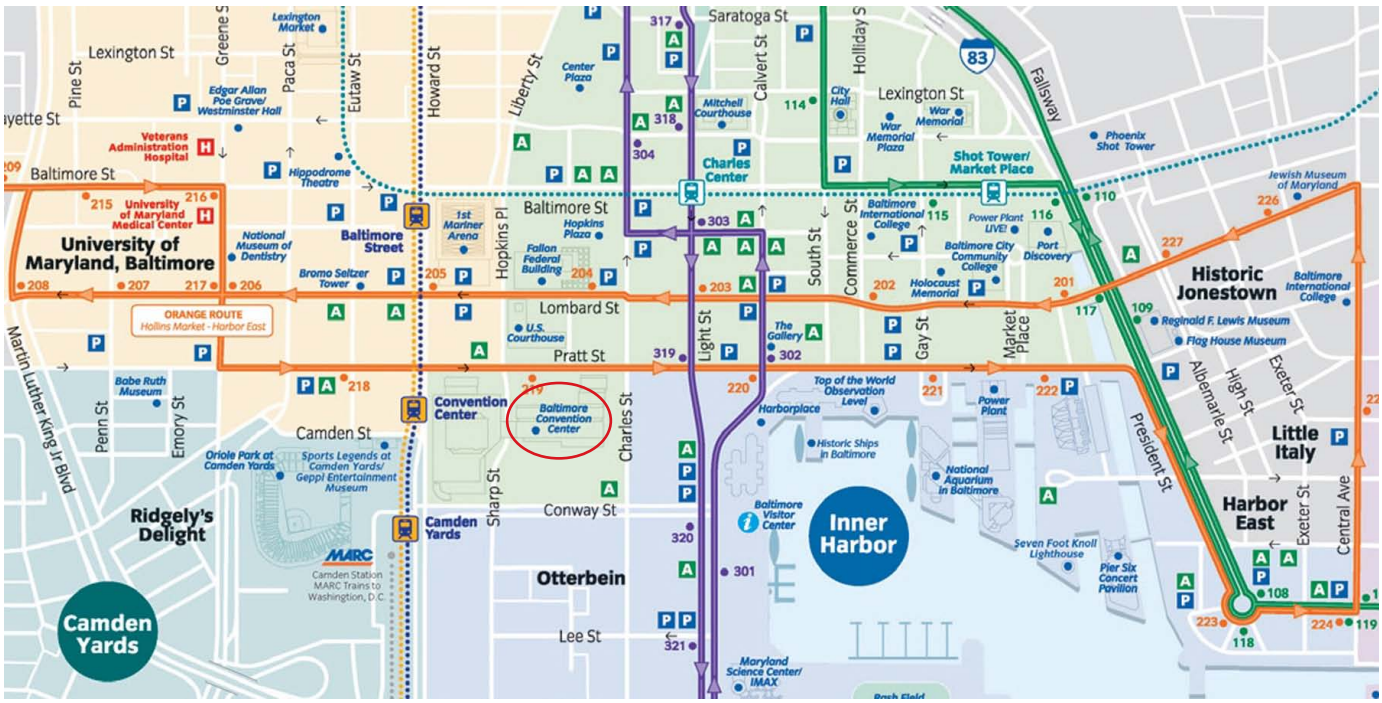
Conference Hotels

Hotel	Map No.	Telephone
Days Inn Inner Harbor	1	410-576-1000
Hampton Inn	2	410-685-5000
Hilton Baltimore	3	443-573-8700
Holiday Inn Inner Harbor	4	410 685-3500
Hyatt Regency	5	410 528 1234
Lord Baltimore	6	443 977-4092
Marriott Inner Harbor	7	410-962-0202
Monaco Baltimore	8	443-692-6170
Renaissance	9	410-547-1200
Sheraton City Center	10	410-752-1100
Sheraton Inner Harbor	11	410-962-8300

Hotel Map

Transportation

Travel free throughout the heart of downtown Baltimore on the Charm City Circulator. The orange line connects many attractions and hotels to the Baltimore Convention Center. Image below shows bus stops.



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to these members who were elected to the ASMS Board

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Bioinformatics for MS	Lucas Kall David Tabb
Biotherapeutics	Li Tao Arindam Roy
Clinical Chemistry	Cory Bystrom Brett Holmquist
Data Independent Acquisition	Yishai Levin
DNA/RNA	Norman Chiu Michael McGinley
Drug Metabolism & Pharmacokinetics	Don McKenzie Mustafa Varoglu
Energy, Petroleum & Biofuels	Patrick Hatcher Lateefah Stanford
Environmental Applications	Kerry Peru Chris Gill
Flavor, Fragrance and Foodstuff	Marc Engel Timothy Croley
Forensics & Homeland Security	Glen Jackson Guido Verbeck
FTMS	Nathan Kaiser Franklin Leach
Fundamentals	George Khairallah Jos Oomens
H/D Exchange, Covalent Labeling & Cross Linking	David Schriemer Joshua Sharp
Imaging MS	Liam McDonnell Zoltan Takats
Ion Mobility MS	Matthew Bush Erin Baker
Ion Trap MS	Daniel E. Austin Yu Xia
Lipids & Lipodomics	Stephen Blanksby
LC/MS Related Topics	Amanda Berg Helene Cardasis
Metabolomics	Gary Patti Sunia Trauger
Metal Ion Coordination Chemistry	Benjamin Bythell Mike Van Stipdonk
Peptide Fragmentation	Sharon Pitteri
Pharmaceuticals	Brian Furmanski Shawna Hengel
Photoionization MS	Jack Syage Ralf Zimmerman
Polymeric Materials	William Erb Gyorgy Vas
Quantitative Intact Proteomics	Edward Dratz
Regulated Bioanalysis	Fabio Garofolo
Undergraduate Research in MS	J.C. Poutsma Elaine Marzluff
Young Mass Spectrometrists	Olga Friese Dian Su

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Corporate Liaison	Gary Valaskovic, Chair Scott McLuckey Karen Anspach, Phenomenex Carla Marshall-Waggett, New Objective Bez Moghadam, Thermo Scientific Lance Nicolaysen, Waters Qihui Ni, EMD Millipore Johnny Cardenas, AB SCIEX
Digital Communications	Michael MacCoss, Chair Bin Ma Nathan Yates
Education	Gavin Reid, Chair Erin Carlson Michael Fitzgerald Elaine Marzluff Darrin Smith
Nominating	Barbara Larsen, Chair Hilkka Kenttamaa Joseph Loo Christine Miller Nathan Yates
Publications	David Muddiman, Chair Michelle Cilia Jessica Prenni Brandon Ruotolo Yu Xia Michael Gross (*ex officio*)
Sanibel Conference	Jon Williams, Chair Neil Kelleher Erin Baker J.C. Poutsma

Archivist

Michael Grayson

Award for a Distinguished Contribution in Mass Spectrometry

2014 Recipient: Richard M. Caprioli

Award Lecture: 4:45 pm, Monday, Exhibit Hall AB, level 1

Dr. Richard M. Caprioli is awarded the 2014 ASMS Award for a Distinguished Contribution in Mass Spectrometry for the development of MALDI Imaging Mass Spectrometry and its application to molecular mapping of tissues in biology and medicine.

Professor Caprioli's work led to a new paradigm for molecular imaging of tissues, founded on the development of matrix assisted laser desorption ionization (MALDI) imaging mass spectrometry. This is now a burgeoning application of mass spectrometry whereby molecular measurements can be made directly from tissues, adding significantly to the information that can be obtained from these specimens.

This work has made significant contributions to the study of proteins, lipids, metabolites, and pharmaceutical compounds. Since publication of Professor Caprioli's seminal 1997 paper (Anal. Chem. 69(23), 4751-4760) showing the power of MALDI imaging mass spectrometry for tissue analysis, he has pioneered advancements in sample preparation, instrumentation, and informatics approaches that have considerably advanced the technology and made it accessible to hundreds of laboratories worldwide.

The impact of his work is evident in the numerous commercial platforms that employ this technology. Approximately 2,500 papers have been published to date on the subject of MALDI imaging mass spectrometry.

Dr. Caprioli is the Stanford Moore Chair in Biochemistry and Director of the Mass Spectrometry Research Center at Vanderbilt University.Scientist in the Biological Sciences Division and Director of Proteomics Research at Pacific Northwest National Laboratory (PNNL).

Biemann Medal

2014 Recipient: Lingjun Li

Award Lecture: 4:45 pm, Tuesday, Exhibit Hall AB, level 1

Dr. Lingjun Li is awarded the 2014 Biemann Medal for the number and depth of her contributions in the field of mass spectrometric study of neuropeptides and functional peptidomics.

Professor Lingjun Li's research program is focused on the development of novel and improved mass spectrometry (MS)-based tools in conjunction with microseparation techniques to study challenging neuroscience problems including functional discovery of neuropeptides and biomarker discovery in neurodegenerative diseases.

Dr. Li and her team have created several multi-faceted and integrated MS-based platforms that include high resolution *in-situ* peptide mapping, tissue imaging, *in vivo* microdialysis, high sensitivity micro-separation techniques coupled with tandem MS *de novo* sequencing, and new isotopic and isobaric labeling strategies, and improved bioinformatics tools to allow large-scale discovery and functional analysis of novel neuropeptides. More recently, the Li group also employed novel use of ion mobility MS to address several remaining technical challenges associated with peptidomic research. They developed a novel site-specific strategy to rapidly and precisely localize peptide epimers and new strategies to probe peptide sequence scrambling and peptide misidentification, and to improve isobaric tandem mass tag quantitation in QTOF based instrumentation.

Using these integrated platforms and multifaceted approaches, Professor Li and her group discovered more than 300 novel neuropeptides in crustacean model organisms whose genomic sequences are currently unavailable. These findings significantly expanded our knowledge about neuropeptides in these important model organisms and transformed current understanding of neuropeptide family organization and functional consequences of neuropeptide multiplicity.

Dr. Li is Professor of Pharmaceutical Sciences and Chemistry at the University of Wisconsin-Madison.

The Research Awards are fully funded by Thermo Scientific and Waters Corporation in the amount of $35,000 each. Awards will be presented at the Biemann Medal Award Lecture, 4:45 pm, Tuesday, Exhibit Hall AB, level 1

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THERMO SCIENTIFIC

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WATERS CORPORATION

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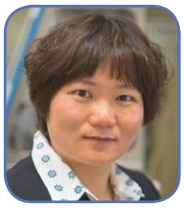
University of Oklahoma

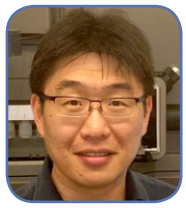
2014 POST-DOCTORAL AWARDS

ASMS inaugurates the Post-Doctoral Awards in 2014. Three awards in the amount of $10,000 each will be awarded annually. The purpose of the award is to promote the professional career development of postdoctoral fellows in the field of mass spectrometry. Activities envisioned for this award include, but are not limited to, conference and workshop attendance, travel to other mass spectrometry laboratories, purchase of books and/or software. The awards are open to ASMS members who are postdoctoral fellows within three years of completing a Ph.D. or equivalent degree. Applicants must be currently appointed as a postdoctoral fellow in North America (e.g., in academia, industry, a government or national laboratory or at a research institute). Details and an application are posted to asms.org.



Huilin Li
University of California, Los Angeles

Boone Prentice
Vanderbilt University



Hao Zhang
Washington University at St Louis

RON A. HITES AWARD FOR OUTSTANDING RESEARCH PUBLICATION IN *JASMS*

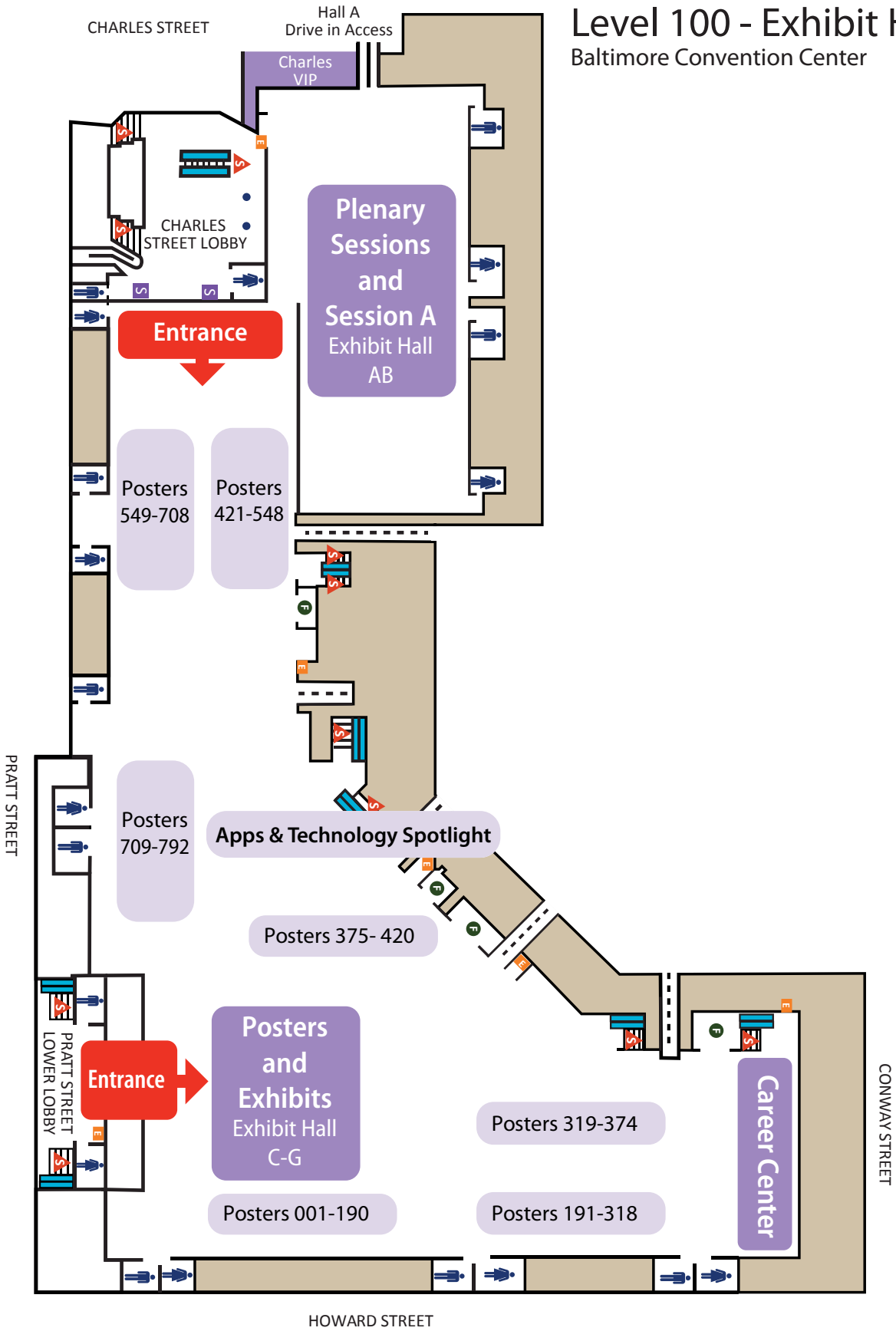
The Ron Hites Award recognizes an outstanding presentation of original research. Selection is based on a paper's innovative aspects, technical quality, likely stimulation of future research, likely impact on future applications, and quality of presentation. The award is named in honor of Professor Ron Hites of Indiana University, who led the creation of *JASMS* in 1988 while president of ASMS. The corresponding author receives a cash award of $2,000 and all authors are acknowledged with certificates of commendation.

The 2014 award recognizes **Evan Williams** and co-authors Harry J. Sterling; Alexander F. Kintzer; Geoffrey K. Feld; Catherine A. Cassou; Bryan A. Krantz; for their paper **Supercharging Protein Complexes from Aqueous Solution Disrupts their Native Conformations**; *JASMS* 2012, vol. 23, pages 191 – 200.

Left to right: Alexander F. Kintzer, Geoffrey K. Feld, Brian A. Krantz, Evan R. Williams, Catherine A. Cassou, and Harry J. Sterling

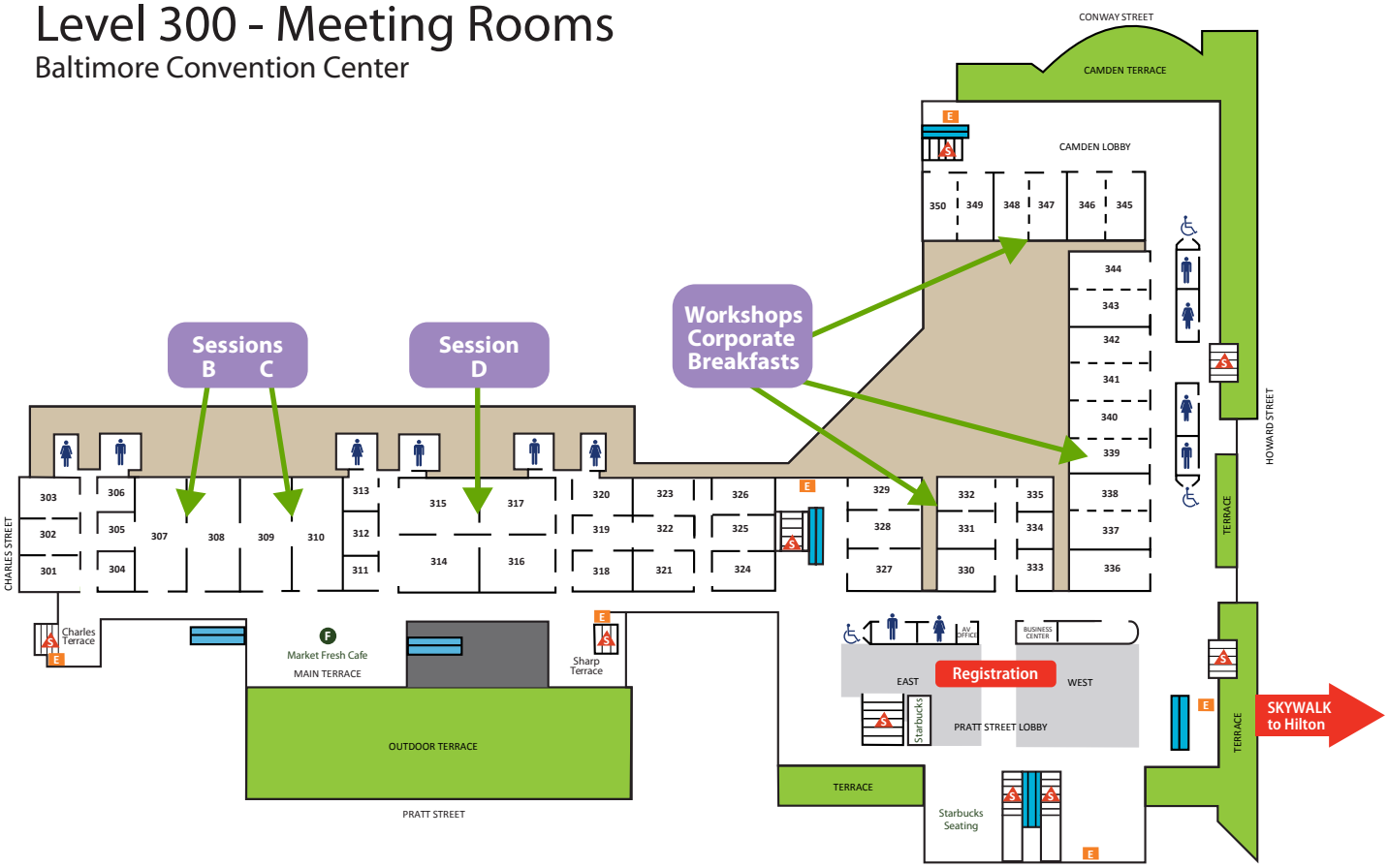
Level 100 - Exhibit Halls

Baltimore Convention Center



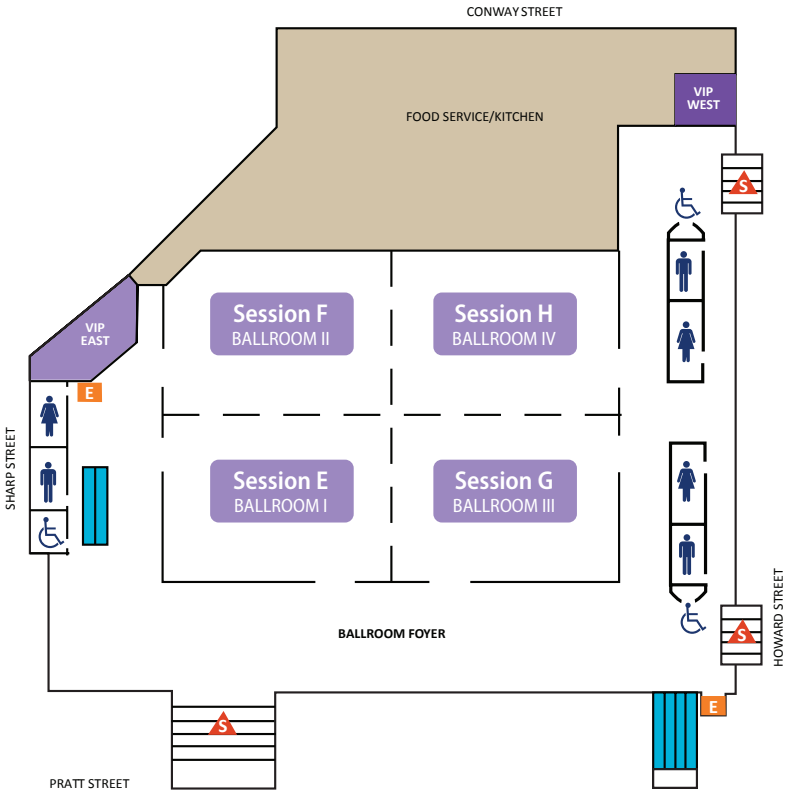
Level 300 - Meeting Rooms

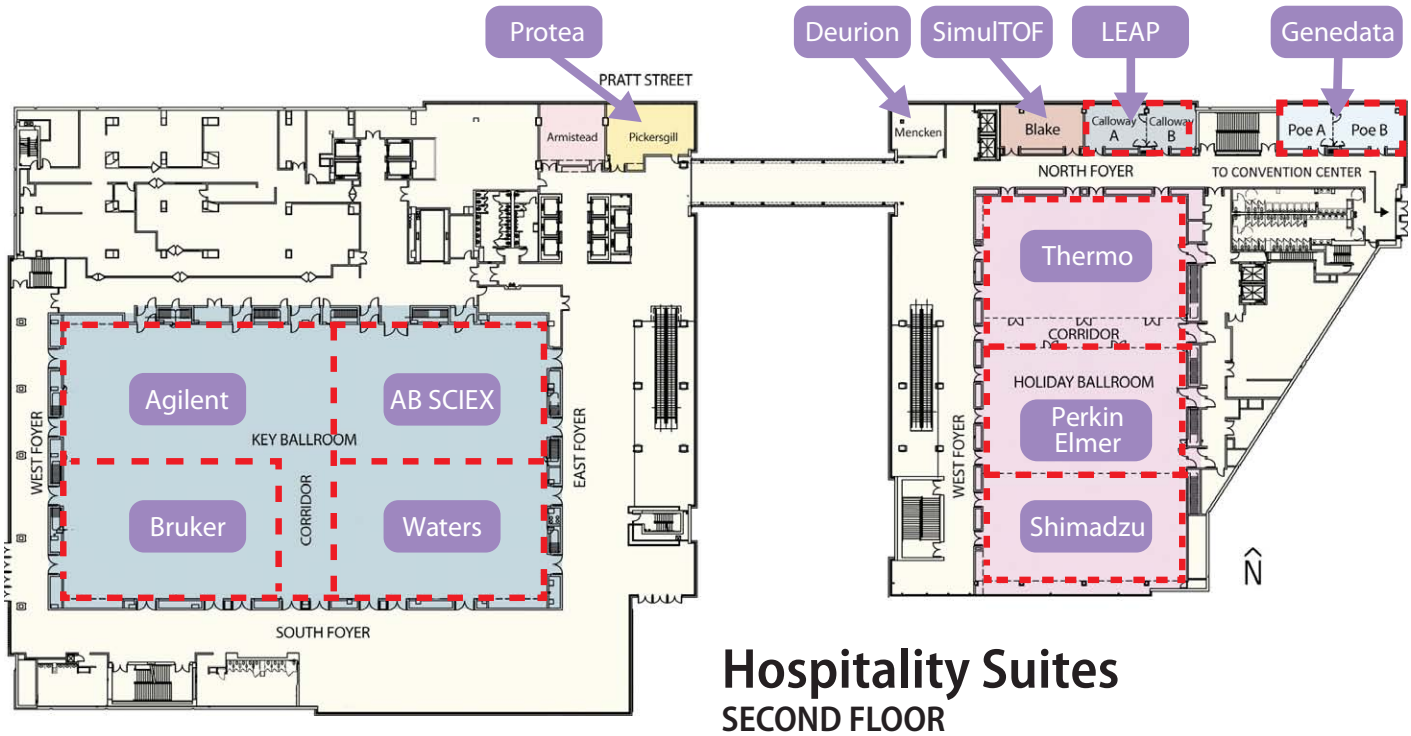
Baltimore Convention Center



Level 400 - Ballroom

Baltimore Convention Center

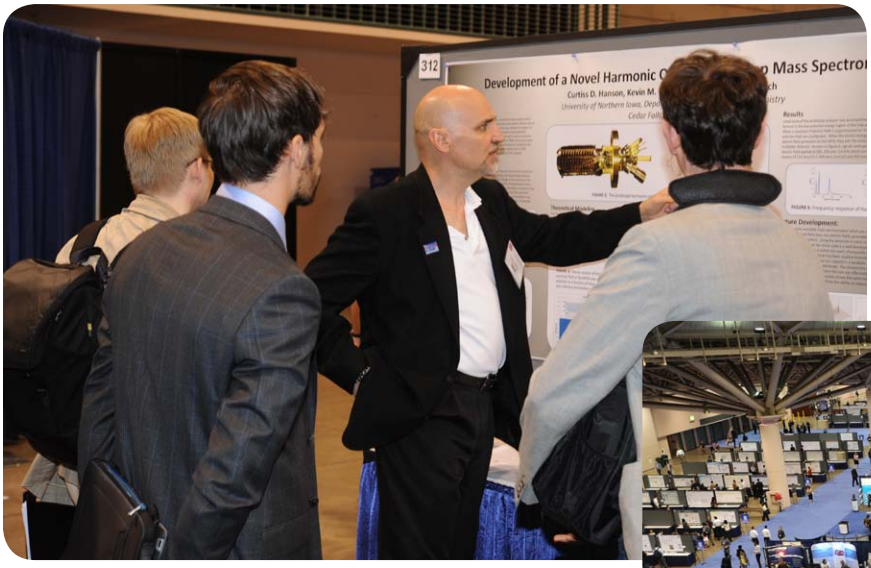




Hospitality Suites

SECOND FLOOR

Hilton Hotel



Company	Booth	Poster or Tabletop	Hilton Hotel Hospitality Suite	Breakfast Seminar
AB SCIEX	160		Key 7	Rm 343/344, Mon-Wed; Rm 345/346 Mon-Tues; Rm 347/348 Mon
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Company	Booth	Poster or Tabletop	Hilton Hotel Hospitality Suite	Breakfast Seminar
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Jenny Brodbelt
University of Texas, Austin
Vice President for Programs

Student Assistants

Graduate students assist with many aspects of the conference, including registration, oral and poster sessions, and the Career Center. The students each receive a stipend to help with their conference travel expenses.

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Mathias Wilhelm
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Yu Xia
Keyang Xu
Nathan Yates
Ralf Zimmerman

Saturday

9:00 AM - 4:30 PM	**Short Courses**
2:00 - 5:00 PM	**Registration**

Sunday

9:00 AM - 4:30 PM	**Short Courses**
10:00 AM - 8:00 PM	**Registration**
5:00 - 6:30 PM	**Tutorial Lectures**, Exhibit Hall AB, level 1
6:45 - 7:45 PM	**Conference Opening,** Exhibit Hall AB, level 1 **Jenny Brodbelt,** *ASMS Vice President for Programs*
7:45 - 9:00 PM	**Reception in the Poster-Exhibit Hall**

5:00 - 5:45 pm
Mass Spectrometry in the Pharmaceutical Industry: Everything You Ever Wanted to Know But Were Afraid to Ask

Lucinda Cohen
Merck Research Laboratories

5:45 - 6:30 pm
Imaging Mass Spectrometry

Ron M.A. Heeren
FOM-AMOLF

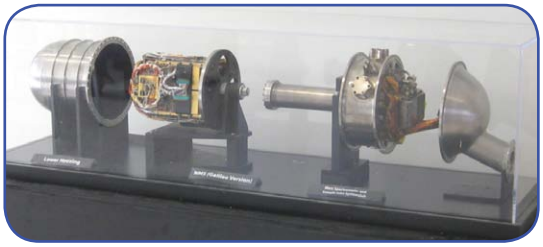
7:00 - 7:45 pm

The James Webb Space Telescope: From First Light to the Search for Earth 2.0

Jason Kalirai
Telescope Science Institute

Spaceflight Mass Spectrometry 1963 – 2018

A small exhibit featuring models of spaceflight mass spectrometers employed in the exploration of the Solar System over the past several decades is displayed in the Pratt Lobby. Mass spectrometers have contributed substantially to our understanding of planetary science and astrobiology, and their continued use has a bright future with new technologies under development. Displayed models include engineering units, flight spares, and demonstration reproductions from robotic planetary missions to Venus, Jupiter, Saturn, Titan, and Mars. Experts will be on hand to answer questions about instrument design, mission science achievements, and future directionassociated with these one-of-a-kind instruments.



The display has been coordinated by William B. Brinckerhoff, NASA GSFC, Greenbelt MD.

Monday

7:30 AM - 5:00 PM	**Registration**
8:30 - 10:30 AM	**Oral Sessions** • MOA am: Emerging Environmental Contaminants, Exhibit Hall AB, level1 • MOB am: Instrumentation: New Developments in High Resolution and Mass Accuracy to Celebrate Alan Marshall's 70th Birthday, Room 307-308, level 3 • MOC am: Nucleic Acids, Room 309-310, level 3 • MOD am: Fundamentals: Reactions, Dynamics and Theory of Gas Phase Ions, Room 314-317, level 3 • MOE am: Antibodies and Antibody-Drug Conjugates, Ballroom I, level 4 • MOF am: H/D Exchange: New Developments in Technology, Ballroom II, level 4 • MOG am: Informatics: Protein Identification, Ballroom III, level 4 • MOH am: PTMs: Advances in Isolation, Enrichment, Derivatization and Separation, Ballroom IV, level 4
10:30 AM - 2:30 PM	**Poster Session and Exhibits,** Poster/Exhibit Hall, level 1 Monday posters 12:00 – 1:00 pm: **Undergraduate students** – look for reserved tables to ***Meet the Experts***
2:30 - 4:30 PM	**Oral Sessions** • MOA pm: Polymer- and Packaging-Related Contaminants and Degradants in Consumer Products, Exhibit Hall AB, level 1 • MOB pm: Instrumentation: Mini/Portable/Fieldable Mass Spectrometry, Room 307-308, level 3 • MOC pm: Ion Mobility: Structures to Celebrate Mike Bowers' 75th Birthday, Room 309-310, level 3 • MOD pm: Photoionization, Room 314-317, level 3 • MOE pm: Characterization of Biologics and Biosimilars, Ballroom I, level 4 • MOF pm: Quantitative Analysis in Drug Discovery and Development, Ballroom II, level 4 • MOG pm: Informatics: Protein Quantification, Ballroom III, level 4 • MOH pm: Imaging: Biomedical Applications, Ballroom IV, level 4
4:45 - 5:30 PM	**Award Lecture**, Exhibit Hall AB, level 1  **Award for a Distinguished Contribution in Mass Spectrometry** **Richard M. Caprioli** Vanderbilt University
5:45 - 7:00 PM	**Workshops** All workshops are located on level 3. There are light refreshments on level 3. 1. Real World Applications of Photoionization; Room 307-308 2. Taming Errors for Peptides with Post-Translational Modifications (organized by Bioinformatics for MS Interest Group); Room 309-310 3. Applying Ion Mobility to Biological Problems (organized by Ion Mobility MS Interest Group); Room 314-317 4. How to Succeed in Pharma without Really Trying; Room 327 5. Discussion on MS Analysis of Oligonucleotides: Methodology and Informatics (organized by DNA/RNA Interest Group); Room 336 6. Use of Mass Spectrometry to Overpower Complexity of Biofuels and Petroleum (organized by Energy, Petroleum & Biofuels Interest Group); Room 337 7. Getting the Most out of Undergraduate Mass Spectrometry Research (organized by Undergraduate Research in MS Interest Group); Room 338 8. ProteomicsDB; Room 339-340 9. Working with Federal Agencies to Obtain Research Support. Session I: Counsel and Resources for Interactions with Federal Funding Agencies; Room 341-342 10. Systems of Annotation and Reporting Requirements for Lipid Mass Spectrometry (organized by Lipids and Lipidomics Interest Group; Room 343-344 11. A State of the Union for Biomarker Translation (organized by Clinical Chemistry Interest Group); Room 345-346 12. Antibody Drug Conjugates as Pharmaceutical Agents (organized by Pharmaceuticals Interest Group); Room 347-348 13. Roundtable Discussion on Research Challenges in Forensics and Homeland Security (organized by Forensics and Homeland Security Interest Group); Room 349-350
7:00 - 8:00 PM	**Dinner Break**
After 8:00 PM	**Corporate Hospitality Suites,** Hilton Hotel

Tuesday

7:30 AM - 5:00 PM	**Registration**
8:30 - 10:30 AM	**Oral Sessions** • TOA am: Integrated Qualitative and Quantitative LC-MS for Small Molecule Analysis, Exhibit Hall AB, level 1 • TOB am: Instrumentation and Methods: FT, Ion Traps and Hybrid Instruments, Room 307-308, level 3 • TOC am: Ion Mobility: Separations, Room 309-310, level 3 • TOD am: Macromolecular Complexes: Activation and Dissociation, Room 314-317, level 3 • TOE am: PK/PD Analysis of Biologics, Ballroom I, level 4 • TOF am: H/D Exchange: Biological Applications, Ballroom II, level 4 • TOG am: Phosphoproteomics in Disease, Ballroom III, level 4 • TOH am: Imaging: Pharmaceuticals and Metabolomics, Ballroom IV, level 4
10:30 AM - 2:30 PM	**Poster Session and Exhibits,** Poster/Exhibit Hall Tuesday posters
2:30 - 4:30 PM	**Oral Sessions** • TOA pm: Space Science, Astrobiology, and Atmospheric Chemistry, Exhibit Hall AB, level 1 • TOB pm: Nano-Scale and Microfluidic Separations and Mass Spectrometry, Room 307-308, level 3 • TOC pm: Protein-Protein and Protein-Ligand Interactions, Room 309-310, level 3 • TOD pm: Fundamentals of Peptide Fragmentation, Room 314-317, level 3 • TOE pm: Top-Down Protein Analysis, Ballroom I, level 4 • TOF pm: Drug Target Discovery and Validation, Ballroom II, level 4 • TOG pm: Clinical Diagnostics, Ballroom III, level 4 • TOH pm: Imaging: Fundamentals, Instrumentation, and Method Development, Ballroom IV, level 4
4:45 - 5:30 PM	**Award Lecture,** Exhibit Hall A/B (lower level)  **Biemann Medal** **Lingjun Li** University of Wisconsin-Madison
5:45 - 7:00 PM	**Workshops** All workshops are located on level 3. There are light refreshments on level 3. 1. H/D Exchange, Covalent Labeling and Crosslinking (organized by H/D Exchange, Covalent Labeling & Cross Linking Interest Group); Room 307-308 2. LC-MS System Performance Tracking in LC-MS Tracking in LC-MS (organized by LC/MS & Related Topics Interest Group); Room 309-310 3. Antibody-Drug Conjugates (ADC) - A Complex Problem in Regulated Bioanalysis (organized by Regulated Bioanalysis Interest Group); Room 314-317 4. Controlling and Measuring Variation in Sample Preparation and Data Analysis in a Core Facility Environment (organized by Analytical Lab Managers Interest Group); Room 336 5. FTMS: ICR and Orbitrap (organized by FTMS Interest Group); Room 337 6. Environmental Impacts and Implications of Hydrocarbon Extraction and Processing – The Role of Mass Spectrometry (organized by Environmental Applications Interest Group); Room 338 7. Gas Phase Ion Chemistry – Thermochemistry, Kinetics and Structures. In Honor of John Bartmess (organized by Fundamentals Interest Group); Room 339-340 8. The NIH Review Process and Mock NIH Study Section; Room 341-342 9. Imaging Mass Spectrometry vs. Histology (organized by Imaging MS Interest Group); Room 343-344 10. Metabolomics: Emerging Technologies for Continued Innovation (organized by Metaboloimics Interest Group); Room 345-346 11. 50 Years of the British Mass Spectrometry Society: Past, Present & Future; Room 347-348 12. CHORUS – A Community Solution for the Storage, Visualization, Sharing, and Analysis of Mass Spectrometry Data on the Cloud; Room 349-350
7:00 - 8:00 PM	**Dinner Break**
After 8:00 PM	**Corporate Hospitality Suites,** Hilton Hotel

Wednesday

7:30 AM - 5:00 PM	**Registration**
8:30 - 10:30 AM	**Oral Sessions** • WOA am: Energy, Petroleum, and Biofuels: Advances in Sample Preparation and MS Interface Design, Exhibit Hall AB, level 1 • WOB am: Ambient and Atmospheric Pressure Ionization: Fundamentals, Room 307-308, level 3 • WOC am: The Triple Quadrupole: 35 Years of Evolution and Application to Celebrate Chris Enke's 80th Birthday, Room 309-310, level 3 • WOD am: Quantitative Proteomics in Systems Biology/Cellular Pathway Analysis, Room 314-317, level 3 • WOE am: Peptidomics, Ballroom I, level 4 • WOF am: Pharmacoproteomics and Toxicoproteomics for Drug Development, Ballroom II, level 4 • WOG am: PTMs: Comprehensive Analysis, Ballroom III, level 4 • WOH am: Lipids and Profiling, Ballroom IV, level 4
10:30 AM - 2:30 PM	**Poster Session and Exhibits,** Poster/Exhibit Hall Wednesday posters
2:30 - 4:30 PM	**Oral Sessions** • WOA pm: Energy, Petroleum, and Biofuels: Advances in MS Design and Informatics, Exhibit Hall AB, level 1 • WOB pm: Ambient Ionization: Instrumentation and Applications, Room 307-308, level 3 • WOC pm: Ecological and Human Health Environmental Chemistry and Toxicology, Room 309-310, level 3 • WOD pm: Fundamentals: New Ion Activation Methods, Room 314-317, level 3 • WOE pm: Plant "omics", Ballroom I, level 4 • WOF pm: Proteomics: Infectious Diseases, Ballroom II, level 4 • WOG pm: Targeted Quantification of Proteins and Post-translational Modifications, Ballroom III, level 4 • WOH pm: Membrane Proteins, Ballroom IV, level 4
4:45 - 5:30 PM	**ASMS Meeting,** Ballroom I, level 4 Awards, board reports, wine, beer, soft drinks - and more!
5:45 - 7:00 PM	**Workshops** All workshops are located on level 3. There are light refreshments on level 3. 1. The DIA Primer (organized by Data Indeptendent Acquisition Interest Group); Room 307-308 2. Mechanisms to Process Data Given Software Restrictions Across Vendors (organized by DMPK Interest Group); Room 309-310 3. Characterization of Biologics by Mass Spectrometry (organized by Biotherapeutics Interest Group); Room 314-317 4. Get Ready to Become a MS Rising Star (organized by Young Mass Spectrometrists Interest Group); Room 336 5. Have Quadrupole Ion Traps Passed their Prime Time? (organized by Ion Trap Interest Group); Room 337 6. Advancements and Discussion of Mass Spectrometry Technology and Challenges within the Polymer and Material Fields (organized by Polymeric Materials Interest Group); Room 338 7. The Galaxy Framework for Biological MS Informatics: Practical Tips for Software Developers and Users; Room 339-340 8. Using Mass Spectrometry to Characterize the Exposome and Its Impact on Human Health; Room 341-342 9. PowerPoint Design Tips and Tricks: How Your Slides Could be Hurting Your Talk and Your Message; Room 343-344 10. Quantitative Glycomics; Room 345-346 11. Current Trends, Gaps, and Needs in Workflows for Absolute Protein Quantitation by LC-MS; Nalini Sadagopan, Room 347-348 12. Modern GCMS for Flavor, Fragrance and Foodstuffs Analysis: GC QQQ and GC HRMS (organized by Flavor Fragrance and Foodstuff Interest Group); Room 349-350 13. Mass Spectrometry Applications in Art, Cultural Heritage, and Natural History, Room 327
7:00 - 8:00 PM	**Dinner Break**
After 8:00 PM	**Corporate Hospitality Suites,** Hilton Hotel

Thursday

7:30 AM - 5:00 PM	**Registration**
8:30 - 10:30 AM	**Oral Sessions** • ThOA am: Forensic Applications, Exhibit Hall AB, level 1 • ThOB am: Instrumentation: New Developments in Ionization and Sampling, Room 307-308, level 3 • ThOC am: FAIMS and DMS: New Developments and Applications, Room 309-310, level 3 • ThOD am: Radical Ion Chemistry, Room 314-317, level 3 • ThOE am: Biomarkers in Drug Discovery, Development and Diagnosis, Ballroom I, level 4 • ThOF am: Covalent Labeling, Chemical Probes, and Crosslinking for Biomolecule Structural Characterization, Ballroom II, level 4 • ThOG am: Informatics: Metabolomics, Ballroom III, level 4 • ThOH am: Glycoproteins and Glycans: New MS Approaches, Ballroom IV, level 4
10:30 AM - 2:30 PM	**Poster Session and Exhibits,** Poster/Exhibit Hall Thursday posters
2:30 - 4:30 PM	**Oral Sessions** • ThOA pm: Food Chemistry and Safety, Exhibit Hall AB, level 1 • ThOB pm: Instrumentation: Time-of-Flight Mass Spectrometry, Room 307-308, level 3 • ThOC pm: Mass Spectrometry in Structural Biology, Room 309-310, level 3 • ThOD pm: Fundamentals: Ion Spectroscopy, Room 314-317, level 3 • ThOE pm: Data Independent Acquisition, Ballroom I, level 4 • ThOF pm: Epigenetic Modifications and Mechanisms, Ballroom II, level 4 • ThOG pm: Metabolomics/Lipidomics: New MS Technologies and Applications, Ballroom III, level 4 • ThOH pm: Carbohydrates: New MS Approaches, Ballroom IV, level 4
4:45 - 5:30 PM	**Plenary Lecture,** Exhibit Hall AB, level 1  **How the Genome Folds** **Erez Lieberman Aiden** Baylor College of Medicine and Rice University
6:30 - 9:00 PM	**Closing Event, National Aquarium.** Ticket required

All workshops are located on level 3. There are light refreshments on level 3.

MONDAY WORKSHOPS, 5:45 - 7:00 PM

1. Real World Applications of Photoionization;
Ralf Zimmerman and Jack Syage presiding
Room 307-308

The workshop on Photoionization last year was a success with a standing room only crowd to the end. That workshop brought the mechanism of atmospheric pressure photoionization and vacuum photoionization up to date and stimulated significant discussion. This year we would like to focus more on applications as PI is expanding in its uses ranging from APPI in LC/MS in petroleums, food safety, and environmental monitoring to ambient analysis (DAPPI, DART/APPI, etc.) to its now becoming the preferred ionization source for explosives detection airport security detection systems (MS and IMS) potentially expanding the user base by yet another few thousand. This would be a great opportunity to get discussion and feedback on these new developments from the MS community and perhaps set the stage for a PI oral session in 2015 as these new developments mature.

2. Taming Errors for Peptides with Post-Translational Modifications (organized by Bioinformatics for MS Interest Group); Karl Clauser, Karl Mechtler, Lukas Käll, David Tabb presiding
Room 309-310

The use of database search engines for identification of posttranslational modifications (PTMs) is common practice in most proteomics labs, but these identifications have been plagued by errors from two key sources. Karl Clauser will highlight the elevation of false discovery rates that results from allowing more degrees of freedom in identification, such as allowing for "blind PTM" searches or permitting too many modifiable sites in some peptides. Karl Mechtler will emphasize localization, the challenge of associating PTMs with the appropriate residue when multiple modifiable sites may be found in a peptide. Which PTM challenge merits more attention from the bioinformatics research community?

3. Applying Ion Mobility to Biological Problems (organized by Ion Mobility MS Interest Group); Matthew Bush and Erin Baker presiding
Room 314-317

Results from ion mobility mass spectrometry studies are increasingly used to answer questions in biology, including applications to metabolomics, proteomics, targeted interactions, and large molecules. This is in part attributed to the increasing performance and selection of commercial ion mobility mass spectrometry instrumentation, which has made it easier to integrate ion mobility technologies into mass spectrometry workflows. In this workshop, we will showcase research that demonstrates the advantages of ion mobility for biological applications. There will also be opportunities to discuss the challenges that arise in different types of ion mobility studies, what is possible today, and opportunities for the future.

4. How to Succeed in Pharma without Really Trying;
Lucinda Cohen presiding
Room 327

This workshop will focus on advice to young scientists considering career choices after graduation. An expert panel consisting of current and former pharmaceutical scientists will engage in dialogue with the audience around their experiences job-hunting, changing positions, networking inside and outside the company, and thriving in today's ever-changing environment. Audience participation will be an essential driver for the workshop, with shared participant experiences being welcome. This workshop will continue the theme of the Sunday Tutorial Lecture by Lucinda Cohen, "Everything You Ever Wanted to Know about Mass Spectrometry in the Pharmaceutical Industry but Were Afraid to Ask." However, the focus will be pragmatic and offer insider perspectives on life in an industrial laboratory environment. Ultimately the intent is to help young mass spectrometrists connect with pharmaceutical industry veterans.

5. Discussion on MS Analysis of Oligonucleotides: Methodology and Informatics (organized by DNA/RNA Interest Group);
Norman Chiu and Michael McGinley presiding
Room 336

The workshop will cover recent advances in MS characterization of oligonucleotides with an emphasis on recent development in sample preparation as well as MS data processing. While MS instrument development will likely be covered in other sessions, there have been several developments both in sample preparation of oligonucleotides as well as data analysis of collected data. The proposed workshop will have 4 short topic "primers" from thought leaders starting discussions; two about sample processing leading to oligonucleotide analysis using MS/MS as well as two discussing data interpretation of MS/MS data for oligonucleotides. Discussion should lead to some view of the current trends in analysis of oligonucleotides by MS.

6. Use of Mass Spectrometry to Overpower Complexity of Biofuels and Petroleum (organized by Energy, Petroleum & Biofuels Interest Group); Patrick Hatcher and Lateefah Stanford presiding
Room 337

The molecular complexity of biofuels and petroleum has offered an analytical challenge for those interested in assessing their composition. Advances in 2 dimensional GC x GC-MS, Fourier transform MS and Ion mobility MS are allowing for an exhaustive molecular characterization of these materials, to the point that a comprehensive molecular-level characterization of thesemixtures is within reach. New developments in MS instrumentation and approaches are paving the way for advanced characterization of complex mixtures like petroleum and biofuels. The workshop will invite discussion leaders at the forefront of applications of these advanced MS approaches in the energy field to enlighten interested groups to venture into the arena.

7. Getting the Most out of Undergraduate Mass Spectrometry Research (organized by Undergraduate Research in MS Interest Group); JC Poutsma and Elaine Marzluff presiding
Room 338

Panel discussion with current undergrads, recent graduates, and faculty members at PUI institutions. This workshop is designed for undergraduates who are attending the ASMS meeting and will focus on how best to leverage their undergraduate research into success in graduate school and industry.

8. ProteomicsDB; Bernhard Kuster and Mathias Wilhelm presiding
Room 339-340

There is a growing landscape of various databases and repositories for MS and proteomics. In this workshop, we would like to present ProteomicsDB, a free, professionally developed solution to store and analyze mass spectrometry-based proteomics data. ProteomicsDB has a strong focus on functionality and secondary use of proteomics and mass spectrometry data. We would like to discuss our motivations for initiating this effort, demonstrate typical use-cases for web interface and API, describe our short and long-term plans and generally encourage the involvement from the ASMS community.

9. Working with Federal Agencies to Obtain Research Support. Session I: Counsel and Resources for Interactions with Federal Funding Agencies; Douglas Sheeley, Charles Edmonds, and Salvatore Sechi presiding
Room 341-342

A major source of financial support for US research is the federal government. Unfortunately, researchers are sometimes not aware of the resources available to them. This two session workshop, to be held on consecutive evenings at the ASMS conference, will discuss the identification of appropriate agencies and programs, writing an effective application, responding to the criticisms of reviewers, and taking full

MONDAY WORKSHOPS, 5:45 - 7:00 PM continued

advantage of guidance from program administrators. Speakers will explore these issues from the perspectives of the applicant, reviewer, and administrator, with some emphasis on the new investigator. References to additional resources will be provided. A "mock" NIH study section presentation will provide additional insight into the review process at that agency, and an opportunity for discussion with NIH staff. Each session will allow substantial time for questions and staff will be available for one-on-one conversations afterward on both evenings.

10. Systems of Annotation and Reporting Requirements for Lipid Mass Spectrometry (organized by Lipids and Lipidomics Interest Group); Stephen Blanksby and Christer Ejsing presiding
Room 343-344

The 61st ASMS conference in Minneapolis played host to the first workshop on "Lipid Mass Spectrometry and Lipidomics". This workshop was attended by ~190 participants and resulted in vibrant discussion. A recurring theme was the importance of developing guidelines for the uniform reporting of mass spectrometry-based lipid and lipidome data, particularly in terms of an abbreviation code that encapsulates the exact level to which lipids can be structurally defined and/or quantified when using a particular MS or MS/MS approach. This workshop will invite opinion on systems of annotation and reporting requirements from leaders in the field that will then be opened for discussion and input from all workshop participants. An expected outcome of this workshop will be the formation of a working group to collate and consider the ideas presented and to refine this into a series of recommendations for lipid mass spectrometrists.

11. A State of the Union for Biomarker Translation (organized by Clinical Chemistry Interest Group); Brian Rappold and Cory Bystrom presiding
Room 345-346

With recent announcements from CPTAC and commercial companies that are offering novel diagnostics derived from proteomics research this presents an opportunity to review the problems that have been solved and the challenges that lie ahead. In this workshop, we will invite several guest speakers to give a brief assessment of the landscape from discovery to clinical utilization/commercialization which will be followed by a moderated discussion. The co-chairs will also be soliciting ideas for future workshop topics so bring your ideas.

12. Antibody Drug Conjugates as Pharmaceutical Agents (organized by Pharmaceuticals Interest Group); Brian Furmanski and Shawna Hengel presiding
Room 347-348

Due to the success of the 2013 pharmaceutical interest group workshop we will continue with a similar format being; the overview of the topic of antibody drug conjugates as pharmaceutical agents with a short informal presentation (10 min) by an academic/industrial leader. Following the presentation the panelists will be introduced along with three key questions to start of the discussion with the general audience. The short presentation is meant to capture the field in its current state, in addition give specific examples of challenging issues in the industry for the discovery and development of antibody drug conjugates. Potential areas of discussion may include characteristics of antibodies, drug antibody ratio (DAR) in vivo/ex vivo, strategies for sample prep/isolation, choice of mass analyzers and a comparison of complimentary tools to mass spectrometry including: ELISA, Luminex, page electrophoresis, Edman sequencing and surface plasmon resonance. To identify panelists, gauge the level of interest of the ASMS community and to tailor the discussion we will send out a survey of open ended questions in April.

13. Roundtable Discussion on Research Challenges in Forensics and Homeland Security (organized by Forensics and Homeland Security Interest Group); Guido Verbeck and Glen Jackson presiding
Room 349-350

Forensic-related applications of mass spectrometry has some unique challenges for researchers wishing to pursue a career in this field. We plan to stimulate an informative discussion between roundtable participants and audience members around the following topics: Funding; publishing; collaborating; job hunting; academic challenges. Roundtable participants will include knowledgeable and experienced members of the forensic and homeland security community, including representatives of funding agencies, crime labs, academia and publishers.

TUESDAY WORKSHOPS, 5:45 - 7:00 PM

All workshops are located on level 3. There are light refreshments on level 3.

1. H/D Exchange, Covalent Labeling and Crosslinking (organized by H/D Exchange, Covalent Labeling & Cross Linking Interest Group); Joshua Sharp and David Schriemer presiding
Room 307-308

The workshop will provide a forum for discussing the latest HDX, covalent labeling and crosslinking methods for protein analysis. Presentations will provide an opportunity to discuss MS-based methods, data analysis routines and applications with the attendees. The goal of these presentations will be to stimulate discussion and convey useful experimental detail you can take back to your lab.

2. LC-MS System Performance Tracking in LC-MS (organized by LC/MS & Related Topics Interest Group); Helene Cardasis presiding
Room 309-310

While this group has previously hosted an annual workshop on LC-MS troubleshooting, this year we will take a more preventative approach. The workshop this year will focus on important aspects of whole-platform performance tracking with respect to defining data quality, understanding performance drift, and facilitating/ expediting troubleshooting when issues do arise. Discussion will touch on choice of QC sample, instrument method, frequency of measurement, key metrics and their interpretation, and QC data processing. We will also review and demo some of the freeware available for this purpose. As always, audience participation in the form of both questions and heated debate are encouraged!

3. Antibody-Drug Conjugates (ADC) - A Complex Problem in Regulated Bioanalysis (organized by Regulated Bioanalysis Interest Group); Fabio Garofolo and Keyang Xu presiding
Room 314-317

The purpose of this workshop is to provide an informal venue for the discussion of ADCs from a Regulated Bioanalytical point of view based on recent industry consensus. Dr. Keyang Xu (Genentech) will lead the discussion together with a recognized panel of bioanalytical experts in the field. As per the ASMS workshop format there will not be formal presentations but the participants will introduce the discussion topics for maximum of 10 minutes to engage the audience and encourage all to participate in a dynamic and productive discussion.

ADCs are generally complex heterogeneous mixtures of multiple species, these novel therapeutic products present unique challenges in Regulated Bioanalysis: Heterogeneity of the reference material (e.g.: lysine side chain-based conjugation; hydrazine-based); Heterogeneity impact on assay accuracy; In-vivo dynamicity and deconjugation (mixture of DAR); LC-MS high sensitivity for unconjugated drug detection. Multiple validated methods are need for well characterizing ADCs quantitation: Total antibody; Conjugated antibody; Antibody-conjugated drug; unconjugated/deconjugated drug. Interpretation of the bioanalytical data from these multiple assays can be complex. Discussion will also focus on regulatory expectations surrounding comparability studies for ADC.

TUESDAY WORKSHOPS, 5:45 - 7:00 PM continued

4. Controlling and Measuring Variation in Sample Preparation and Data Analysis in a Core Facility Environment (organized by Analytical Lab Managers Interest Group); Brett S. Phinney and Chris Colangelo presiding
Room 336

Along with a panel of invited laboratory managers, we propose to discuss several topics related to controlling and measuring variation in sample preparation and Data analysis. These topics may include
1) How do you control variation in sample preparation
2) How do you measure variation is sample preparation
3) How to choose an appropriate QC standard, where to buy it or make it if necessary.
4) How to determine the appropriate number of replicates you need?
5) How to determine what amount of variation is due to sample preparation or biology
6) How do you control for variation in data analysis.
7) How to document variation and present it to core clientele

The session will discuss practical real world examples and implementations to measure and control for variation in core facilities. Audience members are encouraged to share their straggles and approaches for used in their own laboratories.

5. FTMS: ICR and Orbitrap (organized by FTMS Interest Group); Nathan Kaiser and Don Smith presiding
Room 337

Recent advances in high resolution FTMS have focused on electric field control (e.g. high field Orbitrap and compensated/harmonized ICR cells) and new implementations of advanced data processing (e.g. absorption mode and eFT). These, as well as other new developments in FTMS instrumentation and fundamentals will be discussed. Fundamental and practical topics, as well as current instrument limitations will be open for interactive discussion.

6. Environmental Impacts and Implications of Hydrocarbon Extraction and Processing – The Role of Mass Spectrometry (organized by Environmental Applications Interest Group); Kerry Peru and Chris Gill presiding
Room 338

Rapid expansion of hydrocarbon extraction, production and processing from nonconventional sources such as shale gas and oil sands has lead to the need of determining the industry's impact on the environment by characterizing and monitoring associated contaminants. This year's Workshop is a continuation of last year's topic which drew considerable interest. Updates on analytical methodologies used for monitoring, identification and characterization of contaminants will be discussed along with an update of the state of the industry from an environmental perspective.

7. Gas Phase Ion Chemistry – Thermochemistry, Kinetics and Structures. In Honor of John Bartmess (organized by Fundamentals Interest Group);
George Khairallah and Jos Oomens presiding
Room 339-340

This year marks a milestone for several researchers in the fundamentals field including Professor John Bartmess. We plan to honor this special occasion by providing a series of invited short presentations and discussions mainly in the research areas in which John was very active. In the yearly tradition of the fundamentals group, senior graduate students and postdoctoral scholars in research groups will give the presentations.

8. The NIH Review Process and Mock NIH Study Section; Douglas Sheeley, Charles Edmonds, and Salvatore Sechi presiding
Room 341-342

A major source of financial support for US research is the federal government. Unfortunately, researchers are sometimes not aware of the resources available to them. This two session workshop, to be held on consecutive evenings at the ASMS conference, will discuss the identification of appropriate agencies and programs, writing an effective application, responding to the criticisms of reviewers, and taking full advantage of guidance from program administrators. Speakers will explore these issues from the perspectives of the applicant, reviewer, and administrator, with some emphasis on the new investigator. References to additional resources will be provided. A "mock" NIH study section presentation will provide additional insight into the review process at that agency, and an opportunity for discussion with NIH staff. Each session will allow substantial time for questions and staff will be available for one-on-one conversations afterward on both evenings.

9. Imaging Mass Spectrometry vs. Histology (organized by Imaging MS Interest Group); Liam McDonnell and Zoltan Takats presiding
Room 343-344

The topic for discussion will concern the question of where imaging MS can have an impact in diagnostic and prognostic pathology, and what must be done for it to become a recognized clinical method. In order to encourage open discussion we will include a series of deliberately provocative 5-minute presentations.
i) Imaging MS can replace histology.
ii) Histology & diagnostics – mass spectrometrists underestimate its importance.
iii) What is the added benefit of imaging MS in diagnostics?
iv) In-surgery, *in-situ* analysis
v) Open discussion – where can imaging MS make a difference?
vi) What needs to be done for imaging MS to become a recognize clinical tool?

10. Metabolomics: Emerging Technologies for Continued Innovation (organized by Metaboloimics Interest Group); Sunia Trauger and Gary Patti, presiding
Room 345-346

This workshop will begin with a brief discussion of the most exciting technological advances in the field of metabolomics over the past year. The moderators will highlight 2-3 noteworthy metabolomic publications that they feel are particularly impressive achievements and survey the audience for their opinions. Three-four invited scientists with expertise in the technologies highlighted will serve as panelists and answer questions posed by the moderators and attendees. The workshop will close with a discussion among the panelists on their perspectives of emerging trends and the role that these technologies are playing in future development. Advances intended to be highlighted are: (i) software for post-processing of untargeted metabolomic data, (ii) innovative experimental designs using stable isotopes, (iii) shotgun approaches with ion mobility, and (iv) metabolite identification by in silico fragmentation.

11. 50 Years of the British Mass Spectrometry Society: Past, Present & Future; Helen Cooper, Sarah Hart, and Jackie Moseley presiding
Room 347-348

- Presentation by BMSS President Professor John Monaghan on the history of BMSS.
- Three short talks on breaking developments in MS research from the UK
- BMSS travel grants for members to attend ASMS and plan was to select these talks from the recipients of that funding once allocated.
- Panel Q&A session to discuss future direction of BMSS

12. CHORUS – A Community Solution for the Storage, Visualization, Sharing, and Analysis of Mass Spectrometry Data on the Cloud; Andrey Bondarenko, Michael MacCoss, Christine Wu, and Nathan Yates presiding
Room 349-350

The sharing, public dissemination, and analysis of mass spectrometry data has become a major challenge. We would like to present a community effort to provide a free, professionally developed solution

TUESDAY WORKSHOPS, 5:45 - 7:00 PM continued

to the mass spectrometry field's needs. The application provides a "Google Docs" type interface optimized for mass spectrometry data. Data can be uploaded and kept private, shared with a group of collaborators, or made entirely public. Over the last year CHORUS has gained almost 400 users and these users have placed >9,000 mass spectrometry data files into the service. We have learned a lot from user feedback. We would like to discuss improvements made to CHORUS over the last year and what new analysis capabilities have and are being added. We want to discuss our goals and get feedback from the community on our current and long-term priorities.

WEDNESDAY WORKSHOPS, 5:45 - 7:00 PM

All workshops are located on level 3. There are light refreshments on level 3.

1. The DIA Primer (organized by Data Indeptendent Acquisition Interest Group); Yishai Levin and Will Thompson presiding
Room 307

The heated debate over data-dependent (DDA) versus data-independent (DIA) acquisition strategies shows no signs of abating. This workshop will focus on defining the experimental characteristics, specifically related to data acquisition, which would make up the "perfect" strategy for 'omic analyses. Facilitators will prime the discussion with some simple use-cases for 'omics analysis, then experts and novices alike will gather to share views on the most important attributes of data acquisition in this space. The goal of the discussion will then be a critical evaluation of current approaches against that "perfect" strategy, with an eye towards features that should exist in the next generation of tools.

2. Mechanisms to Process Data Given Software Restrictions Across Vendors (organized by DMPK Interest Group); Don McKenzie and Mustafa Varoglu presiding
Room 309-310

One of the challenges faced by mass spectrometrists is the ability to efficiently gather and process data across multiple software platforms. Many scientists consider the advantages of having multiple types of mass spectrometers to leverage the benefits that each platform provides in data collection. Considerations like ion source diversity, trap vs. ToF vs. triple technology, degree and specificity of product ion formation etc. play into the strategy of building a high quality laboratory. With this in mind, it is common to equip laboratories with instrumentation from various vendors. However, many times a preferred procedure for data collection and/or processing can be limited or unavailable depending upon which vendor based set of hardware is employed. Reasons for this disparity can range from differences in vendor specific software capabilities to data collection and/or processing limitations incurred via patent restrictions. Further, having to train staff in the utilization of the various platforms can be time consuming and tie up limited resources. This workshop will focus on the various mechanisms used across labs to overcome software limitations as well as explore the idea of open source coding for DMPK mass spectrometry data analysis.

3. Characterization of Biologics by Mass Spectrometry (organized by Biotherapeutics Interest Group); Li Tao and Arindam Roy presiding
Room 314-317

This would be a forum to discuss current technical challenges and solutions for the characterization of protein therapeutics by mass spectrometry. Development of new methodologies to improve efficiency and robustness of mass spectrometric analysis will be discussed in this forum. Background information on several topics will be provided to initiate the discussion. Example of some topics for discussion would be
(1) Molecular variants analysis
(2) Degradation pathway identification
(3) Quantitative analysis of glycosylation
(4) Improving the speed of LC/MS analysis

4. Get Ready to Become a MS Rising Star (organized by Young Mass Spectrometrists Interest Group); Olga Friese and Dian Su presiding
Room 336

The workshop features a panel discussion on professional development. Topics will be focused on career planing and management, fundamental training, industrial internship, job search tools and interview strategies. The panel, consisting of representatives from government, industrial and academic organizations, will share their knowledge and practices on career prospects.

5. Have Quadrupole Ion Traps Passed their Prime Time? (organized by Ion Trap Interest Group); Yu Xia presiding
Room 337

In this workshop we will discuss the current status and possible future advancement of quadrupole ion traps, with relevance to the development of various types of mass analyzers. The following questions will be asked: 1. As a mass analyzer, how will ion traps compete with others and what are the critical technical advancements? 2. Structural confirmation by MS/MS vs. high resolution MS, any chance at all? 3. Ion trap as a reaction/storage vessel – what new capabilities are coming out of in research and what should be transferred to commercial instrument?

6. Advancements and Discussion of Mass Spectrometry Technology and Challenges within the Polymer and Material Fields (organized by Polymeric Materials Interest Group); Gyorgy Vas and William Erb presiding
Room 338

This workshop will focus on updating the group on recent work and challenges faced in the various fields such as academic, government, and industry. The focus of this group is polymer and material analysis utilizing various mass spectrometric techniques. This workshop will explore the various ways that polymers and materials are not only analyzed themselves but also how they interact with other materials such as patients, products, etc.

7. The Galaxy Framework for Biological MS Informatics: Practical Tips for Software Developers and Users; Tim Griffin presiding
Room 339-340

The open source Galaxy software framework is gaining momentum as a tool to solve biological MS informatics problems. It offers unique features such as flexibility to integrate disparate software programs into effective workflows, and the ability to share complete workflows with other researchers. In this workshop, expert developers and users of Galaxy for biological MS data analysis will present practical tutorials. Presentations will be aimed at informing both software developers and biologists/analytical chemists on how they can make effective use of the Galaxy framework in their research.

WEDNESDAY WORKSHOPS, 5:45 - 7:00 PM continued

8. Using Mass Spectrometry to Characterize the Exposome and Its Impact on Human Health; Michael J. Van Stipdonk and H. M. Skip Kingston, Anthony Macherone presiding
Room 341-342

Two-thirds of global mortality is due to chronic disease with cardiovascular disease and cancers as the major causes. Investigations into the underlying factors for disease through genome-wide association studies and data mining have determined that the genetic heritability for these deaths is about 10%. This suggests that majority of causative factors for chronic human disease is not genetic but rather exposure to external and internal chemical entities and of these; only about 50% have been identified. The human exposome represents the totality of these exposures over individuals' lifetime and is a quantity of critical importance needed to understand their impact on disease. This workshop will define and encourage discussions on the human exposome and strategies for its measurement using multi-omics tools within the exposomics paradigm, with an emphasis on use of the exposomic information in guiding research to identify and validate new biomarkers of exposure and disease.

9. PowerPoint Design Tips and Tricks: How Your Slides Could be Hurting Your Talk and Your Message; Ikumi Kayama, MA Medical & Scientific Illustrator presiding
Room 343-344

Clarity in visual communication is as important to scientific meetings as clarity in writing is to journal articles. Most professors and researchers use PowerPoint to create presentations, but very few have taken a course in presentation design or layout. This workshop will offer PowerPoint design tips and tricks to make your presentation better-looking, easier to understand, and more memorable.

One of the most common misuses of PowerPoint slides are as a reading card or a vehicle for information overload. Some presenters make it more difficult to share their work because of hard-to-read slides/graphs and poor visuals. A professional illustrator and scientific communication specialist will teach simple yet effective ways to improve PowerPoint presentations to help professors, researchers, and students present their work more efficiently with better results.

10. Quantitative Glycomics; Yehia Mechref presiding
Room 345-346

Glycosylation of proteins and lipids is one of the most prevalent posttranslational modification with various biological attributes. The functions of many proteins are modulated by glycosylation while anomalous glycosylation has been associated with various mammalian diseases and biological processes. Therefore, the demands to understand the roles of glycans and to monitor the development and progression of diseases have necessitated the development of reliable quantitative glycomics and glycoproteomics methods. A critical discussion of the state-of-the-art glycomics and glycoproteomics methods will be presented at this workshop. Application of these methods to understanding diseases and biological processes will be also presented and discussed. Reliable quantitative glycomics and glycoproteomics is facilitated by bioinfomratics tools, an overview of which will be presented.

11. Current Trends, Gaps, and Needs in Workflows for Absolute Protein Quantitation by LC-MS; Nalini Sadagopan, Susan Abbatiello, Dawn Dufield presiding
Room 347-348

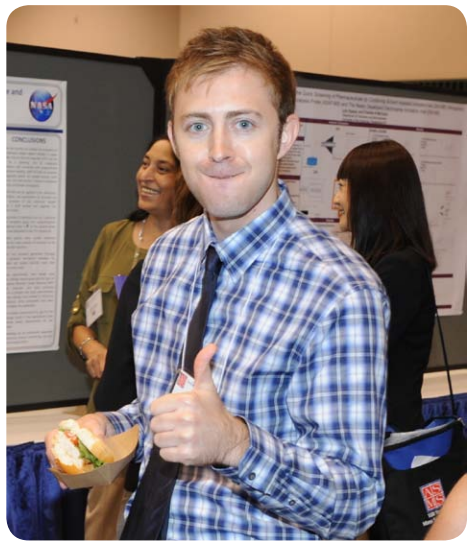
With increase in focus on biologic/biotherapeutic drugs by the pharmaceutical industry and also an increase in need for biomarkers (efficacy and safety) the deployment of LC-MS based techniques is on the rise primarily due to the speed in method development, and specificity of the technique. Scientists are finding new ways of doing sample prep to increase sensitivity/specificity, address reproducibility issues associated with enzymatic digestion and mass spectrometric methods to address specificity. The forum will provide a platform to share common themes, issues on these fronts and perhaps to surface newer needs in software, mass spec design, and automation.

12. Modern GCMS for Flavor, Fragrance and Foodstuffs Analysis: GC QQQ and GC HRMS (organized by Flavor Fragrance and Foodstuff Interest Group);
Marc Engel and Timothy Croley presiding
Room 349-350

In the past 10 years there have been many developments in the instrumentation for the analysis of small molecules. With the evolution of GC QQQ and GC HRMS instrumentation, the confidence of quantification and identification of both constituents and contaminants found in flavors and fragrance agents and foodstuffs has increased significantly. After a few brief presentations we will discuss how we can use this instrumentation to improve our analyses.

13. Mass Spectrometry Applications in Art, cultural Heritage, and Natural History; Mehdi Moini, presiding
Room 327

The purpose of this workshop is to discuss the application of mass spectrometry (MS) to art and cultural heritage objects, as well as natural history specimens. This will be an interactive workshop in which various subjects relevant to the application of MS to art and natural history specimens will be discussed in a casual, dialog format. A preliminary list of topics include: 1) Analysis of proteinaceous and organic specimens such as silk and wool textiles, leather and animal guts objects, bone and tissues, ink, paper, paint, coatings, binders, and wood. 2) Analysis of the fundamental factors that cause degradation and aging of natural history and art objects; identification of their deterioration markers, using degradation markers as clocks for dating objects, and studying environmental factors that affect deterioration. 3) Application of MS to paleo-organic matter such as fossilomics, amino acid racemization, and ancient DNA. 4) Forensic archeology. 5) Determination of the authenticity of art objects. 6) To be determined.



5:00 - 6:30 PM, SUNDAY
TUTORIAL SESSION
Jenny Brodbelt (University of Texas), presiding
Exhibit Hall AB

5:00 - 5:45 pm
Mass Spectrometry in the Pharmaceutical Industry: Everything You Ever Wanted to Know But Were Afraid to Ask

Lucinda Cohen
Merck Research Laboratories

5:45 – 6:30 pm
Imaging Mass Spectrometry

Ron M.A. Heeren
FOM-AMOLF

6:45 - 7:45 PM, SUNDAY
CONFERENCE OPENING
Jenny Brodbelt (University of Texas), presiding
Exhibit Hall AB

Welcome, Jenny Brodbelt
ASMS Vice President for Programs

The James Webb Space Telescope: From First Light to the Search for Earth 2.0

Jason Kalirai
Telescope Science Institute

7:45 - 9:00 PM, SUNDAY
WELCOME RECEPTION
Poster/Exhibit Hall
Conference name badge is required.

8:30 – 10:30 AM, MONDAY MORNING
EMERGING ENVIRONMENTAL CONTAMINANTS
Matthew Crowe (Dow Chemical), presiding
Exhibit Hall AB

MOA am 08:30 **Environmental Petroleomics: Characterization of 10^5 Biotic and Abiotic Petroleum Transformation Products 4-Years after the Deepwater Horizon Disaster;** Ryan P. Rodgers[1, 4]; Brian M. Ruddy[3]; Vladislav V. Lobodin[2, 4]; Amy M. McKenna[4]; Huan Chen[4]; David C. Podgorski[2, 4]; Steven M. Rowland[1]; Jie Lu[2, 4]; Yuri E. Corilo[2, 4]; Alan G. Marshall[1, 4]; *[1]FSU Department of Chemistry and Biochemistry, Tallahassee, FL; [2]Future Fuels Institute, Tallahassee, FL; [3]Taxon Biosciences Inc., Tiburon, CA; [4]National High Magnetic Field Laboratory, Tallahassee, FL*

MOA am 08:50 **Subtractive Proteomics Reveals Novel Enzymes Induced in Rare Caffeine-Degrading Microorganisms;** Chi Li Yu[1]; Ryan Summers[2]; Yalan Li[1]; Sujit Mohanty[2]; Mani Subramanian[3]; Marshall Pope[1]; *[1]Proteomics Facility, Univ. of Iowa, Iowa City, IA; [2]Dept. of Chemical and Biochemical Engineering, Iowa City, IA; [3]CTR Biocatalysis & Bioprocessing, Univ. of Iowa, Iowa City, IA*

MOA am 09:10 **Silicon is a Nearly Ubiquitous Component of Ambient Nanoparticles;** Bryan Bzdek; Ross Pennington; Andrew Horan; Christopher Zordan; Murray Johnston; *University of Delaware, Newark, DE*

MOA am 09:30 **Identification of Environmental Metabolites using Combined High Resolution UPLC- QqTOF and Ultra High Resolution NanoLC-QqITOT Based Approaches;** Jeffrey Gilbert; Jesse Balcer; Yelena Adelfinskaya; Suresh Annangudi; David McCaskill; Pete Johnson; Gerrit Deboer; Mike Hastings; *Dow AgroSciences, Indianapolis, IN*

MOA am 09:50 **Terminal and Internal Alkyne Functionalities in Asphaltenes;** James Riedeman[1]; Xingyu Shen[1]; Huaming Sheng[1]; David Borton[2]; Matthew Hurt[3]; Hilkka Kenttämaa[1]; *[1]Purdue University, West Lafayette, IN; [2]LECO, St Joseph, MI; [3]Chevron, Richmond, CA*

MOA am 10:10 **Detection of Water-Borne 4-Methylcyclohexanemethanol (MCHM) via Purge & Trap and Transportable, On-Site GC/MS;** Phil Tackett; Cynthia Liu; Mitch Wells; Dennis Barket; *FLIR Systems, Inc., West Lafayette, IN*

INSTRUMENTATION: NEW DEVELOPMENTS IN HIGH RESOLUTION AND MASS ACCURACY IN HONOR OF ALAN MARSHALL'S 70th BIRTHDAY
Patrick Limbach (University of Cincinnati), presiding
Room 307-308

MOB am 08:30 **Precision Mass Spectrometry on Short-lived Nuclides: New Methods and Results;** Lutz Schweikhard[1]; for the SHIPTRAP collaboration[2]; and the ISOLTRAP collaboration[3]; *[1]University of Greifswald, Greifswald, Germany; [2]GSI Helmholtzzentrum für Schwerionenforschung, Darmstadt, Germany; [3]ISOLDE/CERN, Geneva, Switzerland*

MOB am 08:50 **Further Characterization and Applications of Dynamically Harmonized FT ICR Cell;** Eugene Nikolaev[1, 2]; Gleb Vladimirov[1]; Oleg Kharybin[3]; Matthias Witt[4]; Jochen Friedrich[4]; Roland Jertz[4]; Goekhan Baykut[4]; *[1]Institute for Energy Problems of Chemical Physics, Moscow, Russia; [2]Emanuel Institute of Biochemical Physics, RAS, Moscow, Russia; [3]Orekhovich Institute of Biomedical Chemistry, RAMS, Moscow, Russia; [4]Bruker Daltonik GmbH, Bremen, Germany*

MOB am 09:10 **Pushing the Limits: Using Isotopic Fine Structure Mass Spectrometry to Assist the Understanding of ^{17}O labelled Peptides in NMR;** Juan Wei[1]; Oleg Antzutkin[1, 2]; Mark Barrow[1]; Ray Dupree[1]; Steven Brown[1]; Peter B. O'connor[1]; *[1]University of Warwick, Coventry, UK; [2]Luleå University of Technology, Luleå, Sweden*

MOB am 09:30 **Unexplored Reserves of Resolution in Fourier Transform Mass Spectrometry;** Anton N. Kozhinov; Konstantin O. Nagornov; Daniel Ayoub; Yury O. Tsybin; *Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland*

MOB am 09:50 **High-Field FTICR MS for Imaging Applications: Combining Ultra-High Resolving Power and Mass Accuracy with High Spatial Resolution and Throughput;** Jeffrey Spraggins; Raf Van De Plas; Junhai Yang; Richard Caprioli; *Vanderbilt University, Nashville, TN*

MOB am 10:10 **Development of an FT-ICR Mass Spectrometer in Preparation for 21 Telsa;** Nathan Kaiser[1]; Chad Weisbrod[1]; John Quinn[1]; Greg T. Blakney[1]; Steve Beu[2]; Tong Chen[1]; Christopher L. Hendrickson[1]; Alan G. Marshall[1, 3]; *[1]National High Magnetic Field Laboratory, Tallahassee, FL; [2]S C Beu Consulting, Austin, TX; [3]Dept. of Chem. and Biochem., Florida State Univ., Tallahassee, FL*

8:30 – 10:30 AM, MONDAY MORNING
NUCLEIC ACIDS
Kathrin Breuker (University of Innsbruck), presiding
Room 309-310

MOC am 08:30 **Single-Molecule Force Spectroscopy and MS Studies of the Determinants of Duplex Stability;** Papa Nii Asare Okai; William Stephenson; Alan Chen; Pan Li; Daniele Fabris; *The RNA Institute, University at Albany, Albany, NY*

MOC am 08:50 **The Effects of Modifications on Glycosidic Bond Stability of Protonated and Sodium Cationized Nucleosides;** Mary T. Rodgers; Yanlong Zhu; *Wayne State University, Detroit, MI*

MOC am 09:10 **LC-MS/MS for the Sensitive Detection of β-Glucosyl-hydroxymethyluracil (Base J) in Genomic DNA of *Trypanosoma brucei*;** Shuo Liu[1]; Robert Sabatini[2]; Yinsheng Wang[1]; *[1]University of California, Riverside, Riverside, CA; [2]University of Georgia, Athens, Georgia*

MOC am 09:30 **Electrospray Mass Spectrometry of Telomeric DNA G-quadruplexes in Potassium;** Adrien Marchand[1, 2]; Valérie Gabelica[1, 2]; *[1]Inserm, U869 ARNA, Bordeaux, France; [2]Université de Bordeaux, IECB, Pessac, France*

MOC am 09:50 **Fluorescence Measurements of DNA-dye Complexes in the Gas Phase;** Stephen Sciuto[1]; Rebecca A. Jockusch[2]; *[1]The University of Toronto, Toronto, Canada; [2]University of Toronto, Toronto, ON*

MOC am 10:10 **Conformational Dynamics of DNA G-Quadruplex in Solution Studied by Kinetic Capillary Electrophoresis Coupled On-line with Mass Spectrometry;** Gleb Mironov; Victor Okhonin; Nasrin Khan; Maxim Berezovski; *University of Ottawa, Ottawa, Canada*

8:30 – 10:30 AM, MONDAY MORNING
FUNDAMENTALS: REACTIONS, DYNAMICS AND THEORY OF GAS PHASE IONS
John Poutsma (College of William and Mary), presiding
Room 314-317

MOD am 08:30 **Is It a Barrier or Endothermic? The Interesting Cases of Sm^+ Oxidation by O_2, CO_2, NO, and CO;** Richard Cox[1]; Shaun Ard[2]; Joshua Melko[2]; Nicholas Shuman[2]; Al Viggiano[2]; Ryan Johnson[3]; Hua Guo[3]; Peter Armentrout[1]; *[1]University of Utah, Salt Lake City, UT; [2]Air Force Research Laboratory, Mesa, AZ; [3]University of New Mexico, Albuquerque, NM*

MOD am 08:50 **Heterometallic Coinage Metal Clusters – Synthesis and Gas-Phase Reactivity;** George N. Khairallah[1]; Richard A. J. O'Hair[2]; *[1]Bio21 Inst,Uni of Melbourne, Melbourne, Australia; [2]University of Melbourne, Victoria, Australia*

MOD am 09:10 **Exploring Electron and Proton Transfer Timescales in the Gas Phase with Multiscale Pump-Probe Action Spectroscopy Experiments;** Luke MacAleese[1]; Sylvain Hermelin[2]; Luigi Bonacina[2]; Rodolphe Antoine[1]; Jean-Pierre Wolf[2]; Philippe Dugourd[1]; *[1]ILM-UMR5306 Université Lyon 1 - CNRS, Villeurbanne, France; [2]GAP-Biophotonics, Université de Genève, Genève, Switzerland*

MOD am 09:30 **Determining Masses, Separating Mixtures, and Probing Structures of Native-Like Ions using Selected Cation to Anion Proton Transfer (SCAPT) Reactions;** Kenneth J. Laszlo; Matthew F. Bush; *University of Washington, Seattle, WA*

MOD am 09:50 **Charges in Protein Electrospray Ionization: Like or Opposite?;** Rachel R. Ogorzalek Loo; Joseph A. Loo; *UCLA, Los Angeles, CA*

MOD am 10:10 **Structures and Energetics of Alkali Metal-Bound Clusters of 9-Ethylguanine;** Mohammad Azargun; Travis Fridgen; *Memorial University of NL, St. John's, Canada*

8:30 – 10:30 AM, MONDAY MORNING
ANTIBODIES AND ANTIBODY-DRUG CONJUGATES
Beatrix Ueberheide (New York University), presiding
Ballroom I, level 4

MOE am 08:30 **Middle-down Primary Structure Assessment and PTM-profiling of Monoclonal Antibody by "Size-controlled" Proteolysis and Online Tandem Mass Spectrometry;** Weihan Wang[1]; Lichao Zhang[1]; Michelle English[1]; Dina Bai[1]; Jeffrey Shabanowitz[1]; Donald F. Hunt[1, 2]; *[1]Department of Chemistry, University of Virginia, Charlottesville, VA; [2]Department of Pathology, University of Virginia, Charlottesville, VA*

MOE am 08:50 **Middle-Down and Extended Bottom-Up Mass Spectrometry for In-Depth and Rapid Characterization of Immunoglobulins and Their Mixtures;** Daniel Ayoub[1]; Luca Fornelli[1]; Kristina Srzentic[1]; Unige Laskay[1]; Alain Beck[2]; Yury O. Tsybin[1]; *[1]Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; [2]Centre d'Immunologie Pierre Fabre, Saint Julien-en-Genevois, France*

MOE am 09:10 **Informatics for mAb Analysis from Top to Bottom;** Chris Becker[1]; Wilfred Tang[1]; Yong Kil[1]; Marshall Bern[1]; John Schiel[2]; Lisa Kilpatrick[2]; Trina Formolo[2]; *[1]Protein Metrics Inc., San Carlos, CA; [2]National Institute of Standards and Technology, Gaithersburg, MD*

MOE am 09:30 **An Optimized MS-based Pipeline for Producing Repertoires of Recombinant High Affinity Nanobodies;** Yinyin Li[1]; Peter Fridy[1]; Sarah Keegan[2]; Mary Thompson[1]; Ilona Nudelman[1]; David Fenyo[2]; Michael Rout[1]; Brian Chait[1]; *[1]The Rockefeller University, New York, NY; [2]New York University, New York, NY*

MOE am 09:50 **Native MS and IM-MS for Antibody Drug Conjugate Characterization;** François Debaene[1]; Amandine Boeuf[2]; Elsa Wagner-Rousset[2]; Nathalie Corvaia[2]; Alain Van Dorsselaer[1]; Alain BECK[2]; Sarah Cianferani[1]; *[1]LSMBO - IPHC, Strasbourg, France; [2]CIPF, Saint Julien en Genevois, France*

MOE am 10:10 **Mass Spectrometry-Based Proteomics in the Development of Antibody Drug Conjugates for Cancer Treatment;** Jeremy Myers; Bingwen Lu; Kim Arndt; *Oncology Research, Pfizer WRD, Pearl River, New York*

8:30 – 10:30 AM, MONDAY MORNING
H/D EXCHANGE: NEW DEVELOPMENTS IN TECHNOLOGY
Kasper Rand (University of Copenhagen), presiding
Ballroom II, level 4

MOF am 08:30 **HDsite: Hydrogen/deuterium Exchange by MS at Amino Acid Resolution;** Zhong-yuan Kan; Wenbing Hu; Benjamin Walters; Leland Mayne; Walter Englander; *University of Pennsylvania, Philadelphia, PA*

MOF am 08:50 **Model-Free Analysis of Millisecond H/D Exchange Reveals Residual Helicity in ACTR, an Intrinsically Disordered Protein;** Theodore Keppel[1,2]; David Weis[1]; *[1]University of Kansas, Lawrence, KS; [2]Washington University School of Medicine, St. Louis, MO*

MOF am 09:10 **Targeted and Data-Independent Acquition of Hydrogen/Deuterium Exchange using ETD;** Vladimir Sarpe; David Schriemer; *University of Calgary, Calgary, Canada*

MOF am 09:30 **Conformational Changes in Peripheral Membrane Proteins using Langmuir Monolayers and Hydrogen-Deuterium Exchange Mass Spectrometry;** Gregory F. Pirrone[1]; Michael S. Kent[2]; John R. Engen[1]; *[1]Northeastern University, Boston, MA; [2]Sandia National Laboratories, Albuquerque, NM*

MOF am 09:50 **Characterizing Protein Oligomer Structure and Dissociation Kinetics by Hydrogen/Deuterium Exchange Mass Spectrometry;** Zhe Zhang; Richard Vachet; *University of Massachusetts, Amherst, MA*

MOF am 10:10 **Strategies for Minimizing Spurious In-Source CID for Peptides during ESI-MS;** Siavash Vahidi; Lars Konermann; *Univ. of Western Ontario, London, ON*

8:30 – 10:30 AM, MONDAY MORNING
INFORMATICS: PROTEIN IDENTIFICATION
David Tabb (Vanderbilt University), presiding
Ballroom III, level 4

MOG am 08:30 **Use of Personalized Sequence Databases for Peptide MS/MS Spectrum Matching in the Proteogenomic Analysis of 105 TCGA Breast Tumors;** Karl R. Clauser[1]; David Fenyo[2]; Kelly V. Ruggles[2]; Philipp Mertins[1]; Jana W. Qiao[1]; D. R. Mani[1]; Michael A. Gillette[1]; Sherri R. Davies[3]; Christopher Maher[3]; Li Ding[3]; Matthew J. Ellis[3]; Steven A. Carr[1]; *[1]Broad Institute of MIT and Harvard, Cambridge, MA; [2]NYU Langone Medical Center, New York, NY; [3]Washington University, St. Louis, MO*

MOG am 08:50 **Approaching the "Perfect" Database: Single-Molecule, Full-Length Transcript Sequencing to Create Sample-Specific, Full-Length Protein Databases;** Gloria M. Sheynkman; Mark Scalf; Michael R. Shortreed; Brian L. Frey; Anthony J. Cesnik; Lloyd M. Smith; *University of Wisconsin, Madison, WI*

MOG am 09:10 **Novel Galaxy Workflows Combining RNA-seq and Proteomic MS/MS Reveal New Insights into Non-Model Organisms;** Jun Fan[1]; Vanessa Evans[2]; Gary Barker[2]; Kate Heesom[2]; Shyamasree Saha[1]; David Matthews[2]; Conrad Bessant[1]; *[1]Queen Mary University of London, London, UK; [2]University of Bristol, Bristol, UK*

MOG am 09:30 **Blind Spectral Alignment with Adaptive Penalties;** Laurence E. Bernstein; Nuno Bandeira; *Univeristy of California, San Diego, La Jolla, CA*

MOG am 09:50 **Pecan: Peptide Identification Directly from Data-Independent Acquisition (DIA) MS/MS Data;** Ying Sonia Ting[1]; Jarrett Egertson[1]; Brendan Maclean[1]; Sangtae Kim[2]; Samuel H Payne[2]; William Stafford Noble[1]; Michael J. Maccoss[1]; *[1]University of Washington, Seattle, WA; [2]Pacific Northwest National Laboratory, Richland, WA*

MOG am 10:10 **Doubling Peptide Identification Efficiency in Complex Shotgun Proteomics by Deconvolution and Identification of Multiple Precursors in MS/MS;** Bo Zhang; Mohammad Pirmoradian; Alexey Chernobrovkin; Roman Zubarev; *Karolinska Institutet, Stockholm, Sweden*

8:30 – 10:30 AM, MONDAY MORNING
PTMS: ADVANCES IN ISOLATION, ENRICHMENT, DERIVATIZATION AND SEPARATION
Jen Grant (University of Wisconsin-Stout), presiding
Ballroom IV, level 4

MOH am 08:30 **A Multi-Functionalized Chemical Reagent Capable of Both Gel-Based Detection of Phosphoproteins and Enrichment of Phosphopeptides for Mass Spectrometric Analysis;** Linna Wang; Li Pan; Weiguo Andy Tao; *Purdue University, West Lafayette, IN*

MOH am 08:50 **Characterization of Lipid Modifications on Regulator of G Protein Signaling 4 (RGS4) from Sf9 Cells by Mass Spectrometry;** Yuhuan Ji; Minjing Liu; Markus M. Bachschmid; Catherine E.

Costello; Cheng Lin; *Boston University School of Medicine, Boston, MA*

MOH am 09:10 **A Site-Specific Strategy for Localization of D-Amino Acids in Bioactive Peptides;** Chenxi Jia; Qing Yu; Christopher Lietz; Lingjun Li; *University of Wisconsin-Madison, Madison, Wisconsin*

MOH am 09:30 **Simultaneous Quantitation of S-nitrosylation and Sulfenation Changes in Escherichia coli under Mild Oxidative Stress;** Katarzyna Wojdyla; James Williamson; Peter Roepstorff; Adelina Rogowska-Wrzesinska; *University of Southern Denmark, Odense, Denmark*

MOH am 09:50 **Protein S-Nitrosylation: Novel Detection, Redox Regulation and Stoichiometry;** Jaimeen Majmudar; Brent Martin; *University of Michigan, Ann Arbor, Michigan*

MOH am 10:10 **New Methodology for the Enrichment and Characterization of O-GlcNAcylated Peptides;** Stacy Malaker[1]; Sarah Penny[2]; Dina Bai[1]; Weihan Wang[1]; Mark Cobbold[2]; Jeffrey Shabanowitz[1]; Donald Hunt[1]; *[1]University of Virginia, Charlottesville, Virginia; [2]University of Birmingham, Birmingham, UK*

10:30 AM – 2:30 PM, MONDAY
MONDAY POSTER SESSION
Poster/Exhibit Hall
Lunch concessions are open 11:00 am – 2:00 pm

12:00 – 1:00 pm
Undergraduate Students
Meet the Experts at tables reserved for you.

MONDAY AFTERNOON ORAL SESSIONS

2:30 – 4:30 PM, MONDAY AFTERNOON
ANALYSIS OF POLYMER- AND PACKAGING-RELATED CONTAMINANTS AND DEGRADANTS IN CONSUMER PRODUCTS
Avinash Dalmia (PerkinElmer), presiding
Exhibit Hall AB

MOA pm 2:30 **Top-Down Mass Spectrometry of Hybrid Materials with Hydrophobic Peptide and Hydrophilic Polymer Blocks;** Chrys Wesdemiotis[1]; Ahlam Alalwiat[1]; Sarah E. Grieshaber[2]; Bradford A. Paik[2]; Xinqiao Jia[2]; *[1]The University of Akron, Akron, OH; [2]University of Delaware, Newark, DE*

MOA pm 2:50 **An Application of Mass Spectrometry for the Detection of Chemical Markers for Product Traceability;** Evan Parker; Carlito Lebrilla; *UC Davis, Davis, CA*

MOA pm 3:10 **Innovative Approaches for Complex Polymer Analysis with the Combination of DART-MS, Thermal Control and a Search Algorithm for Chaotic Spectra;** Kazumasa Kinoshita[2]; Yuki Kudou[1]; Kazuyuki Takama[1]; Haruo Shimada[3]; Yuka Noritake[3]; Yasuo Shida[1]; *[1]Bio Chromato, Inc, Fujisawa, Japan; [2]DirectAnalysis, Inc, Fujisawa, Japan; [3]Shiseido Research Center, Yokohama, Japan*

MOA pm 3:30 **MALDI-TOF/TOF CID Study of Polycarbodiimide Branching Reactions;** Anthony P. Gies; William Heath; *Dow Chemical Company, Freeport, TX*

MOA pm 3:50 **Matrix Segregation as a Major Cause for Sample Inhomogeneity using the Dried Droplet Sample Preparation Method for MALDI-MSI;** Steffen M. Weidner[1]; Stefan Johannes Gabriel[1]; Clemens Schwarzinger[2]; Ulrich Panne[1]; *[1]Fed.Inst.f.Mat. Research, Berlin, Germany; [2]Johannes Kepler University, Linz, At*

MOA pm 4:10 **Utilization of GC-TOFMS and GC-High Resolution-TOFMS for Characterization of Contaminants and Degradation Products in Consumer Product Packaging Materials;** Ray Marsili[1]; Joe Binkley[2]; *[1]Marsili Consulting Group, Rockford, Il; [2]LECO Corporation, St. Joseph, MI*

2:30 – 4:30 PM, MONDAY AFTERNOON
INSTRUMENTATION: MINI/PORTABLE/FIELDABLE MASS SPECTROMETRY
Christopher Gill (Vancouver Island University), presiding
Room 307-308

MOB pm 2:30 **Systematic Testing and Optimization of Subsystems for Development of a Handheld MS;** Mitch Wells; Brent Rardin; Kevin Rosenbaum; Leonard Rorrer; Adam Keil; Dennis Barket; Gary Gentry; *FLIR Systems, West Lafayette, IN*

MOB pm 2:50 **Development of a Synchronized Discharge Ionization Probe for Direct Analysis of Non-volatile Chemicals on Surfaces Using Handheld Mass Spectrometers;** Xiao Wang; Zheng Ouyang; *Purdue University, West Lafayette, IN*

MOB pm 3:10 **Handheld Mass Spectrometry Enabled by Ultrahigh Pressure Operation using Air Buffer Gas;** Kevin Schultze; Kenion Blakeman; J. Michael Ramsey; *University of North Carolina at Chapel Hill, Chapel Hill, NC*

MOB pm 3:30 **A Loeb-Eiber Mass Filter for Miniature Mass Spectrometry Applications;** William D. Hoffmann; Feng Jin; Glen P. Jackson; *West Virginia University, Morgantown, WV*

MOB pm 3:50 **Mobile Autonomous Underwater Mass Spec and Sampler System – Opening up the Entire Underwater Chemical Space;** David Fries[1]; Geran Barton[1]; David Millie[2]; Robert Ulrich[3]; John Paul[3]; *[1]USF, Tampa, Florida; [2]Michigan Technological University, Ann Harbor, MI; [3]USF, St. Petersburg, FL*

MOB pm 4:10 **Utilizing a Novel Compact Mass Spectrometer (CMS) for the Detection and Quantification of Chemical Compounds Related to *Cannabis*;** Daniel Eikel[1]; Simon J. Prosser[2]; *[1]Advion Inc., Ithaca, NY; [2]Advion, Inc., Ithaca, NY*

2:30 – 4:30 PM, MONDAY AFTERNOON
ION MOBILITY STRUCTURES
IN HONOR OF MIKE BOWERS' 75TH BIRTHDAY
Gert Von Helden (Fritz-Haber University), presiding
Room 309-310

MOC pm 2:30 **Are Disulfide Bridges Opened by ETD ?;** Emeline Hanozin; Denis Morsa; Philippe Massonnet; Loic Quinton; Edwin De Pauw; *Mass spectrometry Laboratory, University of Liege, Liege, Belgium*

MOC pm 2:50 **Substance P from Solution to the Gas Phase: Factors that Stabilize Kinetically Trapped Conformations;** Kyle L. Fort[1]; Joshua A. Silveira[1]; Kelly A. Servage[1]; Nicholas A. Pierson[2]; David E. Clemmer[2]; David H. Russell[1]; *[1]Texas A&M University, College Station, TX; [2]Indiana University Bloomington, Bloomington, IN*

MOC pm 3:10 **Utilizing High Throughput IMS-MS Measurements to Analyze Small Molecules and Their Noncovalent Interactions with Macromolecular Complexes;** Erin Baker[1]; Ryan Kelly[1]; Alex Apffel[2]; Kristin Burnum-Johnson[1]; Young-Mo Kim[1]; Yehia Ibrahim[1]; Daniel Orton[1]; Kevin Crowell[1]; Matthew Monroe[1]; Thomas Metz[1]; Ruwan Kurulugama[2]; Alex Mordehai[2]; Ed Darland[2]; George Stafford[2]; Gordon Anderson[1]; Richard Smith[1]; *[1]Pacific Northwest National Laboratory, Richland, WA; [2]Agilent Technologies, Santa Clara, CA*

MOC pm 3:30 **Supercharging of Native Protein Complexes: Effects of Polarity and Evidence for Multiple Mechanisms;** Samuel J. Allen; Christiane N. Stachl; Matthew F. Bush; *University of Washington, Seattle, WA*

MOC pm 3:50 **Ion Mobility and Solution Studies Show Specific Competitive Binding of Homo- and Hetero-multimer Receptor:Protein:Carbohydrate Binding;** Julie A. Leary; Youjin Seo; *UC Davis, Davis, CA*

MOC pm 4:10 **Projected Superposition Approximation: A Novel Parameter Set for Prediction of Cross Sections in Nitrogen as a Drift Gas;** Christian Bleiholder[1]; Thomas Wyttenbach[2]; Michael T. Bowers [2]; *[1]Florida State University, Tallahassee, FL; [2]University of California, Santa Barbara, CA*

2:30 – 4:30 PM, MONDAY AFTERNOON
PHOTOIONIZATION
Helene Cardasis (Thermo Scientific), presiding
Room 314-317

MOD pm 2:30 **Evaluation of the Optimization Space for Atmospheric Pressure Photoionization (APPI);** Andreas Fredenhagen; Jürgen Kühnöl; *Novartis, Basel, Switzerland*

MOD pm 2:50 **Highly Time-Resolved Mapping of Combustion Product-Concentrations in Dynamic Solid-Fuel Combustion Processes by Photoionisation Mass Spectrometry: Looking into a Burning Cigarette;** Ralf Zimmermann[1]; Romy Hertz-Schuenemann[1]; Sven Ehlert[1]; Kevin MCAdam[2]; Steven Coburn[2]; Chuan Liu[2]; Thorsten Streibel[1]; *[1]University of Rostock, Rostock, Germany; [2]GR&D, BAT Ltd,, Southampton, UK*

MOD pm 3:10 **Investigating the Ionization of Sulfur-Containing Compounds within Petroleum using Atmospheric Pressure Photoionization Fourier Transform Ion Cyclotron Resonance Mass Spectrometry;** Holly Chan; Mark Barrow; *University of Warwick, Coventry, UK*

MOD pm 3:30 **Fluorophore-Assisted Laser Desorption/ Ionization Mass Spectrometry (FALDI-MS) of biomolecules;** Dragan Isailovic; Raymond West; Eric Findsen; *The University of Toledo, Toledo, OH*

MOD pm 3:50 **Laser Desorption VUV Lamp Ionization for Quadrupole Ion Trap Mass Spectrometry;** Qinghao Wu; Richard Zare; *Stanford University, Stanford, CA*

MOD pm 4:10 **Analytical Performance of a Novel, Dopant-Free GC-APPI Source with Femtogram-Level Sensitivity for Quadrupole-Orbitrap GC/MS;** Amelia C. Peterson[1]; Hendrik Kersten[2]; Dirk Krumwiede[1]; Scott Quarmby[3]; Kyle D'Silva[1]; Kai Kroll[2]; Kirsten Haberer[2]; Maciej Bromirski[1]; Alexander Makarov[1]; Thorsten Benter[2]; *[1]Thermo Fisher Scientific (Bremen) GmbH, Bremen, Germany; [2]University of Wuppertal, Wuppertal, Germany; [3]Thermo Fisher Scientific, Austin, TX*

2:30 – 4:30 PM, MONDAY AFTERNOON
CHARACTERIZATION OF BIOLOGICS AND BIOSIMILARS
James Madsen (Momenta Pharmaceuticals), presiding
Ballroom I, level 4

MOE pm 2:30 **Sequence Variant Analysis with Increased Specificity and Meaningful Confidences;** Sean L. Seymour; Ignat V. Shilov; Joe Durant; Bret Pehrson; Eric Johansen; *AB SCIEX, Redwood City, CA*

MOE pm 2:50 **Size-Based Enrichment and 1D Proteomics of Low ppm Levels of Host Cell Proteins in High-Concentration Therapeutic Antibodies;** Gang Xiao; Da Ren; Pavel Bondarenko; *Amgen, Inc., Thousand Oaks, CA*

MOE pm 3:10 **Interleukin-23 Binding to Adnectin: An Approach to Correlating Molecular Structure with Hydrogen/ Deuterium Exchange Mass Spectrometry;** Roxana E. Iacob[1]; Guodong Chen[2]; Stanley R. Krystek[2]; Hui Wei[2]; Richard Huang[2]; Li Tao[2]; Zheng Lin[2]; Paul E. Morin[2]; Michael L. Doyle[2]; Adrienne A. Tymiak[2]; John R. Engen[1]; *[1]Northeastern University, Boston, MA; [2]Bristol-Myers Squibb, Princeton, NJ*

MOE pm 3:30 **New Workflows for Identification and Profiling of Disulfide Bonds in Biopharmaceuticals;** Jan Wiesner; Antje Kozicki; Anja Resemann; Rainer Paape; Lars Vorwerg; Kristina Marx; Andrea Kiehne; Ralf Hartmer; Carsten Baessmann; Detlev Suckau; Wolfgang Jabs; *Bruker Daltonik GmbH, Bremen, Germany*

MOE pm 3:50 **System Suitability Metrics for Analysis of Protein Therapeutics by LC-MS;** Mowei Zhou; Ashley Gucinski; Michael Boyne; *U.S. FDA, Division of Pharmaceutical Analysis, St Louis, MO*

MOE pm 4:10 **Biopharmaceutical Characterization: Evaluation of the NIST Monoclonal Antibody Reference Material.;** John Schiel[1]; Meiyao Wang[1]; Trina Formolo[1]; Lisa Kilpatrick[1]; Mark Lowenthal[1]; Henning Stockmann[2]; Karen Phinney[1]; Justin Prien[5]; Darryl Davis[4]; Oleg Borisov[3]; *[1]NIST, Gaithersburg, MD; [2]NIBRT, Dublin, Ireland; [3]Novavax, Gaithersburg, MD; [4]Janssen, Malvern, PA; [5]Amgen, West Grenwich, RI*

2:30 – 4:30 PM, MONDAY AFTERNOON
QUANTITATIVE ANALYSIS IN DRUG DISCOVERY AND DEVELOPMENT
Brian Furmanski (GlaxoSmithKline), presiding
Ballroom II, level 4

MOF pm 2:30 **Digestion of Some Model Proteins for Therapeutic Proteins in Blood Plasma with Thermolysin and Quantification of the Peptides by LC/LC-MS/MS;** Aljona Saleh; *Stockholm university, Analytical Chemistry, Stockholm, Sweden*

MOF pm 2:50 **High-Throughput, Dual-Stream UHPLC/MS/MS Bioanalysis and Data-Deconvolution for Rapid Drug Discovery Applications;** Brendon Kapinos[1]; John Janiszewski[1]; Mary Piotrowski[1]; Wayne Lootsma[2]; Steve Ainley[2]; Nick Levitt[3]; *[1]Pfizer Inc., Groton, CT; [2]Sound Analytics, Niantic, CT; [3]Two Center Technologies, Cambridge, MA*

MOF pm 3:10 **Single Cell Drug Discovery;** Sachiko Date[1]; Hajime Mizuno[1]; Tsuyoshi Esaki[1]; Ai Fujita[1]; Tsutomu Masujima[1]; Haruo Iwabuchi[2]; Makoto Takei[2]; Hideo Takakusa[2]; Takashi Izumi[2]; Setsuko Fujita[3]; Shuichi Matsuda[3]; Motohiko Morihara[3]; Kiyoko Bando[4]; Jiro Deguchi[4]; Yasunori Fukuda[5]; Naoki Tarui[5]; *[1]Quantitative Biology Center (QBiC), RIKEN, Suita, Osaka, Japan; [2]Daiichi Sankyo Co. Ltd., Shinagawa, Tokyo, JP; [3]Ono Pharmaceutical Co., Ltd., Shimamoto, Osaka , JP; [4]Dainippon Sumitomo Pharma Co. Ltd., Osaka, JP; [5]Takeda Pharmaceutical Co., Ltd, Fujisawa, Kanagawa, JP*

MOF pm 3:30 **A Novel Selective Peptide Derivatization Strategy for Sensitivity Enhancement for the LC-MS/MS Bioanalysis of Protein Therapeutics in Serum;** Long Yuan[1]; Anna Mai[2]; Anne-Françoise Aubry[1]; Mark Arnold[1]; Qin Ji[1]; *[1]Bristol-Myers Squibb, Princeton, NJ; [2]Columbia University, New York, NY*

MOF pm 3:50 **Label-Free Quantification of GeLC-MALDI Data with a Novel Software Reveals Pancreatic Ductal Adenocarcinoma Subtype-Specific Protein Signatures;** Wiebke Nadler[1, 3]; Alexander Kerner[1, 3]; Sabrina Hanke[1, 3]; Christoph Roesli[1, 2]; *[1]Junior Research Group Biomarker Discovery, DKFZ, Heidelberg, Germany; [2]Biomarker Discovery, HI-STEM gGmbH, Heidelberg, Germany; [3]Helmholtz Int. Grad. School for Cancer Research, Heidelberg, Germany*

MOF pm 4:10 **Total Plasma 3-chloro-tyrosine and Methionine Sulfoxide are Biomarkers of Oxidative Stress Events in Humans;** Matthew Blatnik[1]; Rick Steenwyk[1]; Paul Huang[2]; Buckbinder Leonard[3]; *[1]Pfizer Inc., Groton, CT; [2]Massachusetts General Hospital and Harvard Medical, Boston, MA; [3]Pfizer Inc., Cambridge, MA*

2:30 – 4:30 PM, MONDAY AFTERNOON
INFORMATICS: PROTEIN QUANTIFICATION
Nathan Yates (University of Pittsburgh), presiding
Ballroom III, level 4

MOG pm 2:30 **Proteome-Wide Analysis of Diversity Outbred Mouse Liver Protein Expression in Relation to Genetic and Environmental Variability;** Joel M. Chick[1]; Steven Ciciotte[2]; Steven C. Munger[2]; Daniel M. Gatti[2]; Karen L. Svenson[2]; Gary A. Churchill[2]; Steven P. Gygi[1]; *[1]Harvard medical school, Boston, MA; [2]The Jackson Laboratory, Bar Harbor, MA*

MOG pm 2:50 **Streamlining Sequence Variant and Modification Analysis of Therapeutic Proteins;** Yong Kil[1]; Chris Becker[1]; Oleg Borisov[2]; Boyan Zhang[3]; Michael Kim[4]; Richard Seipert[4]; *[1]Protein Metrics Inc., San Carlos, CA; [2]Novavax, Inc., Gaithersburg, MD; [3]Beijing Mabworks Biotech Co., Ltd., Beijing, China; [4]Genentech, South San Francisco, CA*

MOG pm 3:10 **CONSTANd : A Normalization Method for Isobaric Labeled Spectra by Constrained Programming;** Evelyne Maes[1, 2]; Wahyu Hadiwikarta[1, 2]; Inge Mertens[1]; Geert Baggerman[1, 3]; Jef Hooyberghs[1, 4]; Dirk Valkenborg[1, 4]; *[1]VITO, Mol, Belgium; [2]KULeuven, Leuven, Belgium; [3]UAntwerpen, Antwerpen, Belgium; [4]UHasselt, Hasselt, Belgium*

MOG pm 3:30 **Proteoform Quantitation through the IQ Framework;** Grant Fujimoto; Sangtae Kim; Kevin Crowell; Nikola Tolic; Charles Ansong; Si Wu; Ljiljana Pasa-Tolic; Richard D. Smith; Joshua Adkins; Sam Payne; *Pacific Northwest National Laboratory, Richland, WA*

MOG pm 3:50 **Statistical Elimination of Spectral Features with Large Between-Run Variation Enhances Quantitative Protein-Level Conclusions in Experiments with Data-Independent Spectral Acquisition;** Lin-Yang Cheng[1]; Yansheng Liu[2]; Ching-Yun Chang[1]; Hannes Roest[2]; Ruedi Aebersold[2, 3]; Olga Vitek[1, 4]; *[1]Department of Statistics, Purdue University, West Lafayette, IN; [2]Department of Biology, ETH, Zurich, Switzerland; [3]Faculty of Science, University of Zurich, Zurich, Switzerland; [4]Department of Computer Science, Purdue University, West Lafayette, IN*

MOG pm 4:10 **Public Sharing of Complex MS-based Qualitative and Quantitative Proteomic Data Analysis Workflows: Adding Value to big Data Repositories;** Tim Griffin[1]; Pratik Jagtap[1]; James Johnson[2]; Trevor Wennblom[2]; Bart Gottschalk[2]; Yue Chen [1]; *[1]University of Minnesota, Minneapolis, MN; [2]Minnesota Supercomputing Institute, Minneapolis, MN*

2:30 – 4:30 PM, MONDAY AFTERNOON
IMAGING: BIOLOGICAL APPLICATIONS
Richard Perry (University of Illinois), presiding
Ballroom IV, level 4

MOH pm 2:30 **Advanced MALDI Imaging Techniques for the Study of Renal Disease;** Megan M. Gessel[1]; Jeffrey Spraggins[1]; Raf Van De Plas[1]; Dale Abrahamson[2]; Billy Hudson[1]; Richard Caprioli[1]; *[1]Vanderbilt University School of Medicine, Nashville, TN; [2]University of Kansas Medical Center, Kansas City, KS*

MOH pm 2:50 **Chronic Ethanol Consumption Profoundly Disrupts Regional Brain Ceramide-Sphingomyelin Content in a Mouse Model;** Amina S. Woods[1]; Aurelie Roux[1]; Shelley N Jackson[1]; Ludovic Muller[1]; J. Albert Schultz[2]; Joseph R. O'Rourke[3]; Panayotis K. Thanos[3]; Nora D Volkow[1]; *[1]NIDA-IRP, NIH, Baltimore, MD; [2]Ionwerks, Inc., Houston, TX; [3]Stony Brook University, Stony Brook, NY*

MOH pm 3:10 **Spatially Resolved Rapid Evaporative Ionization Mass Spectrometry (REIMS) for Database Population and In-Theatre Classification of Excised Tissues;** Emrys A Jones; Ottmar Golf; Nicole Strittmatter; Abigail Speller; Zoltan Takats; *Imperial College London, London, UK*

MOH pm 3:30 **Molecular Signatures and Implications of Focal Cerebral Ischemia Revealed using Nanospray Desorption Electrospray Ionization Mass Spectrometry Imaging;** Ingela Lanekoff[1, 3]; Susan Stevens[2]; Mary Stenzel-Poore[2]; Julia Laskin[1, 3]; *[1]PNNL, Richland, WA; [2]Oregon Health & Science University, Portland, OR; [3]Pacific NW National Laboratory, Richland, WA*

MOH pm 3:50 **Combining Magnetic Resonance Spectroscopic Imaging and Mass Spectrometric Imaging Reveals Protein Biomarkers of Aggressive Breast Cancer;** Lu Jiang[1]; Kamila Chughtai[2]; Tiffany Greenwood[1]; Zaver Bhujwalla[1]; Venu Raman[1]; Gert Eijkel[2]; Ron Heeren[2]; Kristine Glunde[1]; *[1]Johns Hopkins University School of Medicine, Baltimore, MD; [2]FOM-Institute AMOLF, Amsterdam, The Netherlands*

MOH pm 4:10 **3D Molecular Cartography of Humans;** Amina Bouslimani[1]; Carla Porto Da Silva[1]; Christopher M Rath[1]; Mingxun Wang[1]; Guo Yurong[1]; Antonio Gonzalez[2]; Donna Berg-Lyon[2]; Gail Ackermann[2]; Gitte Julie Moeller Christensen[3]; Nakatsuji Teruaki[1]; Lingjuan Zhang[1]; Andrew Borkowski[1]; Michael Meehan[1]; Kathleen Dorrestein[1]; Richard Gallo[1]; Nuno Bandeira[1]; Rob Knight[2]; Theodore Alexandrov[4]; Pieter Dorrestein [1]; *[1]Univ. of Califronia at San Diego, La Jolla, CA; [2]University of Colorado at Boulder, Boulder, CO; [3]Aarhus University, Aarhus, Denmark; [4]University of Bremen, Bremen, Germany*

4:45 – 5:30 PM, MONDAY AFTERNOON
AWARD LECTURE
Susan T. Weintraub (Univ. of Texas HSC, San Antonio), presiding
Exhibit Hall AB

Award for a Distinguished Contribution in Mass Spectrometry

Richard M. Caprioli
Vanderbilt University

5:45 – 7:00 PM, MONDAY AFTERNOON
WORKSHOPS
Level 3
Light refreshments, level 3

1. Real World Applications of Photoionization; Room 307-308
2. Taming Errors for Peptides with Post-Translational Modifications (organized by Bioinformatics for MS Interest Group); Room 309-310
3. Applying Ion Mobility to Biological Problems (organized by Ion Mobility MS Interest Group); Room 314-317
4. How to Succeed in Pharma without Really Trying; Room 327
5. Discussion on MS Analysis of Oligonucleotides: Methodology and Informatics (organized by DNA/RNA Interest Group); Room 336
6. Use of Mass Spectrometry to Overpower Complexity of Biofuels and Petroleum (organized by Energy, Petroleum & Biofuels Interest Group); Room 337
7. Getting the Most out of Undergraduate Mass Spectrometry Research (organized by Undergraduate Research in MS Interest Group); Room 338
8. ProteomicsDB; Room 339-340
9. Working with Federal Agencies to Obtain Research Support. Session I: Counsel and Resources for Interactions with Federal Funding Agencies; Room 341-342
10. Systems of Annotation and Reporting Requirements for Lipid Mass Spectrometry (organized by Lipids and Lipidomics Interest Group; Room 343-344
11. A State of the Union for Biomarker Translation (organized by Clinical Chemistry Interest Group); Room 345-346
12. Antibody Drug Conjugates as Pharmaceutical Agents (organized by Pharmaceuticals Interest Group); Room 347-348
13. Roundtable Discussion on Research Challenges in Forensics and Homeland Security (organized by Forensics and Homeland Security Interest Group); Room 349-350

AFTER 8:00 PM, MONDAY EVENING
CORPORATE HOSPITALITY SUITES
Hilton Hotel

TUESDAY MORNING ORAL SESSIONS

8:30 – 10:30 AM, TUESDAY MORNING
INTEGRATED QUALITATIVE AND QUANTITATIVE LC-MS FOR SMALL MOLECULE ANALYSIS
Alison Danell (East Carolina University), presiding
Exhibit Hall AB

TOA am 08:30 **Probing Dynamics of Plant Specialized Metabolism through Stable Isotopic Labeling and Nonselective Collision-Induced Dissociation;** Zhenzhen Wang; A. Daniel Jones; *Michigan State University, East Lansing, MI*

TOA am 08:50 **Characterizing Chemical Composition of SOM using Graduated Extractions, Deep Fractionation and LCMS to Detect/Quantify a Broad Range of Compounds;** Kristyn Roscioli[1]; Yufeng Shen[2]; Thomas Fillmore[1]; Rui Zhao[1]; Nikola Tolic[1]; Brian Anderson[2]; Nancy J Hess[1]; Ljiljana Paša-Tolić[1]; Errol W Robinson[1]; *[1]Environmental Molecular Sciences Laboratory, PNNL, Richland, WA; [2]Biological Sciences Division, PNNL, Richland, Washington*

TOA am 09:10 **Analysis of Enantiomeric Amino Acids in Biological Samples via Capillary Electrophoresis Coupled with Mass Spectrometry;** Takayuki Kawai; Stanislav Rubakhin; Jonathan Sweedler; *University of Illinois at Urbana-Champaign, Urbana-Champaign, IL*

TOA am 09:30 **Characterization of Alkylpolyglucoside Surfactants with Liquid Chromatography/Mass Spectrometry and Evaporative Light Scattering Detection: Total Characterization without a Reference Standard;** Matthew Crowe; Katherine Davis; Janet Windisch; *Dow Chemical Company, Collegeville, PA*

TOA am 09:50 **Application of Qualitative and Quantitative Analysis of HRMS to Fast Identification of Major Drug Metabolic Pathways and Drug-Metabolizing Enzymes;** Qian Ruan; Li Ma; Mingshe Zhu; *Dept. of Biotransformation, Bristol-Myers Squibb, Princeton, NJ*

TOA am 10:10 **Combining Derivatizaton and SWATH for the Integrated Quantification and Identification of Aldehydes and Ketones in Biological Samples;** David Siegel[1]; Anne Meinema[1]; Hjalmar Permentier[1]; Gerard Hopfgartner[2]; Rainer Bischoff[1]; *[1]University of Groningen, Groningen, Netherlands; [2]University of Geneva, Geneva, Switzerland*

8:30 – 10:30 AM, TUESDAY MORNING
INSTRUMENTATION AND METHODS: FT, ION TRAPS AND HYBRID INSTRUMENTS
Ryan Danell (Danell Consulting), presiding
Room 307-308

TOB am 08:30 **Hybrid Electron Transfer/Ultraviolet Photodissociation for Characterization of Intact Proteins;** Joe Cannon; Dustin Holden; Jennifer Brodbelt; *University of Texas, Austin, TX*

TOB am 08:50 **Absolute Pressure in FTICR/MS Using "CRAFTI" Technique For Measuring Collision Cross Sections;** Chad Jones; David V. Dearden; *Brigham Young University, Provo, UT*

TOB am 09:10 **A New Method for Isolating Ions in Quadrupole Ion Traps Using an Excitation Waveform Generated by Frequency Modulation and Upconversion;** Ryan T. Hilger; Robert E. Santini; Boone M. Prentice; Scott A. McLuckey; *Purdue University, West Lafayette, IN*

TOB am 09:30 **Dual-Trap Configuration for High Efficiency Tandem Mass Spectrometry Analysis;** Linfan Li; Xiaoyu Zhou; Zheng Ouyang; *Purdue University, West Lafayette, IN*

TOB am 09:50 **Lossless Ion Trapping in Structures for Lossless Ion Manipulation (SLIM);** Xinyu Zhang; Sandilya V.B. Garimella; Spencer A. Prost; Ian K. Webb; Randolph V. Norheim; Brian L. LaMarch; Tsung-Chi Chen; Aleksey V. Tolmachev; Gordon A. Anderson; Yehia M. Ibrahim; Richard D. Smith; *Pacific Northwest National Laboratory, Richland, WA*

TOB am 10:10 **Setting New Speed Records for Orbitrap Mass Spectrometry;** Alexander Makarov; Jan-Peter Hauschild; Eduard Denisov; Amelia Peterson; Oliver Lange; Eugen Damoc; Mathias Mueller; Konstantin Ayzikov; Andreas Wieghaus; Markus Kellmann; *Thermo Fisher Scientific, Bremen, Germany*

8:30 – 10:30 AM, TUESDAY MORNING
ION MOBILITY: SEPARATIONS
Stephen Valentine (West Virgina University), presiding
Room 309-310

TOC am 08:30 **Progress in the Development of Structures for Extended and Lossless Ion Separations and Manipulations;** Richard D. Smith; Xinyu Zhang; Ian Webb; Tsung-Chi Chen; Sandilya Garimella; Aleksey Tolmachev; Yehia Ibrahim; Gordon Anderson; Erin Baker; *PNNL, Richland, WA*

TOC am 08:50 **Ion Mobility Spectrometry of Foldamers;** Frédéric Rosu[1]; Christian Klein[2]; Xuesong Li[3, 4]; Victor Maurizot[3, 4]; Ivan Huc[3, 4]; Valérie Gabelica[4, 5]; *[1]CNRS UMS 3033, Inserm U001, IECB, Pessac, France; [2]Agilent Technologies, Santa Clara, CA; [3]CNRS, UMR 5284, CBMN, Pessac, France; [4]Université de Bordeaux, IECB, Pessac, France; [5]Inserm, U869 ARNA, Bordeaux, France*

TOC am 09:10 **Accuracy in Ion Mobility Spectrometry: Requirements and Results;** Brian Hauck[1]; Bill Siems[1]; Charles Harden[2]; Vincent McHugh[3]; Herbert Hill, Jr. [1]; *[1]Washington State University, Pullman, WA; [2]LEIDOS - US Army ECBC Operations, Gunpowder, MD; [3]U.S. Army Edgewood Chemical Biological Center, Aberdeen Proving Ground, MD*

TOC am 09:30 **Ion Mobility Mass Spectrometry Differentiates Multiprotein Complex Structures formed in Solution and in Electrospray Droplets;** Linjie Han; Brandon Ruotolo; *University of Michigan, Ann Arbor, MI*

TOC am 09:50 **Structural Characterization of Methylenedianiline Regioisomers by Ion Mobility-Mass Spectrometry, Tandem Mass Spectrometry, and Computational Strategies;** Sarah M. Stow[1]; Jay G. Forsythe[1]; Tiffany M. Onifer[1]; Hartmut Nefzger[2]; Nicholas W. Kwiecien[3]; Jody C. May[1]; David M. Hercules[1]; John A. McLean[1]; *[1]Vanderbilt University, Nashville, TN; [2]Bayer MaterialScience AG, Leverkusen B108, Germany; [3]University of Wisconsin, Madison, WI*

TOC am 10:10 **IR Spectroscopy of IMS-MS Selected Protein Ions;** Stephan Warnke; Kevin Pagel; Gert von Helden; *Fritz-Haber-Institut der Max-Planck-Gesellschaft, Berlin, Germany*

8:30 – 10:30 AM, TUESDAY MORNING
MACROMOLECULAR COMPLEXES: ACTIVATION AND DISSOCIATION
Brian Bothner (Montana State University), presiding
Room 314-317

TOD am 08:30 **Multi-Step Sequencing and Confident Identification of Native Protein Complexes with an Orbitrap Mass Spectrometer;** Mikhail Belov[1, 3]; Eugen Damoc[3]; Eduard Denisov[3]; Philip Compton[2]; Neil L. Kelleher[2]; Alexander Makarov[3]; *[1]Spectroglyph LLC, Kennewick, WA; [2]Northwestern University, Evanston, IL; [3]Thermo Fisher Scientific (Bremen) GmbH, Bremen, Germany*

TOD am 08:50 **Protein Complexes: Breaking Up is Hard to Do (Unless You Have an FTMS);** Huilin Li; Jiang Zhang; Piriya Wongkongkathep; Rachel R. Ogorzalek Loo; Joseph A. Loo; *UCLA, Los Angeles, CA*

TOD am 09:10 **Surface Induced Dissociation (SID) and Collision Induced Dissociation (CID) Characterization of Human Nucleosomes;** Yun Zhang; Xin Ma; Morgan Bernier; Cecil Howard; Michael Poirier; Jennifer Ottesen; Vicki Wysocki; *The Ohio state university, Columbus, OH*

TOD am 09:30 **Probing Protein Stability, Unfolding and Dissociation with Variable Temperature Mass Spectrometry and Variable Temperature Ion Mobility Mass Spectrometry;** Kamila Pacholarz[1]; Perdita Barran[2]; *[1]University of Edinburgh, Edinburgh, UK; [2]University of Manchester, Manchester, UK*

TOD am 09:50 **Top-Down Characterization of Non-Covalent Protein Complexes via Ultraviolet Photodissociation Mass Spectrometry;** John O'Brien; Jennifer Brodbelt; *University of Texas, Austin, TX*

TOD am 10:10 **Association of the Dual Specificity Phosphatase DUSP12 with Various Messenger Ribonucleoprotein Particles Revealed by Interactome Analysis;** Panayiotis Vacratsis; *University of Windsor, Windsor, Canada*

8:30 – 10:30 AM, TUESDAY MORNING
PK/PD ANALYSIS OF BIOLOGICS
John Schiel (NIST), presiding
Ballroom I, level 4

TOE am 08:30 **Transitioning to High-Resolution MS for Bioanalytical Study Support: Comparison of High Resolution MS Technologies;** John Kellie; Jonathan Kehler; Matthew Szapacs; *GSK, King Of Prussia, PA*

TOE am 08:50 ***In vivo* Quantitation of Endosome-Disruptive Peptides using High-Resolution Mass Spectrometry to Support Pharmacokinetic Studies;** Bao-Jen Shyong; Rob Burke; Rubina Parmar; Elizabeth Mahan; Suzie Yeh; Rena Zhang; Mark Cancilla; *Merck & Co. Inc., West Point Plant, PA*

TOE am 09:10 **Expanding the Possibilities of LC-MS/MS for the Quantification of (Therapeutic) Proteins in Complex Biological Matrices;** Kees Bronsema[1, 2]; Rainer Bischoff[1]; Nico van de Merbel[1, 2]; *[1]University of Groningen, Groningen, The Netherlands; [2]PRA, Assen, The Netherlands*

TOE am 09:30 **Applying Acid Dissociation in LC-MS/MS Analysis of A PEGylated Anti-CD28 Domain Antibody in Human Serum;** Chao Gong; Jianing Zeng; Billy Akinsanya; Hao Jiang; Johanna Mora; Shannon Chilewski; Janice Gambardella; Alban Allentoff; Carol Gleason; Anne-Francoise Aubry; Binodh DeSilva; Mark Arnold; *Bristol-Mysers Squibb, Princeton, NJ*

TOE am 09:50 **LC-MS/MS Approaches to Support Clinical Studies of an Extended Half-Life Bioactive Peptide Fused to an Albumin-Binding Domain Antibody;** Chester L Bowen; Jonathan Kehler; Thomas Mencken; Bonnie Orr; Matthew Szapacs; *GlaxoSmithKline, King Of Prussia, PA*

TOE am 10:10 **Biodistribution Studies of Transferrin-Based Drug in Animal Models by Inductively Coupled Plasma Mass Spectrometry (ICP-MS);** Son N. Nguyen; Hanwei Zhao; Shunhai Wang; Cedric Bobst; Igor A. Kaltashov; *University of Massachusetts, Amherst, MA*

8:30 – 10:30 AM, TUESDAY MORNING
H/D EXCHANGE: BIOLOGICAL APPLICATIONS
Derek Wilson (York University), presiding
Ballroom II, level 4

TOF am 08:30 **Setting the Stage: Recent Developments in HDX/MS for Exploring Protein Folding, Structure, Dynamics, and Interactions;** Lars Konermann; *Univ. of Western Ontario, London, Canada*

TOF am 08:50 **Elucidating the Mechanisms of Antibody Neutralization of HIV Env by H/D Exchange;** Miklos Guttman[1]; Jean-Philippe Julien[2]; Al Cupo[3]; Rogier Sanders[3]; Ian Wilson[2]; John Moore[3]; Kelly Lee[1]; *[1]University of Washington, Seattle, WA; [2]Scripps Research Institute, La Jolla, CA; [3]Weill Medical College of Cornell University, New York, NY*

TOF am 09:10 **Deubiquitinase-Induced Stabilization of Proteasomal Subunit Rpn1 Revealed by Hydrogen Exchange Mass Spectrometry;** Bradley Stocks[1]; Geng Tian[2]; Suzanne Elsasser[2]; Daniel Finley[2]; John R. Engen[1]; *[1]Northeastern University, Boston, MA; [2]Harvard Medical School, Boston, MA*

TOF am 09:30 **Investigating the Interaction of an IgG_1 Antibody with the Neonatal Fc Receptor by HDX-MS and ETD;** Pernille Foged Jensen[1]; Vincent Larraillet[2]; Maximiliane Hilger[2]; Kasper D. Rand[1]; *[1]Department of Pharmacy, University of Copenhagen, Copenhagen, Denmark; [2]Pharma Research, Roche Diagnostics GmbH, Penzberg, Germany*

TOF am 09:50 **HDX Analysis of RGS-Gα and Multimeric Protein Complexes; Use of Isotopic Labeling;** Devrishi Goswami[1]; Nicole Brown[2]; Bruce Pascal[1]; Steve Tusky[3]; Eddy Arnold[3]; John Hepler[2]; Patrick Griffin[1]; *[1]The Scripps Research Institute, Scripps Florida, Jupiter, FL; [2]Emory University, Atlanta, Georgia; [3]Rutgers University, Piscataway, New Jersey*

TOF am 10:10 **Implementing H/DX-MS in Therapeutic Protein Formulation Development;** Jun Zhang; Douglas Banks; Michael Treuheit; Gerald Becker; *Amgen, Inc, Seattle, WA*

8:30 – 10:30 AM, TUESDAY MORNING
PHOSPHOPROTEOMICS IN DISEASE
Ying Ge (University of Wisconsin), presiding
Ballroom III, level 4

TOG am 08:30 **Proteogenomic Analysis of Human Breast Cancer Connects Genetic Alterations to Phosphorylation Networks;** Philipp Mertins[1]; Jana Qiao[1]; Karl R. Clauser[1]; D. R. Mani[1]; Michael Gillette[1]; Kelly Ruggles[2]; David Fenyo[3]; Sherri Davies[4]; Pei Wang[5]; Ping Yan[6]; Chenwei Lin[6]; Sean Wang[6]; Yuzheng Zhang[6]; Michael McLellan[4]; Henry Rodriguez[7]; Reid Townsend[4]; Li Ding[4]; Amanda Paulovich[6]; Matthew Ellis[4]; Steven A. Carr[1]; Clinical Proteomic Tumor Analysis Consortium (CPTAC)[7]; *[1]The Broad Institute of MIT and Harvard, Cambridge, MA; [2]NYU Langone Medical Center, New York, NY; [3]New York University, New York, NY; [4]Washington University, St.Louis, MO; [5]Icahn School of Medicine at Mount Sinai, New York, NY; [6]Fred Hutchinson Cancer Research Center, Seattle, WA; [7]National Cancer Institute, Bethesda, MD*

TOG am 08:50 **Identification of Post-translational Modifications of Human Desmoplakins in Regulating Interactions with Intermediate Filaments;** Lichao Zhang[1]; Lauren Albrecht[2]; Kathleen Green[2, 3]; Jeffrey Shabanowitz[1]; Donald Hunt[1, 4]; *[1]Department of Chemistry, University of Virginia, Charlottesville, VA; [2]Department of Pathology, Northwestern University, Chicago, IL; [3]Department of Dermatology, Northwestern University, Chicago, IL; [4]Department of Pathology, University of Virginia, Charlottesville, VA*

TOG am 09:10 **Quantitative Phosphoproteomic Analysis of the PTEN Signaling Pathway;** Saddiq Zahari; Jacqueline Douglass; Min Sik Kim; Patrick Shaw; Derese Getnet; Ben Park; Xinyan Wu; Akhilesh Pandey; *Johns Hopkins School of Medicine, Baltimore, MD*

TOG am 09:30 **Phosphoproteome Profiling of Toll-Like Receptor Response to Different Ligand Stimulation in Macrophages; Role of MARCKS Ser163 Phosphorylation;** Virginie Sjoelund; Margery Smelkinson; Iain Fraser; Aleksandra Nita-Lazar; *NIH, Bethesda, MD*

TOG am 09:50 **Multi-Notch MS3-Based 10-Plex TMT Quantification of Human Colorectal Cancer Cells Reveals Distinct Temporal Phosphoproteomic Profiles in Wnt Signaling;** Mark P. Jedrychowski; Ryan Kunz; Robert A. Everley; David P. Nusinow; Leonid Peshkin; Marc W. Kirschner; Steven P. Gygi; *Harvard Medical School, Boston, MA*

TOG am 10:10 **Drug-based Phosphoproteomic Study of Human Insulin Receptor Phosphorylation with Nano-flow UPLC-MS and UPLC-MS/MS;** Jason X. Tang; Zhongping Liao; John Beals; *Eli Lilly & Company, Indianapolis, IN*

8:30 – 10:30 AM, TUESDAY MORNING
IMAGING: PHARMACEUTICALS AND METABOLOMICS
Lingjun Li (University of Wisconsin-Madison), presiding
Ballroom IV, level 4

TOH am 08:30 **Pharmaceutical Mass Spectrometry Imaging: A Cross Platform Approach for Both Targeted and Untargeted Molecular Histology;** Richard Goodwin[1]; John Swales[1]; Anna Nilsson[2]; C. Logan Mackay[3]; Per Andren[2]; Jennifer Sasaki[4]; Peter Webborn[1]; Anshul Gupta[4]; *[1]AstraZeneca, Macclesfield, UK; [2]Uppsala University, Uppsala, Sweden; [3]University of edinburgh, Edinburgh, UK; [4]AstraZeneca, Waltham, MA*

TOH am 08:50 **Mapping HIV Drugs in Tissue using IR-MALDESI MSI Coupled to the Q Exactive with Several Acquisition Modes;** David C. Muddiman[1]; Jeremy Barry[1]; Guillaume Robichaud[1]; Mark Bokhart[1]; Corbin Thompson[2]; Craig Sykes[2]; Angela Kashuba[2]; *[1]North Carolina State University, Raleigh, NC; [2]UNC Chapel Hill, Chapel Hill, NC*

TOH am 09:10 **Multimodal Biomarkers Discovery in Kidney Disease using High Spatial and Spectral Resolution Mass Spectrometry Imaging;** Satoshi Miyamoto[2, 3]; Gregory Hamm[1]; David Bonnel[1]; Kumar Sharma[2, 3]; Jonathan Stauber[1]; *[1]ImaBiotech, MS Imaging Dept., LOOS, France; [2]Institute of Metabolomic Medicine, San Diego, CA; [3]Center for Renal Translational Medicine, Division, San Diego, CA*

TOH am 09:30 **Tracking Metabolomic Dynamics during Corn Seed Germination using MALDI Mass Spectrometry Imaging;** Adam Feenstra[1, 2]; Andy Korte[1, 2]; Young-Jin Lee[1, 2]; *[1]Iowa State University, Ames, IA; [2]Ames Laboratory, Ames, IA*

TOH am 09:50 **Spatial Metabolomics of Alzheimer's Disease Brains using LAESI-MS;** Greg Kilby[2]; Callee Walsh[2]; Pamela Cantrell[2]; Greg Boyce[2]; James Langridge[1]; Giuseppe Astarita[1]; *[1]Waters Corporation, Milford, MA; [2]Protea Biosciences, Morgantown, WV*

TOH am 10:10 **Imaging Mass Spectrometry of 3D Cell Cultures: Novel Approach to Evaluate the Penetration of New Therapeutics and Apoptotic Imaging Probes;** Amanda B. Hummon; *University of Notre Dame, Notre Dame, IN*

10:30 AM – 2:30 PM, TUESDAY
TUESDAY POSTER SESSION
Poster/Exhibit Hall
Lunch concessions are open 11:00 am – 2:00 pm

TUESDAY AFTERNOON ORAL SESSIONS

2:30 – 4:30 PM, TUESDAY AFTERNOON
SPACE SCIENCE, ASTROBIOLOGY, AND ATMOSPHERIC CHEMISTRY
Jos Oomens (Radboud University), presiding
Exhibit Hall AB

TOA pm 2:30 **Detection of Organics in Geological Samples Containing Perchlorate with the MOMA Linear Ion Trap Mass Spectrometer;** Ricardo Arevalo Jr. [1]; Xiang Li[2]; Veronica Pinnick[2]; Friso H.W. Van Amerom[3]; Ryan M. Danell[4]; Stephanie Getty[1]; Lars Hovmand[5]; Paul Mahaffy[1]; William Brinckerhoff[1]; Fred Goesmann[6]; Harald Steininger[6]; *[1]NASA GSFC, Greenbelt, MD; [2]University of Maryland, Baltimore County, Greenbelt, MD; [3]SRI International, Hyattsville, MD; [4]Danell Consulting, Inc., Winterville, NC; [5]Linear Labs LLC, Washington, DC; [6]MPS, Lindau, Germany*

TOA pm 2:50 **Label-Free Quantitation and Dynamic SILAC to Investigate the Effects of Microgravity on Primary Cardiac Cells;** J. Will Thompson[1]; Bryan J. Feger[1]; Laura G. Dubois[1]; Matthew W. Foster[1]; Lisa Scott Carnell[2]; Dawn E. Bowles[1]; M. Arthur Moseley[1]; *[1]Duke University School of Medicine, Durham, NC; [2]NASA Langley Research Center, Hampton, VA*

TOA pm 3:10 **Identification and Separation of Oxidized Organic Aerosol Precursors using a Novel Field-Deployable High Resolution Ion Mobility Time-of-Flight Mass Spectrometer (IMS-TOF);** Jordan Krechmer[1]; Manjula Canagaratna[2]; Joel Kimmel[2, 3]; Heikki Junninen[4]; Richard Knochenmuss[3]; Mike Cubison[3]; Paola Massoli[2]; Harald Stark[1, 2]; John T. Jayne[2]; Jason Surratt[5]; Jose L. Jimenez[1]; Douglas Worsnop[2, 4]; *[1]University of Colorado, Boulder, CO; [2]Aerodyne Research Inc., Billerica, MA; [3]Tofwerk, AG, Thun, Switzerland; [4]University of Helsinki, Helsinki, Finland; [5]University of North Carolina, Chapel Hill, NC*

TOA pm 3:30 **Proteome Expression Profiling of Hypergravity Exposure in *Drosophila*: Preparing for a NASA Space Mission;** Ravikumar Hosamani[2]; Chris Adams[1]; Shilpa R. Bhardwaj[2]; Anna Okumu[1]; Allis S. Chien[1]; Sharmila Bhattacharya[2]; *[1]Stanford University Mass Spectrometry, Stanford, CA; [2]NASA Ames, Sunnyvale, CA*

TOA pm 3:50 **Reactions of N-containing PAH Anions with N and O atom: A DFT Study of Processes of Interstellar Interest;** Zhechen Wang[1, 2]; Veronica M. Bierbaum [1, 2]; *[1]University of Colorado, Boulder, CO; [2]University of Colorado, Boulder, CO*

TOA pm 4:10 **Prebiological Evolution of Macromolecules. Investigation of the Abiogenic Peptide Formation at the Different Conditions by High Resolution Mass Spectrometry;** Alexey Kononikhin[1, 2]; Olga Demina[1]; Igor Popov[1, 2]; Natalia Starodubtseva[1, 2]; Alexey Boldyrev[2]; Andrey Khodonov[1]; Sergey Varfolomeev[1]; Eugene Nikolaev[1, 2]; *[1]Emanuel Institute of Biochemical Physics, Moscow, Russia; [2]Institute for Energy Problems of Chemical Physics, Moscow, Russia*

2:30 – 4:30 PM, TUESDAY AFTERNOON
NANO-SCALE AND MICROFLUIDIC SEPARATIONS AND MASS SPECTROMETRY
Bryan Fonslow (Scripps Research Institute), presiding
Room 307-308

TOB pm 2:30 **Next Generation Blood Sampling For Mass Spectral Analysis Of Proteins and Metabolites;** Fred Regnier[1]; Tim Woenker[2]; JinHee Kim[2]; Jiri Adamec[3]; *[1]Purdue University, West Lafayette, IN; [2]Novilytic Laboratories, West Lafayette, Indiana; [3]University of Nebraska, Lincoln, NE*

TOB pm 2:50 **Peering into Biology from the Outside: Exometabolic Microfluidics-Based Platforms Integrated with Structural Mass Spectrometry for Systems, Synthetic, and Chemical Biology;** John A. Mclean; Stacy D. Sherrod; Cody R. Goodwin; Virginia Pensabene; John P. Wikswo; *Vanderbilt University, Nashville, TN*

TOB pm 3:10 **High Peak Capacity Ultranarrow PLOT LC Columns Coupled to Mass Spectrometry for Proteomic Analysis of Vanishingly Small Samples;** Barry L. Karger[1]; Siyang Li[1]; Xianzhe Wang[1]; Shashi K. Murthy[1]; David Fenyo[2]; Alexander R. Ivanov[1]; *[1]Barnett Institute, Northeastern University, Boston, MA; [2]New York University, New York, NY*

TOB pm 3:30 **High Resolution HILIC for Proteomic LC-MS;** Kanta Horie[1, 2]; Takeo Kamakura[1]; Suguru Ichihara[1]; Masaki Wakabayashi[1]; Nobuo Tanaka[3]; Yasushi Ishihama[1]; *[1]Kyoto University, Kyoto, Japan; [2]Eisai Co., Kawashima, Japan; [3]GL Sciences, Iruma, Japan*

TOB pm 3:50 **Capillary Zone Electrophoresis-Electrospray Ionization-Tandem Mass Spectrometry for Highly Sensitive Shotgun Proteomics;** Liangliang Sun; Guijie Zhu; Xiaojing Yan; Si Mou; Norman J. Dovichi; *University of Notre Dame, South Bend, IN*

TOB pm 4:10 **A Hybrid Microchip/Capillary Electrophoresis Mass Spectrometry Platform for Rapid and Ultrasensitive Bioanalysis;** Ryan T. Kelly[1]; Chengcheng Wang[2]; Cheng S. Lee[2]; Richard D. Smith[1]; Keqi Tang[1]; *[1]Pacific NW National Laboratory, Richland, WA; [2]University of Maryland, College Park, MD*

2:30 – 4:30 PM, TUESDAY AFTERNOON
PROTEIN-PROTEIN AND PROTEIN-LIGAND INTERACTIONS
Renato Zenobi, (ETH Zurich), presiding
Room 309-310

TOC pm 2:30 **Sheathless Capillary Electrophoresis Coupled with Mass Spectrometry in Analysis of Native Proteins and Protein Complexes;** Alexander R. Ivanov[1]; Rosa Viner[3]; Marcia R. Santos[2]; David Horn M.[3]; David R. Bush[1]; Arseniy M. Belov[1]; Barry L. Karger[1]; *[1]Barnett Institute, Northeastern University, Boston, MA; [2]Sciex Separations, Brea, CA; [3]Thermo Fisher Scientific, San Jose, CA*

TOC pm 2:50 **Nanodiscs and CaR-ESI-MS: A Novel Method for the Discovery of Protein-Glycosphingolipid Interactions;** Aneika Leney; Xuxin Fan; Elena Kitova; John Klassen; *University of Alberta, Edmonton, Canada*

TOC pm 3:10 **Using Ion Mobility-Mass Spectrometry to Study the Interactions between Human Histone Deacetylase 8 and Poly-r(C)-binding Protein 1;** Shuai Niu; Byung Chul Kim; Carol Fierke; Brandon Ruotolo; *University of Michigan, Ann Arbor, MI*

TOC pm 3:30 **The Attainment of Low-Charge State HK97 Bacteriophage Capsid at 13 MTh using STJ Cryodetection MALDI Time-of-Flight Mass Spectrometry;** Jonathan Feldman[1]; Robert Duda[2]; Roger Hendrix[2]; Mark E. Bier[1]; *[1]Carnegie Mellon University, Pittsburgh, PA; [2]University of Pittsburgh, Pittsburgh, Pennsylvania*

TOC pm 3:50 **Electron Transfer Dissociation of Native Protein Complexes on a Quadrupole/Ion Mobility/TOF Instrumen;** Frederik Lermyte[1, 2]; Albert Konijnenberg[1]; Jonathan P. Williams[3]; Jeff Brown[3]; Dirk Valkenborg[2, 4]; Frank Sobott[1, 2]; *[1]University of Antwerp, Antwerpen, Belgium; [2]CFP-CeProMa, University of Antwerp, Antwerp, Belgium; [3]Waters Corporation, Manchester, UK; [4]VITO, Mol, Belgium*

TOC pm 4:10 **Towards a Molecular "Microscope": MS-Based Identification of Endogenous Protein-Protein Interactions and Proximities using Global Chemical Stabilization in the Cellular Milieu;** Roman Subbotin; Brian Chait; *The Rockefeller University, New York, NY*

2:30 – 4:30 PM, TUESDAY AFTERNOON
FUNDAMENTALS OF PEPTIDE FRAGMENTATION
Yu Xia (Purdue University), presiding
Room 314-317

TOD pm 2:30 **IRMPD Spectroscopy of Ammonia Complexes of Peptide Fragments;** Oscar Hernandez[2]; Philippe Maitre[2]; Bela Paizs[1]; *[1]Bangor University, Bangor, UK; [2]Université Paris Sud, Paris, France*

TOD pm 2:50 **ETD Performance Comparison among Benzyl/Methyl/ *n*-Butylguanidine-Tagged Peptides;** Chang Xue; Jan Urban; František Tureček; *University of Washington, Department of Chemistry, Seattle, WA*

TOD pm 3:10 **Radical Additions to Aromatic Residues in Peptides Facilitate Unexpected Side Chain and Backbone Losses;** Xing Zhang; Ryan R. Julian; *University of California, Riverside, Riverside, CA*

TOD pm 3:30 **Understanding the Electron Capture Dissociation of Phosphopeptides by Use of Ion Mobility Mass Spectrometry and Molecular Dynamics Simulations;** Helen J. Cooper[1]; Andrew W. Jones[1]; Andrew J. Creese[1]; Doyong Kim[2]; David H. Russell[2]; *[1]University of Birmingham, Birmingham, UK; [2]Texas A&M University, College Station, Texas*

TOD pm 3:50 **Enhanced Loss of Phosphate from Isobarically Tagged Phosphotyrosine Peptides: Impact on Site Localization Assignment, Immonium Ion Formation and MS/MS Interpretation;** Robert A. Everley[1]; Edward L. Huttlin[1]; Sean A. Beausoleil[2]; Steven P. Gygi[1]; *[1]Harvard Medical School, Boston, MA; [2]Cell Signaling Technology, Danvers, MA*

TOD pm 4:10 **Applying Arginylation for Proteomics;** H. Alexander Ebhardt; Ruedi Aebersold; *ETH Zurich, Zurich, CH*

2:30 – 4:30 PM, TUESDAY AFTERNOON
TOP-DOWN PROTEIN ANALYSIS
Jeff Agar (Northeastern University), presiding
Ballroom I, level 4

TOE pm 2:30 **Top Down Ultraviolet Photodissociation For Confirmation of Linkage Specificity of Polyubiquitin Chains;** Joe R. Cannon; Kirby Martinez-Fonts; Andreas Matouschek; Jennifer S. Brodbelt; *Univ. of Texas at Austin, Austin, TX*

TOE pm 2:50 **Intact Protein Characterization using Ultraviolet Photodissociation in a FT-ICR Mass Spectrometer;** Jared B. Shaw; Franklin E. Leach III; Tzu-Yung Lin; Si Wu; Errol W. Robinson; David W. Koppenaal; Ljiljana Paša-Tolić; *Pacific Northwest National Laboratory, Richland, WA*

TOE pm 3:10 **Probing the Structures of Protein Complexes up to 800 kDa by Native Top-Down Tandem Mass Spectrometry with FT-ICR;** Huilin Li[1]; Jeremy Wolff[2]; Steve L. Van Orden[2]; Iain D G Campuzano[3]; Piriya Wongkongkathep[1]; Rachel R. Ogorzalek Loo[1]; Joseph A. Loo[1]; *[1]UCLA, Los Angeles, CA; [2]Bruker Daltonics, Billerica, MA; [3]Amgen Inc., Thousand Oaks, CA*

TOE pm 3:30 **Quantitation of Proteoform-Level Responses in Oncogene-Induced Senescence using Label-free Top Down Proteomics and Advanced Data Acquisition;** Kenneth Durbin; Ryan Fellers; Paul Thomas; Philip Compton; Neil L. Kelleher; *Northwestern University, Evanston, IL*

TOE pm 3:50 **Investigating Redox Regulation in the Apoptotic Pathway using High Resolution Mass Spectrometry;** Sophie Thurlow; David Clarke; Pat Langridge-Smith; C. Logan Mackay; Colin Campbell; *Edinburgh University, Edinburgh, UK*

TOE pm 4:10 **Quantitation of Histones H2A/H2B and Their Changes during Biological Events by Top-Down FT-ICR MS/MS Analysis;** Xibei Dang[1]; Brian D. Spetman[1]; Krystal D. Nolan[2]; Jennifer S. Isaacs[2]; Jonathan H. Dennis[1]; Alan G. Marshall[3]; Nicolas L. Young[3]; *[1]Florida State University, Tallahassee, FL; [2]Medical University of South Carolina, Charleston, SC; [3]National High Magnetic Field Laboratory, Tallahassee, FL*

2:30 – 4:30 PM, TUESDAY AFTERNOON
DRUG TARGET DISCOVERY AND VALIDATION
Jim Glick (Novartis BioMedical Research Institute), presiding
Ballroom II, level 4

TOF pm 2:30 **Dissecting the Binding Mode of Low Affinity Phage Display Ligands by Hydrogen/Deuterium Exchange Mass Spectrometry;** Ulrike Leurs[1]; Rasmus Clausen[1]; Brian Lohse[1]; Jesper Kristensen[1]; Kasper D. Rand[2]; *[1]University of Copenhagen, Copenhagen, Denmark; [2]Department of Pharmacy, University of Copenhagen, Copenhagen, Denmark*

TOF pm 2:50 **Impacting Translation of Biotherapeutics with Immunoaffinity LC-MS/MS Quantification of Protein Targets;** Joe Palandra; Hendrik Neubert; *Pfizer, Andover, MA*

TOF pm 3:10 **Central Dogma of Proteomics Provides Identification of Protein Targets, Action Mechanisms and Cellular Death Pathways of Small Molecule Anticancer Drugs;** Consuelo Marin Vicente[1, 2]; Mohammad Pirmoradian [1]; Bo Zhang[1]; Alexey Chernobrovkin[1]; Neus Visa[2]; Roman Zubarev[1]; *[1]Karolinska Institute, Stockholm, Sweden; [2]Stockholm University, Stockholm, Sweden*

TOF pm 3:30 **Affinity Selection - High Resolution Mass Spectrometry Screening to Rapidly Assess Druggability in the NF-kappaB Pathway;** Christine L. Andrews; Victoria Kutilek; Matthew Richards; Elliott Nickbarg; Michael Ziebell; Ryan Boinay; Chad Chamberlin; Patrick Curran; Peter Saradjian; Berengere Sauvagnat; Xianshu Yang; Nadya Smotrov; Zangwei Xu; Peter Dandliker; Ilona Kariv; Bruce Beutel; *Merck, Boston, MA*

TOF pm 3:50 **Ion Mobility-Mass Spectrometry for Screening Amyloid Formation Inhibitors within Rationally-Designed Bifunctional Small Molecule Libraries;** Richard Kerr[1]; Jeffrey S. Derrick[1]; Michael W. Beck[1]; Younwoo Nam[2]; Mi Hee Lim[2]; Brandon Ruotolo[1]; *[1]University of Michigan, Ann Arbor, MI; [2]Ulsan National Institute of Science and Technology, Ulsan, South Korea*

TOF pm 4:10 **Successful High-Throughput Affinity-Selection Mass Spectrometry Assays of Mixtures of 200 Compounds by Time-of-Flight LCMS;** Mark Bean; Christopher Kwiatkowski; Sunny Hung; Stacy O'Neil Slawecki; Matt Kowalski; Geoffrey Quinque; Larry Szewczuk; Matt Zajac; *GlaxoSmithKline, Collegeville, PA*

2:30 – 4:30 PM, TUESDAY AFTERNOON
CLINICAL DIAGNOSTICS
Tim Garrett (University of Florida), presiding
Ballroom III, level 4

TOG pm 2:30 **Development of on-Cartridge Enzyme Activity Assay for Cholinesterase in Human Whole Blood using Paper Spray Mass Spectrometry;** Yue Ren; Morgan McLuckey; Zheng Ouyang; *Purdue University, West Lafayette, IN*

TOG pm 2:50 **Targeted Metabolomics in Clinical Research Labs using LC-HRMS: Longitudinal Metabotype Determination for Individualized Biology in Healthy Volunteers;** Amélie Favre[1]; Ronan Euzen [1]; Marko Krstic[1]; Olaf Scheibner [2]; Maciej Bromirski[2]; Pierre-Edouard Sottas[3]; Frédéric Schütz[4]; Bertrand Rochat[1]; *[1]CHUV University Hospital, Lausanne, Switzerland; [2]Thermo Fisher Scientific, Bremen, Germany; [3]BioKaizen, Monthey, Switzerland; [4]Swiss Institute of Bioinformatics, Lausanne, Switzerland*

TOG pm 3:10 **Validation of an Automated Immuno-MALDI Assay for the Clinical Measurement of Plasma Renin Activity;** Robert Popp[1]; David Malmstrom[1]; Alex Camenzind[1]; Andrew Chambers[1]; J Grace van der Gugten[2]; Daniel Holmes[2]; Christoph Borchers[1, 3]; *[1]University of Victoria-Genome BC Proteomics Centre, Victoria, Canada; [2]St. Paul's Hospital, UBC, Vancouver, Canada; [3]UVic Dept of Biochemistry and Microbiology, Victoria, Canada*

TOG pm 3:30 **Translational Bionformatics Platform for Next Generation Histology by Imaging Mass Spectrometry;** Kirill Veselkov[1]; Reza Mirnezami[1]; Nicole Strittmatter[1]; James Kinross[1]; Abigail Speller[1]; Tigran Abramov[2]; James McKenzie[1]; Emrys Jones[1]; Ara Darzi[1]; Robert Goldin[1]; Elaine Holmes[1]; Jeremy Nicholson[1]; Zoltan Takats[1]; *[1]Imperial College, London, London; [2]Sevastopol National Technical University, Sevastopol, Ukraine*

TOG pm 3:50 **An Empirically Driven Approach for the Identification of Optimal Peptides for Tandem Mass Spectrometry Experiments on Dried Blood Spots;** James G. Bollinger; Clark M. Henderson; Andrew N. Hoofnagle; Michael J. MacCoss; *University of Washington, Seattle, WA*

TOG pm 4:10 **Universal Calibration: Populations Don't Lie, People Do;** Matthew Crawford[1]; Christopher Shuford[1]; Stacy Dee[1]; Yvonne Wright[1]; Martin Green[1]; Patricia Holland[1]; Mary Morr[1]; Brian Rappold[2]; Russell Grant[1]; *[1]LabCorp, Burlington, NC; [2]Essential Testing, LLC, St. Loius, MO*

2:30 – 4:30 PM, TUESDAY AFTERNOON
IMAGING: FUNDAMENTALS, INSTRUMENTATION, AND METHOD DEVELOPMENT
Francisco Fernandez Lima (Florida International Univ.), presiding
Ballroom IV, level 4

TOH pm 2:30 **High-Resolution Tandem Mass Spectrometry Imaging;** Bernhard Spengler; Dhaka Ram Bhandari; Andreas Römpp; *Analytical Chemistry, Giessen, Germany*

TOH pm 2:50 **New Developments in Nanospray Desorption Electrospray Ionization Mass Spectrometry: Compensation for Matrix Effects and Shotgun-like Quantification;** Julia Laskin[1, 2]; Ingela Lanekoff[1, 2]; *[1]Pacific NW National Laboratory, Richland, WA; [2]Pacific NW National Laboratory, Richland, WA*

TOH pm 3:10 **Multimodal Imaging for Biological Applications: X-ray microCT and Mass Spectrometry Imaging;** Anne Bruinen[1]; Shane Ellis[1]; Enrico Schioppa[2]; Josef Uher[3]; Ron M.A. Heeren[1]; Jan Visser[2]; *[1]FOM Institute AMOLF, Amsterdam, Netherlands; [2]FOM institute Nikhef, Amsterdam, the Netherlands; [3]Amsterdam Scientific Instruments, Amsterdam, the Netherlands*

TOH pm 3:30 **Coupling Atomic Force Microscopy with Biological Mass Spectrometry for High Spatial Resolution Imaging;** Suman Ghorai; Chinthaka A. Seneviratne; Kermit K. Murray; *Louisiana State University, Baton Rouge, LA*

TOH pm 3:50 **Multi-modality 3-D Imaging of a Human Carotid Atherosclerotic Plaque: Correlating *in vivo* Ultrasound and Imaging Mass Spectrometry;** Heath Patterson[1]; Martin Dufresne[1]; Aurelien Thomas[2]; Robert James Doonan[3]; Stella Daskalopoulou[3]; Pierre Chaurand[1]; *[1]University of Montreal, Montreal, Canada; [2]University of Lausane, Lausane, Switzerland; [3]McGill University Health Centre, Montreal, Canada*

TOH pm 4:10 **Soft-landing Ion Mobility Metal Deposition for MALDI-MS Imaging of Forensic and Biological Samples;** Barbara Walton; Drew Sturtevant; Kent Chapman; Guido Verbeck; *University of North Texas, Denton, TX*

4:45 – 5:30 PM, TUESDAY AFTERNOON
AWARD LECTURE
Susan T. Weintraub (Univ. of Texas HSC, San Antonio), presiding
Exhibit Hall AB

Biemann Medal

Lingjun Li
University of Wisconsin-Madison

5:45 – 7:00 PM, TUESDAY AFTERNOON
WORKSHOPS
Level 3
Light refreshments, level 3

1. H/D Exchange, Covalent Labeling and Crosslinking (organized by H/D Exchange, Covalent Labeling & Cross Linking Interest Group); Room 307-308
2. LC-MS System Performance Tracking in LC-MS Tracking in LC-MS (organized by LC/MS & Related Topics Interest Group); Room 309-310
3. Antibody-Drug Conjugates (ADC) - A Complex Problem in Regulated Bioanalysis (organized by Regulated Bioanalysis Interest Group); Room 314-317
4. Controlling and Measuring Variation in Sample Preparation and Data Analysis in a Core Facility Environment (organized by Analytical Lab Managers Interest Group); Room 336
5. FTMS: ICR and Orbitrap (organized by FTMS Interest Group); Room 337
6. Environmental Impacts and Implications of Hydrocarbon Extraction and Processing – The Role of Mass Spectrometry (organized by Environmental Applications Interest Group); Room 338
7. Gas Phase Ion Chemistry – Thermochemistry, Kinetics and Structures. In Honor of John Bartmess (organized by Fundamentals Interest Group); Room 339-340
8. The NIH Review Process and Mock NIH Study Section; Room 341-342
9. Imaging Mass Spectrometry vs. Histology (organized by Imaging MS Interest Group); Room 343-344
10. Metabolomics: Emerging Technologies for Continued Innovation (organized by Metaboloimics Interest Group); Room 345-346
11. 50 Years of the British Mass Spectrometry Society: Past, Present & Future; Room 347-348
12. CHORUS – A Community Solution for the Storage, Visualization, Sharing, and Analysis of Mass Spectrometry Data on the Cloud; Room 349-350

AFTER 8:00 PM, TUESDAY EVENING
CORPORATE HOSPITALITY SUITES
Hilton Hotel

8:30 – 10:30 AM, WEDNESDAY MORNING
ENERGY, PETROLEUM, AND BIOFUELS: ADVANCES IN SAMPLE PREPARATION AND MS INTERFACE DESIGN
Mark Lowenthall (NIST), presiding
Exhibit Hall AB

WOA am 08:30 **Combining Metal Ion Complexation and Ultrahigh Resolution Mass Spectrometry for the Selective Analysis of Nitrogen Compounds in Asphaltenes;** Wolfgang Schrader; Sami Lababidi; *Max-Planck Inst für Kohlenforschung., Mülheim / Ruhr, Germany*

WOA am 08:50 **A Combined Experimental and Computational Study on the Reaction Pathways of Fast Pyrolysis of Cellobiose;** Mckay Easton; John Degenstein; Priya Murria; John J. Nash; Hilkka I. Kenttamaa; *Purdue University, West Lafayette, IN*

WOA am 09:10 **Detailed Characterization of Crude Oil and Its Fractions, Is Mass Spectrometry Sufficient?;** Michael T. Cheng; Matthew Hurt; *Chevron Research, Richmond, CA*

WOA am 09:30 **Separation-Enhanced Characterization of Oxygenated Petroleum Compounds by Fourier Transform Ion Cyclotron Resonance Mass Spectrometry (FT-ICR MS);** Steven M. Rowland[1]; Winston K. Robbins[2]; Yuri E. Corilo[3, 4]; Alan G. Marshall[1, 4]; Ryan P. Rodgers[3, 4]; *[1]FSU Department of Chemistry and Biochemistry, Tallahassee, FL; [2]Consultant, Future Fuels Institute, FSU, Tallahassee, FL; [3]Future Fuels Institute, Florida State University, Tallahassee, FL; [4]Ion Cyclotron Resonance Program, NHMFL, FSU, Tallahassee, FL*

WOA am 09:50 **Characterization and Quantification of Fermentation Inhibitors in Biomass Hydrolysates for Biofuel Production;** Arne Ulbrich; Alan J. Higbee; Samantha Austin; Daniel R. Noguera; John Ralph; Michael S. Westphall; Joshua J. Coon; *University of Wisconsin, Madison, WI*

WOA am 10:10 **Isomer Distribution Analysis for Improved Hydrocarbon Mixtures Characterization;** Aviv Amirav[1, 2]; Tal Alon[1, 2]; Alexander Fialkov[1]; *[1]Tel-Aviv University, Tel-Aviv, Israel; [2]Aviv Analytical Ltd, Tel Aviv, Israel*

8:30 – 10:30 AM, WEDNESDAY MORNING
AMBIENT AND ATMOSPHERIC PRESSURE IONIZATION: FUNDAMENTALS
Brian Clowers (Washington State University), presiding
Room 307-308

WOB am 08:30 **Evaluation of Nanopipette Emitters with Orifice Diameters Less Than 100 Nanometers for Use in Electrospray Ionization Mass Spectrometry;** Steven Ray[1]; Elizabeth Yuill[1]; Alicia Friedman[1]; Anumita Saha[1]; Chris Enke[2]; Gary Hieftje[1]; Lane Baker[1]; *[1]Indiana University, Bloomington, IN; [2]University of New Mexico, Albuquerque, NM*

WOB am 08:50 **Fundamental Spray Characteristics and Complex Formation using SAWN and Other Spray Techniques;** Bob Hommersom[1]; Shane R. Ellis[1]; Tiffany Porta[1]; Marc C. Duursma[1]; Yue Huang[2]; Scott R. Heron[2]; David R. Goodlett [2]; Ron M.A. Heeren[1]; *[1]FOM Institute AMOLF, Amsterdam, Nederland; [2]University of Maryland, Baltimore, MD*

WOB am 09:10 **Supercharging Techniques for Protein Desalting and Structural Characterization from Native Aqueous Solutions;** Catherine A. Cassou; Evan R. Williams; *University of California, Berkeley, Berkeley, CA*

WOB am 09:30 **Evolution of Ions from Charged Droplets Studied by Pulsed Nanospray Coupled to Ion Mobility-Mass Spectrometery;** Carina Minardi; Kaveh Jorabchi; *Georgetown Univ., Washington, DC*

WOB am 09:50 **Surprising New Ionization Methods for Mass Spectrometry, Mechanistic Insights and Potential Practical Utility;** Sarah Trimpin; Corinne Lutomski; Tarick El-Baba; Beixi Wang; Lorelie Imperial; Daniel Woodall; Ruby Kumar; Bryan Harless; Casey Foley; Chih-Wei Liu; Ellen Inutan; *Wayne State University, Detroit, MI*

WOB am 10:10 **Optical Spectroscopic Comparisons of Helium Plasma Ambient Desorption/Ionization Sources for Mass Spectrometry;** Paul Farnsworth[1]; Wade Ellis[1]; Charlotte Reininger[1]; Joel Keelor[2]; Adam Kaylor[2]; *[1]Brigham Young University, Provo, UT; [2]Georgia Institute of Technology, Atlanta, GA*

8:30 – 10:30 AM, WEDNESDAY MORNING
THE TRIPLE QUADRUPOLE 35 YEARS ON EVOLUTION AND APPLICATIONS TO CELEBRATE CHRIS ENKE'S 80TH BIRTHDAY
R. Graham Cooks (Purdue University), presiding
Room 309-310

WOC am 08:30 **The Triple Quadrupole: An Historical Perspective;** Richard A. Yost; *University of Florida, Gainesville, FL*

WOC am 08:50 **The Secret Identity of Phase-Space 'Ellipses' – Are They Misnamed?;** David P.A. Kilgour[1]; David R. Goodlett[1]; John F.J. Todd[2]; *[1]School of Pharmacy, University of Maryland, Baltimore, MD; [2]School of Physical Sciences, University of Kent, Canterbury, UK*

WOC am 09:10 **Mass Selective Axial Ejection in a Low Pressure Linear Ion Trap in the presence of Nonlinear RF Fields;** Mircea Guna; *AB Sciex, Concord, Canada*

WOC am 09:30 **Moore's Law and the Consequence of Technological Change;** Alan Schoen; *Thermo Fisher Scientific, San Jose, CA*

WOC am 09:50 **Performance Investigation and Mass Resolution Enhancement of an Electrospray Ionization Quadrupole Mass Spectrometer with a Position Sensitive Detector;** Sarfaraz Syed; Gert Eijkel; Shane Ellis; Donald Smith; Ron Heeren; *FOM Institute AMOLF, Amsterdam, The Netherlands*

WOC am 10:10 **Room for Improvement;** Christie G. Enke; *University of New Mexico, Placitas, NM*

8:30 – 10:30 AM, WEDNESDAY MORNING
QUANTITATIVE PROTEOMICS IN SYSTEMS BIOLOGY/CELLULAR PATHWAY ANALYSIS
Michael Fitzgerald (Duke University), presiding
Room 314-317

WOD am 08:30 **Metastatic Potential of Osteosarcoma Cells Mapped through Kinase Networks;** Ievgen Motorykin; Milan Milovancev; Shay Bracha; Marcus Weinman; Claudia Maier; *Oregon State University, Corvallis, OR*

WOD am 08:50 **Measuring Reduced-Representation Phosphorylation Profiles with a High-Throughput MS Assay Produces a "Connectivity Map" of Signaling Responses to Drug Perturbations;** Jennifer G. Abelin; Jinal Patel; Lola Fagbami; Xiaodong Lu; Steven A. Carr; Jacob D. Jaffe; *Broad Institute of MIT and Harvard, Cambridge, MA*

WOD am 09:10 **Integration of Ribosome Profiling with Label-Free Quantitative Proteomics;** Andy Kong; Chih-Chiang Tsou; Alexey Nesvizhskii; *University of Michigan, Ann Arbor, MI*

WOD am 09:30 **Transformation of Mouse Embryonic Stem Cells to extra-Embryonic Endoderm (XEN) cells: A Proteomic Investigation of Early Cell Fate Decision Making;** Claire Mulvey[1, 2]; Christian Schröter[2]; Laurent Gatto[1]; Mike Deery[1]; Kathy Niakan[3]; Alfonso Martinez-Arias[2]; Kathryn S. Lilley[1]; *[1]Dept. of Biochemistry, University of Cambridge, Cambridge, U.K; [2]Dept. of Genetics, University of Cambridge, Cambridge, U.K; [3]MRC NIMR, Mill Hill, London, U.K.*

WOD am 09:50 ***Cross-Omics*: Global Phosphoproteomics and Metabolomics Reveals a Connection between Kinase Inhibition and RNA Processing in BCR-ABL H929 Myeloma Cells;** Susanne Breitkopf[1, 2]; Min Yuan[1]; Katja Helenius[1, 2]; Costas Lyssiotis[3]; John M Asara[1]; *[1]Beth Israel Deaconess Medical Center, Boston, MA; [2]Harvard Medical School, Boston, MA; [3]Weill Cornell Medical College, New York, NY*

WOD am 10:10 **NeuCode Mouse: Multiplexed Proteomic Analysis Reveals Tissue Specific Effects of Deubiquitinase Deletion;** Christopher M. Rose[1]; Joshua M. Baughman[2]; Timothy W. Rhoads[1]; Clay E. Williams[1]; Anna E. Merrill[1]; Donald S. Stapleton[1]; Mark P. Keller[1]; Alexander S. Hebert[1]; Michael W. Westphall[1]; Alan D. Attie[1]; Donald S. Kirkpatrick[2]; Anwesha Dey[2]; Joshua J. Coon[1]; *[1]University of Wisconsin, Madison, WI; [2]Genentech, South San Francisco, CA*

8:30 – 10:30 AM, WEDNESDAY MORNING
PEPTIDOMICS
Amanda Hummon (University of Notre Dame), presiding
Ballroom I, level 4

WOE am 08:30 **Distinct Peptidome Signatures of Triple Negative Breast Cancer Revealed by Large-Scale Comparative Peptidomic Analysis;** Chaochao Wu; Zhe Xu; Fang Xie; Athena Schepmoes; Thomas Fillmore; Rosalie Chu; Gordon Slysz; Matthew Monroe; Ronald Moore; Yufeng Shen; Nikola Tolic; Samuel Payne; David Camp; Tao Liu; Richard Smith; *Pacific Northwest National Laboratory, Richland, WA*

WOE am 08:50 **Peptidomics of Human Milk during Lactation and Mastitis;** Stephanie Contreras; Andres Guerrero; Dave Dallas; Lauren Wu; Jennifer Smilowitz; Daniela Barile; Bruce German; Carlito Lebrilla; *University of California, Davis, Davis, CA*

WOE am 09:10 **Mass Spectral Investigation of Circadian Rhythm-Related Neuropeptide Secretion in Crustacean via *in vivo* Microdialysis;** Zhidan Liang[1]; Claire Schmerberg[2]; Lingjun Li[1]; *[1]UW-Madison, Madison, Wisconsin; [2]Duke University, Durham, NC*

WOE am 09:30 **Investigating Mechanism of Preeclampsia by Probing Low Molecular Weight (LMW) Placental Proteome using Capillary Liquid Chromatography-Time-Of-Flight Mass Spectrometer (cLC/Q-ToF);** Komal Kedia; Steven Graves; Craig Thulin; Bruce Jackson; *BYU, Provo, Utah*

WOE am 09:50 **Analytical Strategy for the High-Throughput Sequencing of Venom Peptides (1-10kDa) Combining Cutting-Edge Technologies of Proteomics, Transcriptomics and Bioinformatics;** Loic Quinton[1]; Michel Degueldre[1]; Julien Echterbille[1]; Marion Verdenaud[2]; Madeleine Boulanger[1]; Charlotte Gouin[3]; Jordi Durban[4]; Raquel Rodriguez[4]; Rebeca Minambres[4]; Frederic Ducancel[2]; Nicolas Gilles[3]; Edwin De Pauw[1]; *[1]Laboratory of mass spectrometry, ULg, Liège, Belgique; [2]iBiTEc S/SPI Antibody Eng. for Health, Gif-sur_Yvette, France; [3]IBiTecS, SIMOPRO, Gif-sur-Yvette, France; [4]Sistemas Genomicos Ltd, Valencia, Spain*

WOE am 10:10 **Expanding the Detectable HLA Peptide Repertoire using Electron-Transfer / Higher-Energy Collision Dissociation (EThcD);** Geert P.M. Mommen[1]; Christian K. Frese[2]; Hugo D. Meiring[1]; Jacqueline van Gaans-van den Brink[3]; Ad P.J.M. de Jong[1]; Cecile A.C.M. van Els[3]; Albert J.R. Heck[2]; *[1]Intravacc, Bilthoven, Netherlands; [2]Utrecht University, Utrecht, Netherlands; [3]RIVM, Bilthoven, Netherlands*

8:30 – 10:30 AM, WEDNESDAY MORNING
PHARMACOPROTEOMICS AND TOXICOPROTEOMICS FOR DRUG DEVELOPMENT
Alexander Ivanov (Northeastern University), presiding
Ballroom II, level 4

WOF am 08:30 **High Resolution LC/MS-based Background Subtraction for Toxicoproteomic Profiling: Application to Differentiate Microsomal Protein Bindings of Acetaminophen versus Those of 3-hydroxyacetanilide;** Haiying Zhang; Jinping Gan; Yue-Zhong Shu; W. Griffith Humphreys; *Bristol-Myers Squibb R&D, Princeton, NJ*

WOF am 08:50 **Absolute Quantitation of NAPQI-modified Serum Albumin from Rat Plasma Samples by LC-MS/MS: Monitoring Acetaminophen Toxicity;** André Leblanc; Tze Chieh Shiao; René Roy; Lekha Sleno; *UQAM, Montreal, Canada*

WOF am 09:10 **Direct Monitoring of Protein-Protein Inhibition Using Nano Electrospray Ionization Mass Spectrometry;** Dragana Cubrilovic[1]; Konstantin Barylyuk[1]; Daniela Hofmann[1]; Martin Gräber[2]; Thorsten Berg[2]; Gerhard Wider[1]; Renato Zenobi[1]; *[1]ETH Zurich, Zurich, Switzerland; [2]Universität Leipzig, Leipzig, Germany*

WOF am 09:30 **Tandem Mass-Spectrometry on Native Non-Reduced and Reduced Antibody-Drugs Conjugates using an Orbitrap Mass Spectrometer Equipped with a High-Mass Quadrupole;** Andrey Dyachenko[1, 2]; Sara Rosati[1, 2]; Mike Belov[3]; Eugen Damoc[3]; Eduard Denisov[3]; Alexander Makarov[1, 3]; Albert Heck[1, 2]; *[1]University of Utrecht, Utrecht, Netherlands; [2]Netherlands Proteomics Center, Utrecht, Netherlands; [3]ThermoFisher Scientific, Bremen, Germany*

WOF am 09:50 **More from Less: Straightforward Turn-Key Workflow Enables Combined Pharmacokinetic and Integrated "Omic" Studies from Limited Tissue;** Jon Reed[1, 2]; Gogce Crynen[1, 2]; Laila Abdullah[1, 2]; Ariel Hart[1]; Prashanthi Vallabhaneni [1]; Rosa Joy[1]; Daniel Paris[1, 2]; Fiona Crawford[1, 2]; *[1]Roskamp Institute, Sarasota, Florida; [2]SRQ Bio, Sarasota, Florida*

WOF am 10:10 **Full Structure Elucidation of Elapid Snake Venom Proteins Targeting the Acetylcholine Receptor using the latest Quadrupole-Orbitrap Mass Spectrometer;** Martijn Pinkse[1]; Jeroen Kool[2]; Laurens van Herpen[1]; Tabiwang Arrey[3]; Markus Kellmann[3]; Peter D. Verhaert[1]; *[1]Delft University of Technology, Delft, Netherlands; [2]VU University Amsterdam, Amsterdam, Netherlands; [3]Thermo Fisher Scientific, Bremen, Germany*

8:30 – 10:30 AM, WEDNESDAY MORNING
PTMS: COMPREHENSIVE ANALYSIS
Saiful Chowdhury (University of Texas, Arlington), presiding
Ballroom III, level 4

WOG am 08:30 **Middle-Down Proteomics Reveals Interdependency of Histone Marks and Assists Their Functional Characterization;** Simone Sidoli[1]; Veit Schwämmle[1]; Xudong Wu[2]; Chung-Fan Lee[2]; Kristian Helin[2]; Ole Nørregaard Jensen[1]; *[1]University of Southern Denmark, Odense, Denmark; [2]Centre for Epigenetics, BRIC, Copenhagen, Denmark*

WOG am 08:50 **Global Ubiquitylome Profiling for the Identification of Oncogenic Effector Substrates and Drug Targets in Cancer;** Namrata Udeshi[1]; Jean-Philippe Theurillat[1, 2]; Jan Krönke[3]; Tanya Svinkina[1]; Monica Schenone[1]; Benjamin Ebert[1, 3]; Levi Garraway[1, 2]; Steven A. Carr[1]; *[1]The Broad Institute of MIT and Harvard, Cambridge, MA; [2]Dana-Farber Cancer Institute, Boston, MA; [3]Brigham and Woman's Hospital, Boston, MA*

WOG am 09:10 **An Ultra-tolerant Database Search Identifies Hundreds of Thousands of Modified Peptides;** Joel Chick; David Nusinow; Bo Zhai; Steven P. Gygi; *Harvard medical school, Boston, MA*

WOG am 09:30 **Comprehensive Monitoring of Dynamic Phosphorylation on Intact Proteins by Native MS on an Extended Mass Range Orbitrap;** Michiel Van De Waterbeemd[1]; Philip Lössl[1]; Violette Gautier[1]; Masami Yamashita[2]; Elena Conti[2]; Albert J.R. Heck[1]; *[1]Utrecht University, Utrecht, The Netherlands; [2]Max Planck Insitute of Biochemistry, Martinsried, Germany*

WOG am 09:50 **Lysine 2-Hydroxyisobutyrylation is a New and Widely Distributed Histone Modification with Important Biological Functions;** Lunzhi Dai[1]; Chao Peng[1]; Emilie Montellier[2]; Zhike Lu[1]; Yue Chen[1]; Haruhiko Ishii[4]; Alexandra Debernardi[2]; Thierry Buchou[2]; Sophie Rousseaux[2]; Fulai Jin[4]; Benjamin R. Sabari[3]; Zhiyou Deng[1]; He Huang[1]; C. David Allis[3]; Bing Ren[4]; Saadi Khochbin[2]; Yingming Zhao[1]; *[1]University of Chicago, Chicago, Illinois; [2]Université Joseph Fourier, La Tronche Cedex, France; [3]The Rockefeller University, New York, NY; [4]University of California, San Diego, La Jolla, CA*

WOG am 10:10 **Novel Acyl-Lysine Modifications in a Bacterial Proteome Elucidate Substrate Metabolism;** Hong Hanh Nguyen[1]; Yanan Yang[1]; Robert Gunsalus[1]; Michael McInerney[2]; Joseph Loo[1]; Rachel Ogorzalek Loo[1]; *[1]UCLA, Los Angeles, CA; [2]The University of Oklahoma, Norman, OK*

8:30 – 10:30 AM, WEDNESDAY MORNING
LIPIDS AND PROFILING
Kim Ekroos (Zora Biosciences), presiding
Ballroom IV, level 4

WOH am 08:30 **Functional Lipidomics - From Structural Characterization to Regulation of Lipid Metabolic Networks;** Christer Ejsing; *Department Of Biochemistry And Molecular Biology, Odense, Denmark*

WOH am 08:50 **Stable Isotope Labeling in Cell Culture of Short-, Medium- and Long-Chain acyl-Coenzyme A Thioesters for SID-LC-MS/MS Analysis;** Nathaniel W. Snyder; Sankha S. Basu; Zinan Zhou; Andrew J. Worth; Ian A. Blair; *University of Pennsylvania, Philadelphia, PA*

WOH am 09:10 **Biosynthetic Pathway of 12-hydroxyheptadecatrienoic Acid Revealed by LC-MS/MS System;** Toshiaki Okuno[1]; Takehiko Matsunobu[2]; Takehiko Yokomizo[1]; *[1]Department of Biochemistry, Juntendo University, Tokyo, Japan; [2]Medical Biochemistry, Kyushu University, Fukuoka, Japan*

WOH am 09:30 **Method Development for Comprehensive Analysis of Lysophospholipid Molecular Species by Shotgun Lipidomics;** Chunyan Wang; Miao Wang; Xianlin Han; *Sanford-Burnham Medical Research Institute, Orlando, FL*

WOH am 09:50 **Single-Cell Nanomanipulation to Identify Lipid Heterogeneity in Mammalian Cells at the Cancer Forefront;** Jason Hamilton; Mandy Phelps; Guido Verbeck; *University of North Texas, Denton, TX*

WOH am 10:10 **Glucosylceramide and Glucosylsphingosine Quantitation by Liquid Chromotography-Tandem Mass Spectrometry to Enable Studies of Neuronopathic Gaucher Disease;** Rick Hamler; Nastry Brignol; Sean Morrison; Hui Chang; Leo Dungan; Robert Boyd; Sean Clark; Richie Khanna; John Flanagan; Kenneth Valenzano; Elfrida Benjamin; *Amicus Therapeutics, Cranbury, New Jersey*

10:30 AM – 2:30 PM, WEDNESDAY
WEDNESDAY POSTER SESSION
Poster/Exhibit Hall
Lunch concessions are open 11:00 am – 2:00 pm

2:30 – 4:30 PM, WEDNESDAY AFTERNOON
ENERGY, PETROLEUM, AND BIOFUELS: ADVANCES IN MS DESIGN AND INFORMATICS
Michael Freitas (Ohio State University), presiding
Exhibit Hall AB

WOA pm 2:30 **Elucidating Structures of Compounds in Complex Mixture by a Combination of Ion Mobility and Ultrahigh-Resolution MS and Collisional Cross-Section Calculation;** Sunghwan Kim[1]; Ahmed Arif[1]; Eleanor Riches[2]; Kevin Giles[2]; Yunju Cho[1]; Hugh I Kim[3]; Jong Wha Lee[3]; Cheol Ho Choi[1]; *[1]Chemistry Department, Kyungpook National Universit, Daegu, South Korea; [2]Waters Corporation, Manchester, N/A; [3]Pohang University of Science and Technology, Pohang, Republic of Korea*

WOA pm 2:50 **Ion Mobility Petroleomics: Towards Isomeric Compositional Space Elucidation via New Software and Methods;** Eleanor Riches[1]; Priscila Lalli[2]; Ryan P. Rodgers[2, 3]; Yuri Corilo[2, 3]; *[1]Waters Corporation, Wilmslow, UK; [2]National High Magnetic Field Laboratory, Tallahassee, FL; [3]Future Fuels Institute, Tallahassee, FL*

WOA pm 3:10 **Analysis of Crude Oil Samples on the Multi Reflecting High Resolution TOF at resolution over 160,000;** George Tikhonov[1]; Viatcheslav Artaev[1]; Boris Kozlov[2]; Kevin Siek[1]; Anatoly Verenchikov[2]; *[1]LECO Corporation, Saint Joseph, MI; [2]MS Consulting, Bar, Montenegro*

WOA pm 3:30 **Direct Analysis of Crude Oil using Orbitrap Mass Spectrometry with Resolving Powers above 1,000,000;** Eduardo M. Schmidt[1]; Marcos A. Pudenzi[1]; Jandyson M. Santos[1]; Eugen Damoc[2]; Eduard Denisov [2]; Alexander Makarov [2]; Marcos N. Eberlin[1]; *[1]ThoMSon Mass Spectrometry Laboratory, Campinas, Brazil; [2]Thermo Fisher Scientific, Bremen, Germany*

WOA pm 3:50 **Spectroscopic and FT-ICR Mass Spectral Analysis of Asphaltene Subfractionation by *N*-Methyl-2-pyrrolidone;** Mmilili M. Mapolelo[1]; Simon I. Andersen[1]; Amy M. Mckenna[2]; Jacqueline M. Jarvis[2]; Ryan P. Rodgers[2]; Alan G. Marshall[2]; *[1]Schlumberger, Edmonton, Canada; [2]Natl High Magnetic Field Laboratory, Tallahassee, FL*

WOA pm 4:10 **Use of 2D GC-MS and ESI-FTICR-MS to Characterize Quality Crude Oil Produced from Aliphatic Coal via Hydrous Pyrolysis;** Blaine Hartman; Patrick Hatcher; *Old Dominion University, Norfolk, VA*

2:30 – 4:30 PM, WEDNESDAY AFTERNOON
AMBIENT IONIZATION: INSTRUMENTATION AND APPLICATIONS
Demian Ifa (York University), presiding
Room 307-308

WOB pm 2:30 **Data-Independent Ion Correlations by Dynamic Sample Introduction Ambient MS;** Ezequiel M. Morzan[1]; Rachel V. Bennett[2]; Facundo M. Fernandez[2]; *[1]Universidad de Buenos Aires, Buenos Aires, Argentina; [2]Georgia Institute of Technology, Atlanta, GA*

WOB pm 2:50 **Metabolic Response to Altered Light Conditions in Genetically Modified Chlamydomonas by LAESI Mass Spectrometry with Ion Mobility Separation;** Sylwia Stopka[1]; Bindesh Shrestha[1]; Éric Maréchal[2]; Denis Falconet [2]; Akos Vertes[1]; *[1]George Washington University, Washington, District Of Columbia; [2]CEA-CNRS-INRA-Univ. Grenoble Alpes, Grenoble, France*

WOB pm 3:10 **Single-probe Sampling and Ionization Technique for Single Cell Mass Spectrometry Analysis: Development and Applications;** Ning Pan; Anthony Burgett; Naga Rama Kothapalli; Zhibo Yang; *University of Oklahoma, Norman, OK*

WOB pm 3:30 **High Repetition-Rate, Fiber-Based Laser Vaporization, Electrospray Ionization Mass Spectrometry (Fiber-LEMS);** Paul Flanigan[1]; Fengjian Shi[1]; Jieutonne Archer[1]; Andrew Mills[2]; Martin Fermann[2]; Robert Levis[1]; *[1]Temple University, Philadelphia, PA; [2]IMRA America, Inc., Ann Arbor, MI*

WOB pm 3:50 **Direct Quantification of Chemical Warfare Agent Related Compounds using Active Capillary Inlet and SESI Mass Spectrometry;** Jan-Christoph Wolf[1]; Pablo Martinez-Lozano Sinues[1]; Martin Schaer[2]; Renato Zenobi[1]; *[1]ETH Zurich, Zurich, CH; [2]SPIEZ Laboratory, Spiez, CH*

WOB pm 4:10 **jigSAWN: A Self-optimizing SAWN Control Interface;** Erik Nilsson[2]; Michael Wilson[1]; Yue Huang[1]; Scott Heron[1]; David Kilgour[1]; David Goodlett [1]; *[1]University of Maryland, Baltimore, Baltimore, MD; [2]Deurion LLC, Seattle, WA*

2:30 – 4:30 PM, WEDNESDAY AFTERNOON
ECOLOGICAL AND HUMAN HEALTH ENVIRONMENTAL CHEMISTRY AND TOXICOLOGY
J. Will Thompson (Duke University), presiding
Room 309-310

WOC pm 2:30 **Comprehensive Characterization of Mixed-Halogen Dioxins and Furans Generated in Fire Debris Using GCxGC-TOFMS and APGC-TQS;** Kari Organtini[1]; Anne Myers[2]; Karl Jobst[3]; Eric Reiner[3]; Jack Cochran[4]; Adam Ladak[5]; Douglas Stevens[5]; Frank Dorman[1]; *[1]Penn State University, University Park, PA; [2]University of Toronto, Toronto, Canada; [3]Ontario Ministry of the Environment, Toronto, ON; [4]Restek Corporation, Bellefonte, PA; [5]Waters Corporation, Beverly, MA*

WOC pm 2:50 **Characterization of Paralytic Shellfish Poisons by HILIC-IM-MS coupling;** Salomé Poyer[1]; Corinne Loutelier-Bourhis[1]; Florence Mondeguer[2]; Julien Enche[3]; Gael Coadou[1]; Anne Bossée[3]; Philipp Hess[2]; Carlos Afonso[1]; *[1]University of rouen, Mont Saint Aignan, France; [2]IFREMER, Nantes, France; [3]DGA Maîtrise NRBC, Vert Le Petit, France*

WOC pm 3:10 **Fast Identification and Quantification of Major Protein Carbonyls α -aminoadipic and γ-glutamic semialdehydes---A New Pronase Hydrolysis Methodology;** Lin Huang[1]; Jacob Raber[2]; Claudia Maier[1]; *[1]Oregon State University, Corvallis, OR; [2]Oregon Health & Science University, Portland, OR*

WOC pm 3:30 **Supercritical Fluid Chromatography Coupled to Orbitrap Mass Spectrometry for Analysis of Oil Sands Process-Affected Water;** Alberto Pereira; Jonathan Martin; *University of Alberta, Edmonton, Canada*

WOC pm 3:50 **A Highly Sensitive, Fully Automated, High Throughput Method to Analyze Nicotine Metabolites in Human Serum using HPLC-APCI-Tandem Mass Spectrometry;** Kristin Dortch; Kevin Caron; Hunter Ronald; Luo Zuzheng; Alexander Ricky; Akins Ricky; McGahee Ernest; Connie Sosnoff; Lanqing Wang; *Centers for Disease Control and Prevention, Atlanta, GA*

WOC pm 4:10 **Identification and Quantification of Fourteen N-Nitrosamines in Canadian Drinking Water Systems using SPE-HPLC-MS/MS Methods;** Yichao Qian; Minghuo Wu; Jessica Boyd; Steve Hrudey; Xing-Fang Li; *University of Alberta, Edmonton, Canada*

2:30 – 4:30 PM, WEDNESDAY AFTERNOON
FUNDAMENTALS: NEW ION ACTIVATION METHODS
Hao Chen (Ohio University), presiding
Room 314-317

WOD pm 2:30 **Improvement of the Low Mass Cutoff Effect using Digital Ion Trap Technology;** Fuxing Xu; Chuanfan Ding; *Fudan University, Shanghai, China*

WOD pm 2:50 **"Flow-Through" Electron Capture Dissociation in a Novel Branched Radio-Frequency Ion Trap for High Throughput Mass Spectrometry;** Takashi Baba; J. Larry Campbell; Yves Le Blanc; Jim. W. Hager; Bruce A. Thomson; *AB Sciex, Concord, Canada*

WOD pm 3:10 **Effects of Sodium Cationization on Electron Detachment Dissociation Fragments of Heparin Oligosaccharides;** Isaac Agyekum[2]; Muchena J. Kailemia[2]; Lingyun Li[3]; Robert J. Linhardt[3]; Jon Amster[1]; *[1]University of Georgia, Athens, GA; [2]University of Georgia,Chemistry Department, Athens, GA; [3]Rensselaer Polytechnic University, Troy, NY*

WOD pm 3:30 **UV Photogeneration of Peptidic Carbenes and UV Photodissociation of ETD Fragmentation Products;** Christopher Shaffer; Ales Marek; Robert Pepin; Frantisek Turecek; *University of Washington, Seattle, Washington*

WOD pm 3:50 **Effect of Conformational Flexibility on Gas-Phase Unfolding of Noncovalent Protein Homodimers Probed by CID and SID;** Yang Song; Yun Zhang; Royston Quintyn; Mowei Zhou; Vicki Wysocki; *The Ohio State University, Columbus, OH*

WOD pm 4:10 **Gas-Phase Structural Effects in Negative Ion Electron Capture Dissociation (niECD);** Ning Wang; Kristina Hakansson; *University of Michigan, Ann Arbor, MI*

2:30 – 4:30 PM, WEDNESDAY AFTERNOON
PLANT"OMICS"
Ron Cerny (University of Nebraska), presiding
Ballroom I, level 4

WOE pm 2:30 **Living Without Our Daily Bread – Towards Solutions for Sufferers of Gluten Intolerance;** Michelle Colgrave[1, 2]; Keren Byrne[1, 2]; Hareshwar Goswami[1, 2]; Greg Tanner[2, 3]; Crispin Howitt[2, 3]; *[1]CSIRO Animal, Food & Health Science, St Lucia, Australia; [2]CSIRO Food Futures Flagship, Canberra, Australia; [3]CSIRO Plant Industry, Black Mountain, Australia*

WOE pm 2:50 **Targeted and Nontargeted Apple Metabolomics using 96-blade LC-MS;** Sanja Risticevic; Fatemeh Mousavi; Janusz Pawliszyn; *University of Waterloo, Waterloo, Canada*

WOE pm 3:10 **Structural Identification of N-glycoproteins and Stress Signaling in Arabidopsis Thaliana;** Jun Ma; Qianqian Li; Guochen Qin; Yi-Min She; *Shanghai Center for Plant Stress Biology, Shanghai, P. R. China*

WOE pm 3:30 **Nuclear Proteins Controlling Soybean Rust Resistance;** Bret Cooper; *USDA-ARS, Beltsville, MD*

WOE pm 3:50 **A Quantitative Systems Approach to Understand Differences in Geminivirus-induced Senescence in *Arabidopsis thaliana*;** Laura Edwards; Inna Kulikova; Sophia Yang; Mariana Franco-Ruiz; Caroline Bryan; Elise Braswell; Lisa Rightmyer; Kevin Blackburn; Michael B. Goshe; Jose Trinidad Ascencio-Ibanez; *North Carolina State University, Raleigh, NC*

WOE pm 4:10 **Alteration of the Root Microbiome using Plant Mutants Affecting Root Carbon Allocation;** Ljiljana Pasa-Tolic[1]; Charles Ansong[1]; Joshua Aldrich[1]; Heather Brewer[1]; Alice Dohnalkova[1]; Richard Ferrieri[2]; Susannah Green Tringe[3]; Michael Sadowsky[4]; Chanlan Chun[4]; Lihui Song[5]; Yaya Cui[5]; Vania Pankievicz[5, 6]; Fernanda do Amaral[5, 7]; Karina Freire d'Eça Nogueira Santos[5, 6]; Emanuel de Souza[5]; Fabio Pedrosa[5]; Gary Stacey[5]; *[1]Pacific NW Nat'l Lab, Richland, WA; [2]Brookhaven National Laboratory, Upton, NY; [3]DOE Joint Genome Institute, Walnut Creek, CA; [4]BioTechnology Institute, University of Minnesota, St. Paul, MN; [5]University of Missouri, Columbia, MO; [6]Federal University of Parana, Curitiba, Brazil; [7]Federal University of Santa Catarina, Florianopolis, Brazil*

2:30 – 4:30 PM, WEDNESDAY AFTERNOON
PROTEOMICS: INFECTIOUS DISEASES
Rena Robinson (University of Pittsburgh), presiding
Ballroom II, level 4

WOF pm 2:30 **Identification of HLA-DR-Presented Peptides in Synovial Tissue and Fluid, and PBMCs from Patients with Rheumatoid Arthritis or Antibiotic-Refractory Lyme Arthritis;** Qi Wang[1]; Elise E. Drouin[2]; Chunxiang Yao[1]; Jiyang Zhang[1, 3]; Yu Huang[1]; Allen C. Steere[2]; Catherine E. Costello[1]; *[1]Boston University School of Medicine, Boston, MA; [2]Massachusetts General Hospital, Boston, MA; [3]National University of Defense Technology, Changsha, Hunan Province, China*

WOF pm 2:50 **Viral-induced Changes in the Liver Proteome;** Dijana Vitko; Anannya Bhattacharya; Katrin Hoermann; Katja Parapatics; André C. Mueller; Jacques Colinge; Andreas Bergthaler; Keiryn L. Bennett; *CeMM Research Center for Molecular Medicine, Vienna, Austria*

WOF pm 3:10 **Revealing Essential Metabolic Enzymes for Mycobacterium Tuberculosis Survival using a Targeted Quantitation Strategy on a Q Exactive Mass Spectrometer;** John D. Leszyk; Subhalaxmi Nambi; Scott A. Shaffer; Christopher Sassetti; *University of Massachusetts Medical School, Worcester , MA*

WOF pm 3:30 **Proteomic Identification of Interspecies Host-Pathogen Interactions by Protein Crosslinking: *Acinetobacter baumannii* Infection of Human Lung Epithelia;** Devin Schweppe; Juan Chavez; James Bruce; *University of Washington, Seattle, WA*

WOF pm 3:50 **Human Immune Defense versus Viral Immune Evasion: Emerging Roles for Phosphorylation and Acetylation in Virus-Host Dynamics;** Tuo Li; Benjamin Diner; Jin Chen; Ileana M. Cristea; *Princeton University, Princeton, NJ*

WOF pm 4:10 **Glycoproteomic Analysis of Plasmas from HIV Infected Individuals of Post-Seroconversion, with Developed AIDS, HAART and Elite Suppression;** Weiming Yang[1]; Oliver Laeyendecker[1, 3]; Sarah Wendel[3]; Shisheng Sun[1]; Jian-Ying Zhou[1]; Minghui Ao[1]; Joel Blankson[2]; Richard Moore[2]; George Seage III[4]; Connie Celum[5]; Deborah Donnell[7]; Susan Buchbinder[6]; Matthew Cousins[1]; Hui Zhang[1]; Jay Brooks Jackson[1]; *[1]Department of Pathology, Johns Hopkins University, Baltimore, MD; [2]Department of Medicine, Johns Hopkins University, Baltimore, MD; [3]NIAID, National Institutes of Health, Bethesda; [4]Department of Epidemiology, Harvard SPH, Boston, MA; [5]Department of Medicine, University of Washington, Seattle,WA; [6]Statistical Center for HIV/AIDS Research and Pre, Seattle, WA; [7]San Francisco Department of Public Health, San Francisco, CA*

2:30 – 4:30 PM, WEDNESDAY AFTERNOON
TARGETED QUANTIFICATION OF PROTEINS AND POST-TRANSLATIONAL MODIFICATIONS
Yishai Levin (Weizmann Institute of Science), presiding
Ballroom III, level 4

WOG pm 2:30 **Going Wide with Targeted Quantification of PTMs: Proteomic Connectivity Maps of Drugs, Disease, Genomics, and Beyond;** Jacob D. Jaffe; Jennifer Abelin; Jinal Patel; Jordan Taylor; Lola Fagbami; Amanda Creech; Caitlin Feeney; Xiaodong Lu; Roger Hu; Aravind Subramanian; Steven A. Carr; *The Broad Institute, Cambridge, MA*

WOG pm 2:50 **High Sensitivity Targeted Quantification of ERK Phosphorylation Dynamics and Stoichiometry without Affinity Enrichment;** Tujin Shi; Tao Liu; Matthew Gaffrey; Yuqian Gao; William Chrisler; Thomas Fillmore; Carrie Nicora; Marina Gritsenko; Chaochao Wu; Jintang He; Jia Guo; Rui Zhao; Ronald Moore; Richard Smith; David Camp, II; Karin Rodland; Steven Wiley; Wei-Jun Qian; *Pacific Northwest National Laboratory, Richland, WA*

WOG pm 3:10 **Development of a Novel 2D LC/MRM-MS Approach for Deeper and Broader Quantitation of Putative Protein Biomarkers in Human Plasma;** Romain Simon[1]; Andrew Percy[1]; Andrew Chambers[1, 1]; Christoph Borchers[1, 2]; *[1]University of Victoria-Genome BC Proteomics Centre, Victoria, Canada; [2]UVic Dept of Biochemistry and Microbiology, Victoria, Canada*

WOG pm 3:30 **Targeted Quantitation of Post-Translational Modifications and Protein-Protein Interactions of Human Nitric Oxide Synthase 2 in Airway Epithelial Cells;** Erik J Soderblom; J. Will Thompson; Kurren Mehta; Loretta G. Que; Harvey E. Marshall; M. Arthur Moseley; Matthew W. Foster; *Duke University Medical Center, Durham, NC*

WOG pm 3:50 **A Multiplex PRM Assay for Assessing Regulatory Mechanisms of Cell Death in Breast Cancer Xenografts;** Matthew R. Meyer[1]; John A. Wrobel[3]; Kelly V. Ruggles[2]; Petra Erdmann-Gilmore[1]; Robert Kitchens[1]; Jacqueline Snider[1]; Jeremy Hoog[1]; Shunqiang Li[1]; Sherri R. Davies[1]; Matthew J. Ellis[1]; David Fenyö[2]; R. Reid Townsend[1]; *[1]Washington University in St. Louis, St. Louis, MO; [2]New York University, New York, NY; [3]University of North Carolina, Chapel Hill, NC*

WOG pm 4:10 **Rapid Processing of Large Scale Quantitative Proteomics Projects: Integration of Skyline with the CHORUS Cloud;** Brendan MacLean[1]; Andrey Bondarenko[2]; Nick Shulman[1]; Oleksii Tymchenko[3]; Christine Wu[2]; Nathan Yates[4]; Michael J. Maccoss[1]; *[1]Univ of Washington, Seattle, WA; [2]Stratus Biosciences, Seattle, WA; [3]TeamDev, Kharkov, Ukraine; [4]University of Pittsburgh, Pittsburgh, PA*

2:30 – 4:30 PM, WEDNESDAY AFTERNOON
MEMBRANE PROTEINS
Stephen Eyles (University of Massachusetts-Amherst), presiding
Ballroom IV, level 4

WOH pm 2:30 **Applications of Mass Spectrometry-based Strategies for Structural Studies of 7-Transmembrane Receptors and other Membrane Proteins;** Graham M West; Bruce Pascal; Michael Chalmers; Pat Griffin; *The Scripps Research Institute, Scripps Florida, Jupiter, FL*

WOH pm 2:50 **Probing the Membrane Protein Interaction Network of Pseudomonas aeruginosa Cells by Chemical Cross-Linking Mass Spectrometry;** Arti Navare; Richard Siehnel; Kirsten Beck; Alejandro Wolf-Yadlin; Pradeep Singh; James E. Bruce; *University of Washington, Seattle, WA*

WOH pm 3:10 **Amphipols Outperform Detergents in the Stabilization of Membrane Protein Structure in the Gas Phase;** Antonio N. Calabrese; Tom G. Watkinson; Peter J. F. Henderson; Sheena E. Radford; Alison E. Ashcroft; *University of Leeds, Leeds, UK*

WOH pm 3:30 **The Fragmentation of Gaseous Integral Membrane Proteins;** Owen Skinner; Adam Catherman; Bryan Early; Paul Thomas; Philip Compton; Neil L. Kelleher; *Northwestern University, Evanston, IL*

WOH pm 3:50 **The Release of Membrane Protein from Detergent Micelles in the Gas Phase – Mechanistic Insights and New Detergents;** Idlir Liko; Eamonn Reading; Timothy Allison; Arthur Laganowsky; Carol V. Robinson; *University of Oxford, Oxford, Oxfordshire*

WOH pm 4:10 **Exosome Surface Proteins: Enrichment and Identification by Mass Spectrometry;** Rebecca Rose[1]; Nathan Edwards[3]; Suzanne Ostrand-Rosenberg[2]; Catherine Fenselau[1]; *[1]University of Maryland, College Park, MD; [2]University of Maryland, Baltimore County, MD; [3]Georgetown University, Georgetown, Washington, D.C.*

4:45 – 5:30 PM, WEDNESDAY AFTERNOON
ASMS MEETING
Susan T. Weintraub, ASMS President, presiding
Enjoy a beverage and hear the latest ASMS news.
Ballroom I, level 4

5:45 – 7:00 PM, WEDNESDAY AFTERNOON
WORKSHOPS
Level 3
Light refreshments, level 3

1. The DIA Primer (organized by Data Indeptendent Acquisition Interest Group); Room 307-308
2. Mechanisms to Process Data Given Software Restrictions Across Vendors (organized by DMPK Interest Group); Room 309-310
3. Characterization of Biologics by Mass Spectrometry (organized by Biotherapeutics Interest Group); Room 314-317
4. Get Ready to Become a MS Rising Star (organized by Young Mass Spectrometrists Interest Group); Room 336
5. Have Quadrupole Ion Traps Passed their Prime Time (organized by Ion Trap Interest Group); Room 337
6. Advancements and Discussion of Mass Spectrometry Technology and Challenges within the Polymer and Material Fields (organized by Polymeric Materials Interest Group); Room 338
7. The Galaxy Framework for Biological MS Informatics: Practical Tips for Software Developers and Users; Room 339-340
8. Using Mass Spectrometry to Characterize the Exposome and Its Impact on Human Health; Room 341-342
9. PowerPoint Design Tips and Tricks: How Your Slides Could be Hurting Your Talk and Your Message; Room 343-344
10. Quantitative Glycomics; Room 345-346
11. Current Trends, Gaps, and Needs in Workflows for Absolute Protein Quantitation by LC-MS; Nalini Sadagopan, Room 347-348
12. Modern GCMS for Flavor, Fragrance and Foodstuffs Analysis: GC QQQ and GC HRMS (organized by Flavor Fragrance and Foodstuff Interest Group); Room 349-350
13. Mass Spectrometry Applications in Art, cultural Heritage, and Natural History; Room 327

AFTER 8:00 PM, WEDNESDAY EVENING
CORPORATE HOSPITALITY SUITES
Hilton Hotel

THURSDAY MORNING ORAL SESSIONS

8:30 – 10:30 AM, THURSDAY MORNING
FORENSIC APPLICATIONS
Lisa Jones (Indiana Univ.-Purdue Univ. Indianapolis), presiding
Exhibit Hall AB

ThOA am 08:30 **Qualitative Analysis of Commercially Available Household and Agrochemicals using Miniature Mass Spectrometry Coupled with Ambient Ionization;** Christopher Pulliam; Ryan Bain; Graham Cooks; *Purdue University, West Lafayette, IN*

ThOA am 08:50 **Simultaneous Measurement of Creatinine and 11-nor-9-Carboxy-THC in Urine by Paper Spray-Mass Spectrometry for Illicit Drug Screening;** Nicholas Manicke; *Indiana University-Purdue University Indianapolis, Indianapolis, IN*

ThOA am 09:10 **Development of Hand Portable GC/MS for Onsite Arson Investigation and Screening for Toxic Chemicals on Firefighter PPE Gear;** Andrew Byrnes[1]; John DeHaan[2]; David Matthew[3]; Nickesha Chung[4]; Ed Kissel[4]; Andy Saksa[4]; Eric Diken[4]; Gareth Dobson[4]; *[1]Utah Valley University Emergency Services, Orem, UT; [2]Fire-Ex Forensics, Vallejo, CA; [3]Fire Service Consulting, Napa, CA; [4]Smiths Detection, Danbury, CT*

ThOA am 09:30 **Direct Identification of ANFO Explosive on Real Crime Scene Samples: Banknotes and ATM Explosion Residues;** Vinicius Veri[1]; Jandyson Machado[1]; Jose Perez[1]; Marcos Franco[1]; Rodrigo Borges[2]; Wanderley Souza[2]; Jorge Zacca[3]; Deleon Correa[4]; Marcos Eberlin[1]; *[1]University of Campinas - Unicamp, Campinas, Brazil; [2]Inmetro, Rio de Janeiro, Brazil; [3]Brazilian Federal Police, Brasilia, Brazil; [4]Technical-Scientific Police Superintendency, São Paulo, Brazil*

ThOA am 09:50 **A Novel Forensic Approach towards Determining Time of Death Utilizing Saliva Glycosylation;** Bum Jin Kim[1]; Chanyoung Han[1]; Jong-Soon Choi[2]; Hyun Joo An[1]; *[1]GRAST, Chungnam National University, Daejeon, Korea; [2]Korea Basic Science Institute, Daejeon, Korea*

ThOA am 10:10 **Analysis of Phenethylamine Street Drugs for Psychoactive Compounds and Impurities;** Maura McGonigal[1]; Noelle Elliott[2]; Philip Smith[1]; Frank Dorman[1]; *[1]Penn State, University Park, PA; [2]Perkin Elmer, Shelton, CT*

8:30 – 10:30 AM, THURSDAY MORNING
INSTRUMENTATION: NEW DEVELOPMENTS IN IONIZATION AND SAMPLING
Michael Bereman (North Carolina State University), presiding
Room 307-308

ThOB am 08:30 **Controlled-Resonant Surface Tapping-Mode Scanning Probe Electrospray Ionization Mass Spectrometry Imaging;** Matthias Lorenz; Olga S. Ovchinnikova; Gary J. Van Berkel; *Oak Ridge National Laboratory, Oak Ridge, TN*

ThOB am 08:50 **Gas Chromatography Plasma-Assisted Reaction Chemical Ionization Mass Spectrometry for Quantification of Organobromines;** Ninghang Lin[1]; Haopeng Wang[1]; Kaveh Kahen[2]; Hamid Badiei[2]; Kaveh Jorabchi[1]; *[1]Georgetown Univ., Washington, DC; [2]PerkinElmer Inc., Woodbridge, Canada*

ThOB am 09:10 **Metabolic Profiling of Single *Arabidopsis* Cells by Capillary Microsampling and ESI Mass Spectrometry with Ion Mobility Separation;** Linwen Zhang[1]; Daniel P. Foreman[1]; Paaqua A. Grant[1]; Bindesh Shrestha[1]; Sally A. Moody[1]; Florent Villiers[2]; June M. Kwak[2, 3]; Akos Vertes[1]; *[1]The George Washington University, Washington, DC; [2]Maryland University, College Park, MD; [3]Institute for Basic Science, Daegu, Republic of Korea*

ThOB am 09:30 **DMSO Enhances Electrospray Response and Boosts Sensitivity of Proteomic Experiments – Lessons Learnt from a Variety of Mass Spectrometers;** Hannes Hahne; Fiona Pachl; Benjamin Ruprecht; Susan Klaeger; Dominic Helm; Heiner Koch; Bernhard Kuster; *Technische Universität München, Freising, Germany*

ThOB am 09:50 **Development of Rapid Bedside Diagnosis Tool by Coupling of Bio-Compatible Solid Phase Microextraction (SPME) Devices to Mass Spectrometry;** German Augusto Gómez-Ríos; Barbara Bojko; Fatemeh Mirnaghi; Janusz Pawliszyn; *University of Waterloo, Waterloo, Canada*

ThOB am 10:10 **Rectangular Ion Funnel (RIF): Conceptualization and Analytical Performance of a New ESI-MS Interface for Structures for Lossless Ion Manipulations (SLIM);** Tsung-Chi Chen; Ian Webb; Marques Harrer; Spencer Prost; Sandilya Garimella; Xinyu Zhang; Jonathan Cox; Randy Norheim; Brian Lamarche; Erin Baker; Aleksey Tolmachev; Gordon Anderson; Keqi Tang; Yehia Ibrahim; Richard D. Smith; *Pacific Northwest National Laboratory, Richland, WA*

8:30 – 10:30 AM, THURSDAY MORNING
FAIMS AND DMS: NEW DEVELOPMENTS AND APPLICATIONS
Randy Purves (University of Saskatchewan), presiding
Room 309-310

ThOC am 08:30 **Improved Detection of SUMOylated Peptides in Large Scale Proteomic Analyses using High Field Asymmetric Waveform Ion Mobility Spectrometry (FAIMS);** Eric Bonneil; Frederic Lamoliatte; Pierre Thibault; *Université de Montréal, Montréal, QC*

ThOC am 08:50 **Differential Mobility Spectrometry of Derivatized Steroid Hormones: Examining the Relationships between Structures and Solvation;** Chang Liu[1]; J. Larry Campbell[1]; J.C. Yves Leblanc[1]; Subhakar N. Dey[2]; Subhasish Purkayastha[2]; Tim L. Hoffman[1]; *[1]AB SCIEX, Concord, ON, Canada; [2]AB SCIEX, Framingham, MA*

ThOC am 09:10 **Fast Separation of Hydroxytestosterone Isomers using Chip-Based FAIMS Combined with Mass Spectrometry for High-Throughput Drug Assays;** Robert Smith[1]; Dora Santos[2]; Yongmin Li[2]; Weichao Chen[2]; Kari Schlicht[3]; Danielle Toutoungi[1]; Colin Creaser[4]; Sam Sperry[5]; *[1]Owlstone Ltd, Cambridge, UK; [2]Vertex Pharmaceuticals Incorporated, San Diego, CA; [3]Agilent Technologies Inc, Wakefield, MA; [4]Loughborough University, Loughborough, UK; [5]Effector Therapeutics, San Diego, CA*

ThOC am 09:30 **Improvement in the Detection of Leukemia Antigens with Differential Ion Mobility Spectrometry Coupled to Tandem Mass Spectrometry;** Samantha Isenberg; Udara Dharmasiri; Paul Armistead; Gary Glish; *University of North Carolina, Chapel Hill, NC*

ThOC am 09:50 **High Throughput Analysis using Guard-Column UHPLC-DMS-MS/MS to screen Veterinary Drug Residues in Animal Tissues;** Steven Lehotay[1]; Alan Lightfield[1]; Marilyn Schneider[1]; Paul C. Winkler[2]; *[1]USDA ARS, Wyndmoor, PA; [2]AB Sciex, Golden, CO*

ThOC am 10:10 **Evaluation of Two FAIMS Configurations for Improved Speed, Selectivity, and Sensitivity in Targeted Peptide Quantitation;** Susan E. Abbatiello; Lindsay Pino; Steven A. Carr; *The Broad Institute of MIT and Harvard, Cambridge, MA*

8:30 – 10:30 AM, THURSDAY MORNING
RADICAL ION CHEMISTRY
Benjamin Bythell (University of Missouri-St. Louis), presiding
Room 314-317

ThOD am 08:30 **Kinetic Ion Thermometers (KIT) for the Determination of Internal Energy in Transient Peptide Cation-Radicals Formed by Electron Transfer;** Frantisek Turecek; Robert Pepin; *University of Washington, Seattle, WA*

ThOD am 08:50 **Formation and Reaction of Methoxy Radical with Disulfide Linked Peptides in a NanoESI Plume: Chemistry and Utility;** Kirt L. Durand; Craig Stinson; Xiaoxiao Ma; Chasity Love; Yu Xia; *Purdue University, West Lafayette, IN*

ThOD am 09:10 **"How Sweet It Is": Development of a New Method for Generating Sugar Radical Cations via Non-Covalent Complexes;** Sandra Osburn; Spencer J. Williams; Richard A.J. O'Hair; *University of Melbourne, Parkville, Australia*

ThOD am 09:30 **Radical Delivery and Radical Fragmentation with Crown Ether Attachment for Structural Analysis of Biomolecules;** Huong T (Nicole) Pham; Ryan R. Julian; *University of California, Riverside, CA*

ThOD am 09:50 **Identification of the Presence of Isomeric Reactant Ions Based on their Ion-Molecule Reaction Kinetics;** Ashley Wittrig; Hilkka Kenttamaa; *Purdue University, West Lafayette, IN*

ThOD am 10:10 **Tuning Radical Reactivity by Polarity Switching in Gas Phase Distonic Ions;** David Marshall[2]; Lifu Ma[2]; Benjamin Kirk[3]; Adam Trevitt[2]; Stephen J Blanksby[1]; *[1]Queensland University of Technology, Brisbane, Australia; [2]University of Wollongong, Wollongong, Australia; [3]Lawrence Berkeley National Laboratory, Berkeley, CA*

8:30 – 10:30 AM, THURSDAY MORNING
BIOMARKERS IN DRUG DISCOVERY, DEVELOPMENT AND DIAGNOSIS
Nathalie Agar (Harvard Medical Center), presiding
Ballroom I, level 4

ThOE am 08:30 **Identification of Translational Biomarkers in Drug Discovery: Animal Model Optimization and Experimental Design;** Petia Shipkova; Joelle Onorato; Dong Cheng; Anthony Azzara; Don Robertson; *Bristol Myers Squibb, Princeton, NJ*

ThOE am 08:50 **Rapid Assessment of Apoptotic Signaling to Study Synergy of Cancer Chemotherapeutics;** Robert Sprung[1]; Mark Meads[1]; Luis Saavedra-Roman[2]; Elizabeth Wood[1]; Wei Guan[1]; David Britton[3]; Ian Pike[3]; Kenneth Shain[1]; John Koomen[1]; *[1]H. Lee Moffitt Cancer Center, Tampa, FL; [2]University of South Florida, Tampa, FL; [3]Proteome Sciences, London, UK*

ThOE am 09:10 **Tracer Methodologies for Measuring Triglyceride Metabolism in Pharmaceutical Research & Development: How to Get the Skinny on Fat;** David McLaren; Steven Stout; Dan Xie; Ying Chen; Seongah Han; Jinqi Liu; Sheng-Ping Wang; Raymond Rosa; Vivienne Mendoza; Olga Berejnaia; Gowri Bhat; Paul Miller; Pan Yi; Kithsiri Herath; Ablatt Mahsut; Vinit Shah; Dunlu Chen; Beth Ann Murphy; Karen Akinsanya; Hayes Dansky; Jose Castro-Perez; Shirly Pinto; Douglas Johns; Stephen Previs; Thomas Roddy; *Merck & Co., Inc., Kenilworth, NJ*

ThOE am 09:30 **Understanding Uptake and Trafficking Pathways Taken by Liver-Targeted siRNAs by Looking for Metabolite Breadcrumbs using High Resolution Mass Spectrometry;** Christopher Kochansky; Kristen Kwasnjuk; Michael Lyman; BaoJen Shyong; Kristin Geddes; Heather Trexler; Charles Thompson; Mark Cancilla; *Merck Research Labs, West Point, PA*

ThOE am 09:50 **Serum Protein Biomarkers to Monitor Duchenne Muscular Dystrophy Disease Progression and Response to Therapy;** Ramya L Marathi[1]; Sree Rayavarapu[1]; Aiping Zhang[1]; Haeri Seol[1]; Kristry J Brown[1]; Heather Gordish-Dressman1[1]; Kanneboyina Nagaraju[1]; Eric P Hoffman[1]; Erik Henricson[2]; Craig McDonald[2]; Yetrib Hathout[1]; *[1]Children's National Medical Center, Washington D.C., DC; [2]University of California, Davis School of Medicine, Davis , CA*

ThOE am 10:10 **Integrated Analysis of Proteomic and Genomic Data from Breast Cancer Tumor Profiles;** D. R. Mani[1]; Philipp Mertins[1]; Pei Wang[2, 3]; Karl R. Clauser[1]; Michael A. Gillette[1]; Jana W. Qiao[1]; Xianglong Wang[2]; Yuzheng Zhang[2]; Ping Yan[2]; Chenwei Lin[2]; Amanda Paulovich[2]; Steven A. Carr[1]; *[1]Broad Institute of MIT and Harvard, Cambridge, MA; [2]Fred Hutchinson Cancer Research Center, Seattle, WA; [3]Mount Sinai School of Medicine, New York, NY*

8:30 – 10:30 AM, THURSDAY MORNING
COVALENT LABELING, CHEMICAL PROBES, AND CROSSLINKING FOR BIOMOLECULE STRUCTURAL CHARACTERIZATION
Simin Maleknia (University of New South Wales), presiding
Ballroom II, level 4

ThOF am 08:30 **Extending the Cross-Linking/MS Strategy: Monitoring Protein Conformations by Incorporation of Unnatural Amino Acids, Photo-Cross-Linking, and MS;** Rico Schwarz; Knut Koelbel; Philip Loessl; Christian Ihling; Andrea Sinz; *Martin Luther University Halle, Halle, Germany*

ThOF am 08:50 **Structural Characterization using Chemical Cross-linking and Hydrogen/Deuterium Exchange: Resource for Novel Model of Human Haptoglobin;** Zdenek Kukacka[1, 2]; Petr Man[1, 2]; Petr Novak[1, 2]; Petr Pompach[1, 2]; *[1]Institute of Microbiology ASCR, Prague, Czech Republic; [2]Faculty of Science, Charles University, Prague, Czech Republic*

ThOF am 09:10 **A Novel Bioorthogonal and Clickable Cross-Linker for improved Protein/Protein Interaction Analysis;** Catherine Nury[1, 2]; Virginie Redeker[3]; Sébastien Dautry[4]; Anthony Romieu[4]; Guillaume Van der Rest[5]; Pierre-Yves Renard[4]; Ronald Melki[3]; Julia Chamot-Rooke[1, 2]; *[1]CNRS UMR 3528, Institut Pasteur, Paris, France, Paris, France; [2]Institut Pasteur, Structural MS & Proteomics Unit, Paris, France; [3]Laboratoire Enzymologie et Biochimie Structurales, Gif sur Yvette, France; [4]Université de Rouen - UMR 6014 CNRS, Mont Saint Aignan, France; [5]Université Paris Sud, Lab. Chimie Physique, Orsay, France*

ThOF am 09:30 **Mass-Spectrometry-Based Footprinting to Map the Precursor tRNA Binding Sites in a Protein-Only RNase P Variant;** Tien-Hao Chen; Akiko Tanimoto; Xin Ma; Wei Zhou; Jikang Wu; Venkat Gopalan; Vicki Wysocki; *The Ohio State University, Columbus, OH*

ThOF am 09:50 **High Resolution Measurement of Protein Topography by Covalent Carbene Labeling Induced by Single-Shot Laser Irradiation;** Joshua Buse[1]; Ryan Bomgarden[2]; John Rogers[2]; Chris Etienne[2]; David C. Schriemer[1]; *[1]University of Calgary, Calgary, Alberta; [2]Thermo Fisher Scientific, Rockford, Illinois*

ThOF am 10:10 **Probing the Conformational Change of Orange Carotenoid Protein during Photo-Activation in Cyanobacteria;** Hao Zhang; Haijun Liu; Jeremy King; Mindy Prado; Michael L. Gross; Robert E. Blankenship; *Washington University, St Louis, MO*

8:30 – 10:30 AM, THURSDAY MORNING
INFORMATICS: METABOLOMICS
Pieter Dorrestein (University of California, San Diego), presiding
Ballroom III, level 4

ThOG am 08:30 **Searching PubChem with Tandem Mass Spectrometry Data: Teaming Molecular Fingerprint Prediction and Fragmentation Trees;** Sebastian Böcker[1]; Huibin Shen[2]; Kai Dührkop[1]; Juho Rousu[2]; *[1]Friedrich-Schiller-University Jena, Jena, Germany; [2]Aalto University, Helsinki, Finland*

ThOG am 08:50 **ramclustR: post-XCMS Feature Clustering for Data Reduction and Spectral Matching-Based Annotation;** Corey Broeckling[1]; Fayyaz-ul-Amir Afsar Minhas[1]; Asa Ben-Hur[1]; Jessica Prenni[1]; Steffen Neumann[2]; *[1]Colorado State University, Fort Collins, CO; [2]Leibniz Institute of Plant Biochemistry, Halle, Germany*

ThOG am 09:10 **Multivariate Analysis, Visualization and Network Tools for Biological Interpretation of Metabolomic Data;** Dmitry Grapov[1, 2]; Oliver Fiehn[1, 2]; *[1]NIH West Coast Metabolomics Center, Davis, CA; [2]University of California, Davis, Davis, CA*

ThOG am 09:30 **Database Driven Molecular Annotation of Imaging Mass Spectrometry;** Andrew D. Palmer[1]; Michael Becker[2]; Janina Oetjen[3]; Ilya Chernyavsky[1]; Dmitry N. Kozlov[1]; Theodore Alexandrov[1, 4]; *[1]University of Bremen, Bremen, Germany; [2]Bruker Daltonik GmbH, Bremen, Germany; [3]MALDI Imaging Lab, University of Bremen, Bremen, Germany; [4]SCiLS GmbH, Bremen, Germany*

ThOG am 09:50 **Mass Spectrometry Based Metabolomics Work Area and Data Management Software "From Sample to Metabolic Pathways";** Bernd Haas; Martin Buratti; Nicole Huber; Hannes Pedevilla; Therese Koal; *Biocrates Life Sciences AG, Innsbruck, Österreich*

ThOG am 10:10 **Lifeline-S.O.S: "Crowd Curation" of Unidentified GC-(EI)MS spectra through Social Online Spectrometry;** Manor Askenazi[1]; Yuri Mirokhin[2]; Stephen Stein[2]; *[1]Biomedical Hosting LLC, Arlington, MA; [2]NIST, Gaithersburg, MD*

8:30 – 10:30 AM, THURSDAY MORNING
GLYCOPROTEINS AND GLYCANS: NEW MS APPROACHES
Ronghu Wu (Georgia Tech), presiding
Ballroom IV, level 4

ThOH am 08:30 **Determination of the False Discovery Rate in Glycopeptide Identifications using GlycoPep Evaluator;** Zhikai Zhu; Xiaomeng Su; Eden Go; Heather Desaire; *University of Kansas, Lawrence, KS*

ThOH am 08:50 **Method for Analysis of Glycan Degradation Products in the Feces of Breast-Fed Newborns;** Jasmine C. C. Davis; Sarah M. Totten; Carlito B. Lebrilla; *UC Davis, Davis, CA*

ThOH am 09:10 **Relative Quantification of Glycans using Multiplexed Carbonyl-Reactive Tandem Mass Tags and CE-ESI-MS;** Xuefei Zhong[1]; Yan Liu[2]; Sergei Snovida[3]; John Rogers[3]; Lingjun Li[1]; *[1]University of Wisconsin Madison, Madison, WI; [2]Xiamen University, Xiamen, P.R.China; [3]Thermo Fisher Scientific, Rockford, IL*

ThOH am 09:30 **Stable Isotope Labeling Strategies for Quantitative UPLC-MS Based Glycomics;** Silvia Millan Martin[1]; Simone Albrecht[1]; Margaret Doherty[1]; Cedric Delporte[1]; Niaobh McLoughlin[1]; Natalia Navas[2]; Jonathan Bones[1]; *[1]NIBRT, Dublin, Ireland; [2]University of Granada, Granada, Spain*

ThOH am 09:50 **Quantitative LC-MS/MS Glycomic Analysis using Tandem Mass Tag (TMT);** Shiyue Zhou[1]; Yunli Hu[1]; Sergei Snovida[2]; John C. Rogers[2]; Julian Saba[3]; Yehia Mechref[1]; *[1]Texas Tech University, Lubbock, TX; [2]Thermo Fisher Scientific, Rockford, IL; [3]Thermo Fisher Scientific, San Jose, CA*

ThOH am 10:10 **A Novel Method for Quantitative Analysis of Sialylated Glycopeptides;** Punit Shah; Shadi Toghi Eshghi; Weiming Yang; Jing Chen; Lijun Chen; Hui Zhang; *Johns Hopkins University School of Medicine, Baltimore, MD*

10:30 AM – 2:30 PM, THURSDAY
THURSDAY POSTER SESSION
Poster/Exhibit Hall
Lunch concessions are open 11:00 am – 2:00 pm

THURSDAY AFTERNOON ORAL SESSIONS

2:30 – 4:30 PM, THURSDAY AFTERNOON
FOOD CHEMISTRY AND SAFETY
Clifton K. Fagerquist (USDA), presiding
Exhibit Hall AB

ThOA pm 2:30 **Integrated Targeted and Untargeted Analysis of Ergot Alkaloids in Cereals using UHPLC – TripleTOF MS;** José Diana Di Mavungu; Sarah De Saeger; *Ghent University, Ghent, Belgium*

ThOA pm 2:50 **The Molecular Architecture of an Edible Biofilm;** Laura Sanchez[1]; Julie Button[2]; Theodore Alexandrov[3]; Benjamin Wolfe[2]; Rachel Dutton[2]; Pieter Dorrestein [1]; *[1]University of California, San Diego, Skaggs school, La Jolla, CA; [2]Harvard FAS Center for Systems Biology, Cambridge, MA; [3]University of Bremen, Bremen, Germany*

ThOA pm 3:10 **Ion Mobility Studies of Isomeric Species Lycopene, β-carotene, and α-carotene and the Retention of Trans and Cis Conformation;** Matthew Bernier; Rachel Kopec; Steven Schwartz; Vicki Wysocki; *The Ohio State University, Columbus, OH*

ThOA pm 3:30 **Simultaneous Quantitative Determination of Melamine, Ammeline, Ammelide, Cyanuric acid and Dicyandiamide in Infant Formula and Other Foods by UHPLC-MS/MS with Fast Polarity Switching;** Hui Zhao; Katerina Mastovska; James Stark; Brent Rozema; John Austad; *Covance, Madison, WI*

ThOA pm 3:50 **Evaluating *terroir* - Revealing the Chemical Basis of Organoleptic Properties of Cabernet Sauvignon Wine with Untargeted LC and GC/QTOF Workflows;** Stephan Baumann[1]; Susan Ebeler[2]; Frank David[3]; Mark Sartain[1]; Sofia Aronova[1]; Kawaljit Tandon[4]; *[1]Agilent Technologies, Inc., Santa Clara, CA; [2]UC Davis Department of Viticulture and Enology, Davis, CA; [3]Research Institute for Chromatography, Kortrijk, Belgium; [4]Constellation Brands, Inc., Madera, CA*

ThOA pm 4:10 **Application of Wheat-Specific Peptide Markers for the Detection of Gluten in an incurred Cornbread Model using Mass Spectrometry;** Katherine L. Fiedler[1]; Sara C. McGrath[1]; Lauren S. Jackson[2]; Mark M. Ross[1]; *[1]U.S. FDA, CSFAN, College Park, MD; [2]U.S. FDA, CFSAN, Bedford Park, IL*

2:30 – 4:30 PM, THURSDAY AFTERNOON
INSTRUMENTATION: TIME-OF-FLIGHT MASS SPECTROMETRY
William Brinckerhoff (NASA), presiding
Room 307-308

ThOB pm 2:30 **Space- and Time-Resolved Detection of Ions and Neutrals in MALDI-TOF-MS Using an Active Pixel Detector;** Shane R. Ellis; Ron M.A. Heeren; *FOM Institute AMOLF, Amsterdam, Netherlands*

ThOB pm 2:50 **MALDI-TOF-MS-Analysis of Intact High Mass Proteins by Phonon-Assisted Field Emission in Silicon Nanomembranes;** Diana Hildebrand[1]; Hyun-Cheol Shin Shin[1, 2]; Hyunseok Kim Kim[2]; Jonghoo Park[3]; Zlatan Aksamija Aksamija[4]; Robert Blick[1, 2]; *[1]University of Hamburg, Hamburg, Germany; [2]University of Wisconsin-Madison, Madison, WI; [3]Kyungpook National University, Daegu, Korea; [4]University of Massachusetts-Amherst, Amherst, MA*

ThOB pm 3:10 **High Resolution Multi-Reflecting TOFMS with Ion Trap Converter;** Viatcheslav Artaev[1]; Sergey Kirillov[2]; Boris Kozlov[2]; Mikhail Yavor[2]; Anatoly Verenchikov[2]; *[1]LECO Corporation, St Joseph, MI; [2]Mass Spectrometry Consulting, Bar, Montenegro*

ThOB pm 3:30 **Instrumentation, Statistics and Inference in TOFMS;** Andreas Ipsen; *Swansea University, Swansea, UK*

ThOB pm 3:50 **Perfect Timing: Fragment Ion Mobility Based Performance Increase on a qTOF Instrument;** Dominic Helm[1]; Christopher J Hughes[2]; Johannes PC Vissers[2]; Benjamin Ruprecht[1]; Hannes Hahne[1]; Isabelle Becher[3]; Markus Bantscheff[3]; James I Langridge[2]; Bernhard Kuster[1]; *[1]Technische*

Universität München, Freising, Germany; [2]Waters Corporation, Manchester, UK; [3]Cellzome, Heidelberg, Germany

ThOB pm 4:10 **Transient Sample Introduction with Laser Ablation Coupled to an Inductively Coupled Plasma Distance-of-Flight Mass Spectrometer (ICP-DOFMS);** Elise A. Dennis[1]; Alexander W. Gundlach-Graham[1]; Christie G. Enke[2]; Steven J. Ray[1]; Charles J. Barinaga[3]; David W. Koppenaal[3]; Gary M. Hieftje[1]; *[1]Indiana University, Bloomington, IN; [2]University of New Mexico, Placitas, NM; [3]Pacific Northwest National Laboratory, Richland, WA*

2:30 – 4:30 PM, THURSDAY AFTERNOON
MASS SPECTROMETRY IN STRUCTURAL BIOLOGY
Christian Bleiholder (Florida State University), presiding
Room 309-310

ThOC pm 2:30 **Integrating Native Mass Spectrometry with (Quantitative) Proteomics and Comparative Chemical Cross-linking – Insights into the Assembly of Key Protein Complexes;** Carla Schmidt; Yuliya Gordiyenko; Nina Morgner; Min Zhou; Carol Robinson; *University of Oxford, Oxford, UK*

ThOC pm 2:50 **Using Surface Induced Dissociation-Ion Mobility (SID-IM) to Distinguish the Different Interfaces that Exist in Tetrameric Protein Complexes;** Royston Quintyn; Jing Yan; Vicki Wysocki; *The Ohio State University, Columbus, Ohio*

ThOC pm 3:10 **Metabolic Pulse Chase Labeling of Rodents Shows that the Protein Cores of Some Intracellular Protein Machines Last a Lifetime;** Jeffrey Savas[1]; Brandon Toyama[2]; Varda Levram-Ellisman[3]; Roger Tsien[3]; Martin Hetzer[2]; John Yates[1]; *[1]The Scripps Research Institute, La Jolla, CA; [2]Salk Institute for Biological Studies, La Jolla, CA; [3]University of California at San Diego, La Jolla, CA*

ThOC pm 3:30 **Charge Detection Mass Spectrometry Measures Mass Distribution of Virus Capsids above 20 MDa and Resolves Intermediates in Virus Assembly;** David Keifer; *Indiana University, Bloomington, IN*

ThOC pm 3:50 **Large Scale Protein-Protein Complex Structure Prediction with *in vivo* Cross-Linking Data;** Chunxiang Zheng; Juan Chavez; Arti Navare; Xia Wu; James Bruce; *University of Washington, Seattle, WA*

ThOC pm 4:10 **Droplet Sizes, Electrospray Currents, and Nonspecific Aggregation in Electrokinetically Controlled Native Nanoelectrospray Ionization;** Kimberly Davidson[1]; Derek Oberreit[2]; Christopher Hogan[2]; Matthew Bush[1]; *[1]University of Washington, Seattle, WA; [2]University of Minnesota, Minneapolis, MN*

2:30 – 4:30 PM, THURSDAY AFTERNOON
FUNDAMENTALS: ION SPECTROSCOPY
Elaine Marzluff (Grinnell College), presiding
Room 314-317

ThOD pm 2:30 **Fluorescence Resonance Energy Transfer Measurements for the Structural Characterization of Gaseous Proteins Generated by Electrospray Ionization;** Martin F. Czar[1]; Arash Zarrine-Afsar[2]; Franziska Zosel[2]; Iwo König[2]; Benjamin Schuler[2]; Rebecca A. Jockusch[1]; *[1]University of Toronto, Toronto, Canada; [2]Universität Zürich, Zürich, Switzerland*

ThOD pm 2:50 **Action-EET Based Dissociation of Disulfide Bonds with Tryptophan as a Donor in the Gas Phase;** Nathan Hendricks[1]; Nichole M. Lareau[2]; John A. Mclean[2]; Ryan R. Julian[1]; *[1]University of California, Riverside, Riverside, CA; [2]Vanderbilt University, Nashville, TN*

ThOD pm 3:10 **Conformer-Specific Infrared Spectroscopy of Cyclic b_6 and b_8 Fragments Produced by Collision-Induced Dissociation of Peptides;** Oleg Aseev; Marta Perez; Ursula Röthlisberger; Thomas Rizzo; *École Polytechnique Fédérale de Lausanne, Lausanne, Swirzerland*

ThOD pm 3:30 **Gas-phase Conformation of Polyproline Peptides and the b_2 Fragment by IRMPD Spectroscopy;** Jonathan Martens[1]; Josipa Grzetic[1]; Giel Berden[1]; Jos Oomens[1, 2]; *[1]Radboud University Nijmegen, Nijmegen, Netherlands; [2]University of Amsterdam, Amsterdam, Netherlands*

ThOD pm 3:50 **Infrared Multiple Photon Dissociation Spectroscopy of a Gas-Phase Oxo-Molybdenum Complex with 1,2-dithiolene Ligands;** Michael J. Van Stipdonk[1]; John K. Gibson[2]; Giel Berden[3]; Jos Oomens[3, 4]; *[1]Duquesne University, Pittsburgh, PA; [2]Lawrence Berkeley Laboratory, Berkeley, CA; [3]Radboud University Nijmegen, Nijmegen, The Netherlands; [4]University of Amsterdam, Amsterdam, The Netherlands*

ThOD pm 4:10 **Soft Landing of Mass-Selected Polyoxometalate Anions onto Self-Assembled Monolayers;** Don Gunaratne; Grant Johnson; Amity Andersen; Dan Du; Weiying Zhang; Yuehe Lin; Julia Laskin; *Pacific Northwest National Laboratory, Richland, WA*

2:30 – 4:30 PM, THURSDAY AFTERNOON
DATA INDEPENDENT ACQUISITION
Paul West (Biomarker Discovery), presiding
Ballroom I, level 4

ThOE pm 2:30 **Comparison of Shotgun Proteomics with Data Independent Acquisition in Terms of Number of Identified Peptides;** Roland M. Bruderer; Oliver M. Bernhardt; Saša M. Miladinović; Tejas Gandhi; Oliver Rinner; Lukas Reiter; *BiognoSYS AG, Zurich, Switzerland*

ThOE pm 2:50 **Multiphase-cHiPLC Coupled SWATH Profiling of Metastatic Melanoma Cells Reveals MAPK Pathway Mutation Specific Protein Expression;** Christoph Krisp[1]; Robert Parker[1]; Matthew Mckay[1]; Dana Pascovici[1]; Hao Yang[2]; Remco van Soest[2]; Tina Settineri[2]; Mark P. Molloy[1]; *[1]Australian Proteome Analysis Facility, Sydney, Australia; [2]Eksigent, part of AB SCIEX, Redwood City, CA*

ThOE pm 3:10 **Systematic Investigation on Suitability of LC-QqTOF with SWATH Acquisition for Routine Forensic Screenings-Comparison with IDA and Targeted MRM Approaches;** Andreas T. Roemmelt; Andrea E. Steuer; Michael Poetzsch; Thomas Kraemer; *Zurich Institute of Forensic Medicine, UZH, Zurich, Switzerland*

ThOE pm 3:30 **Harnessing the Power of SWATH-MS for Unbiased Identification of O-GlcNacylated Proteins;** Christine Jelinek; Genaro Ramirez-Correa; Guanghui Han; David Colquhoun; Alexey Lyashkov; Gerald Hart; David Graham; Jennifer Van Eyk; Anne Murphy; *Johns Hopkins School of Medicine, Baltimore, MD*

ThOE pm 3:50 **Increasing Depth of Coverage in Data Independent Acquisition with Acquisition Improvements and Higher Sample Loads;** Christie L Hunter[1]; Ben Collins[2]; Ludovic Gillet[2]; Ruedi Aebersold[2]; *[1]AB SCIEX, Redwood City, CA; [2]ETH Zurich, Zurich, Switzerland*

ThOE pm 4:10 **Establishment of DIA-based Methods in Urine Biomarker Discovery - A Comparative Study to Discover an Early Stage Chronic Pancreatitis Biomarker;** Jan Muntel[1]; Saima Ahmed[1]; Melena Bellin[2]; Vivek Kadiyala[3]; Shadeah L. Suleiman[3]; Linda S. Lee[3]; Peter A. Banks[3]; Darwin L. Conwell[4]; Hanno Steen[1]; *[1]Boston Children's Hospital, Boston, MA; [2]University of Minnesota, Minneapolis, MN; [3]Brigham and Women's Hospital, Boston, MA; [4]Ohio State University Wexner Medical Center, Columbus, OH*

2:30 – 4:30 PM, THURSDAY AFTERNOON
EPIGENETIC MODIFICATONS AND MECHANISMS
Maria Person (University of Texas, Austin), presiding
Ballroom II, level 4

ThOF pm 2:30 **Stable Isotope labeled Histone Peptide Library for Histone Post-Translational Modification and Variant Quantification by Mass Spectrometry;** Shu Lin[1]; Samuel Wein[1]; Michelle Gonzales-Cope[1,2]; Gabriel L. Otte[1]; Leila Afjehi-Sadat[1]; Tobias Maile[3]; Shelley L. Berger[1]; John Rush[4]; Jennie Lill[3]; David Arnott[3]; Benjamin A. Garcia[1]; *[1]University of Pennsylvania, Philadelphia, PA; [2]Princeton University, Princeton, NJ; [3]Genentech Inc., South San Franciso, CA; [4]Cell Signaling Technology Inc., Danvers, MA*

ThOF pm 2:50 **Differential Analysis of histone Post Translational Modifications in MEL Cells using WCX-HILIC Coupled to Middle-Down ECD Mass Spectrometry;** Annie Moradian[1]; Michael Sweredoski[1]; Anastasia Kalli[2]; Sonja Hess[1]; *[1]California Institute of Technology, Pasadena, CA; [2]Children's Hospital Los Angeles, Los Angeles, CA*

ThOF pm 3:10 **Top Down MS/MS Analysis of Dynamic Changes in Histone Sequence Variants and Post-Translational Modifications during HIV Activation;** Yu Chen[1]; Xibei Dang[1]; Brian D. Spetman[2]; Jonathan H. Dennis[2]; Alan G. Marshall[1,2]; Nicolas L. Young[1]; *[1]National High Magnetic Field Laboratory, Tallahassee, FL; [2]Florida State University, Tallahassee, FL*

ThOF pm 3:30 **Dynamic and Combinatorial Landscape of Histone Modifications through Plasmodium falciparum Life Cycle;** Anita Saraf[1]; Serena Cervantes[2]; Evelien Bunnik[2]; Nadia Ponts[2]; Mihaela Sardiu[1]; Duk-Won Chung[2]; Jacques Prudhomme[2]; Zhihui Wen[1]; Joseph Varberg[1]; Michael Washburn[1]; Karine Le Roch[2]; Laurence Florens[1]; *[1]Stowers Institute for Medical Research, Kansas City, MO; [2]University of California Riverside, Riverside, CA*

ThOF pm 3:50 **Quantitative Profiling of Chromatome Dynamics Reveals the Regulatory Switches of Epignome in Hypoxia-Induced Oncogenesis;** Bamaprasad Dutta; Siu Kwan Sze; *Nanyang Technological University, Singapore, Singapore*

ThOF pm 4:10 **Protein Profiling Reveals Dynamic H1 Expression and Identifies H3 K9me/S10p/K14ac tri-modification Forms in Monocyte Differentiation;** Hui Tang; Kangling Zhang; *University of Texas Medical Branch at Galveston, Galveston, TX*

2:30 – 4:30 PM, THURSDAY AFTERNOON
METABOLOMICS/LIPIDOMICS:
NEW MS TECHNOLOGIES AND APPLICATIONS
Stephen Blanksby (Queensland University), presiding
Ballroom III, level 4

ThOG pm 2:30 **Comprehensive Lipidome Profiling Enables Functional Studies to Determine the Role of Aberrant Lipid Metabolism in Metastatic Colorectal Cancer Cells;** Cassie Fhaner; Gavin E. Reid; *Michigan State University, East Lansing, MI*

ThOG pm 2:50 **Integration of Supercritical Fluid Chromatography with Ion Mobility-Mass Spectrometry (SFC-IM-MS) for Metabolomics and Lipidomics;** Rafael Montenegro Burke[1]; Cody Goodwin[1]; Libin Xu[1]; Zeljka Korade[2]; Brian Bachmann[1]; Ned Porter[1]; John A. Mclean[1]; *[1]Vanderbilt University, Nashville, TN; [2]Vanderbilt Kennedy Center, Nashville, Tennessee*

ThOG pm 3:10 **Applications and Performance of the GC/quadrupole-Orbitrap MS in Discovery Metabolomics;** Allison Balloon[1]; Jason Cole[3]; Taylor Wahlig[1]; Amelia Petersen[2]; Jens Griep-Raming[2]; Michael Westphall[1]; Jean-Michel Ane[1]; Michael Sussman[1]; Joshua Coon[1]; *[1]University of Wisconsin, Madison, WI; [2]Thermo Fisher Scientific, Bremen, Germany; [3]Thermo Fisher Scientific, Austin, TX*

ThOG pm 3:30 **Accurate Quantification of Polyunsaturated Glycerophospholipids by Shotgun Lipidomics;** Kai Schuhmann; Andrej Shevchenko; *MPI-CBG, Dresden, Germany*

ThOG pm 3:50 **Facile Determination of C=C Bonds within Lipids by On-Line Paternò–Büchi Reaction and Tandem Mass Spectrometry;** Xiaoxiao Ma; Yuan Su; Zheng Ouyang; Yu Xia; *Purdue University, West Lafayette, IN*

ThOG pm 4:10 **A Sensitive Mass Spectrometry Platform Providing Ozone Induced Dissociation for High Throughput Lipid Structure Characterization;** Qibin Zhang; Yehia Ibrahim; Karl Weitz; Ronald Moore; Richard D. Smith; Keqi Tang; *Pacific Northwest National Laboratory, Richland, WA*

2:30 – 4:30 PM, THURSDAY AFTERNOON
CARBOHYDRATES: NEW MS APPROACHES
Maria Lorna De Leoz (NIST), presiding
Ballroom IV, level 4

ThOH pm 2:30 **Application of Selected Accumulation Ion Mobility Spectrometry-Electron Activated Dissociation Tandem Mass Spectrometry in Structural Analysis of Isomeric Glycans;** Yi Pu[1]; Rebecca S. Glaskin[2]; Cheng Lin[2]; Catherine E. Costello[1,2]; *[1]Boston University, Boston, MA; [2]Boston University School of Medicine, Boston, MA*

ThOH pm 2:50 **Comparing the LC-MS of Permethylated and Native Glycans on Reversed-Phase and Porous Graphitic Carbon Columns;** Yunli Hu; Shiyue Zhou; James Blackmer; Yehia Mechref; *Texas Tech University, Lubbock, TX*

ThOH pm 3:10 **Exploring the Brain Glycome using Tissue Cell Membrane Capture and Nanoflow Liquid Chromatography/Mass Spectrometry;** Injung Ji[1]; Serenus Hua[1]; Jong-Soon Choi[2]; Hyun Joo An[1]; *[1]AGRS, Chungnam National University, Daejeon, Korea; [2]Division of Life Science, KBSI, Daejeon, Korea*

ThOH pm 3:30 **Oligosaccharide MSn and Spectral Library Matching: Instrumental and Collision Energy Comparisons;** Andrew Hanneman[1]; David Ashline[1,2]; Hailong Zhang[2]; Vernon Reinhold[2]; *[1]Glycan Connections, Lee, NH; [2]University of New Hampshire, Durham, NH*

ThOH pm 3:50 **Fully Automated Annotation and Identification of Glycosaminoglycan MS/MS Spectra;** Jiana Duan; Jon Amster; *University of Georgia, Athens, GA*

ThOH pm 4:10 **Discovery of a Novel Peeling Reaction that Contributes to the Underestimation of 3-O-sulfation in Heparan Sulfate;** Yu Huang[1]; Yang Mao[1]; Chengli Zhong[2]; Geert-Jan Boons[2]; Cheng Lin[1]; Joseph Zaia[1]; *[1]Boston University School of Medicine, Boston, MA; [2]University of Georgia, Athens, GA*

4:45 – 5:30 PM, THURSDAY AFTERNOON
PLENARY LECTURE
Jenny Brodbelt (University of Texas, Austin), presiding
Exhibit Hall AB

How The Genome Folds

Erez Lieberman Aiden
Baylor College of Medicine and Rice University

6:30 – 9:00 PM, THURSDAY
CLOSING EVENT
National Aquarium
Ticket is required.

7:30 – 8:00 am..... Set up all Monday posters
10:30 am – 1:00 pm.....Odd-numbered posters present
12:00 – 2:30 pm..... Even-numbered posters present
7:30 – 8:00 pm..... Remove all Monday posters

These special posters will be displayed all week.

Special **The Analytical Triple-Quadrupole Mass Spectrometer and Low-Energy CID: Beginnings, Offshoots, and Current Applications;** Michael A. Grayson[1]; Christie G. Enke[2]; Richard A. Yost[3]; *[1]Retired, St Charles, MO; [2]University of New Mexico, Placitas, NM; [3]University of Florida, Gainesville, FL*

Special **The British Mass Spectrometry Society: The first 50 years;** Alison E. Ashcroft[1]; Susan Crosland[2]; Keith R Jennings[3]; *[1]University of Leeds, Leeds, United Kingdom; [2]Syngenta, Jealott's Hill, Bracknell, UK; [3]2 Meadow Croft Drive, Bishop Monkton, UK*

Special **Call for Participants for the iPRG 2015 Study: Label-Free Quantitative Proteomics Data Anbalysis**

Imaging MS: Method Development, 001 - 018

MP 001 **Systematic Study of Stage Raster Speed, Laser Repetition Rate and Pulse Energy in MALDI MSI;** Rory T. Steven; Ian S. Gilmore; Josephine Bunch; *National Physical Laboratory, London, UK*

MP 002 **High Throughput Spatially Resolved Peptide Identification using Hydrogel Digestion and Electro-Elution;** Erin H. Seeley; Gregory Boyce; Linda Prengaman; Greg W. Kilby; *Protea Biosciences, Inc., Morgantown, WV*

MP 003 **Quality Measures of MALDI MS imaging;** Oskar Karlsson; Malin Andersson; *Uppsala University, Uppsala, Sweden*

MP 004 **Multicenter MALDI Mass Spectrometry Imaging Identifies Proteomic Markers of Stromal Activation in Breast Cancer;** Tim Dekker[1]; Benjamin Balluff[1]; Emrys Jones[1]; Cedrik Schoene[2]; Michaela Aubele[2]; Manfred Schmitt[3]; Judith Kroep[1]; Vincent Smit[1]; Rob Tollenaar[1]; André Deelder[1]; Wilma Mesker[1]; Axel Walch[2]; Liam Mcdonnell[1]; *[1]Leiden University Medical Center, Leiden, Netherlands; [2]Helmholtz Zentrum Muenchen, Munich, Germany; [3]Klinikum rechts der Isar, Munich, Germany*

MP 005 **Imaging Mass Spectrometry and Depth Profiling for the Organic Thin Film using Laser Desorption Ionization;** Takaya Satoh[1]; Masahide Shima[1]; Hironobu Niimi[1]; Yoji Nakajima[2]; Makiko Fujii[3]; Toshio Seki[3]; Jiro Matsuo[3]; Robert DiPasquale[4]; *[1]JEOL Ltd., Akishima, Japan; [2]Asahi Glass Co., Ltd., Yokohama, Japan; [3]Kyoto Univ., Kyoto, Japan; [4]JEOL USA Inc., Peabody, MA*

MP 006 **Using MALDI-IMS and Membrane Microarrays for Tissue Classification;** Roberto Fernández[1]; Tarson Tolentino-Cortez[2]; Sergio Lage[3]; Jone Garate[1]; Izaskun Erguido[1]; Rafael Rodríguez-Puertas[1]; Egoitz Astigarraga[2]; Gabriel Barreda-Gómez[2]; José A. Fernández[1]; *[1]University of Basque Country, Leioa, Spain; [2]IMG Pharma Biotech, Leioa, Spain; [3]Cruces University Hospital, Barakaldo, Spain*

MP 007 **Sensitive Imaging of Essential Elements in a Rat Cerebellum using an Optimized LA/ICP-MS Setup Including a Collision Reaction Interface;** Rebecca Niehaus; Christoph Alexander Wehe; Michael Sperling; Uwe Karst; *Institute of Inorganic and Analytical Chemistry, Muenster, Germany*

MP 008 **In-depth Identification of Protein Images by Combining High Mass Resolution MALDI FTICR Imaging and High Performance qTOF nLC-MS/MS;** Shannon Cornett; Sergei Dikler; Matt Willetts; *Bruker Daltonics Inc., Billerica, MA*

MP 009 **Integration and Application of Separation Strategies to Multiplex Imaging Mass Spectrometry for Complex Neuropeptide Analysis;** Shan Jiang; Zichuan Zhang; Lingjun Li; *UW-Madison, Madison, WI*

MP 010 **High Resolution and High Mass Accuracy Multiply Charged MALDI Technique for *in situ* Protein Characterization – Sequencing, Identification and Visualization;** Bingming Chen[1]; Christopher Lietz[2]; Anh Van[1]; Lingjun Li[1, 2]; *[1]School of Pharmacy,UW-Madison, Madison, WI; [2]Department of Chemistry, UW-Madison, Madison, WI*

MP 011 **Optimization of the Analysis of Proteins Found in Paint Cross-sections from Works of Art by MALDI MSI;** Emily O'Neill[1]; Marcel Powers[2]; Julie Arslanoglu[3]; John Allison[2];

Richard A. Yost[1]; [1]*University of Florida, Gainesville, FL;* [2]*The College of New Jersey, Ewing, NJ;* [3]*The Metropolitan Museum of Art, New York, NY*

MP 012 **Development of Imaging MS Methods to Monitor the Molecular Composition of Latent Fingermarks;** Nidia Lauzon[1]; Matthew Howland[2]; Martin Dufresne[1]; Vinita Chauhan[2]; Pierre Chaurand[1]; [1]*Université de Montréal, Montreal, Canada;* [2]*Health Canada, Ottawa, Canada*

MP 013 **Increasing the Specificity and Sensitivity in Imaging Mass Spectrometry: Regiospecific Transfer of Proteins from Tissue Sections to Functionalized Surfaces;** Erik Fournaise; Pierre Chaurand; *Department of Chemistry, Université de Montréal, Montreal, QC, Canada*

MP 014 **Multiplexed Molecular Imaging Mass Spectrometry: Analysis of Different Molecular Types on a Single Tissue Section;** Domenico Taverna[1, 2]; Erin H Seeley[2, 3]; Jeremy L Norris[2]; Raf Van de Plas[2]; Giovanni Sindona[1]; Richard M Caprioli[2]; [1]*University of Calabria, Arcavacata Di Rende, Italy;* [2]*Vanderbilt University, Nashville, TN;* [3]*Protea Bioscience, Inc., Morgantown, WV*

MP 015 **Top-Down and Bottom-Up Analyses of Proteins on the *Same Tissue Section* using High Mass Resolution Imaging Mass Spectrometry;** David G. Rizzo; Jeffrey M. Spraggins; Kristie L. Rose; Richard M. Caprioli; *Vanderbilt University MSRC, Nashville, TN*

MP 016 **Low Molecular Weight Proteins Revealed by Virtual 2D Gels;** Karen Lohnes; Robert Gunsalus; Joseph A. Loo; Rachel O. Loo; *UCLA, Los Angeles, CA*

MP 017 **Single-step Process for Coupling *in situ* Protease Digestion with MALDI IMS: Pre-coated Trypsin Targets for High-throughput Analysis of FFPE Tissues;** Faizan Zubair; Junhai Yang; Richard Caprioli; Paul Laibinis; *Vanderbilt University, Nashville, TN*

MP 018 **Tuning the Selectivity of MALDI Imaging Mass Spectrometry through Control of the Sample Preparation Parameters of Alternative Matrix Deposition Techniques;** Brian Malys; Kevin Owens; Elsa Gorre; *Drexel University, Philadelphia, PA*

Imaging MS: Software, 019 - 030

MP 019 **CARDINAL: Open-source R Package for Statistical Analysis of 2D and 3D Mass Spectrometry Imaging Experiments;** Kyle Bemis[1]; Livia Eberlin[1]; Christina Ferreira[1]; Stephanie van de Ven[2]; Parag Mallick[2]; Mark Stolowitz[2]; Olga Vitek[1]; [1]*Purdue University, West Lafayette, IN;* [2]*Stanford School of Medicine, Palo Alto, CA*

MP 020 **Topographical Surface Imaging Mass Spectrometry;** Theodore Alexandrov[1, 2]; Christopher M Rath[3]; Amina Bouslimani[1]; Carla Porto Da Silva[1]; Yi Zeng[1]; Neha Garg[1]; Cliff Kapono[1]; Tal Luzzatto Knaan[1]; Katherine Duncan[4]; Laura Sanchez[1]; Alexey Melnik[1]; Kathleen Dorrestein[1]; Pieter Dorrestein [1]; [1]*Skaggs School of Pharmacy, UCSD, La Jolla, CA;* [2]*University of Bremen, Bremen, Germany;* [3]*Novartis Institute for Biomedical Research, Emeryville, CA;* [4]*Scripps Institution of Oceanography, UCSD, La Jolla, CA*

MP 021 **3D MALDI Imaging of Mouse Heart after Myocardial Infarction;** Michael Becker[1]; Lena Hauberg-Lotte[2]; Judith Berger[3]; Janina Oetjen[2]; Dennis Trede[9]; Michaela Aichler[6]; Wolfgang Dreher[7]; Moritz Wildgruber[8]; Klaus Steinhorst[5]; Jan Hendrik Kobarg[5]; Stefan Schiffler[9]; Stefan Heldmann[3]; Herbert Thiele[3]; Peter Maass[4]; Axel Walch[6]; Theodore Alexandrov[4]; [1]*Bruker Daltonik GmbH, Bremen, Germany;* [2]*MALDI Imaging Lab, University of Bremen, Bremen, Germany;* [3]*Fraunhofer MEVIS Project Group Image Registration, Lübeck, Germany;* [4]*Center for Industrial Mathematics, Bremen, Germany;* [5]*Steinbeis Innovation Center SCiLS Research, Bremen, Germany;* [6]*Research Unit Analytical Pathology, HMGU München, Oberschleissheim, Germany;* [7]*University of Bremen, Bremen, Germany;* [8]*Klinikum Rechts der Isar, TU München, München, Germany;* [9]*SCiLS GmbH, Bremen, Germany*

MP 022 **Automated Differential Analysis Between Tissue Samples Measured by Imaging Mass Spectrometry;** Nico Verbeeck[1, 2]; Yousef El Aalamat[1, 2]; David M. Anderson[3]; Zsolt Ablonczy[4]; Yiannis Koutalos[4]; Rosalie Crouch[4]; Kevin L. Schey[3]; Richard M. Caprioli[3]; Bart De Moor[1, 2]; Etienne Waelkens[5]; Raf Van de Plas[3]; [1]*KU Leuven, ESAT - STADIUS, Leuven, Belgium;* [2]*KU Leuven, iMinds Department Medical IT, Leuven, Belgium;* [3]*Vanderbilt University, MSRC, Nashville, TN;* [4]*Medical University of South Carolina, Charleston, SC;* [5]*KU Leuven, Dept. Cellular and Molecular Medicine, Leuven, Belgium*

MP 023 **Capitalizing on Multi-Modal Imaging: Deeper Insights Through Fusion of Mass Spectrometry and Other Imaging Technologies;** Raf Van de Plas; Junhai Yang; Jeffrey Spraggins; Richard M. Caprioli; *Vanderbilt University, Nashville, TN*

MP 024 **OpenMSI: A Web-Based Portal for Rapid Processing of Size-Independent, Next-Generation Mass Spectrometry Imaging Experiments;** Ben Bowen; Annette Greiner; Shreyas Cholia; Katherine Louie; Wes Bethel; Trent Northen; Oliver Ruebel; *Lawrence Berkeley National Lab, Berkeley, CA*

MP 025 **Large MSI Datasets Analysis and Normalization using a "BigData" Platform: Proof-of- Concept in Hunting Biomarkers of Pulmonary Arterial Hypertension;** Sébastien J. Dumas[1]; Raphael Legouffe[2]; Fabien Pamelard[2]; David Bonnel[2]; Youssef Oulamine[2]; Gaël Picard De Muller[2]; Gregory Hamm[2]; Elie Fadel[1, 3]; Marc Humbert[1, 4]; Sylvia Cohen-kaminsky[1]; Jonathan Stauber[2]; [1]*INSERM UMR-S 999, Univ Paris-Sud, LabEx LERMIT, Le Plessis Robinson, France;* [2]*ImaBiotech, MS Imaging Dept., LOOS, France;* [3]*Hôpital Marie Lannelongue, Département de chirurgi, Le Plessis Robinson, France;* [4]*Service de Pneumologie, Centre National de Referen, Le Kremlin Bicêtre, France*

MP 026 **Data Management for Handling Large Data Sets in mslQuant Software for Mass Spectrometry Imaging;** Patrik Kallback; Mohammadreza Shariatgorji; Anna Nilsson; Per E. Andren; *Uppsala University, Uppsala, Sweden*

MP 027 **Registration of Mass Spectrometry Imaging datasets to the Allen Brain Atlas;** Ricardo J. Carreira[1]; Walid M. Abdelmoula[2]; Reinald Shyti[3]; Benjamin Balluff[1]; René J. M. van Zeijl[1]; Else Tolner[3, 4]; Arn M.J.M. van den Maagdenberg[3, 4]; Boudewijn F.P. Lelieveldt[2, 5]; Jouke Dijkstra[2]; Liam Mcdonnell[1]; [1]*Center for Proteomics and Metabolomics, LUMC, Leiden, Netherlands;* [2]*Department of Radiology, LUMC, Leiden, Netherlands;* [3]*Department of Human Genetics, LUMC, Leiden, Netherlands;* [4]*Department of Neurology, LUMC, Leiden, Netherlands;* [5]*Faculty of EEMCS, Delft University of Technology, Delft, Netherlands*

MP 028 **Compositional Hierarchicies for Spectral Segmentation of Mass Spectrometry Imaging Data Sets for Redundancy Reduction and Improved Interpretation;** Alan M. Race[1]; Josephine Bunch[2]; Aleš Leonardis[1]; Iain B. Styles[1]; [1]*University of Birmingham, Birmingham, UK;* [2]*National Physical Laboratory, London, UK*

MP 029 **Efficient Noise Reduction in Imaging Mass Spectrometry Data using Robust PCA;** Yousef El Aalamat[1, 2]; Nico Verbeeck[1, 2]; Junhai Yang[3]; Bart De Moor[1, 2]; Richard M. Caprioli[3]; Etienne Waelkens[4]; Raf Van de Plas[3]; [1]*KU Leuven, ESAT-STADIUS, Leuven, Belgium;* [2]*KU Leuven, iMinds Department Medical IT, Leuven, Belgium;* [3]*Vanderbilt University, MSRC, Nashville, TN;* [4]*KU Leuven, Dept. Cellular and Molecular Medicine, Leuven, Belgium*

MP 030 **Correcting Mass Shifts: Lock Mass-Free Recalibration Procedure for Mass Spectrometry Imaging;** Purva Kulkarni[1, 2]; Philipp Kynast[1, 2]; Filip Kaftan[2, 3]; Vladimír Vrkoslav[4]; Josef Cvačka[3, 4]; Markus Knaden[2]; Aleš Svatoš[2, 3]; Sebastian Böcker[1]; *[1]Lehrstuhl für Bioinformatik, FSU, Jena, Germany; [2]Max Planck Institute for Chemical Ecology, Jena, Germany; [3]Inst. of Organic Chemistry & Biochemistry, AS CR, Prague, Czech Republic; [4]Dept. of Analytical Chemistry, Charles University, Prague, Czech Republic*

Informatics: Workflow & Data Management, 031 - 049

MP 031 **PROCESS – PROteomics Data Collection, Software and Standards to Support Open Access and Long Term Management of Data;** Simon Perkins[1]; Henning Hermjakob[2]; Andrew Jones[1]; *[1]University of Liverpool, Liverpool, UK; [2]European Bioinformatics Institute, Cambridge, UK*

MP 032 **Collecting and mining Mass Spectrometry Quality Control Data for Proteomics;** Wout Bittremieux[1]; Pieter Kelchtermans[2]; Dirk Valkenborg[3]; Lennart Martens[2]; Bart Goethals[1]; Kris Laukens[1]; *[1]University of Antwerp, Antwerp, Belgium; [2]Ghent University, Ghent, Belgium; [3]VITO, Mol, Belgium*

MP 033 **Community-based Development and Evaluation of Biological Mass Spectrometry Software via the Galaxy Tool Shed;** Bart Gottschalk[2]; Pratik Jagtap[1]; Harald Barsnes[3]; Marc Vaudel[3]; Ira Cooke[4]; James Johnson[2]; John Chilton[5]; Leeann Higgins[1]; Todd Markowski[1]; Trevor Wennblom[2]; Anne-Francoise Lamblin[2]; Yue Chen[6]; Sangtae Kim[7]; Lennart Martens[8]; Tim Griffin[6]; *[1]Center for Mass Spectrometry and Proteomics, UMN, St.Paul, MN; [2]Minnesota Supercomputing Institute, UMN, Minneapolis, MN; [3]University of Bergen, Bergen, Norway; [4]La Trobe University, Melbourne , Australia; [5]PennState University, University Park, PA; [6]University of Minnesota, Minneapolis, MN; [7]Pacific Northwest National Laboratory, Richland, WA; [8]Ghent University, Ghent, Belgium*

MP 034 **KYSS: Mass Spectrometry Data Quality Assessment for Protein Analysis and Large-Scale Proteomics;** Gerard Such-Sanmartin; Simone Sidoli; Estela Ventura-Espejo; Ole Jensen; *University of Southern Denmark, Odense, DK*

MP 035 **Modular Software for Visualization, Analysis and Interpretation of Mass-Spectrometry Data;** Dmitry Avtonomov; Chih-Chiang Tsou; Alexander Raskind; Alexey Nesvizhskii; *University of Michigan, Ann Arbor, MI*

MP 036 **Using Maxquant on Amazon Cloud EC2: Pros and Cons;** John Philip; Ronald Hendrickson; *Memorial Sloan-Kettering Can, New York, NY*

MP 037 **Scientific Workflows for Automated, Documented and Reproducible Data Analysis in Bottom-up and Targeted Proteomics;** Yassene Mohammed[1, 2]; Suzanne van der Plas-Duivesteijn[1]; Dominik Domanski[3]; Christoph Borchers[2, 4]; Magnus Palmblad[1]; *[1]Center for Proteomics and Metabolomics,Leiden Univ, Leiden, The Netherlands; [2]University of Victoria-Genome BC Proteomics Centre, Victoria, Canada; [3]Instit.of Biochem & Biophys,Polish Acad of Sci, Warsaw, Poland; [4]UVic Dept of Biochemistry and Biophysics, Victoria, Canada*

MP 038 **Bioanalytical Laboratory Data Flow Strategy for Electronic Notebook and Laboratory Information Data Systems;** Michael J. Hayes; Jennifer Davis; Timothy Bedman; Jimmy Flarakos; *Novartis Institutes for Biomedical Research, East Hanover, NJ*

MP 039 **Instrument Management and Tracking System Developed for The University of Maryland Baltimore Mass Spectrometry Center;** Michael C. Wilson; Young Ah Goo; Maureen A. Kane; Jace W. Jones; Bao Q. Tran; Scott Heron; David R. Goodlett; *University of Maryland, Baltimore, Baltimore, MD*

MP 040 **Computational Infrastructure for Mining "Big" Proteomic Data;** Himanshu Grover; David Fenyo; *New York University, New York, NY*

MP 041 **ProteomicsDB: Show Cases for Rapid Meta-Analysis of Thousands of Mass Spectrometry Data Sets;** Mathias Wilhelm[1]; Judith Schlegl[2]; Hannes Hahne[1]; Amin Moghaddas Gholami[1]; Marcus Lieberenz[2]; Emanuel Ziegler[2]; Lars Butzmann[2]; Siegfried Gessulat[2]; Harald Marx[1]; Mikhail Savitski[3]; Karsten Schnatbaum[4]; Ulf Reimer[4]; Holger Wenschuh[4]; Marcus Bantscheff[3]; Anja Gerstmair[2]; Franz Faerber[2]; Bernhard Kuster[1]; *[1]Technische Universität München, Freising, DE; [2]SAP AG Germany, Walldorf, DE; [3]Cellzome, Heidelberg, DE; [4]JPT Peptide Technologies, Berlin, DE*

MP 042 **RAId's Knowledge Integrated Databases;** Gelio Alves; Aleksey Ogurtsov; Yi-Kuo Yu; *National Center for Biotechnology Information, NLM, Bethesda, MD*

MP 043 **Enabling Reusable Crowdsourced Annotation of All Mass Spectrometry Data;** Jeremy Carver[1]; Mingxun Wang[1, 2]; June Snedecor[1, 2]; Seungjin Na[1, 2]; Adrian Guthals[1, 2]; Nuno Bandeira[1, 2]; *[1]Center for Computational Mass Spectrometry, La Jolla, CA; [2]University of California, San Diego, La Jolla, CA*

MP 044 **Improving Dynamic Offline Lockmass to Tolerate High Mass Shift;** Ying Zhang; Zhihui Wen; Michael Washburn; Laurence Florens; *Stowers Institute for Medical Research, Kansas City, MO*

MP 045 **Quality By Design Method Development with Mass Detection;** Sean Mccarthy; Margaret Maziarz; *Waters, Milford, MA*

MP 046 **Tracking Chromatographic Peaks with Mass Detection during Method Development;** Margaret Maziarz; Sean Mccarthy; *Waters, Milford, MA*

MP 047 **Automated Collision Cross Section Calculation for Traveling Wave Ion Mobility Spectrometry Instruments;** Brett Harper[1]; Matthew Brantley[2]; Michael Pettit[1]; Touradj Solouki[1]; *[1]Baylor University, Waco, TX; [2]University of Texas at Tyler, Tyler, TX*

MP 048 **A Method for Creating Libraries of Recurring Unidentified Mass Spectra from Large Metabolic Data Sets;** Wm. Gary Mallard[1]; N. Rabe Andriamaharavo[1]; Yuri Mirokhin[1]; John M. Halket[2]; Stephen Stein[1]; *[1]National Institute of Standards and Technology, Gaithersburg, MD; [2]Mass Spectrometry Facility, King's College, London, UK*

MP 049 **Characterizing Molecular Mechanisms of Mammalian Hibernation via Non-Model Organism Quantitative Proteogenomics;** Katie Vermillion[1]; Pratik Jagtap[2]; Todd Markowski[2]; LeeAnn Higgins[2]; James Johnson[2]; Matthew Andrews[1]; Timothy Griffin[2]; *[1]University of Minnsota, Duluth, MN; [2]University of Minnesota, Minneapolis, MN*

Informatics: Small Molecule Identification and Characterization, 050 - 062

MP 050 **Isomer-Specific Fragmentation Pathways of Gaseous Anions Derived from Isomeric Hydroxybenzyl Alcohols (HBAs);** Hanxue Xia; Upul Nishshanka; Carl Weisbecker; Athula B. Attygalle; *Stevens Institute of Technology, Hoboken, NJ*

MP 051 **Improved and Extended Tandem Mass Spectral Library with Multiple Precursor Types for More Robust and Flexible Metabolite Identification;** Xiaoyu Yang; Pedatsur Neta; Yuxue Liang; Stephen Stein; *National Institute of Standards and Technology, Gaithersburg, MD*

MP 052 **Large-Scale Analysis of Non-Targeted LC-MS Metabolomics Data with OpenMS in the Compound Discoverer Platform;** Fabian Aicheler[1]; Timo Sachsenberg[1]; Erhan Kenar[1]; Sebastian Kusch[2]; Hans Grensemann[2]; Oliver Kohlbacher[1]; *[1]Center for Bioinformatics, Tübingen, Germany; [2]Thermo Fisher Scientific GmbH, Bremen, Germany*

MP 053 **Application of Fragmentation Analysis in Annotation of Ions in Creation of LC/MS Libraries from Accurate Mass Spectrometry in Global Metabolomics;** Hongping Dai; Corey DeHaven; Anne Evans; *Metabolon, Inc., Durham, NC*

MP 054 **Combined Isotopic Enrichment, High-Resolution MS, and Advanced Software Tools to Aid in the Identification of Trace-Level Environmental Metabolites by LC/MS;** Jesse L. Balcer[1]; Jeffrey R. Gilbert[1]; Yelena A. Adelfinskaya[1]; Leah Luna[2]; Jeffrie Godbey[1]; Pete L. Johnson[1]; Gerrit J. DeBoer[1]; Ayanna U. Jackson[1]; Amber R. Mahan[1]; *[1]Dow AgroSciences, Indianapolis, IN; [2]The Dow Chemical Company, Midland, MI*

MP 055 **Web-Based Toolkit for Interpretation of High Accuracy Mass-Spectrometry Data;** Alexander Raskind; *University of Michigan, Ann Arbor, MI*

MP 056 **Enabling High Throughput Compound Discovery via Global Natural Products Social Molecular Networking;** Mingxun Wang[1]; Yao Peng[1]; Jeremy Carver[1]; Vanessa Phelan[1]; Laura Sanchez[1]; Jeramie Watrous[1]; Clifford Capono[1]; Don Nguyen[1]; Tal Knaan[1]; Neha Garg[1]; Carla Porto Da Silva[1]; Amina Bouslimani[1]; Alexey Melnik[1]; Michael Meehan[1]; Wei-ting Liu[2]; Anne Lamsa[1]; Paul Boudreau[1]; Evgenia Glukhov[1]; Eduardo Esquenazi[4]; Hailey Houson[4]; Venkat Macherla[4]; Mario Sandoval-Calderon[5]; Pep Charusanti[1]; Brendan Duggan[1]; Marcelino Gutirerrez[6]; Xueting Liu[3]; Lixin Zhang[3]; Bradley Moore[1]; William Gerwick[1]; Pieter Dorrestein [1]; Nuno Bandeira[1]; *[1]University of California, San Diego, La Jolla, CA; [2]Stanford University, Stanford, CA; [3]IMCAS, Beijing, PRC; [4]Sirenas Marine Discovery, San Diego, CA; [5]National Autonomous University of Mexico, Mexico City, Mexico; [6]INDICASAT, Clayton, City of Knowledge, Panama*

MP 057 **Towards Comprehensive, Reliable and Accurate Mass Spectral Data Repositories;** Eva Duchoslav[1]; Lyle Burton[1]; Emmanuel Varesio[2]; Ron Bonner[1]; Gérard Hopfgartner[2]; *[1]AB Sciex, Concord, Canada; [2]University of Geneva, Geneva, Switzerland*

MP 058 **Spectral Deconvolution of Multiplex Fragmentation Data without the use of a non-Fragmentation Scan;** Thomas Mcclure; David Wright; Michael Athanas; *Thermo Fisher Scientific, San Jose, CA*

MP 059 **Machine Classification Consistent with LipidMaps Ontology: Bringing Classifications to the Unknowns;** Ryan Taylor; Ryan Miller; John Prince; *Brigham Young University, Provo, UT*

MP 060 **Msplinter: A Molecular Model of Lipid Fragmentation;** Ryan Taylor; Ryan Miller; John Prince; *Brigham Young University, Provo, UT*

MP 061 **XPeak: Quantitation and Characterization of the Metabolic Profile of Colorectal Cancer Relapse;** Jordan Kruger; Amrita Cheema; Subha Madhaven; Nathan Edwards; *Georgetown University Medical Center, Washington, District of Columbia*

MP 062 **Power of Isotopic Fine Structure for Unambiguous Determination of Metabolite Elemental Compositions: in silico Evaluation and Metabolomic Application;** Daisuke Miura[1]; Tatsuhiko Nagao[1]; Daichi Yukihira[1]; Yoshinori Fujimura[2]; Kazunori Saito[3]; Katsutoshi Takahashi[4]; *[1]Kyushu University, Fukuoka, Japan; [2]ICMRN, Kyushu University, Fukuoka, Japan; [3]Bruker Daltonics K.K., Kanagawa, Japan; [4]National Institute of Advanced Industrial Science, Tsukuba, Japan*

Proteins: General, 063 - 087

MP 063 **Development of an Asp-N Peptide Mapping Method for a Therapeutic Growth Factor;** Hung-Yu Lin; Kenneth Moore; Jenny Heidbrink Thompson; WenJun (David) Mo; *MedImmune, Inc., Gaithersburg, MD*

MP 064 **Global Effects of Protease Inhibitors on Protein Identification and Quantification;** John Mangrum; Adam Hawkridge; *Virginia Commonwealth University, Richmond, VA*

MP 065 **Simple Protein Fractionation Enhances Peptide-based Protein Quantitation in Experiments using Metabolic Labeling;** James Moresco[1]; Antonio Pinto[2]; Jolene Diedrich[1]; Patricia Tu[1]; John R. Yates III[1]; *[1]The Scripps Research Institute, La Jolla, CA; [2]CAPES Foundation, Brasilia, Brazil*

MP 066 **Effects of Aptamer End Groups on Linkage to Support Material for Specific Enrichment of Proteins;** Funda Yıldırım[1]; Ülkü Güler[1]; Burak Tavşanlı[2]; Ömür Çelikbıçak[1]; Bekir Salih[1]; *[1]Hacettepe University, Department of Chemistry, Ankara, Turkey; [2]İstanbul Tech. University, Department of Chemistry, İstanbul, Turkey*

MP 067 **Characterization by nano-LC/ESI-MS/MS of Highly Degraded Collagen Detected in 4,400-year-old Egyptian Wall Paintings of the Idout Tomb;** Shunsuke Fukakusa[1]; Kazuki Kawahara[2]; Ahmed Sayed Shoeib[3]; Abel Akarish[4]; Hideya Kawasaki[5]; Hiroshi Suita[5]; Ryuichi Arakawa[5]; Takashi Nakazawa[1]; *[1]Nara Women's University, Nara, Japan; [2]Osaka University, Osaka, Japan; [3]Cairo University, Cairo, Egypt; [4]National Reaserch Center, Cairo, Egypt; [5]Kansai University, Osaka, Japan*

MP 068 **The Study of Protein/Pigment Interactions in Art Materials from Replica Paints with an Integrated ELISA and Proteomics Approach;** Natalya Atlasevich[1]; Caroline Tokarski[3]; Brian Baade[2, 5]; John Loike[4]; Julie Arslanoglu[1]; *[1]Metropolitan Museum of Art, New York, NY; [2]University of Delaware, Newark, De; [3]USR CNRS 3290 MSAP, Villeneuve D'ascq, France; [4]Columbia University, New York, NY; [5]University of Delaware, Newark, DE*

MP 069 **Analysis of Centipede, Spider, and Snake Venoms by Electrospray and MALDI Mass Spectrometry;** Chip Cochran; Allen Cooper; Eric Gren; Wayne Kelln; David Nelsen; Ben Gardner; Willian Hayes; Gerad Fox; *Loma Linda University, Loma Linda, CA*

MP 070 **High-throughput Scheduled MRM for Multiplexed Analysis of Activity-based Probe Labeled Enzymes in Human Cells;** Song Li; Yu Shi; Christian Malapit; Amy Howell; Xudong Yao; *University of Connecticut, Storrs, CT*

MP 071 **A Comparative Study of Human Whey Colostral Protein Levels from Women With and Without Gestational Diabetes Mellitus (GDM);** Darren Weber[1]; Jennifer T. Smilowitz[2, 3]; Dmitry Grapov[4]; Brett S. Phinney [1]; *[1]Proteomics Core Facility, UC Davis, Davis, CA; [2]Foods for Health Institute, UC Davis, Davis, CA; [3]Department of Food Science and Technology, UCDavis, Davis, CA; [4]West Coast Metabolomics Center, UC Davis, Davis, CA*

MP 072 **MS Analyses of Proteins Associated with Autoimmune Diseases;** Leesa Deterding; Jeffrey F. Kuhn; Katina Johnson; Rachelle Bienstock; Jinglan Wang; Erin Hopper; Shyamal Peddada; Frederick Miller; Kenneth B. Tomer; *NIEHS, Research Triangle Park, NC*

MP 073 **Identification of ERK2 Substrates using Label-Free Approach;** Farzin Gharahdaghi; *Astrazeneca, Waltham, MA*

MP 074 **Evaluation of a Universal LC-MS/MS Assay for Bioanalysis of Human IgG4 Subclass Monoclonal Antibody Protein Drugs;** Craig Titsch; Hao Jiang; Weifeng Xu; Jianing Zeng; Michael Furlong; Mark Arnold; Anne-Francoise Aubry; *Bristol-Myers Squibb, Lawrenceville, NJ*

MP 075 **Simultaneously Probing Lipoprotein and Lipid Kinetics in Humans using a Practical Oral Tracer Procedure;** Haihong Zhou[1]; Gissette Reyes-Soffer[2]; Tiffany Thomas[2]; Kithsiri Heratch[1]; Ablatt Mahsut[1]; Yi Pan[1]; Gowri Bhat[1]; Kristian Jensen[1]; David Kelley[1]; Henry Ginsberg[2]; Stephen Previs[1]; Thomas Roddy[1]; *[1]Merck & Co., Inc., Rahway, NJ; [2]Columbia University, New York, NY*

MP 076 **Protective Effects of Flavonoids on Cytochrome c Oxidation in Continuous Stirred Tank Reactor Coupled with Electrospray Ionization Mass Spectrometry;** Hui Fan; Veronica Waybright; Jeremy Barnes; Kevin Schug; *The University of Texas at Arlington, Arlington, TX*

MP 077 **Differential Analysis by SIEVE for sequence Variant Analysis (SVA) of High-Cell-Age Material;** Georg Drabner; Verena Niggeloh; *Roche Diagnostics GmbH, Penzberg, Germany*

MP 078 **Capillary Electrophoresis Separation and Fractionation Combined with MALDI-MS for Analysis of Reproduction Proteins from Pieridae Butterflies;** Måns Ekelöf; Maria Khihon Rokhas; Johan Jacksén; Åsa Emmer; *Royal Institute of Technology, Stockholm, Sweden*

MP 079 **Automatic Capillary Isoelectric Focusing – Electrospray Ionization – Mass Spectrometry for Protein Separation and Characterization;** Shuai Sherry Zhao; *University of British Columbia, Vancouver, Canada*

MP 080 **Capillary Zone Electrophoresis−Electrospray Ionization-Tandem Mass Spectrometry for Top-Down Characterization of the *Mycobacterium marinum* Secretome;** Yimeng Zhao[1]; Liangliang Sun[1]; Matthew Champion[1]; Michael Knierman[2]; Norman Dovichi[1]; *[1]University of Notre Dame, South Bend, IN; [2]Eli lilly and Company, Indianapolis, IN*

MP 081 **On the Stabilization of Noncovalent Protein Complexes via Vapor Treatment of Electrospray Droplets;** J. Corinne DeMuth; Scott A. McLuckey; *Purdue University, West Lafayette, IN*

MP 082 **Determination of Novel Copper Binding Sites in MEK1 by Metal-Catalyzed Oxidation Based Mass Spectrometry Analysis;** Xiaojie Yao; Donita Brady; Christopher Counter; Kunhong Xiao; *Duke University Medical Center, Durham, NC*

MP 083 **Top Down Protein Analysis Applied to Ancient Photographs;** Austin Nevin[2]; Fabrice Bray[1]; Christian Rolando[1]; Caroline Tokarski[1]; *[1]Univ. de Lille 1, Sciences et Technologies, Villeneuve d'Ascq, France; [2]Politecnico di Milano, Milano, Italy*

MP 084 **Front-End Electron Transfer Dissociation Coupled to 14.5 T FT-ICR MS for Top-Down Protein MS/MS Analysis;** Chad R. Weisbrod[1]; A. Michelle English[2]; Nathan K. Kaiser[1]; Christopher L. Hendrickson[1]; Greg T. Blakney[1]; Xiaoyan Guan[1]; John E. P. Syka[3]; Lee Earley[3]; Christopher Mullen[3]; Donald F. Hunt[2]; Alan G. Marshall[1, 4]; *[1]National High Magnetic Field Laboratory, Tallahassee, FL; [2]University of Virginia, Charlottesville, VA; [3]Thermo Fisher Scientific, San Jose, CA; [4]Florida State University, Tallahassee, FL*

MP 085 **Semi-preparative Purification and Characterization of Lysozyme Modified with Poly Ethylene Glycol (PEG);** M Sundaram Palaniswamy[1]; N.S Lakshmi[1]; Ravindra Gudihal[1]; Ning Tang[2]; *[1]Agilent Technologies, Bangalore, India; [2]Agilent Technologies, Santa Clara, CA*

MP 086 **Effect of Centrifugation on Tryptic Digestion;** Jihyeon Lee; Taehee Kim; Jeongkwon Kim; *Chungnam National University, Daejeon, South Korea*

MP 087 **Systematic and Quantitative Comparison of Digest Efficiency and Specificity Reveals the Impact Of Trypsin Quality on MS-based Proteomics;** Julia Maria Burkhart; Albert Sickmann; *Leibniz-Institut für Analytische Wissenschaften, Dortmund, Germany*

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MP 088 **Complete Trimethylation of Proteins and its Application to the Quantification of Lysine Methylation at Specific Residues using Mass Spectrometry;** Steven Toth; *Toledo, OH*

MP 089 **Measuring Protein-Bound Glutathione (PSSG) : Critical Correction for Cytosolic Glutathione Species;** Michael Bukowski; Matthew Picklo; *USDA-ARS Human Nutrition Research Center, Grand Forks, ND*

MP 090 **Improved Detection of Acidic Post-translational Modifications Utilizing Negative Ion Mode with Alkaline Liquid Chromatography/Fourier Transform-Ion Cyclotron Resonance Mass Spectrometry;** Phillip Mcclory; Kristina Hakansson; *University of Michigan, Ann Arbor, MI*

MP 091 **Quantitative Study of Protein Carbonylation in Human Blood Samples;** Chelsea Coffey; Suresh Narayanasamy; David Simpson; Scott Gronert; *Virginia Commonwealth University, Richmond, VA*

MP 092 **Methylation Artefacts Introduced during Standard Proteomics Sample Preparation Workflows and Its Impact on Histone PTM Analysis;** Florian Richter[1, 2]; Aneliya Yoveva[1]; Gerhard Mittler[1]; *[1]Max Planck Institute of Immunbiology & Epigenetics, Freiburg, Germany; [2]Functional Proteomics SFB 815 Goethe-University, Frankfurt am Main, Germany*

MP 093 **Controlled Reduction of Disulfide Bonds in Biopharmaceuticals using an Electrochemical Reactor Cell Online with LC/MS;** Jean-Pierre Chervet; Agnieszka Kraj; Hendrik-Jan Brouwer; Nico Reinhoud; *Antec, Zoeterwoude, Netherlands*

MP 094 **Characterization of the Degradation Products of a Color-Changed Monoclonal Antibody: Tryptophan-Derived Chromophores;** Yiming Li[1]; Alla Polozova[2]; Flaviu Gruia[1]; Jinhua Feng[1]; *[1]MedImmune, Gaithersburg, MD; [2]Amgen, West Greenwich, RI*

MP 095 **Linking Epidermal Growth Factor Signaling to Dynamic Chromatin Modifications;** Rosalynn Molden[1]; Daniel Thomas[3]; Susan Janicki[2]; Benjamin A. Garcia[3]; *[1]Princeton University, Princeton, NJ; [2]The Wistar Institute, Philadelphia, PA; [3]University of Pennsylvania, Philadelphia, PA*

MP 096 **Mass Spectrometric Characterization of Aldehyde-Mediated N-terminal Epimerization in Protein;** Tomoyuki Oe; Ryo Kajita; Seon Hwa Lee; Takaaki Goto; *Tohoku University, Sendai, Japan*

MP 097 **Analysis of Monoclonal Antibody Oxidation using Capillary Electrophoresis coupled to Quadrupole Time-of-Flight Mass Spectrometry;** Suresh Babu CV; Ravindra Gudihal; *Agilent Technologies, Bangalore, India*

MP 098 **Modifications of Albumin Isolated from Patients with Multi-Morbid Disease;** Melissa Grant; Iain Chapple; Parth Narendran; Paul Cockwell; Andrew Creese; *University of Birmingham, Birmingham, UK*

MP 099 **High Resolution is Not a Strict Requirement for Characterization and Quantification of Histone PTMs;** Kelly R. Karch; Benjamin A. Garcia; *University of Pennsylvania, Philadelphia, PA*

MP 100 **Proteome-wide Light/Dark Modulation of Protein Thiol Oxidation in Cyanobacteria Revealed by Quantitative Site-Specific Redox Proteomics;** Jia Guo[1]; Amelia Y. Nguyen[3]; Dian Su[1, 4]; Matthew J. Gaffrey[1]; Ronald J. Moore[1]; Jon M. Jacobs[1]; Richard D. Smith[1, 2]; David W. Koppenaal[2]; Himadri B. Pakrasi[3]; Wei-Jun Qian[1]; *[1]Biological Sciences Division, PNNL, Richland, WA; [2]Environmental Molecular Sciences Laboratory, PNNL, Richland, WA; [3]Department of Biology, Washington University, St. Louis, MO; [4]Genentech Inc, South San Francisco, CA*

MP 101 **Global Analysis of Absolute and Relative Quantification of SUMOylated Proteins in *Saccharomyces cerevisiae* by Data-Independent Acquisition using LC/MS[e];** Armann Andaya; Nikhil Bhagwat; Youjin Seo; Neil Hunter; Julie A. Leary; *UC Davis, Davis, CA*

MP 102 **Quantitative Redox Proteomics using Cysteine Specific Isobaric Tags;** Kumaran Sivagnanam; Leslie M. Hicks; *University of North Carolina, Chapel Hill, NC*

MP 103 **Analysis of TOR's Role in Lipid Droplet Accumulation in *Chlamydomonas reinhardtii*;** Emily Werth[1]; Silas P. Rodrigues[1, 2]; Leslie M. Hicks[1]; *[1]University of North Carolina at Chapel Hill, Chapel Hill, NC; [2]Federal University of Rio de Janeiro, Rio de Janeiro, Brazil*

MP 104 **Rapid Profiling of Proteomes and Sub-Proteomes on the Orbitrap Tribrid Mass Spectrometer;** Steven Danielson[1]; Todd Markowski[2]; LeeAnn Higgins[2]; Pratik Jagtap[2]; Tim Griffin[2, 3]; Yue Chen[3]; *[1]Thermo Fisher Scientific, San Jose, CA; [2]Center for Mass Spectrometry and Proteomics, UMN, St.Paul, MN; [3]Dept. of Biochemistry, University of Minnesota, Minneapolis, MN*

MP 105 **Comprehensive Screening of lipid Peroxidation-Derived Modifications to Protein using Isotope Data Dependent Scan;** Ryo Takahashi; Seon Hwa Lee; Takaaki Goto; Tomoyuki Oe; *Tohoku University, Sendai, Japan*

MP 106 **Analysis of Glycosylation Sites within the Polypeptide Encoded by Exon 7 of Mouse ZP3 protein (ZP3E7);** Armand Ngounou; Izabela Sokolowska; Urmi Roy; Alisa Woods; Costel Darie; *Clarkson University, Potsdam, NY*

MP 107 **Oxidative Stress-Derived Formation and Transamination of N-terminal Alpha-Ketoamide Peptides/Proteins;** Seon Hwa Lee; Hyunsook Kyung; Ryo Yokota; Takaaki Goto; Tomoyuki Oe; *Tohoku University, Sendai, Japan*

MP 108 **Simultaneous Mass Spectrometric Analysis of Various Chemical Modifications on Human Serum Albumin: Strategies for Clean-Up, Sequence Coverage, and Identification;** Takaaki Goto; Yuta Kudo; Kazuyuki Murata; Seon Hwa Lee; Tomoyuki Oe; *Tohoku University, Sendai, Japan*

MP 109 **Unravelling the Drugable ALK Signaling Pathway in Neuroblastoma by Quantitative Proteomics;** Dorte B. Bekker-Jensen; Kristina B. Emdal; Chiara Francavilla; Jesper V. Olsen; *NNF Center for Protein Research, Copenhagen, Denmark*

MP 110 **Top-down Mass Spectrometry Reveals Molecular Heterogeneity in the Swine Heart;** Zachery Gregorich[1]; Wei Guo[2]; Timothy Hacker[1]; Ying Ge[1]; *[1]UW Madison, Madison, WI; [2]University of Wyoming, Laramie, WY*

MP 111 **Characterization of Cyanobacterial Photosystem II Proteins from Wild-Type and Mutant Cells by Top-Down Mass Spectrometry;** Daniel A. Weisz; Haijun Liu; Weidong Cui; Hao Zhang; Michael L. Gross; Himadri B. Pakrasi; *Washington University in St. Louis, St. Louis, MO*

MP 112 **Stability of Nitration and Oxidation in Hemoglobin Extracted from Dried Blood Spot by Nanoflow Liquid Chromatography Tandem Mass Spectrometry;** Chih-Huang Fan; Hauh-Jyun Candy Chen; *National Chung Cheng Univ., Ming-Hsiung, Chia-Yi, Taiwan*

MP 113 **Identification and Functional Characterization of a Novel Phosphorylation Site in DDB2;** Qian Cai; Yinsheng Wang; *University of California at Riverside, Riverside, CA*

MP 114 **Determining the Redox Proteome of Photosynthetic Organisms;** William Slade; Leslie Hicks; *University of North Carolina, Chapel Hill, NC*

MP 115 **Use of Proteomics Techniques in the Study in Animal Model Proteins Expression upon Exposure to 2, 3 Butanedione;** Leticia Dias Lima Jedlicka[1]; Sheila Guterres[1]; Richardt G. Landgraf[1]; Bernadete de Faria[1]; Etelvino J. H. Bechara[1, 2]; Assuncao Nilson A. [1]; *[1]UNIFESP, São Paulo, Brasil; [2]USP, Sao Paulo, SP Brazil*

MP 116 **Analysis by Mass Spectrometry of the Phospho-State of Tau using a Novel Microtubule Affinity Column;** Robert Pelot[1]; Jon Reed[1, 3]; Gogce Crynen[1]; Corbin Bachmeier[2]; Laila Abdullah[1]; James Evans[1]; Mike Mullan[1]; Fiona Crawford[1, 3]; *[1]Roskamp Institute, Sarasota, FL; [2]The Open University, Milton Keynes, UK; [3]The Veterans Administration, Tampa, FL*

MP 117 **Proteomic Profile of Lipid Peroxidation in Human Cardiomyopathy;** Mark Jeong; Wes Blakeslee; Don Backos; Timothy McKinsey; Kristofer Fritz; *University of Colorado Anschutz Medical Campus, Aurora, CO*

MP 118 **Identification of a Novel Post-Translational Modification, Methylated Diphthine, in Diphthamide Biosynthetic Pathway;** Wei Chen; Zhewang Lin; Xiaoyang Su; Bo Ci; Sheng Zhang; Hening Lin; *Cornell University, Ithaca, NY*

MP 119 **Characterizing Phosphorylation and Ubiquitination Cross-talk in *Magnaporthe oryzae*;** Jennifer L. Parker; Yeonyee Oh; David C. Muddiman; Ralph A. Dean; *North Carolina State University, Raleigh , NC*

MP 120 **Western Diet Causes Metabolic Disorder in Mouse Heart;** Stephen A. Whelan; Jean L. Spencer; Chunxiang Yao; Jessica B. Behring; Christian Heckendorf; Deborah A. Siwick; Wilson S. Colucci; Richard A. Cohen; Markus M. Bachschmid; Catherine E. Costello; Mark E. Mccomb; *Boston University School of Medicine, Boston, Ma*

MP 121 **Stoichiometric Determination of Global Protein Acetylation by Stable Isotope Labeling and Mass Spectrometry;** Josue Baeza[1]; James Dowell[1]; Michael Smallegan[1]; Zia Khan[2]; John Denu[1]; *[1]University of Wisconsin Madison, Madison, WI; [2]University of Maryland College Park, College Park, MD*

MP 122 **An Improved Immunoaffinity Reagent for Quantitative Profiling of Lysine Acetylation;** Jeffrey C. Silva; Ailan Guo; Anthony Couvillon; Rami Najjar; Daniel Mulhern; Kimberly A. Lee; Jian-Min Ren; Jia Xiaoying; Hongbo Gu; *Cell Signaling Technology, Danvers, MA*

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MP 123 **Analysis of *Helicobacter pylori* cell surface proteins;** Bradley J. Voss; W. Hayes Mcdonald; Timothy L. Cover; *Vanderbilt University, Nashville, TN*

MP 124 **Profiling of Cell Surface Proteome and Secreted Metabolome from an *in-vitro* Model System, using LC-MS technologies;** Ravi K Krovvidi[1]; Leo Bonilla[2]; Syed Salman Lateef[1]; Arunkumar Padmanaban[1]; *[1]Agilent Technologies, Bangalore , India; [2]Agilent Technologies,, Santa Clara, CA*

MP 125 **Exploring the Surface Proteins of Myeloid Derived Suppressor Cells;** Sitara Chauhan[1]; Steve Danielson[2]; Rebecca Rose[1]; Susan Ostrand-Rosenberg[3]; Nathan Edwards[4]; Catherine Fenselau[1]; *[1]University of Maryland, College Park, MD; [2]Thermo Fisher Scientific, San Jose, CA; [3]University of Maryland, Baltimore County, MD; [4]Georgetown University Medical Center, Washington D.C., DC*

MP 126 **Quantification of Membrane Bound Drug Transporter Proteins at the Blood-Brain Barrier;** Thomas Lau[1, 2]; Jean-Pierre Eliane[3]; Lauren Gauthier[2]; Bo Feng[3]; Patrick Trapa[4]; Jennifer Liras[4]; Hendrik Neubert[2]; Steven A. Carr[1]; *[1]Broad Institute, Cambridge, MA; [2]Pfizer Inc, Andover, MA; [3]Pfizer Inc, Groton, CT; [4]Pfizer Inc, Cambridge, MA*

MP 127 **Proteomic Analysis of the Membrane Proteins in Human Placenta;** Jong-Sun Lim[1]; Hyoung-Joo Lee[1]; Keun Na[1]; Min Jung Lee[1]; Han-Ho Lee[1]; Ja-Young Kwon[2]; Young-Ki Paik[1]; *[1]YPRC, Seoul, South Korea; [2]Collage of Medicine, Yonsei University, Seoul, South Korea*

MP 128 **Characterization of the Membrane Proteome and N-glycoproteome in BV-2 Mouse Microglia by Liquid Chromatography-Tandem Mass Spectrometry;** Dohyun Han[1, 3]; Sungyoon Moon[1, 2]; Jongmin Woo[1, 4]; Youngsoo Kim[2, 3]; *[1]Seoul National University College of medicine, Seoul, South Korea; [2]Departments of Biomedical Engineering, SNU, Seoul, South Korea; [3]Institute of Medical & Biological Engineering, SNU, Seoul, South Korea; [4]Department of Biomedical Science, Seoul, South Korea*

MP 129 **Life on the Edge: Exploring the Superficial Interface between *Ignicoccus hospitalis* and *Nanoarchaeum equitans* using 2D LC-MS/MS-based Proteomics;** Richard J. Giannone; Louie L. Wurch; Zamin Yang; Mircea Podar; Robert Hettich; *Oak Ridge National Laboratory, Oak Ridge, TN*

MP 130 **Enhanced MALDI-MS using Alkylated Trihydroxyacetophenone as a Matrix for Hydrophobic Peptides in Membrane Protein Analysis;** Yuko Fukuyama[1]; Chihiro Nakajima[1]; Shunsuke Izumi[2]; Koichi Tanaka[1]; *[1]Shimadzu Corporation, Kyoto, Japan; [2]Hiroshima University, Higashi-Hiroshima, Japan*

MP 131 **Affinity Screening of Purified GPCRs on the Automated Ligand Identification System (ALIS): Protein Expression, Characterization, and Screening Results for CXCR4;** Charles E. Whitehurst[1]; Zhiping Yao[3]; Denise Murphy[4]; Mingzuan Zhang[5]; Shane Taremi[2]; Lisa Wojcik[6]; Julie M. Strizki[6]; Jack D. Bracken[7]; Cliff C. Cheng[8]; Xianshu Yang[2]; Gerald W. Shipps, Jr.[9]; Michael Ziebell[2]; Elliott Nickbarg[2]; *[1]Boehringer Ingelheim, Ridgefield, CT; [2]Merck Pharmaceuticals Inc., Boston, MA; [3]Novartis Institute for Biomedical Research, Cambridge, MA; [4]Pfizer Global Biotherapeutics, Cambridge, MA; [5]Biogen Idec Hemophilia Therapeutic, Inc., Waltham, MA; [6]Merck Research Laboratory, West Point, PA; [7]University of California, Los Angeles, CA; [8]Central Research Institute, Shanghai, China; [9]The New Venture Fund, Washington, DC*

MP 132 **In-depth Mapping of the Cell Surface Proteome of Cancer Cells Expressing Specific Alleles of KRas;** Xiaoying Ye; DaRue A. Prieto; Gordon Whiteley; Josip Blonder; *Fredrick National Laboratory for Cancer Research, Frederick, MD*

MP 133 **A Comparison of Plasma Membrane and Whole Proteome Profiling Across 10 Cell Lines on an Orbitrap Fusion;** David Nusinow; Michael Weekes; Mark Jedrychowski; Robert Everley; Steven Gygi; *Harvard Medical School, Boston, MA*

MP 134 **Examining Ligand Induced Conformational Changes in the Human Erythrocyte Glucose Transporter, GLUT1, through Chemical Crosslinking and Mass Spectrometry;** Kenneth Lloyd; John Leszyk; Scott A. Shaffer; Anthony Carruthers; *UMASS Medical School, Worcester, MA*

MP 135 **A proteomic Approach for Monitoring the Dynamic Response of the Female Oviductal Epithelium Surface to Male Gametes;** Konstantin Artemenko[1]; Jana Horáková[1, 4]; Birgit Steinberger[2, 3]; Urban Besenfelder[3]; Gottfried Brem[2]; Jonas Bergquist[1]; Corina Mayrhofer[2, 3]; *[1]Uppsala University, Uppsala, Sweden; [2]University of Veterinary Medicine, Vienna, Austria; [3]University of Nat.Resources &Applied Life Sciences, Tulln, Austria; [4]Institute of Organic Chemistry and Biochemistry, Prague, Czech Republic*

MP 136 **Interrogation of the Ubiquitinated Proteome of Exosomes Shed by Myeloid-derived Suppressor Cells;** Meghan Burke[1]; Maria Oei[1]; Suzanne Ostrand-Rosenberg[2]; Catherine Fenselau[1]; *[1]University of Maryland College Park, College Park, MD; [2]University of Maryland Baltimore County, Baltimore, MD*

MP 137 **Identification and Post-Translational Modifications of Intact Proteins in Exosomes Shed by Murine Myeloid-Derived Suppressor Cells;** Lucia Geis-Asteggiante[1]; Avantika Dhabaria[1]; Nathan J. Edwards[2]; Suzanne Ostrand-Rosenberg[3]; Catherine Fenselau [1]; *[1]University of Maryland, College Park, MD - Maryland; [2]Georgetown University Medical Center, Washington, DC; [3]University of Maryland Baltimore County, Baltimore, MD*

MP 138 **Multiple Dissociation Pathways of Ganglioside-Toxin Complexes Revealed by Collision Induced Dissociation and Surface Induced Dissociation in the Gas Phase;** Yue Ju; Yun Zhang; Vicki Wysocki; *The Ohio State University, Columbus, OHIO*

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MP 139 **Sequence Variant Analysis of Therapeutic Proteins using LC/MS/MS;** Ning Tang; *Agilent Technologies, Santa Clara, CA*

MP 140 **Probing Disulfide Bonds with Top-Down Mass Spectrometry;** Jeremy J. Wolff; Christopher J. Thompson; J. Paul Speir; *Bruker Daltonics, Billerica, MA*

MP 141 **Fourier Transform Ion Cyclotron Resonance Top-Down Mass Spectrometry of Intact and Reduced Antibodies;** Jeremy J. Wolff; Christopher J. Thompson; *Bruker Daltonics, Billerica, MA*

MP 142 **Extracting Complementary Protein Sequence Information using Sequential Ion Mobility Resolved Electron Transfer Dissociation and Collision Induced Dissociation;** Deepali Rathore; Forouzan Aboufazeli; Eric D. Dodds; *University of Nebraska, Lincoln, NE*

MP 143 **Determination of the Number of Methionine Residues in Proteins via Gas-Phase Ion/Ion Reactions for Improved Sequence Analysis;** Alice Pilo; Yang Gao; Scott McLuckey; *Purdue University, West Lafayette, IN*

MP 144 **Strategies for Mass Spectrometry-Based *de novo* Sequencing of a Critical Monoclonal Antibody Reagent;** Lawrence Dick; Van Hoang; *Merck & Company, West Point, PA*

MP 145 **Combining UV Laser Irradiation and IR Activated-Ion Electron Capture Dissociation to Enhance Disulfide Bond Cleavage for Protein Top-Down MS;** Piriya Wongkongkathep[1]; Huilin Li[1]; Xing Zhang[2]; Ryan R. Julian[2]; Rachel O. Loo [1]; Joseph A. Loo[1]; *[1]UCLA, Los Angeles, CA; [2]University of California, Riverside, Riverside, CA*

MP 146 **Extending Top-Down Intact Protein Sequence Coverage using ETD, Ion-Ion Proton Transfer (IIPT) Reactions and Parallel Ion Parking;** A. Michelle English[1]; John E. P. Syka[2]; Christopher Mullen[2]; Lee Earley[2]; Jeffrey Shabanowitz[1]; Donald F. Hunt[1]; *[1]University of Virginia, Charlottesville, VA; [2]Thermo Fisher Scientific, San Jose, CA*

MP 147 **Inclusion of Internal Fragment Ions in Spectral Analysis to Increase Sequence Coverage in Top-Down Mass Spectrometry;** David R. Bush; Jared R. Auclair; Alexander R. Ivanov; Jeffrey N. Agar; Barry L. Karger; *Barnett Institute, Northeastern University, Boston, MA*

MP 148 **Characterization of Rare Hemoglobin Mutants with Top-Down High Resolution Mass Spectrometry and Semi-Automated Data Analysis;** Didia Coelho Graça[1]; Ralf Hartmer[2]; Photis Beris[3]; Kaveh Samii[4]; Lorella Clerici[5]; Wolfgang Jabs[2]; Carsten Stoermer [2]; Denis Hochstrasser[1, 5]; Pierre Lescuyer[1, 5]; Alexander Scherl[1, 5]; *[1]DHPS, Faculty of medicine, University of Geneva, Geneva, Switzerland; [2]Bruker Daltonik GmbH, Bremen, Germany; [3]Laboratoire Unilabs Coppet, Geneva, Switzerland; [4]Division of Hematology, Geneva University Hospital, Geneva, Switzerland; [5]DGLM, Geneva University Hospitals, Geneva, Switzerland*

MP 149 **Top Down Analysis of Protein Classes with Incomplete Genomes;** David Morgenstern[1]; Marshall W. Bern[2]; Chris Becker[2]; David Fenyo[1]; Baldomera Olivera[3, 4]; Julita Imperial[3]; Beatrix Ueberheide[1]; *[1]NYU, New York City, NY; [2]Protein Metrics Inc., San Carlos, CA; [3]University of Utah, Salt Lake City, UT; [4]The Howard Hughes Medical Institute, Chevy Chase, MD*

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MP 150 **Characterization of the TAP Tag Affinity-Purified Mouse RNA Exosome Complex with Data-Independent MS^E with Ion Mobility;** Veronika Grinstein[2]; Lewis M. Brown[1]; David Chen[1]; Uttiya Basu[2]; *[1]Columbia University, New York, NY; [2]Columbia University Medical Center, New York, NY*

MP 151 **System Wide Characterisation of *Trypanosoma brucei* Cytoplasmic Protein Complexes Utilising Chromatography and Proteomics;** Thomas Crozier; Mark Larance; Lucia Guther; Michael Ferguson; Angus Lamond; *University of Dundee, Dundee, UK*

MP 152 **Turnover and Complex Assembly of the Yeast Oligosaccharyl transferase by dynamic SILAC and Targeted Mass Spectrometry;** Susanne Mueller[1]; Asa Wahlander[2]; Nathalie Selevsek[2]; Robert Gauss[1]; Markus Aebi[1]; *[1]Institute of Microbiology, ETH Zurich, Zurich, Switzerland; [2]Functional Genomics Center Zurich, Zurich, Switzerland*

MP 153 **Investigation of *P. aeruginosa* Lipopolysaccharide Transporter Subunit LptA Oligomerization by Chemical Crosslinking and LC-tandem Mass Spectrometry;** Rong-Fang Gu; Adam Shapiro; Stephania Livchak; *AstraZeneca, Waltham, MA*

MP 154 **Exploring the Experimental Controls Used for Identifying Transcription Factor Associated Proteins by Mass Spectrometry;** Charles Banks; Zachary Lee; Gina Boanca; Michael Washburn; *Stowers Institute, Kansas City, MO*

MP 155 **Intact Mass Analysis of PEGylated Therapeutic Proteins using TripleTOF® System;** Faraz Rashid[1]; Annu Uppal[1]; Dipankar Malakar[1]; Anita Krishnan[2]; *[1]ABSCIEX, Gurgaon, India; [2]LUPIN Limited Biotech Division, G O Square Mall, Pune, Maharashtra, IN*

MP 156 **A Mass Spectrometry Based Proteomics Approach to Analyze the Modularity of the Chromatin Remodeling Swr1 Complex;** Mahadevan Lakshminarasimhan[1]; Gaye Hattem[1]; Mihaela Sardiu[1]; Sreenivasa Ramisetty[2]; Michael Washburn[1]; *[1]Stowers Institute for Medical Research, Kansas City, MO; [2]Indexx Laboratories, Westbrook, ME*

MP 157 **Increasing Transfer Efficiency in Native Mass Spectrometry of Supermolecular Protein Complexes with a Modified Dual-Funnel QTOF ;** Ralf Hartmer[1]; Peter Brechlin[1]; Werner Imhoff[1]; Anja Wiechmann[1]; Wolfgang Jabs[1]; Pierre-Olivier Schmitt[2]; Francoise Debaene[3]; Alain Van Dorsselaer[3]; Sarah Cianferani[3]; *[1]Bruker Daltonik, Bremen, Germany; [2]Bruker Daltonique, Wissembourg, France; [3]LSMBO Université de Strasbourg, Strasbourg, France*

MP 158 **A Proteomic Profile of Deleted in Breast Cancer 1 (DBC1) and its Role in Transcriptional Regulation;** Preeti Joshi; Amanda Guise; Olivia Quach; Sophie Giguere; Jeffrey Kong; Ileana M. Cristea; *Princeton University, Princeton, NJ*

MP 159 **Interactome of Bacillus subtilis Cell Division Machinery;** Livia Goto Silva[1]; Jimmy Rodriguez Murillo[1]; Micaella P. da Fonseca[2]; Agnelo Rodrigues de Souza[2]; Gilberto Barbosa Domont[1]; Federico Gueiros-Filho[3]; Magno Junqueira[1]; *[1]Federal University of Rio de Janeiro, Rio De Janeiro, Brazil; [2]University of Brasilia, Brasilia, DF-Brazil; [3]University of Sao Paulo-USP, Sao Paulo, Sao Paulo-Brazil*

MP 160 **A Robust Platform for Routine Analysis of Endogenous Protein Complexes with Ion Exchange Chromatography Coupled to Native Electrospray Mass Spectrometry;** Paul Dominic B. Olinares; Zachary T. Quinkert; Julio C. Padovan; Brian T. Chait; *The Rockefeller University, New York, NY*

MP 161 **Characterization of Bound HSV-2 Peptides in a Heat Shock Protein Based Vaccine;** Joseph Connolly; Zhenyu Li; Jesse Martin; Shiwen Lin; Stephen Monks; *Agenus, Inc., Lexington, MA*

MP 162 **Comparative proteomic Analysis Reveals Novel Components at the Plasma Membrane of Differentiated HepaRG Cells;** Catalina Petrareanu[2]; Izabela Sokolowska[1]; Alina Macovei[2]; Alisa G. Woods[1]; Lucian G Radu[2]; Costel Darie[1]; Norica Brinza-Nichita[2]; *[1]Clarkson University, Potsdam, NY; [2]Institute of Biochemistry, Bucharest, Romania*

MP 163 **Defining Interacting Proteins of the Retinoic Acid Receptor Responder Protein-1 using TAP-TAG Affinity and SILAC Titration Strategy;** Haeri Seol; Kristy J Brown; Yetrib Hathout; *Children's National Medical Center, Washington, DC*

MP 164 **Strategies for Identifying Specific Constituents of Protein Complexes and Benefits of Combining Bead Matrices for Immunoaffinity & Mass Spectrometric Applications;** Aman Tyagi[1]; Ken Oh[1]; Ebbing deJong[2]; Sricharan Bandhakavi[1]; Michael Early[1]; *[1]Bio-Rad Laboratories, Hercules, CA; [2]University of Minnesota, Minneapolis, MN*

MP 165 **Accurate Stoichiometry Determination of a Very Large Molecular Machine: The 50 MDa Yeast Nuclear Pore Complex;** Wenzhu Zhang; Javier Fernandez-Martinez; Michael P. Rout; Brian T. Chait; *The Rockefeller University, New York, NY*

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MP 166 **Elucidating the Interaction of Resveratrol with Amyloid-β (1-40) using Labeling Electrospray Deposition and Mass Spectrometry;** Jeddidiah Griffin; Paul Martino; *Carson-Newman University, Jefferson City, TN*

MP 167 **Rapid Gas-Phase Carbene Labeling and Top-Down Mass Spectrometry Provides Topographical Structural Information;** Daniel Therrien[2]; Douglas Steiner[2]; Elizabeth Campbell[1]; Mark Carver[1]; Emily Hammer[1]; Margaret Cothern[1]; Paul Martino[1]; *[1]Carson-Newman University, Jefferson City, TN; [2]Martino Labs, Inc., Kalispell, MT*

MP 168 **Chemo-Enzymatic Derivatization and Enrichment of Protein Post-Translational Modifications: Methylation and Isoaspartic Acid;** Zhaohui Zhou; *Northeastern University, Boston, MA*

MP 169 **Structural Analysis of Fibrillar and Prefibrillar Oligomeric Forms of Amyloid Abeta at the Level of Single Residue by Covalent Labeling;** Janna Kiselar[1]; Alexandra Klinger[2]; Sergei Ilchenko[1]; Mark R Chance[1]; Paul Axelsen[2]; *[1]Case Western Reserve Univ, Cleveland, OH; [2]University of Pennsylvania, Pennsylvania, PA*

MP 170 **Identification of Phosphorylation of Tyrosines on Tubulin Following Exposure to Organophosphorus Pesticides using LC-MS/MS;** Michael G. Bartlett[1]; Pei Li[1]; Alvin Terry[2]; *[1]University of Georgia, Athens, GA; [2]Georgia Regents University, Augusta, GA*

MP 171 **Standardization of Hydroxyl Radical Protein Footprinting Data - High Resolution Footprint of Galectin-1;** Boer Xie; *Complex Carbohydrate Research Center, The Universi, Athens, GA*

MP 172 **Epitope Mapping of EGFR Binding to an Adnectin by Fast Photochemical Oxidation of Proteins (FPOP);** Yuetian Yan[1]; Guodong Chen[2]; Hui Wei[2]; Richard Huang[2]; Jingjie Mo[2]; Don Rempel[1]; Adrienne Tymiak[2]; Michael Gross[1]; *[1]Washington University, Saint Louis, MO; [2]Bristol-Myers Squibb, Princeton, NJ*

MP 173 **FPOP Dosimetry Experiment in Building a More Quantitative FPOP Platform;** Ben Niu; Hao Zhang; Daryl Giblin; Don Rempel; Michael Gross; *Washington University, Saint Louis, MO*

MP 174 **Development of an *in vivo* Protein Footprinting Method for the Structural Analysis of Proteins;** Lisa M. Jones; *Indiana University-Purdue University Indianapolis, Indianapolis, IN*

MP 175 **Efficient Quantitation of Hydroxyl Radical-Mediated Protein Footprinting using Proteome Discoverer;** Aimee Rinas[1]; Lisa Jones[2]; *[1]Indiana University Purdue University Indianapolis, Indianapolis, In; [2]Indiana University-Purdue University Indianapolis, Indianapolis, IN*

MP 176 **Characterization of Robo1 IG 1-2 Protein and Robo1-Heparin Complex by High Structural Resolution Hydroxyl Radical Protein Footprinting;** Zixuan Li; Heather Moniz; Annapoorani Ramiah; Kelley Moremen; Joshua Sharp; *Complex Carbohydrate Research Center UGA, Athens, GA*

MP 177 **Structural Analysis of HIV-1 gp120 and its Complex with Neutralizing Immunoglobulin G1 b12 using Hydroxyl Radical Protein Footprinting;** Xiaoyan Li; Joshua S. Sharp; *Complex Carbohydrate Research Center, UGA, Athens, GA*

MP 178 **Method for the Specific Quantification of Oxidative Stress Based on Metal Tags in Proteins;** Ahmed H. El-Khatib; Diego Esteban-Fernández; Michael Linscheid; *Humboldt-Universitaet zu Berlin, Berlin, Germany*

MP 179 **Methods for Determining Site-Specificity of Reversible Thiol Modifications in Ras GTPases;** G. Aaron Hobbs; Harsha P. Gunawardena; Minh V. Huynh; Xian Chen; Sharon L. Campbell; *Biochemistry & Biophysics, UNC-Chapel Hill, NC*

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MP 181 **Advances in Native Mass Spectrometry-based Methods for the Analysis of Non-Covalent Protein Complexes;** Jonathan P. Williams; Malcolm Anderson; Lidia Jackson; Kevin Giles; Jeff Brown; *Waters Corporation, Manchester, UK*

MP 182 **Investigating the Catalytic Mechanism of Serine Palymitoyltransferase using Native Mass Spectrometry and Top-Down Fragmentation;** David J Clarke; John Wadsworth; C. Logan Mackay; Dominic Campopiano; *University of Edinburgh, Edinburgh, UK*

MP 183 **Molecular Self-Assembly of Bacterial Stress-Response Protein WrbA Studied by Mass Spectrometry;** Alan Kadek[1, 2]; Zdenek Kukacka[1, 2]; Julien Marcoux[3]; Ondrej Vanek[2]; Olga Ettrichova[4, 5]; Rudiger Ettrich[4, 5]; Carol Robinson[3]; Petr Man[1, 2]; Petr Novak[1, 2]; *[1]Institute of Microbiology ASCR, Prague, Czech Republic; [2]Faculty of Science, Charles University in Prague, Prague, Czech Republic; [3]Department of Chemistry, University of Oxford, Oxford, UK; [4]Global Change Research Centre ASCR, Nove Hrady, Czech Republic; [5]Faculty of Science, University of South Bohemia, Ceske Budejovice, Czech Republic*

MP 184 **Nanodisc Characterization by Tandem Mass Spectrometry, Ion Mobility and Atomic Force Microscopy;** Iain D G Campuzano[1]; Huilin Li[2]; Joseph A. Loo[2]; George Svitel[1]; Paul D Schnier[1]; *[1]Amgen Inc., Thousand Oaks, CA; [2]UCLA, Los Angeles, CA*

MP 185 **Monitoring the Proteolytic Degradation of β2-Microglobulin Oligomers and Amyloid Fibrils using Mass Spectrometry;** William Warren[1, 2]; Jill Graham[1, 2]; Peter Chien[1, 2]; Richard Vachet[1, 2]; *[1]University of Massachusetts, Amherst, MA; [2]University of Massachusetts, Amherst, MA*

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MP 187 **Identification and Quantification of a Hydrophobic C-terminal Amidated Peptide in Occular Fluid Extracts;** Tatiana N. Boronina[1]; Niranjan Pandey[2]; Aleksander S. Popel[2]; Robert O'meally[1]; Robert N. Cole[1]; *[1]Johns Hopkins School of Medicine, Baltimore, MD; [2]BME, Johns Hopkins School of Medicine, Balyimore, MD*

MP 188 **A Novel 6x5 Peptide Mixture for Instrument Performance Monitoring;** Michael Rosenblatt; Ethan Strauss; Marjeta Urh; *Promega Corporation, Madison, WI*

MP 189 **MS^n Characterization of Phosphothreonine Peptide Isomers;** Christopher C. Lai; Wen-Jian Qian; Terrence R. Burke, Jr; James A. Kelley; *NCI/NIH, Frederick, MD*

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MP 191 **Comparison of C18 Reversed-Phase Column Material for Shotgun Proteomics;** Fiona Pachl[1]; Hannes Hahne[1]; Bernhard Kuster[2]; *[1]Technische Universität München, Freising, Germany; [2]Technical Universitiy Munich, Freising, Germany*

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MP 194 **Development of a High Resolution Data Independent Acquisition Method for Detecting Organophosphorus Nerve Agents as Butyrylcholinesterase Inhibitors;** Caroline Watson[1]; Melissa Carter[2]; Brian Crow[2]; Brooke

Pantazides[2]; Jonas Perez[3]; Darryl Johnson[1]; Thomas Blake[2]; Rudolph Johnson[2]; *[1]ORISE Centers for Disease Control and Prevention, Atlanta, GA; [2]CDC, Atlanta, GA; [3]Battelle, Atlanta, GA*

MP 195 **Investigating the Use of Alternative Solvent Systems for Maximizing Sensitivity for Bottom-Up Proteomics on a Q Exactive Plus;** Mark Szewc[1]; Joshua Nicklay[1]; Tara Schroeder[1]; Scott Peterman[2]; *[1]Thermo Fisher Scientific, Somerset, NJ; [2]Thermo Fisher Scientific BRIMS, Cambridge, MA*

MP 196 **Targetted Analysis of Peptides in Live Single-Cell Mass Spectrometry;** Ai Fujita[1]; Hajime Mizuno[1]; Iwao Sakane[2]; Tsutomu Masujima[1]; *[1]Quantitative Biology Center (QBiC), RIKEN, Suita, Japan; [2]ITO-EN Ltd, Makinohara, Japan*

MP 197 **A New Strategy for Sensitive and Selective Quantitation of Membrane Proteins using Differential Mobility Spectrometry and MRM Cubed Technology;** Li Ma[1]; Yaofeng Cheng[1]; Yuan-qing Xia[2]; Jeff Miller[2]; Elliot Jones, Jr[2]; Mingshe Zhu[1]; *[1]Bristol-Myers Squibb, Princeton, NJ; [2]AB Sciex, Framingham, MA*

MP 198 **Implementation of Hybrid QqToF Data in MaxQuant Software for the Processing of SILAC Experiments;** Christof Lenz[1, 2]; Jasmin Corso[1]; Juergen Cox[3]; Joerg Dojahn[4]; Thomas Oellerich[5]; Henning Urlaub[1, 2]; *[1]Max Planck Institute for Biophysical Chemistry, Goettingen, Germany; [2]University Medical Center, Goettingen, Germany; [3]Max Planck Institute of Biochemistry, Martinsried, Germany; [4]AB SCIEX, Darmstadt, Germany; [5]Goethe University, Frankfurt am Main, Germany*

MP 199 **Single Bead Peptide Microarrays Characterized by Laser Ablation Electrospray Ionization Mass Spectrometry Imaging (LAESI-MSI);** Holly Henderson[1]; Vladislav Bergo[2]; Benjamin Mildenberg[2]; Greg Kilby[1]; Matthew Powell[1]; *[1]Protea Biosciences Group, Inc., Morgantown, WV; [2]Adeptrix, Boston, MA*

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MP 201 ***De novo* Sequencing of Peptides in Free Radial Initiated Peptide Sequencing (FRIPS) Mass Spectrometry;** Han Bin Oh; *Sogang Univ. Dept. of Chemistry, Seoul, South Korea*

MP 202 **Characterization of Photo-switchable bZIP Domains: Sequencing of Internally Cross-linked Peptides via Collision-induced Dissociation Tandem Mass Spectrometry;** Ahmed M. Ali; Matthew W. Forbes; G. Andrew Woolley; *Department of Chemistry, University of Toronto, Toronto, Canada*

MP 203 **Identification of Selenocysteine Sites in Selenoproteins using HPLC and Low Energy CID;** Stephen Chan; Fei Li; *University of Delaware, Newark, DE*

MP 204 **Protease-Containing Membranes for Antibody Digestion Prior to Middle-Down Sequencing;** Yongle Pang[1]; Gavin Reid[1, 2]; Merlin Bruening[1]; *[1]Department of Chemistry, Michigan State University, East Lansing, MI; [2]Department of Biochemistry & Molecular Biology, East Lansing, MI*

MP 205 **Peptide Sequencing using Q-TOF and MALDI TOF/TOF Mass Spectrometry in Combination with Different Software Tools;** Lena von Sydow; Anja Ekdahl; Gustaf Hedlund; Pernilla Korsgren; *AstraZeneca R&D, Mölndal, Sweden*

MP 206 **Combining NeuCode with LysC and LysN Digestion for *de novo* Sequencing Applications;** Robert Cunningham[1]; Ryan Bomgarden[1]; Christine Johnson[2]; John C. Rogers[1]; *[1]Thermo Fisher Scientific, Rockford, IL; [2]Northwestern University, Evanston, IL*

MP 207 **Application of Multiple Protease Digestion with SPS *de novo* Approach to the Characterization of Hemoglobin Variants;** Jane Yang[1]; Adrian Guthals[1]; Jesse Meyer[1]; Majid Ghassemian[1]; Elizabeth Komives[1]; Nuno Bandeira[1]; David Herold[2]; *[1]UCSD, San Diego, CA; [2]VAMC/ UCSD, San Diego, CA*

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MP 210 **Protein Turnover Rate in Gastrointestinal Tract;** Liisa Arike[1]; Sjoerd van der Post[1]; Andrus Seiman[2]; Gunnar C. Hansson[1]; *[1]University of Gothenburg, Gothenburg, Sweden; [2]Competence Center of Food and Fermentation Technol, Tallinn, Estonia*

MP 211 **Protein Turnover and Quantification Determination in Mice using a Combination of Both Metabolic and Chemical Labeling;** Liisa Arike; Gunnar C Hansson; Sjoerd Van Der Post; *University of Gothenburg, Gothenburg, Sweden*

MP 212 **Application of Quantitative Proteomics and RNA-Seq to Study the Evolution of Primate Transcipt and Protein Expression Levels;** Zia Khan[1]; Michael Ford[2]; Darren Cusanovich[3]; Amy Mitrano[3]; Jonathan Pritchard[3, 4]; Yoav Gilad[3]; *[1]University of Maryland, College Park, MD; [2]MS Bioworks LLC, Ann Arbor, MI; [3]University of Chicago, Chicago, IL; [4]Stanford University, Stanford, CA*

MP 213 **Nano Flow UPLC-MS Analyses of Insulin Receptor Site-Specific Phosphorylation Induced by Insulin and Insulin Mimetic Peptide;** Zhongping Liao; Jason X. Tang; John Beals; *Eli Lilly & Company, Indianapolis, IN*

MP 214 **A Targeted *in vivo* SILAC Approach for Quantification of Drug Metabolism Enzymes;** Kenneth MacLeod; Tuo Zang; Zoe Riches; Colin Henderson; Roland Wolf; Jeffrey Huang; *Medical Research Institute, University of Dundee, Dundee, UK*

MP 215 **Cell-selective Labeling using Amino Acid Precursors for Proteomic Studies of Multicellular Environments and Biomarker Discovery;** Nicholas Gauthier[1]; Boumediene Soufi[2]; Boris Macek [3]; Chris Sander[1]; Martin Miller[1]; *[1]Memorial Sloan-Kettering Cancer Center, New York, NY; [2]Proteome Center Tuebingen, Tuebingen, Germany; [3]University of Tuebingen, Tubingen, Germany*

MP 216 **Sensitivity Increased MultiPLEX (SIMPLEX) SILAC for Quantitative Proteomics;** Duc Duong[1]; Eric Dammer[1]; Ron Trolard[2]; Nicholas Seyfried[1]; *[1]Emory University, Atlanta, GA; [2]Cambridge Isotope Laboratories, Cambridge, MA*

MP 217 **Development of a 20-plex Method for Profiling Total Proteome and Proteome turnover in Yeast;** Yanling Yang; Haiyan Tan; Zhiping Wu; Hong Wang; Junmin Peng; *St. Jude Children's Research Hospital, Memphis, TN*

MP 218 **SILAC Labeling of Mitophagy-Inhibited C. elegans;** Michelle Henderson[1]; Hope Henderson[2]; Suzanne Wolff[2]; Andrew Dillin[2]; Edgar Arriaga[1]; *[1]University of Minnesota, Minneapolis, MN; [2]University of California, Berkeley, Berkeley, CA*

MP 219 **Development and Characterization of a Proteomics Normalization Standard Consisting of 1,000 Stable Isotope Labeled Peptides;** Christopher M. Colangelo[1]; Lisa M. Chung[1]; Craig Dufresne[2]; David Hawke[3]; Alexander R. Ivanov[4]; Antonius Koller[5]; Brendan Maclean[6]; Brett Phinney[7]; Kristie Rose[8]; Paul Rudnick[9]; Brian C. Searle[10]; Vagisha Sharma[6]; Scott A. Shaffer[11]; *[1]Yale University, New Haven, CT; [2]Thermo Fisher Scientific, West Palm Beach, FL; [3]UT- M.D. Anderson Cancer Center, Houston, TX; [4]Barnett Institute, Northeastern University, Boston, MA; [5]Stony Brook University, Stony Brook, NY; [6]University of Washington, Seattle, WA; [7]University of California, Davis, CA; [8]Vanderbilt University, Nashville, TN; [9]Spectragen Informatics, Rockville, MD; [10]Proteome Software Inc., Portland, OR; [11]University of Massachusetts Medical School, Worcester, MA*

MP 220 **Global Equalization of Peptide Abundance through Limited Digestion and Depletion Improves Quantitation Sensitivity and Accuracy of Whole Proteomes;** Bryan Fonslow; Jeffrey Savas; Navin Rauniyar; John R. Yates III; *The Scripps Research Institute, La Jolla, CA*

MP 221 **Multiphase Trap Chips for Improved Protein Identification and Quantitation in Discovery and Targeted Proteomics;** Christoph Krisp[1]; Hao Yang[2]; Remco van Soest[2]; Mark P. Molloy[1]; *[1]Macquarie University, Sydney, Australia; [2]Eksigent, part of AB SCIEX, Redwood City, CA*

MP 222 **Comparative Proteomics-Based in Silico Analyzes Further our Understanding of Mouse Spermatogenesis and Fertility;** Tanxi Cai; Yongqiang Wang; Jiejian Luo; Taijiao Jiang; Fuquan Yang; *Institute of Biophysics, CAS, Beijing, China*

MP 223 **Selective Isolation of Genome-Associated Proteins Reveals Dynamics of Chromatin Composition in Stem Cells;** Mahmoud-Reza Rafiee; Jeroen Krijgsveld; *EMBL Heidelberg, Heidelberg, Germany*

MP 224 **An Ion-Current-Based, Proteomic Investigation of Schwann Cells Radial Sorting Revealed New Insights into Directional Cell Migration and Neural Developments;** Jun Li; Shichen Shen; Xiaomeng Shen; Jun Qu; *University at Buffalo SUNY, Buffalo, NY*

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MP 226 **Data-Independent ETD Mass Spectrometry for Middle-Down Histone Post-Translational Modifications Analysis;** Michael J Sweredoski[1]; Tonya Pekar-Second[2]; Annie Moradian[1]; Sonja Hess[1]; *[1]Caltech, Pasadena, CA; [2]Thermo Fisher Scientific, San Jose, CA*

MP 227 **Utilizing Targeted Proteomics to Determine the Factors that Influence the Specificity of Rtt109 Histone Acetylation;** Yin-Ming Kuo; Ryan Henry; Andrew Andrews; *Fox Chase Cancer Center, Philadelphia, PA*

MP 228 **Harnessing Proteomics to Study the Role of Histone Deacetylases in T-Cell Receptor Signalling and T-Cell Proliferation;** Dijana Vitko[1]; Lisa Göschl[2]; Florian Breitwieser[1]; Roland Tschismarov[2]; Nicole Boucheron[2]; Christian Seiser[3]; Jacques Colinge[1]; Wilfried Ellmeier[2]; Keiryn L. Bennett[1]; *[1]CeMM Research Center for Molecular Medicine, Vienna, Austria; [2]Institute of Immunology, Vienna, Austria; [3]Max F. Perutz Laboratories, Vienna, Austria*

MP 229 **Histone H1 Phosphorylation in Human Breast Cancer;** Michael E. Hoover[1, 6]; Sean W. Harshman[1, 6]; Chengsi Huang[2]; Owen E. Branson[2]; Sarah B. Chaney[3]; Carolyn M. Cheney[4, 6]; Thomas J. Rosol[3]; Charles L. Shapiro[5, 6]; Vicki H. Wysocki[2]; Kay Huebner[5, 6]; Michael A. Freitas[5, 6]; *[1]Biomedical Sciences Graduate Program, Columbus, OH; [2]OSU Department of Chemistry & Biochemistry, Columbus, OH; [3]OSU College of Veterinary Medicine, Columbus , OH; [4]Department of Internal Medicine, Columbus, OH; [5]Comprehensive Cancer Center, Columbus, OH; [6]The Ohio State University Wexner Medical Center, Columbus, OH*

MP 230 **Confidence Metrics for Identification of Proteins, Post-translational Modifications (PTMs) and Proteoforms;** Naomi Brownstein[1]; Nicolas L. Young[2]; *[1]National High Magnetic Field Laboratory, Tallahassee, FL; [2]NHMFL / FSU, Tallahassee, FL*

MP 231 **Multiplexed Parallel Reaction Monitoring-Targeting Histone Modifications on the Q-Exactive Mass Spectrometer;** Hui Tang; Kangling Zhang; *University of Texas Medical Branch at Galveston, Galveston, TX*

MP 232 **Infection of Borna Disease Virus Impacts Proteome and Histone Lysine Acetylation in Human Oligodendroglia Cells;** Xia Liu[1, 2]; Xiaojun Peng[3]; Zhongyi Cheng[3]; Peng Xie[1, 2]; *[1]Institute of Neuroscience, Chongqing Medical Univ, Chongqing, CN; [2]The First Affiliated Hospital, Chongqing Medical U, Chongqing, CN; [3]PTM Biolabs, Inc, Hangzhou, China*

MP 233 **Characterization of Global Patterns of 5-Methylcytosine and 5-Hydroxymethylcytosine in the Vascular Endothelium using LC-MS/MS;** Apurva Shirodkar[1, 2]; Michelle E. Young[1]; Jacquie Lu[2]; Philip Marsden[1, 2]; *[1]University of Toronto, Toronto, Canada; [2]St. Michael's Hospital, Toronto, Canada*

MP 234 **Identification of Histone Post-translational Modifications in Alzheimer's Disease Brain;** Kyle Anderson[1, 2]; Illarion Turko[1, 2]; *[1]IBBR, Rockville, MD; [2]NIST, Gaithersburg, MD*

MP 235 **Dynamic Changes in Histone Post-Translational Modifications: A New Global MS-based Profiling Approach;** Raphaël Bilgraer[1]; Sylvie Gillet[1]; Sophie Gil[2]; Danièle Evain-Brion[2]; Olivier Laprévote[1, 3]; *[1]CNRS UMR 8638, Université Paris Descartes, Paris, France; [2]INSERM U1139, Université Paris Descartes, Paris, France; [3]Toxicologie Biologique, Hôpital Lariboisière, APHP, Paris, France*

MP 236 **Investigating the Specificity of Histone Acetyltransferase Activity for Producing Rare Modifications on Histones using Mass Spectrometry;** Amanda Hu[1]; Laura-Mae Britton[2]; Benjamin A. Garcia[1]; *[1]University of Pennsylvania, Philadelphia, PA; [2]Princeton University, Princeton, NJ*

MP 237 **Identification of Serine and Threonine O-Acetyltransferases;** Laura-Mae Britton[1]; Benjamin Garcia[2]; *[1]Princeton University, Princeton, NJ; [2]University of Pennsylvania, Philadelphia, PA*

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MP 238 **Automatic Characterization of Lipids using Charge Remote Fragmentation Ions and Peaks Characteristic of Fatty Acid Fragmentation From MALDI MS/MS Data;** Ningombam Sanjib Meitei[1]; Arun Apte[2]; Dietmar Waidelich[3]; Fadi Abdi[4]; Matthias Glueckmann[3]; *[1]PREMIER Biosoft, Indore, India; [2]PREMIER Biosoft, Palo Alto, U.S.A; [3]AB SCIEX, Darmstadt, Germany; [4]AB SCIEX, Framingham, U.S.A.*

MP 239 **Identification of Novel Serum Lipid Biomarkers Predicting Preeclampsia using a Shotgun Lipidomics Approach;** Swati Anand[1]; Sydney Young[1]; sean esplin[2]; Craig Thulin[3]; Bruce Jackson[1]; Steven Graves[1]; *[1]BYU, Provo, UT; [2]University of Utah, Salt lake city, UT; [3]Utah valley university, orem, UT*

MP 240 **Lipidomic Analysis and Comparison of Young and Old Rat Skeletal Muscles using UHPLC-HRMS;** Yu-Hsuan Tsai[1, 2]; Timothy Garrett[1, 3]; Christy Carter[1, 4]; Richard A. Yost[1, 2]; *[1]University of Florida, Gainesville, FL; [2]Dept. of Chemistry, Gainesville, Florida; [3]Dept. of Pathology, Gainesville, Florida; [4]Dept. Aging & Geriatric Research, Gainesville, Florida*

MP 241 **Phospholipidomics of Yeast Lipidome and Marine Lecithin by Single Run LC/MS/MS;** Corinne Bure; Maud Cansell; Alexandre Pinsolle; Sophie Ayciriex; Jean-Marie Schmitter; *University of Bordeaux, Bordeaux, France*

MP 242 **Comprehensive Investigation of Reversed-phase LC Methodology for Global Lipidomics Analyses using High-Resolution Accurate Mass LC-MS/MS;** Kevin J. McHale[1]; Josef Ruzicka[1]; David A. Peake[2]; *[1]Thermo Fisher Scientific, Somerset, NJ; [2]Thermo Fisher Scientific, Carmel, IN*

MP 243 **Data Acquisition Parameters Optimization of Quadrupole Orbitrap for Global Lipidomics on LC-MS/MS time frame;** Josef Ruzicka[1]; Kevin J. Mchale[1]; David A. Peake[2]; *[1]Thermo Fisher Scientific, Somerset, NJ; [2]Thermo Fisher Scientific, San Jose, CA*

MP 244 **Tandem Mass Tag hydrazide - A New Derivative for Oxosteroid Analysis;** Katarina Rigdova[2]; Yuqin Wang[2]; Malcolm Ward[1]; William James Griffiths[2]; Ian Pike[1]; *[1]Proteome Sciences plc, London, UK; [2]Swansea University, Swansea, UK*

MP 245 **Comparison of Experimental MALDI Mass Spectrometric and Computer Modeling Investigation of Protonated and Cationized Phosphatidylcholines;** Vitaliy Chagovets; Michal Holcapek; Miroslav Lisa; *University of Pardubice, Pardubice, Czech Republik*

MP 246 **Comprehensive LC/sCID-MS and GC/MS Lipidomic Platform for In-Depth Characterization of Diverse Lipids: Application in Biological Target Identification for Drug Discovery;** Laila Abdullah[1]; James Evans[1]; Jon Reed[1, 2]; Gogce Crynen[1, 2]; Corbin Bachmeier[1]; Hannah Montague[1]; Ariel Gonzalez[1]; Madison Crocker[1]; Tanja Emmerich[1]; Robert Pelot[2]; Michael Mullan[1]; Fiona Crawford[1, 2]; *[1]Roskamp Institute, Sarasota, FL; [2]SRQ Bio, Sarasota, FL*

MP 247 **Live Single-cell Mass Spectrometry for Direct Lipid Analysis of a Stimulated Allergy Cell;** Hajime Mizuno; Yosuke Kawai; Tsutomu Masujima; *Quantitative Biology Center (QBiC), RIKEN, Suita, Japan*

MP 248 **Gas Phase Discrimination of Phosphatidylcholines and Phosphatidylethanolamines using Charge-Inversion Ion/Ion Reactions;** Stella Rojas-Betancourt[1]; John Stutzman[1]; Stephen J Blanksby[2]; Scott McLuckey[1]; *[1]Purdue University, West Lafayette, IN; [2]Queensland University of Technology, Brisbane, Australia*

MP 249 **Molecular Differentiation of *Escherichia coli* Strains as a Function of Antibiotic Stress;** Alyssa Garabedian[1]; Emily Schenk[1]; Diana Hernandez[1]; Christopher Thompson[2]; Yuk-Ching Tse-Dinh[1]; Francisco Fernandez-Lima[1]; *[1]Florida International University, Miami, FL; [2]Bruker Daltonics Inc., Billerica, MA*

MP 250 **Global Lipid Profiling of Mucosa from Patients with Chronic Sinusitis and Otomastoiditis and Controls;** Farbod Fazlollahi[1]; Kessiri Kongmanas[2]; Nongnuj Tanphaichitr[2]; Kym Faull[1]; Jeffrey Suh[1]; Quinton Gopen[1]; *[1]UCLA, Los Angeles, CA; [2]University of Ottawa, Ottawa , Canada*

MP 251 **Mass Spectrometry Study of Non-Glycerol Lipids Hydrolysis by Phospholipase A2;** Reza Nemati [1]; Emily Anstadt[2]; Vahid Farrokhi[1]; Robert Clark[2]; Xu Wang[3]; Xudong Yao[1]; Frank Nichols[4]; *[1]Department of Chemistry, University of Connecticut, Storrs, CT; [2]Department of Medicine, University of Connecticut, Farmington, CT; [3]AB SCIEX,, Framingham, MA; [4]University of Connecticut School Dental Medicine, Farmington, CT*

MP 252 **Phospholipid Oxidation Products as Biomarkers for Oxidative Stress in Inflammatory Liver Disease;** Beate Fuchs; Jürgen Schiller; *University of Leipzig, Leipzig, Germany*

MP 253 **The Use of Glycerol for Enhanced Lipid Signal in Liquid Extraction Surface Analysis Mass Spectrometry of Thin Tissue Sections;** Alexander Dexter[1]; Josephine Bunch[2]; Iain B. Styles[1]; Helen J. Cooper[1]; *[1]University of Birmingham, Birmingham, UK; [2]National Physical Laboratory, London, UK*

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MP 254 **Confetti: A Multi-protease Map of the HeLa Proteome for Comprehensive Proteomics;** Hamid Mirzaei[1]; David Trudgian[1]; Xiaofeng Guo[2]; Andrew Lemoff[1]; Sivaramakrishna Yadavalli [1]; *[1]UT Southwestern, Dallas, TX; [2]University of Pennsylvania, Philadelphia, PA*

MP 255 **A Draft Map of the Human Proteome;** Min-Sik Kim [1]; Sneha M. Pinto[1, 2]; Derese Getnet[1]; Raja Sekhar Nirujogi[1, 2]; Srikanth S. Manda[1, 2]; Raghothama Chaerkady[1]; Anil Madugundu[2]; Dhanashree S. Kelkar[2]; Ruth Isserlin[3]; Shobhit Jain[3]; Joji K. Thomas[2]; Babylakshmi Muthusamy[2]; Nandini A. Sahasrabuddhe[2]; Praveen Kumar[2]; Pamela Leal Rojas[1]; Lavanya Balakrishnan[2]; Jayshree Advani[2]; Bijesh George[2]; Santosh Renuse[2]; Lakshmi Dhevi N. Selvan[2]; Arun H. Patil[2]; Vishalakshi Nanjappa[2]; Aneesha Radhakrishnan[2]; Tejaswini Subbannayya[2]; Rajesh Raju[2]; Manish Kumar[2]; Sreelakshmi Sreenivasamurthy[2]; Arivusudar Marimuthu[2]; Gajanan J. Sathe[2]; Sandip Chavan[2]; Keshava K. Datta[2]; Yashwanth Subbannayya[2]; Apeksha Sahu[2]; Soujanya D. Yelamanchi[2]; Savita Jayaram[2]; Pavithra Rajagopalan[2]; Jyoti Sharma[2]; Krishna R. Murthy[2]; Aafaque A. Khan[2]; Sartaj Ahmed[2]; Nazia Syed[2]; Gourav Dey[2]; Aditi Chatterjee[2]; Tai-Chung Huang[1]; Jun Zhong[4]; Xinyan Wu[1]; Patrick G. Shaw[4]; Muhammad S. Zahari[1]; Henry Lam[5]; Christopher J. Mitchell[1]; John T. Schroeder[1]; Ravi Sirdeshmukh[2]; Anirban Maitra[1]; Steven D. Leach[1]; Charles G. Drake[1]; Marc K. Halushka[1]; T. S. Keshava Prasad[2]; Ralph H. Hruban[1]; Candace L. Kerr[6]; Gary D. Bader[3]; Christine A. Iacobuzio-Donahue[1]; Harsha Gowda[2]; Akhilesh Pandey[1]; *[1]Johns Hopkins University SOM, Baltimore, MD; [2]Institute of Bioinformatics, Bangalore, India; [3]The Donnelly Centre, University of Toronto, Toronto, Canada; [4]Johns Hopkins University, Baltimore, MD; [5]The Hong Kong University of Science and Technology, Clear Water Bay, Hongkong; [6]University of Maryland, Baltimore, Maryland*

MP 256 **Integrative Omics Analysis Reveals Distinct Gene and Protein Expression Signatures across Multiple Tissues in an Individual;** Srikanth S. Manda[1, 3]; Min-Sik Kim [2]; Raja Sekhar Nirujogi[1, 3]; Premendu P. Mathur[3]; Harsha Gowda[1]; Akhilesh Pandey[1, 2]; *[1]Institute of Bioinformatics, Bangalore, India; [2]Johns Hopkins University SOM, Baltimore, MD; [3]Center for Bioinformatics, Pondicherry University, Puducherry, India*

MP 257 **High-Coverage High-Throughput Characterization of Breast Cancer Cell Lines through the Use of Synchronous Precursor Selection MS3-based 10-plexed Quantitative Proteomics;** John Lapek[1]; Jessica Biosvert[1]; Cyril Benes[1, 2]; Wilhelm Haas[1, 2]; *[1]MGH Cancer Center, Charlestown, MA; [2]Harvard Medical School, Charlestown, MA*

MP 258 **Construction of a Physical Map of a Human Cell;** Anne-Claude Gingras[1]; Christopher Go[1]; Wade H Dunham[1]; James DR Knight[1]; Étienne Coyaud[2]; Geoffrey Hesketh[1]; Jean-Philippe Lambert[1]; Payman Samavarchi-Tehrani[1]; Amber L. Couzens[1]; Andy Kong[3]; Laurence Pelletier[1]; Hyungwon Choi[4]; Alexey Nesvizhskii[3]; Brian Raught[2];

[1]Lunenfeld-Tanenbaum Research Institute, Toronto, Canada; [2]Ontario Cancer Institute, Toronto, Canada; [3]University of Michigan, Ann Arbor, MI; [4]National University of Singapore, Singapore

MP 259 **The Nuclear Proteome of a Vertebrate;** Martin Wuehr; Thomas Guettler; Leonid Peshkin; Graeme C. McAlister; Aaron C. Groen; Timothy J. Mitchison; Marc W. Kirschner; Steven P. Gygi; *Harvard Medical School, Boston, MA*

MP 260 **Protein Quantitative Trait Locus (pQTL) Analysis in a Mouse Genetic Reference Population using Targeted Mass Spectrometry Methods;** Yibo Wu[1]; Evan Williams[2]; Sander Houten[3]; Carmen Argmann[3]; Witold Wolski[1]; Johan Auwerx[2]; Ruedi Aebersold[1, 4]; *[1]IMSB, Zurich, switzerland; [2]EPFL, Lausanne, Switzerland; [3]University of Amsterdam, Amsterdam, Netherland; [4]University of Zurich, Zurich, Switzerland*

MP 261 **A Systems Approach to the Characterization of Toll-Like Receptor Response to Different Ligand Stimulation in Macrophages;** Virginie Sjoelund; Arthur Nuccio; Zachary Benet; Jessica Mann; Marijke Koppenol-Raab; Alisa Bochnowski; Nathan Manes; Bhaskar Dutta; Iain Fraser; Aleksandra Nita-Lazar; *NIH/NIAID/LSB, Bethesda, MD*

MP 262 **Dynamic Analysis of Pure HIV-1 Infected and Bystander Monocyte Derived Macrophages (MDMs);** Isabel Martinez Ferrando[1]; Alexandre Deshiere[2]; Alexey Lyashkov [1]; Ceereena Mohien [1]; David Colquhoun[1]; Michel Ouellet[2]; Michel Tremblay[2]; David R Graham[1]; *[1]Johns Hopkins School of Medicine, Baltimore, MD; [2]Laval University, Quebec city , Quebec*

MP 263 **Advanced Ti4+-IMAC (Phospho)proteomics to Identify Novel Melanoma Companion Drug Targets and Uncover Phosphorylation Dynamics and Pathway Dependence in Senescence Signaling;** Erik L. de Graaf[1]; Gianluca Maddalo[1]; Joanna Kaplon[2]; Marjon A. Smit[2]; Daniel S. Peeper[2]; Albert J.R. Heck[1]; A.F. Maarten Altelaar[1]; *[1]Utrecht University, Utrecht, The Netherlands; [2]The Netherlands Cancer Institute, Amsterdam, The Netherlands*

MP 264 **Enhanced Informatics Methods for Enriching Protein Identifications in the Metaproteome Characterization of the Human Gut Microbiome;** Robert Hettich[1]; Alison Erickson[1]; J Chai[1]; Chongle Pan[2]; Rachel Adams[1]; Brandi Cantarel[3]; Claire Fraser-Liggett[3]; *[1]Oak Ridge National Laboratory, Oak Ridge, TN; [2]Oak Ridge National Lab, Oak Ridge, TN; [3]University of Maryland, Baltimore, MD*

MP 265 **A Data Independent Strategy for a Multi-omic Approach to Investigate Obesity Treatment within a Mouse Model;** Gertjan Kramer[1]; Nicholas Dekker[1]; Lee A Gethings[2]; Victoria Lee[3]; Robert J Beynon[3]; James I Langridge[2]; Johannes P.C. Vissers[2]; Johannes M.F.G. Aerts[1]; *[1]Academic Medical Centre, University of Amsterdam, Amsterdam, Netherlands; [2]Waters, Manchester, UK; [3]University of Liverpool, Liverpool, UK*

MP 266 **Hypothesis Driven Approach to Integrated Lipidomic and Proteomic Data Analysis;** Gogce Crynen[1, 2]; Laila Abdullah[1, 2]; Jon Reed[1, 2]; James Evans[1]; Hannah Montague[1]; Ariel Hart[1]; Ariel Gonzalez[1]; Madison Crocker[1]; Tanja Emmerich[1]; Robert Pelot[1]; Michael Mullan[1]; Fiona Crawford[1, 2]; *[1]Roskamp Institute, Sarasota, Florida; [2]SRQ Bio, Sarasota, Florida*

MP 267 **Comprehensive Analysis of Alterations in Lipid and Bile Acid Metabolism by Carbon Tetrachloride using Integrated Transcriptomics and Metabolomic;** Jinchun Sun[1]; Thomas Schmitt[1]; Laura Schnackenberg[1]; Lisa Pence[1]; Yosuke Ando[1, 2]; James Greenhaw[1]; Xi Yang[1]; Svetoslav Slavov[1]; William Salminen[1, 3]; Donna Mendrick[1]; Richard Beger[1]; *[1]NCTR / USFDA, Jefferson, AR; [2]Daiichi Sankyo Co., Ltd, Tokyo, Japan; [3]PAREXEL International, Boston, MA*

MP 268 **LC-MS Chemoplexing for the Direct Measurement of Apparent Catalytic Efficiency of Enzyme Systems;** Richard King[1]; Bonnie Baker[1]; Victoria King[2]; Carmen Fernandez-Metzler[1]; *[1]PharmaCadence Analytical Services, LLC, Hatfield, PA; [2]Northeastern University, Boston, MA*

MP 269 **Chemokine and Sphingosine-1-Phosphate Signaling in RAW 264.7 Cells Quantitated using Targeted Proteomics and Simulated using Simmune;** Nathan Manes[1]; Marijke Koppenol-Raab[1]; Eunkyung An[1]; Virginie Sjoelund[1]; Jing Sun[1]; Bastian Angermann[1]; Masaru Ishii[2]; Martin Meier-Schellersheim[1]; Ronald Germain[1]; Aleksandra Nita-Lazar[1]; *[1]National Institutes of Health, Bethesda, MD; [2]Osaka University, Osaka, Japan*

MP 270 **Integrated Transcriptomic and Proteomic Analysis of an Indian Malaria Vector –*Anopheles stephensi*;** Sreelakshmi Sreenivasamurthy[1, 2]; Ajeet Kumar Mohanty[3]; Manish Kumar[1, 2]; Gourav Dey[1, 2]; Sneha Pinto[1, 4]; Raja Sekhar Nirujogi[1, 4]; Anil Madugundu[1]; Arun Patil[1]; Jayshree Advani[1]; Sutopa Dwivedi[1]; Manoj Kumar Gupta[1, 2]; Dhanashree Kelkar[1]; Chris Mitchell[4]; Charles Wang[5]; Harsha Gowda[1]; T. S. Keshava Prasad[1]; Zhijian Tu[6]; Ashwani Kumar[3]; Akhilesh Pandey[4]; *[1]Institute of Bioinformatics, Bangalore, India; [2]Manipal University, Manipal, India; [3]National Institute of Malaria Research, Goa, India; [4]Johns Hopkins University School of Medicine, Baltimore, MD; [5]School of Medicine, Loma Linda University, Loma Linda, CA; [6]Department of Biochemistry, Virginia Tech, Blacksburg, VA*

MP 271 **Dysregulation of Nitric Oxide Metabolism in Host Erythrocytes Following Plasmodium falciparum Infection;** Simon A. Cobbold[1]; David H. Perlman[2]; Manuel Llinás[3]; Kiaran Kirk[4]; *[1]Bio21 Institute, University of Melbourne, Melbourne, Australia; [2]Princeton University, Princeton, NJ; [3]The Pennsylvania State University, University Park, PA; [4]The Australian National University, Acton, Australia*

MP 272 **Absolute Quantification of Over 1000 Yeast Proteins Provides Insights into Translational Control;** Stephen W. Holman[1]; Craig Lawless[2]; Philip Brownridge[1]; Karin Lanthaler[2]; Victoria M. Harman[1]; Dean E. Hammond[1]; Rebecca L. Miller[1]; Rachel H. Watkins[2]; Paul F. G. Sims[2]; Christopher M. Grant[2]; Claire E. Eyers[1]; Robert J. Beynon[1]; Simon J. Hubbard[2]; *[1]The University of Liverpool, Liverpool, UK; [2]The University of Manchester, Manchester, UK*

MP 273 **Proteomic Analysis of Environmental Stress in Oysters;** Paul Haynes[1]; Emma Thompson[2]; Sridevi Muralidharan[1]; Wayne O'Connor[3]; David Raftos[2]; *[1]Department of Chemistry and Biomolecular Sciences, Macquarie University, Sydney, NSW Australia; [2]Department of Biological Sciences, Macquarie University, NSW Australia; [3]NSW Department of Primary Industries, Taylors Beach, NSW Australia*

MP 274 **An Integrated Metabolomics and Proteomics Approach to Understand Chemically Mediated Diatom Competition;** Christina M. Jones[1]; Kelsey L. Poulson-Ellestad[1]; Brook L. Nunn[2]; Jessie Roy[1]; Facundo M. Fernández[1]; Julia Kubanek[1]; *[1]Georgia Institute of Technology, Atlanta, GA; [2]University of Washington, Seattle, WA*

MP 275 **Multiple Nutrient Stresses at Intersecting Pacific Ocean Biomes Detected by Protein Biomarkers;** Mak Saito[1]; Matthew McIlvin[1]; Dawn Moran[1]; Tyler Goepfert[1]; Giacomo DiTillio[2]; Carl Lamborg [1]; *[1]Woods Hole Oceanographic Inst., Woods Hole Ma 02543, MA; [2]College of Charleston, Charleston, SC*

MP 276 **Integrated Omics Analysis of the Interaction Between *Ignicoccus hospitalis* and *Nanoarchaeum equitans*;** Timothy Hamerly[1]; Brian P. Tripet[1]; Richard Giannone[2]; Robert Hettich[2]; Mircea Podar[2]; Valerie Copie[1]; Brian

Bothner[1]; [1]*Montana State University, Bozeman, MT;* [2]*Oak Ridge National Laboratory, Oak Ridge, TN*

MP 277 **Characterization of the Core and Unique Proteome of *Anaeromyxobacter dehalogenans* 2CP-C Grown With Various Electron Acceptors;** Xiaoxin Liu[1, 2]; Silke Nissen[1, 2]; Karuna Chourey[1]; Frank Löffler[1, 2]; Robert Hettich[1, 2]; [1]*Oak Ridge National Laboratory, Oak Ridge, TN;* [2]*The University of Tennessee, Knoxville, TN*

MP 278 **Targeted Proteogenomic Characterization of the *Shewanella oneidensis* MR-1 Extracellular Proteome;** William Judson Hervey IV[1]; Erinn C. Howard[2]; Emily R. Peterson[3]; Dagmar Hajkova Leary[1]; Anthony P. Malanoski[1]; Jinny L. Liu[1]; Justin C. Biffinger[1]; Sarah M. Glaven[1]; Baochuan Lin[1]; Lisa A. Fitzgerald[1]; Gary J. Vora[1]; Bradley R. Ringeisen[1]; [1]*Naval Research Laboratory, Washington, DC;* [2]*West Virginia Wesleyan College, Buckhannon, WV;* [3]*Nova Research, Inc., Alexandria, VA*

MP 279 **Metaproteomic Analysis of an Electricity Consuming Biocathode Biofilm;** Dagmar Hajkova Leary[1]; Anthony Malanoski[1]; William Judson Hervey, IV.[1]; Zheng Wang[1]; Brian Eddie[2]; Gary Vora[1]; Leonard Tender[1]; Baochuan Lin[1]; Sarah Glaven[1]; [1]*Naval Research Laboratory, Washington, DC;* [2]*National Research Council, Washington, DC*

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MP 280 **Verification of an LC-MS/MS Method for 19 Opioids, Opiates, and Their Metabolites in Human Urine without Hydrolysis;** Sarah Fair-Wandland; Kerry Hassell; Joseph L. Herman; *ThermoFisher Scientific, Franklin, MA*

MP 281 **Analysis of Pain Panel Medications in Urine on Raptor™ Biphenyl by LC-MS/MS;** Sharon Lupo; Frances Carroll; Paul Connolly; Ty Kahler; *Restek, Bellefonte, PA*

MP 282 **Comparison of LDTD with Traditional LCMS for Quantitative Screening of Urine Drugs of Abuse using Benchtop Quadrupole Orbitrap Mass Spectrometer;** Kristine Van Natta; Marta Kozak; *Thermo FIsher Scientific, San Jose, CA*

MP 283 **Evaluation of Sample Preparation Methods for Semi-Quantitative Ultra-High Throughput Urine Screening using LDTD HR/AM MS technique;** Marta Kozak; Kristine Van Natta; *Thermo Fisher Scientific, San Jose, CA*

MP 284 **Ultra Fast Analysis of 13 Benzodiazepines by LDTD-MS/MS Cross Validated with LC-MS/MS for 200 Real Urine Samples;** Alex Birsan; Serge Auger; Annick Dion; Pierre Picard; Jean Lacoursiere; *Phytronix Technologies Inc., Quebec, QC*

MP 285 **Evaluation of a Novel High-Throughput Screening Method for Drugs of Abuse in Urine with Paper-Spray Triple Quadrupole Mass Spectrometry;** Bradley Hart[1]; Maria C. Prieto Conaway[1]; Kristine van Natta[1]; Nicholas E. Manicke[2]; Marta Kozak[1]; [1]*Thermo Fisher Scientific, San Jose, CA;* [2]*Dept of Chemistry, Indiana Univ-Purdue Univ, Indianapolis , IN*

MP 286 **Rapid LC-MS/MS Analysis of Opiates and Benzodiazepines in Urine using a Partially Porous C-18 Stationary Phase;** J. Fred Banks; *Ammon Analytical Laboratory, Linden, NJ*

MP 287 **Challenges and Solutions for High Throughput TFC-LC-MS/MS in Clinical Toxicology;** Yvonne Wright; Christopher Shuford; Matthew Crawford; Patricia Holland; Stacy Dee; Martin Green; Russell Grant; *LabCorp, Burlington, NC*

MP 288 **Development of a New Toxicological Drug Screening Method for More than 800 Compounds in Biological Matrices using a UPLC-QToF MS;** Gilles Provencher; Nicolas Caron; Michel Lefebvre; Normand Fleury; *INSPQ, Quebec, Canada*

MP 289 **Applying Enhanced Confirmation Criteria for Reducing False Positive Rates (FPR) in Toxicology Screening using High Resolution, LC-QToF, Accurate Mass Analysis;** Petra Decker[1]; Karin Wendt[1]; Carsten Baessmann[1]; Christian Albers[1]; Tony Drury[2]; Laura Huppertz[3]; Juergen Kempf[3]; Volker Auwaerter[3]; Anna Pelander[4]; Mira Sundström[4]; Ilkka Ojanperä[4]; [1]*Bruker Daltonik GmbH, Bremen, Germany;* [2]*Bruker UK Ltd., Coventry, UK;* [3]*University Medical Center, Forensic Toxicology, Freiburg, Germany;* [4]*Hjelt-Institute, University of Helsinki, Helsinki, Finland*

MP 290 **Quantitation of Pain Management Drugs using Ultra-Fast Liquid Chromatography/Mass Spectrometry in Human Plasma Utilizing Positive/Negative Polarity Switching;** Steven R. McGown[1]; Robert D. English[1]; Chris Denicola[2]; Nataliya Bulayeva[3]; Rob Freeman[2]; Kevin Rosenblatt[3]; Ben Figard[1]; [1]*Shimadzu Scientific Instruments, Houston, TX;* [2]*Restek Corporation, Bellefonte, PA;* [3]*UT-Health Science Center, Houston, TX*

MP 291 **Increased Throughput for the Analysis of delta-9-THC in Oral Fluids using Triple Quadrupole Mass Spectrometry coupled to Automated Dual-Channel HPLC;** Kevin McCann; Andre Szczesniewski; *Agilent Technologies, Santa Clara, CA*

MP 292 **Comprehensive Screening for Drugs of Abuse in Urine by LC-MSn Combined with MS Spectral Library Matching;** Zoltan Czentnar[2]; Andrea Kiehne[2]; Markus Meyer[2]; Michael D. Timmons[1]; [1]*Bruker Daltonics Inc., Billerica, MA;* [2]*Bruker Daltonik GmbH, Bremen, DE*

MP 293 **A Workflow-driven High-throughput Screening Method for Synthetic Cannabinoids and Metabolites in Urine with Q-TOF Mass Spectrometer and Multiplexed LCs;** Xiang He; Zhaoxiang (Sean) Wu; Jenny Moshin; Alexandre Wang; *AB SCIEX, Redwood City, CA*

MP 294 **Quantification of Illicit Drugs in Urine for Confirmatory Analysis in Routine Laboratories using Ion Trap LC-MS^n;** Julian Philips; Markus Peer; Birgit Schneider; *Bruker Daltonik, Bremen, Germany*

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MP 295 **Nitrilium Cations in the Spectra of N-Methyl-N-Perfluoroacyl- Amino Acids and Their Alkyl Esters;** Nino G. Todua; Kirill V. Tretyakov; Anzor I. Mikaia; *National Institute of Standards and Technology, Gaithersburg, MD*

MP 296 **Ionization Mechanism in Radio-Frequency Ionization (RFI);** Abayomi D. Olaitan; Behrooz Zekavat; Touradj Solouki; *Baylor University, Waco, TX*

MP 297 **Detection of Light vs. Heavy Atoms with a Laser Induced Plasma Ionization Source for Single Particle Analysis;** Andrew Horan; Murray Johnston; *University of Delaware, Newark, DE*

MP 298 **Ion Chemistry in the APPI Source Studied by Ion-Molecule Reactions in Q2 of a Triple Quadrupole Mass Spectrometer;** Annie van Dam; Andries P. Bruins; *University of Groningen, Groningen, Netherlands*

MP 299 **Ionization of Gaseous Compounds in Direct and Dopant-Assisted Atmospheric Pressure Photoionization;** Tiina J Kauppila[1]; Hendrik Kersten[2]; Thorsten Benter[2]; [1]*University of Helsinki, Helsinki, N/A;* [2]*University of Wuppertal, Wuppertal, Germany*

MP 300 **Mechanistic Understanding on Why a Number of Compounds with High Gas Phase Basicity Produce Mostly Molecular Ions by (+) APPI-MS;** Arif Ahmed[1]; Cheol Ho Choi[1, 2]; Younghwan Kim[3]; Sunghwan Kim[1, 2]; [1]*Kyungpook National University, Daegu, South Korea;* [2]*Green-Nano Materials Research Center, Daegu, South Korea;* [3]*Korea Basic Science Institute, Daejeon, South Korea*

MP 301 **Ionization from Freezing Water: Why it Should be Expected;** Charles N. Mcewen[2]; Beixi Wang[1]; Vincent Pagnotti[2]; Shubhashis Chakrabarty[2]; Sarah Trimpin[1]; *[1]Wayne State University, Detroit, MI; [2]University of the Sciences, Philadelphia, PA*

MP 302 **Experimental and Theoretical Investigations of Positron Ionization Mass Spectrometry with Biological Molecules;** Panagiotis Papoulias[1]; Indika Wanniarachchi[1]; Caroline Morgan[1]; Alan Sebastian[1]; Larry Burggraf[2]; Rod Greaves[3]; *[1]Wayne State University, Detroit, MI; [2]Air Force Institute of Technology, Dayton, OH; [3]First Point Scientific, Inc., Agoura Hills, CA*

MP 303 **Ion-Velocity Distribution of MALDI Ions Measured in an Internal Source Fourier-Transform Ion Cyclotron Resonance Mass Spectrometry;** Vladimir Frankevich[1]; Vitaliy Chagovets[2]; Renato Zenobi[1]; *[1]ETH Zurich, Zurich, Switzerland; [2]University of Pardubice, Pardubice, Czech Rebublic*

MP 304 **Large Biomolecule Clusters Detection using MALDI Ion Trap Mass Spectrometer with Charge Detector;** Yung-Kun Chuang; Szu-Hsueh Lai; Jung-Lee Lin; Chung-Hsuan Chen; *Academia Sinica, Taipei, Taiwan*

MP 305 **Ion-to-Neutral Ratios and Thermal Proton Transfer Reactions in Matrix-Assisted Laser Desorption/Ionization;** I-Chung Lu[1]; Kuan Yu Chu[1, 2]; Chih-Yuan Lin[1]; Yuri A. Dyakov[1]; Hsu Chen Hsu[1]; Yuan-Tseh Lee[1, 2]; Chi-Kung Ni[1, 3]; *[1]Academia Sinica, Taipei, Taiwan; [2]National Taiwan University, Taipei, Taiwan; [3]National Tsinghua University, Hsinchu, Taiwan*

MP 306 **Ion Intensity and Thermal Proton Transfer Reactions in Matrix-Assisted Laser Desorption/Ionization;** Chuping Lee[1, 3]; I-Chung Lu[1]; Hui-Yuan Chen[1]; Hou-Yu Lin[1, 3]; Sheng-Wei Hung[1]; Yuri Dyakov[1]; Kuo-Tung Hsu[2]; Chih-Yu Liao[2]; Yin-Yu Lee[2]; Cheng-Ming Tseng[5]; Yuan Tseh Lee[1, 3]; Chi-Kung Ni[1, 4]; *[1]Academia Sinica, Taipei, Taiwan; [2]National Synchrotron Radiation Research Center, Hsinchu, Taiwan; [3]National Taiwan University, Taipei, Taiwan; [4]National Tsing Hua University, Hsinchu, Taiwan; [5]National Chiao Tung University, Hsinchu, Taiwan*

MP 307 **Excited State Lifetime and Fluorescence Properties of UV-MALDI Matrices;** Hou-Yu Lin[1]; Botao Song[1]; I-Chung Lu[1]; Kuo-Tung Hsu[2]; Chih-Yu Liao[2]; Yin-Yu Lee[2]; Cheng-Ming Tseng[3]; Yuan-Tseh Lee[1, 4]; Chi-Kung Ni[1, 5]; *[1]Institute of Atomic and Molecular Sciences, Academ, Taipei, Taiwan; [2]National Synchrotron Radiation Research Center, Hsinchu, Taiwan; [3]National Chiao Tung University, Hsinchu, Taiwan; [4]National Taiwan University, Taipei, Taiwan; [5]National Tsing Hua University, Hsinchu, Taiwan*

MP 308 **Relation of Excited State Lifetimes and Ion Yields for Common MALDI Matrices;** Kristopher Kirmess; Gary R. Kinsel; *Southern Illinois University at Carbondale, Carbondale, Illinois*

MP 309 **Variation of Alkali Metal Ion Distribution with MALDI Sample Composition Investigated with Dual-Polarity Time-of-Flight Imaging Mass Spectrometer;** Yin-Hung Lai; Hsun Lee; Yi-Sheng Wang; *Genomics Research Center, Academia Sinica, Taipei, Taiwan*

MP 310 **One Method Might Not be Enough – Investigating Ionization of Peptides and Their Modifications;** Wiebke Nadler[1, 3]; Dietmar Waidelich[4]; Alexander Kerner[1, 3]; Christoph Roesli[1, 2]; *[1]Junior Research Group Biomarker Discovery, DKFZ, Heidelberg, Germany; [2]Biomarker Discovery, HI-STEM gGmbH, Heidelberg, Germany; [3]Helmholtz Int. Grad. School for Cancer Research, Heidelberg, Germany; [4]AB SCIEX, Darmstadt, Germany*

MP 311 **In-Source Reactions of Catechol During Oxidative Positive Ion Electrospray Mass Spectrometric Analysis;** Luis Sojo; *Xenon Pharmaceutical, Burnaby, Canada*

MP 312 **Protonation and Desolvation as Limiting Factors in the Linear Dynamic Range of Electrospray Ionization Mass Spectrometry;** Clint M. Alfaro; Agbo-Oma Uwakweh; Daniel A. Todd; Brandie M. Ehrmann; Nadja B. Cech; *University of North Carolina at Greensboro, Greensboro, NC*

MP 313 **Predicting Concentrations of Small Molecules without Standard Substances in LC/API/MS via Ionization Efficiency Scales;** Anneli Kruve; Jaanus Liigand; Piia Burk; Karl Kaupmees; Riin Rebane; Ivo Leito; Koit Herodes; Merit Oss; *University of Tartu, Tartu, Estonia*

MP 314 **Supercharging Reagents as Mobile Phase Additives in the LC-MS Analysis of Intact Proteins;** Michael Nshanian[1]; Rachel R. Ogorzalek Loo[2]; Joseph A. Loo[1]; *[1]UCLA, Department of Chemistry and Biochemistry, Los Angeles, CA; [2]UCLA, Department of Biological Chemistry, Los Angeles, CA*

MP 315 **Atmospheric Pressure Laser Ionization with a Novel Highly Sensitive Atmospheric Pressure Ionization Interface for Gas Chromatography-Mass Spectrometry;** Thorsten Benter[1]; Tiina J Kauppila[2]; Hendrik Kersten[1]; *[1]University of Wuppertal, Wuppertal, Germany; [2]University of Helsinki, Helsinki, N/A*

MP 316 **A Model for the Supercharging of Proteins in the Positive and Negative Ion Modes Based on Gas-Phase Basicities;** Kevin Douglass; Andre Venter; *Western Michigan University, Kalamazoo, MI*

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MP 319 **Gas-Phase Acidities of Amino Acid Amides;** Chelsea E. Plummer; Michele L. Stover; David A. Dixon; Carolyn J. Cassady; *The University of Alabama, Tuscaloosa, AL*

MP 320 **Understanding Conformational Effects on Proton Affinity of Peptides Containing Lysine and Its Unnatural Homologs;** Patrickhenry Batoon; Jianhua Ren; *University of the Pacific, Stockton, CA*

MP 321 **Gas-phase Acidities of Nitrated Azole Species from the Extended Kinetic Method;** Charles Nichols[1, 2]; W. Carl Lineberger[1, 2]; Veronica M. Bierbaum[1, 2]; *[1]University of Colorado, Boulder, CO; [2]JILA, Boulder, CO*

MP 322 **Metal Ion/Peptide Binding at Nitrogen Sites: The Histidine Rule;** Robert C. Dunbar[1]; Giel Berden[2]; Jos Oomens[2]; *[1]Case Western Reserve Univ, Cleveland, OH; [2]Radboud University Nijmegen, Nijmegen, Netherlands*

MP 323 **Unimolecular Dissociation of Penicillamine Sulfinyl Radical Ions;** Chasity B. Love; Joseph S. Francisco; Yu Xia; *Purdue University, Lafayette, IN*

MP 324 **Fragmentation Studies of Tetracene-dienophile Adducts by Different Ionization Methods and Time-of-Flight Mass Spectrometry;** Daryl Giblin[2]; Brittni A. Qualizza[1]; Jacob W. Ciszek[1]; M. Paul Chiarelli[1]; Michael L. Gross[2]; *[1]Loyola University, Chicago, IL; [2]Washington University, St Louis, MO*

MP 325 **Investigation of an Unusual Rearrangement of Certain Protonated Anilide Analogs with Collision Induced Dissociation Mass Spectrometry;** Chengli Zu; Shijing Xia; Patrick Hanley; Bruce Bell; *Dow Chemical Company, Midland, MI*

MP 326 **Investigation of the Fragmentation Processes of Amines by VisPD Experiments in an FT-ICR MS;** Claus Gernert; Sarah Seulen; Jurgen Grotemeyer; *Christian-Albrechts-Univ, Kiel, Germany*

MP 327 **Influence of Heating Rate and Pyrolysis Temperature on the Internal Energy and Composition of Organic Aerosols;** Sandra Spencer; Gary L. Glish; *University of North Carolina, Chapel Hill, NC*

MP 328 **Base-Pairing Energies of Proton-Bound Dimers of Cytosine and Methylated Cytosines: Implications for the Stability of DNA *i*-Motif Conformations;** Bo Yang[1]; Aaron Moehlig[2]; Thomas Morton[2]; M.T. Rodgers[1]; *[1]Wayne State University, Detroit, MI; [2]University of California, Riverside, CA*

MP 329 **Probing Gold-Catalyzed Alkyne Hydration Reaction by Mass Spectrometry: Evidence for Dinuclear Gold Intermediates and Dual Activation of Substrates;** Mei Lu[1]; Yijin Su[2]; Xiaodong Shi[2]; Eric Masson[1]; Fengyao Li[1]; Hao Chen[1]; *[1]Ohio University, Athens, OH; [2]West Virginia University, Morgantown, WV*

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MP 402 **Thermal Desorption/Electrospray and Plasma Ionization/Mass Spectrometry for Simultaneously Detecting Polar and Nonpolar Compounds in Complex Mixtures;** Min Zong Huang; Siou-Sian Jhang; Jentaie Shiea; *Dep. of Chemistry National Sun Yat-Sen University, Kaoshiung, Taiwan*

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MP 425 **Change in IgGs Fc N-linked Glycosylation in Human Disease;** Hsi-Chang Shih[1, 3]; Yu-Ting Chang[2]; Ming-Chu Chang[2]; Chein-Hung Chen[3]; Ya-Po Kuo[3]; Chung-Hsuan Chen[1, 3]; *[1]Dept. of Chemistry, National Taiwan University, Taipei, Taiwan; [2]Dept. of Internal Medicine, NTU Hospital, Taipei, Taiwan; [3]The Genomics Research Center, Academia Sinica, Taipei, Taiwan*

MP 426 **Stop Enzymatic Activity and Preserve the Molecular Integrity of Tissue Samples by Heat Stabilization;** Ulla Sollenberg; Marcus Söderquist; Mats Borén; Karl Skold; *Denator AB, Uppsala, Sweden*

MP 427 **In-depth Analysis of Glioma Stem Cells through an Integrative Genomics-Proteomics Approach;** Huiling Liu[1]; Dong Wang[2]; Qianghu Wang[2]; Alexander S. Shavkunov, [1]; Erik Philip Sulman[2]; Charles A Conrad[2]; Frederick F Lang Jr[2]; Carol L. Nilsson[1]; *[1]University of Texas Medical Branch, Galveston, TX; [2]The University of Texas M.D. Anderson Cancer Cent, Houston, Texas*

MP 428 **Identification of Glioblastoma *A Priori* Bevacizumab Response Biomarkers by Mass Spectrometry-Based Label-Free Quantitative Proteomics;** Maxime Heroux[1]; Marla Chesnik[1]; Brian Halligan[1]; Mona Al-Gizawiy[1]; Jennifer Connelly[1]; Wade Mueller[1]; Scott Rand[1]; Elizabeth Cochran[1]; Peter LaViolette[1]; Mark Malkin[2]; Kathleen Schmainda[1]; Shama Mirza[1]; *[1]Medical College of Wisconsin, Milwaukee, WI; [2]Virginia Commonwealth University, Richmond, VA*

MP 429 **Large-Scale Quantitative Proteomic/Metaproteomic Platform Discovers Target Pathways and Promising Biomarkers of COPD-associated Lung Cancer;** Brian Sandri[1]; Andy Limper[2]; Pratik Jagtap[4]; Ping Yang[2]; Ola Larsson[3]; Peter Bitterman[1]; Tim Griffin[4]; Leeann Higgins[4]; Todd Markowski[4]; Chris Wendt[1]; *[1]University of Minnesota, Minneapolis, MN; [2]Mayo Clinic, Rochester, MN; [3]Karolinska Institutet, Solna, Sweden; [4]Mass Spectrometry and Proteomics, UMN, Minneapolis, MN*

MP 430 **Multi-Platform Analysis of Metabolic Perturbations in Diabetic NOD Mice: Evaluation of the Metabolome, Lipidome and Signaling Mediators;** Johannes Fahrmann[1]; Dmitry Grapov[1]; Jun Yang[1]; Bruce Hammock[1]; Oliver Fiehn[1]; Manami Hara[2]; *[1]University of California, Davis, Davis, CA; [2]Department of Medicine, The University of Chicago, Chicago, IL*

MP 431 **Label-free Quantitative Proteomics Analysis of Hepatocellular Carcinoma with Different Grading Reveals Potential Prognostic Marker;** Wael Naboulsi[1]; Dominik Megger[1]; Thilo Bracht[1]; Kristin Rosowski[1]; Birgit Korte[1]; Stephanie Tautges[1]; Marvin Voss [1]; Michael Kohl[1]; Maike Ahrens[1]; Martin Eisenacher[1]; Katja Kuhlmann[1]; Helmut Meyer[1]; Andreas Hoffmann[4]; Frank Weber[4]; Joerg Schlaak[3]; Hideo Baba[2]; Barbara Sitek[1]; *[1]Medizinisches Proteom-Center, Bochum, Germany; [2]Pathologie, Universitätsklinikum Essen, Essen, Germany; [3]Hepatologie, Universitätsklinikum Essen, Essen, Germany; [4]Medicine, Universitätsklinikum Essen, Essen, Germany*

MP 432 **Discovery of Glycoprotein Signatures for Aggressive Prostate Cancer via SWATH Mass Spectrometry;** Yansheng Liu[1]; Chen Jing[2]; Atul Sethi[1]; Qing K Li[2]; Geroge Steven Bova[3]; Lijun Chen[2]; Ben Collins[1]; Ludovic CJ Gillet[1]; Bernd Wollscheid[1]; Hui Zhang[2]; Ruedi Aebersold[1, 4]; *[1]Institute of Molecular Systems Biology ETH, Zurich, Switzerland; [2]Johns Hopkins University, Baltimore, DE; [3]University of Tampere, Tampere, Finland; [4]Faculty of Science University of Zurich, Zurich, Switzerland*

MP 433 **A Novel Platform for Plasma Biomarker Discovery with super-SILAC Quantification of Microparticle Proteomes;** Michal Harel[1]; Yuval Shaked[2]; Tamar Geiger[1]; *[1]Tel Aviv University, Tel Aviv, Israel; [2]Technion, Haifa, Israel*

MP 434 **Novel Orbitrap-Based Two-Dimensional LC-MS/MS Workflows to Qualitatively and Quantitatively Analyze Native Human Peptides in Complex Secretome Samples;** Baozhen Shan[2]; Martijn Pinkse[1]; Bharath Kumar Raghuraman[1]; Cassandra Wigmore[2]; Peter D. Verhaert[1]; *[1]Delft University of Technology, Delft, Netherlands; [2]BSI, Waterloo, Ontario, Canada*

MP 435 **Biomarker Discovery of CD14, a Soluble Endotoxin Receptor for Diagnosis of Stable Coronary Artery Disease;** Thomas S.-H. Chiou[1]; Min-Yi Lee[1]; Chao-Jen Kuo[1]; Wen-Jen Chen[1]; Chun-Hao Huang[1]; Chen-Lung Steve Lin[1]; Wen-Ter Lai[2]; *[1]Kaohsiung Medical University, Kaohsiung, Taiwan; [2]Kaohsiung Medical University Hospital, Kaohsiung, Taiwan*

MP 436 **Environmental Exposure to Xenobiotic Agents in Breast Cancer;** Maria Hassis[1]; George Lemieux[2]; Namrata Prasad[1]; Susan Fisher[1]; Zena Werb[2]; Katherine Williams[1]; *[1]Department of Ob/Gyn & Reproductive Sciences, UCSF, San Francisco, CA; [2]Department of Anatomy, UCSF, San Francisco, CA*

MP 437 **A Comparative Proteomics Study of Cerebrospinal Fluid from Smith-Lemli-Opitz Syndrome Patients;** Stephanie M. Cologna; Christopher A. Wassif; Sandra K. Conley; Peter S. Backlund; Alfred L. Yergey; Forbes D. Porter; *National Institutes of Health, Bethesda, MD*

MP 438 **Biomarkers of Dietary Intake to Gauge Health and the Onset of Disease;** Simin D. Maleknia; Russell Bonduriansky; *University of New South Wales, Sydney, Australia*

MP 439 **Metabolic Profiling of Autistic Brain Tissue Analysis by Laser Ablation Electrospray Ionization;** Rachelle Jacobson; Jessica Stolee; Valerie Hu; Akos Vertes; *George Washington University, Washington, District of Columbia*

MP 440 **Phosphoproteomics Reveals Activation of FAK Kinase Signaling Pathway in Tamoxifen-Resistant Breast Cancer;** Xinyan Wu[1]; Muhammad Zahari[1]; Santosh Renuse[2]; Nandini Sahasrabuddhe[2]; Min-Sik Kim[1]; Raghothama Chaerkady[1]; Saraswati Sukumar[1]; Akhilesh Pandey[1]; *[1]Johns Hopkins University, Baltimore, MD; [2]Institute of Bioinformatics, Bangalore, India*

MP 441 **Down-scaling Tissues Proteomics, toward Precious FFPE Tissue Sample Preparation;** Rémi Longuespée[1]; Gabriel Mazzucchelli[1]; Nicolas Smargiasso[1]; Dominique Baiwir[2]; Florence Quesada Calvo[3]; Marie Alice Meuwis[3]; Philippe Delvenne[4]; Edwin De Pauw[1]; *[1]Mass Spectrometry Laboratory, University of Liège, Belgium; [2]GIGA Proteomic Facilities, University of Liège, Liège, Belgium; [3]Hepato-Gastroenterology and Digestive Oncology, Liège, Belgium; [4]Laboratory of Experimental Pathology, Liège, Belgium*

MP 442 **Development of a Diagnostic Proteomic Profiling Platform for Differentiating Thoracic Tumors;** Linan Wang[1, 2]; Konstantin Shilo[1, 3]; Charles Hitchcock[1, 3]; Michael A. Freitas[1, 2]; *[1]Ohio State University, Columbus, OH; [2]Molecular Virology, Immunology & Medical Genetics, Columbus, OH; [3]College of Medicine Pathology, Columbus, OH*

MP 443 **Colorectal Cancer Screening using Targeted LC-MS/MS-Based Metabolic Profiling of Human Serum;** Danijel Djukovic[1]; Jiangjiang Zhu[1]; Lingli Deng[1]; Haiwei Gu[1]; Farhan Himmati[1]; Gabriela Chiorean[1, 3]; Daniel Raftery[1, 2]; *[1]University of Washington, Seattle, WA; [2]Fred Hutchinson Cancer Research Center, Seattle, WA; [3]Indiana University Melvin and Bren Simon Cancer Ce, Indianapolis , IN*

MP 444 **Discovery of Lipid Biomarkers of Stroke and Cerebral Injury;** Anthony Iavarone[1]; Sunil Sheth[2]; Raymond Swanson[3, 4]; *[1]UC Berkeley, Berkeley, CA; [2]UCLA, Los Angeles, CA; [3]UCSF, San Francisco, CA; [4]San Francisco Veterans Affairs Medical Center, San Francisco, CA*

MP 445 **Hitting the Target: Novel Reagents for the Chemical-Proteomics Based Identification of Vascular Accessible Biomarkers;** Sabrina Hanke[1, 3]; Alexander Kerner[1, 3]; Yixin Zhang[4]; Christoph Roesli[1, 2]; *[1]Junior Research Group Biomarker Discovery, DKFZ, Heidelberg, Germany; [2]Biomarker Discovery, HI-STEM gGmbH, Heidelberg, Germany; [3]Helmholtz Int. Grad. School for Cancer Research, Heidelberg, Germany; [4]B CUBE Center for Molecular Bioengineering, Dresden, Germany*

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MP 446 **A Glycoprotein Biomarker Panel for Pancreatic Cancer Discovered by Quantitative Mass Spectrometry;** Song Nie[1]; Andy Lo[1]; Jing Wu[1]; Jianhui Zhu[1]; Zhijing Tan[1]; Diane M. Simeone[1]; Michelle A. Anderson[2]; Kerby A. Shedden[3]; Mack T. Ruffin[4]; David M. Lubman[1]; *[1]Surgery department, Ann Arbor, MI; [2]Department of Internal, Ann arbor, Michigan; [3]Department of Statistics, University of Michigan, Ann arbor, Michigan; [4]Department of Family Medicine, University of Michi, Ann arbor, Michigan*

MP 447 **Quantitative Targeted Proteomics-Based Personalized Molecular Target Chemotherapy for Recurrent Brain Tumor;** Sumio Ohtsuki[1]; Wataru Obuchi[2]; Mitsutoshi Nakata[3]; Jun-ichiro Hamada[3]; Tetsuya Terasaki[2]; *[1]Kumamoto University, Kumamoto, Japan; [2]Tohoku University, Sendai, Japan; [3]Kanazawa University, Kanazawa, Japan*

MP 448 **Identification and Comparison of Protein Candidate Biomarkers from Lower Urinary Tract Symptoms (LUTS) in Mouse Models and Human Patients;** Tyler Greer[1]; Anatoliy Nechyporenko[2]; Ling Hao[2]; Chad Vezina[3]; Will Ricke[4]; Paul Marker[2]; Dale Bjorling[3]; Wade Bushman[4]; Lingjun Li[2]; *[1]Department of Chemistry UW-Madison, Madison, WI; [2]School of Pharmacy UW-Madison, Madison, WI; [3]School of Veterinary Medicine UW-Madison, Madison, WI; [4]Department of Urology UW-Madison, Madison, WI*

MP 449 **Targeted and Discovery Proteomic Comparisons of Thyroid Neoplasms Reveals Differential Protein Expression;** Juan Martinez-Aguilar[1]; Roderick Clifton-Bligh[2]; Mark Molloy[1, 3]; *[1]Macquarie University, Sydney, Australia; [2]Kolling Institute of Medical Research, Sydney, Australia; [3]Australian Proteome Analysis Facility, Sydney, Australia*

MP 450 **SRM as a New Efficient Detection Tool for the Early Diagnosis of the Lyme Disease;** Gilles Schnell[1]; Amandine Boeuf[1]; Benoît Westermann[1]; Benoît Jaulhac[2]; Nathalie Boulanger[2]; Laurence Ehret-Sabatier[1]; *[1]LSMBO, Strasbourg, France; [2]EA7290, Groupe Borréliose de Lyme, Strasbourg, France*

MP 451 **Detection of Amyloid β-peptides in Cerebrospinal Fluid and Blood Plasma with Immunoprecipitation-MALDI-TOF-MS, using Micropillar Targets on a Silicon Chip;** Johan Jacksén[1]; Patrik EK[1]; Patrick Öeckl [3]; Bernd Baumann [3]; Jens Wiltfang [2]; Markus Otto [3]; Johan Roeraade[1]; *[1]KTH Royal Institute of Technology, Stockholm, Sweden; [2]Georg-August-Universität Göttingen, Göttingen, Germany; [3]University of Ulm, Ulm, Germany*

MP 452 **Evaluation of Drug Induced Toxicity on Cultured Primary Hepatocytes using MS-based Quantitative Proteomics;** Laxmikanth Kollipara[1]; Lisa Dietz[1]; Patricio Godoy[2]; Jan Hengstler[2]; Albert Sickmann[1]; *[1]Leibniz-Institut für Analytische Wissenschaften –, Dortmund, Germany; [2]Leibniz-Institut für Arbeitsforschung (IfADo), Dortmund, Germany*

MP 453 **Quantitative Profiling of N-linked Glycoproteins from Normal Breast Epithelia and Breast Cancer Cells;** Ten-Yang Yen; Roger Yen; Moe Thein; Yejin Yoo; Alejandro Corona; Judi Wong; Leslie Timpe; Bruce Macher; *San Francisco State University, San Francisco, CA*

MP 454 **Elevated Peptides in Lung Lavage Fluid Associated with Bronchiolitis Obliterans Syndrome;** Stephen B. Harvey; *University of Minnesota, Minneapolis, MN*

MP 455 **Analysis of Bone Marrow Derived Multipotent Stromal Cell Secretome Miljan Kuljanin, David Hess, Gilles A. Lajoie;** Miljan Kuljanin; *Western University, London, Canada*

MP 456 **Systematic Analysis of Tissue Glycoprotein Expression for the Early Detection of Pancreatic Cancer;** Hua Xiao[2]; Evelyn Kim[1]; David Misek[1]; *[1]University of Michigan, Ann Arbor, MI; [2]Shanghai Jiao Tong University, Shanghai, China*

MP 457 **A Combined FASP and TMT Approach (iFASP) for the Identification of CSF Biomarker Candidates for Alzheimer's Disease;** Omar Barnaby[1, 2]; Adam Boxer[3]; Hanno Steen[1, 2]; Judith Steen[1, 2]; *[1]Boston Children's Hospital, Boston, MA; [2]Harvard Medical School, Boston, MA; [3]University of California, San Francisco, CA*

MP 458 **Characterizing the Nodal-regulated Breast Cancer Secretome and Its Role in Human Bone Marrow Mesenchymal Stem Cell Mediated Tumourigenesis;** Dylan Dieters-Castator[1]; Gilles Lajoie[1]; Lynne-Marie Postovit[2]; *[1]University of Western Ontario, London, Canada; [2]University of Alberta, Edmonton, Canada*

MP 459 **Evaluation of a Protein Marker for Amyotrophic Lateral Sclerosis;** Melinda Beccari[1]; Miguel Mitne-Neto[2]; Valdemir Melechco Carvalho[2]; Gabriela Venturini[3]; Mayana Zatz[1]; *[1]Human Genome and Stem Cell Research Center, São Paulo, Brazil; [2]Fleury Group, São Paulo, Brazil; [3]Instituto do Coração, São Paulo, Brazil*

MP 460 **High Performance Mass Spectrometry Revealing Phosphorylation-Dependent Regulation of GATA-2 Function;** Chenxi Yang; Koichi Katsumura; Emery Bresnick; Lingjun Li; *University of Wisconsin-Madison, Madison, WI*

MP 461 **Effect of Fluoride in Insulin Resistance of Gastrocnemium Muscle in Diabetics Rats: A Proteomic Analysis;** Aline Lima Leite[1, 2]; Tatiana Martini[1]; Fernanda Zucki[1]; Heloísa Aparecida Barbosa da Silva Pereira[2]; Marília Afonso Rabelo Buzalaf[1]; *[1]Bauru dental School, Bauru, SP; [2]Federal University of São Carlos, São Carlos, SP*

MP 462 **A Sensitive LC/MS/MS Method for the Quantification of Free T3/T4 in Serum, using a Simple Ultrafiltration Sample Preparation Procedure;** Evelyn Mcclure; *AB SCIEX, Concord, Canada*

MP 463 **The Role of Proteomics in Deciphering the Intracellular Mechanism of Diuresis by the Insect Vector of Chagas' Disease *Rhodnius prolixus*;** Noman Hassan; Rachit Batta; Paula Gioino; Juan Ianowski; George Katselis; *College of Medicine, University of Saskatchewan, Saskatoon, Saskatchewan, Canada*

MP 464 **Penile Squamous Cell Carcinoma: Searching for Protein Profiles by Imaging Mass Spectrometry;** Elisângela Silva[1]; Adriana Bulgarelli [1]; Bernadete Faria[2]; Isabela Cunha[1]; Rafael Rocha[1]; Stenio Zequi[1]; Gustavo Guimarães[1]; Fernando Soares[1]; Nilson Assunção[2]; Jose Vassallo[3]; *[1]AC Camargo Cancer Center, São Paulo, SP-Brazil; [2]Federal University of São Paulo, São Paulo, SP-Brazil; [3]State University of Campinas Medical School, Campinas, SP-Brazil*

MP 465 **Catalase Corrected Metabolic Syndrome Induced Protein/PTM Changes in a Mouse Model of CVD;** Mark E. Mccomb; Stephen A. Whelan; Chunxiang Yao; Jessica B. Behring; Jean L. Spencer; Christian Heckendorf; Deborah A. Siwik; Wilson S. Colucci; Richard A. Cohen; Markus M. Bachschmid; Catherine E. Costello; *Boston University School of Medicine, Boston, MA*

MP 466 **Metabolite Profiling of Foodborne Disease Significance – Case study Escherichia coli O157;** Ann Perera[1]; Indira Kudva[2]; Preeti Bais[3]; Manohar John[4]; *[1]Iowa State Uiversity, Ames, IA; [2]USDA-ARS-NADC, Ames, IA; [3]The Jackson Laboratory, Farmington, CT; [4]Pathovacs Inc, Ames, IA*

MP 467 **Defining Post-Translational Proteolysis Important in Biology and Medicine through N-terminal Labeling;** Reid O'Brien Johnson; Sean Shen; Rachel Ogorzalek Loo; Joseph A. Loo; *University of California, Los Angeles, CA*

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MP 468 **Identification of Plasmodium Falciparum Thioredoxin Reductase (PfTrxR) Inhibitors from Malaria Box using LC-MS Functional Assay;** Angela Calderon[1]; Neil Tiwari[1]; Katja Becker[2]; *[1]Auburn University, Auburn, AL; [2]Justus Liebig University, Giessen, Germany*

MP 469 **Application of a Molecular Feature Extraction Algorithm to Detect Co-Eluting Species in Degraded Pharmaceuticals;** Fatkhulla K. Tadjimukhamedov; Tsion Bililign; Qun Xu; Robyn Powell; Jennifer L. Belsky; John T. Simpson; *United States Pharmacopeia, Rockville, MD*

MP 470 **Identification of Cooling Agents in Aerosols of an E-Cigarette from Unit Mass Resolution Spectra Enhanced to High Mass Accuracy;** Serban Moldoveanu; Karen Kilby; *Winston-Salem, NC*

MP 471 **Development of an Ultrafast Screen for Synthetic Cannabinoids using a RapidFire-MS/MS System;** Jennifer Cottine Hitchcock; Ayodele Morris; Gregory McIntire; *Ameritox, Ltd., Greensboro, NC*

MP 472 **New Approach For Compound Identification using Fine Isotopic Pattern Search;** Caroline Ding[1]; Tim Stratton[1]; Hans Pfaff[2]; Hans Grensemann[2]; Christoph Henrich[2]; *[1]Thermo Fisher Scientific, San Jose, CA; [2]Thermo Fisher Scientific, Bremen, Germany*

MP 473 **Large-Scale Nanoparticle Screening for Nanoparticle Assisted Laser Desorption Ionization Mass Spectrometry of Plant Metabolites;** Gargey Yagnik[1, 2]; Andrew Korte[1, 2]; Young Jin Lee[1, 2]; *[1]Iowa State University, Ames, IA; [2]Ames lab US DOE, Ames, IA*

MP 474 **My ZAB is Dying! Exact Mass Determinations of ESI Invisible Molecules on Qtofs with TAPCI, Toluene Atmospheric Pressure Chemical Ionization;** Todd Williams[1]; Larry Seib[1]; Robert Drake[1]; Jared Mays[2]; *[1]University of Kansas, Lawrence, KS; [2]Augustana College, Sioux Falls, SD*

MP 475 **Small Molecule Analysis using Laser Desorption/ Ionozatin-Mass Spectrometry on Maldi Matrix Incorporated Sol-Gel Film;** Ömür Çelikbıçak; Bekir Salih; *Hacettepe University, Department of Chemistry, Ankara, Turkey*

MP 476 **Surface Analysis of Permanent Wave Processing Hair using DART-MS;** Shoji Takigami[1]; Erika Ikeda[1]; Yuta Takagi[1]; Jun Watanabe[2]; Teruhisa Shiota[3]; *[1]Gunma University, Kiryu, Japan; [2]Shimadzu Corporation, Kyoto, Japan; [3]AMR, Inc., Tokyo, Japan*

MP 477 **Mass Spectrometric Analysis of Oxidation Products generated in an Electrochemical Artificial Kidney;** Maria Viehoff[1]; Lars Büter[1]; Karin G. F. Gerritsen[2]; Frank Simonis[3]; Uwe Karst[1]; *[1]University of Muenster, Muenster, D; [2]University Medical Center Utrecht, Utrecht, The Netherlands; [3]Nanodialysis B.V., Oirschot, The Netherlands*

MP 478 **Collision Induced Dissociation Mass Spectra of Protonated Alkyl Dihydrocinnamates;** Sihang Xu; Athula B. Attygalle; *Stevens Institute of Technology, Hoboken, NJ*

MP 479 **Development of a Fast UPLC-MS/MS Screen for Common Drugs of Abuse;** Erin C. Strickland; Gregory McIntire, Ph.D; *Ameritox, Ltd., Greensboro, NC*

MP 480 **Development of a Qualitative Screen for Select Non-Tricyclic Antidepressants by UPLC/TOF;** Jeremy P. Smith; Erin C. Strickland; Gregory Mcintire, Ph.D; *Ameritox, Ltd, Greensboro, NC*

MP 481 **Software Assisted Rapid Screening and Identification of Potential Genotoxic Degradation Products;** Siji Joseph; Syed Salman Lateed; Vinayak Azhakaprakalam; Sreelakshmy Menon; *Agilent technologies, Bangalore, India*

MP 482 **Environmental Marker Profiling of Landfill Leachate in Carcass Disposal;** Ryu Ji-Jeong; Seo Jungju; Hwang Geum Sook; *Korea Basic Science Institute(KBSI), Seoul, Korea*

MP 483 **Characterization of Metabolites of biib028, a Heat Shock Protein 90 Inhibitor, in Rats and Dogs, by High Resolution Mass Spectrometry;** Natalia Penner; Chandra Prakash; *Biogen Idec, Cambridge, MA*

MP 484 **Identification of Persistent Pd-containing Impurities using LC-MS/MS and LC-ICP-MS;** Wendy Zhong; Qiang Tu; Ryan Cohen; Renee Dermenjian; *Merck, Rahway, New Jersey*

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MP 485 **Avoiding Potential Interferences by Choosing the Right LCMSMS Transition for Midazolam Analysis;** Eric Morin; Jason Bilodeau; Nathalie Pelletier; François Viel; Sylvain Lachance; Nadine Boudreau; Ann Levesque; *inVentiv Health Clinical, Quebec, Canada*

MP 486 **Combined Method for the Analysis of Darunavir, Ritonavir and Lopinavir in Human EDTA Plasma by LCMSMS;** Pierre-Yves Caron; Sylvain Lachance; François Viel; Nadine Boudreau; Ann Levesque; *InVentiv Health Clinical, Québec, Canada*

MP 487 **A Novel WCX Micro SPE Plate and Its Application in the Sample Extraction for LC-MS/MS Quantitation Method Development;** Guotao Lu[1]; Manik Desai[2]; Dawei Zhou[2]; Wan Wang[3]; Jerry Wang[1]; *[1]Bonna-Agela Technologies, Inc., Wilmington, DE; [2]XenoBiotic Laboratories, Inc., Plainsboro, NJ; [3]Bonna-Agela Technologies, Ltd., Tianjin, China*

MP 488 **Inhibition of Inter-Conversion between Pitavastatin and its Lactone Metabolite for Application in Clinical Studies using LCMSMS;** Guy Havard; François Viel; Sylvain Lachance; Nadine Boudreau; Ann Levesque; *InVentiv Health Clinical, Québec, Canada*

MP 489 **Solving Linearity Issue at High Concentration for the Determination of Gemcitabine using LCMSMS;** François Viel; Guy Havard; Nadine Boudreau; Ann Levesque; *InVentiv Health Clinical, Quebec, Canada*

MP 490 **Highly Selective and Sensitive Determination of Betamethasone-17,21-Dipropionate, Bethamethasone-17-Propionate and Betamethasone by LCMSMS;** Nadia Smith; Philippe Belanger; François Samson-Thibault; Marie-Josée Marcoux; Marie-Claude Theberge; Nadine Boudreau; Ann Levesque; *inVentiv Health Clinical, Quebec, Canada*

MP 491 **Unique Liquid Chromatography Separation of Calcifediol and its 3-epimer analog using Dimethylpentafluorophenyl Propyl Column on a LCMSMS;** Guy Havard; Nicolas Jean; Nadine Boudreau; Ann Levesque; *inVentiv Health Clinical, Quebec, Canada*

MP 492 **Investigation of the Impact of Light on the Determination of Lurasidone in Human Serum by LCMSMS;** Valérie Montminy; Nathalie Pelletier; Sylvain Lachance; Nadine Boudreau; Ann Levesque; *inVentiv Health Clinical, Quebec, Canada*

MP 493 **Improved Performance with Column Back-Flushing between Injections: Two Case Studies;** Jason Bilodeau; Nicolas Jean; Marie-Claude Theberge; Sylvain Lachance; Nadine Boudreau; Ann Levesque; *inVentiv Health Clinical, Quebec, Canada*

MP 494 **Evaluation of Matrix Effect when Matrix Factor is not Enough for LCMSMS Bioanalytical Method;** Jason Bilodeau; Nadine Lafontaine; Pierre-Yves Caron; François Viel; Sylvain Lachance; Nadine Boudreau; Ann Levesque; *inVentiv Health Clinical, Quebec, Canada*

MP 495 **Resolution of Sildenafil-d8 Ionization Dependence on Sildenafil Concentrations;** Pierre-Yves Caron; Audrey Wilmott; Nancy Lampron; François Viel; Nadine Boudreau; Ann Levesque; *inVentiv Health Clinical, Quebec, Canada*

MP 496 **Lower Limit of Quantitation at Sub-endogenous Compound Level and the Challenge of Low Quality Control Samples Preparation;** Marie-Claude Theberge; Jason Bilodeau; Guy Havard; François Viel; Sylvain Lachance; Nadine Boudreau; Ann Levesque; *inVentiv Health Clinical, Quebec, Canada*

MP 497 **Improvement of Sensitivity and Robustness of an LCMSMS Quantitation Method for Digoxin, Controlling the Reactivity of the Deuterated Internal Standard;** Luc Bouchard; Carine Levesque; Nathalie Pelletier; Nadine Boudreau; Ann Levesque; *inVentiv Health Clinical, Quebec, Canada*

MP 498 **Investigation of a Clinical Methodology for Sample Collection for the Determination of Inosine in Human Plasma by LC/MS/MS;** Luc Bouchard; Nathalie Pelletier; Sylvain Lachance; Nadine Boudreau; Ann Levesque; *inVentiv Health Clinical, Quebec, Canada*

MP 499 **Quantative Analysis of Docetaxel in NCR Nude Mice Fat by LC-MS/MS;** Yung-Hsiang Chen; Jason Oeh; Bianca Liederer; Marcel Hop; Brian Dean; Xiao Ding; *Genentech Inc., South San Francisco, CA*

MP 500 **Application of HILIC Mode to Improve LC/ESI/MS Sensitivity of Opiates and Metabolites;** Anne Mack; William Long; Xiaoli Wang; *Agilent Technologies, Wilmington, DE*

MP 501 **Stability Investigation on Dimethyl Fumarate in Rat Blood by LC-MS/MS: Insight Into Pharmacokinetics and Metabolic Fate *In Vivo*;** Venkatraman Junnotula; Hermes Licea Perez; *GSK, King Of Prussia, PA*

MP 502 **A Highly Selective, Fast and Robust LC/MS/MS Method for the Quantification of Poloxamer 188 in Rat Plasma;** Aihua Liu; Brandon Wilcock; Laixin Wang; Scott Reuschel; Min Meng; *Tandem Labs, Salt Lake City, UT*

MP 503 **Improving Sensitivity and Throughput for the Quantification of Buprenorphine, Norbuprenorphine, and Naloxone in Human Plasma using LC/MS/MS Assay;** Sherry Liu; Chad Moore; Laixin Wang; Scott Reuschel; Min Meng; *Tandem Labs, Salt Lake City, UT*

MP 504 **Method Development of a Simultaneous Fast Quantitation of Niacin, Nicotinamide and Nicotinuric Acid using HPLC Tandem Mass Spectrometry;** Todd Lusk; *Quintiles Bioanalytical and ADME Labs, Ithaca, NY*

MP 505 **Challenges on Method Development for the Quantitation of Beclomethasone Dipropionate and Beclomethasone-17-monopropionate in Human Plasma by UPLC®-MS/MS;** Nancy Zheng; Marlking G Peay; Michael Waldron; Bruce Hidy; Rand Jenkins; *PPD, Richmond, VA*

MP 506 **Simultaneous Low Level Determination of Ascorbic and Dehydroascorbic Acids using Newly Developed HILIC Stationary Phases and Tandem Mass Spectrometry;** William E. Cotham[1]; Audrey M. Howard[2]; Michael D. Walla[1]; Norma Frizzell[2]; John W. Baynes[2]; Matthew Przybyciel[3]; *[1]University of South Carolina, Dept. of Chemistry, Columbia, SC; [2]University of South Carolina School of Medicine, Columbia, SC; [3]ES Industries, West Berlin, NJ*

MP 507 **A General Approach to Eliminating Downfield Interference in Bioanalysis of Amines by SCX Chromatography - Application to Oxybutynin and NNAL;** A Dzerk; P Miller; D Grafelman; E Sarajlic; C Kafonek; *Celerion, Inc, Lincoln, NE*

MP 508 **Development and Validation of a Rapid and Sensitive LC-MS/MS Method for Quantification of CSUOH0901, an Antitumor Agent;** Ramakrishna Reddy Voggu; Xiang Zhou; Bin Su; Baochuan Guo; *Cleveland State University, Cleveland, Ohio*

MP 509 **A Novel Derivitization Strategy to Enhance Stability and Sensitivity of LC-MS Detection of Catechol Estrones Extracted from Human Serum;** Lisa Bottalico[1,2]; Clementina Mesaros[1,2]; Qingqing Wang[1,2]; Kannan Rangiah[3]; Ian A. Blair[1,2]; *[1]University of Pennsylvania School of Medicine, Philadelphia, PA; [2]Center for Cancer Pharmacology, Philadelphia, PA; [3]C-CAMP, Bangalore, INDIA*

MP 510 **A Single Method for the Quantitation of Sirolimus (Rapamycin) in Whole Blood and Multiple Tissues;** Donald Gray; Tyler DeGraw; Rachel Sun; *BASi, West Lafayette, IN*

MP 511 **Direct Analysis of Carbodiimides in Pharmaceutical Compounds by High Performance Liquid Chromatography Mass Spectrometry;** Timothy Nowak; Ryan Cohen; Lin Wang; Vincent Antonucci; *Merck, Rahway, NJ*

MP 512 **Modeling of *in vitro* Activity with Rat Pharmacokinetics to Remove the Need for in vivo Screening of RIP2 Inhibitors;** Michael Reilly; David Lipshutz; Bart Votta; Helen Sun; Elizabeth Rivera; Mukesh Mahajan; Rakesh Nagilla; Barb Swift; Carol Capriotti; Scott Berger; Linda Casillas; Peter Gough; Robert Marquis; John Bertin; *GlaxoSmithKline, Collegeville, PA*

MP 513 **A Novel Device for Plasma Micro-Sampling Technique Developed for Bioanalysis;** Ji Zhang; David Lok; Jesse Gray; Matt Jones; *Takeda Pharmaceutical International, Cambridge, MA*

MP 514 **Method Development and Validation for the Quantitation of ManNAc in Human Plasma using HILIC LC-MS/MS;** Yifan Shi[1]; Meng Fang[1]; Michael Zhang[1]; Yinghe Li[1]; Amy Wang[2]; Ed Kerns[2]; Nuria Carrillo-Carrasco[2]; Xin Xu[2]; Selwyn Yorke[3]; Bradley Gillespie[4]; *[1]Alliance Pharma, Malvern, PA; [2]TRND, NCATS, NIH, Rockville, MD; [3]New Zealand Pharmaceuticals, Palmerston North, New Zealand; [4]Leidos Biomedical Research Inc., Frederick, MD*

MP 515 **Quantitation and Comparison of A Durg by using Whole Blood Assay and Plasma Assay;** Megan Mimnaugh; John Yu; Jeffrey Duggan; Jennifer Bleecker; Heln Luo; *Boehringer Ingelheim Pharma, Inc., Ridgefield, CT*

MP 516 **Quantification of Tryptophan and Its Major Kynurenine Metabolites in Human Plasma;** Farid Jahouh; Fang Qian; Rong Wang; *Icahn School of Medicine at Mount Sinai, New York, NY*

MP 517 **Development of an Ultrasensitive Microflow LC/MS/MS Method for Vitamin D Metabolites Analysis using Amplifex Diene Derivatization Reagent;** Jenny Dai[1]; Subhakar Dey[2]; Eric Battaglioli[3]; Bruce Stanley[1]; Robin Wilson[3]; *[1]Section of Research Resources, Penn State Univers, Hershey, PA; [2]AB SCIEX, Chemistry and Consumables R&D, Framingham, MA; [3]Department of Public Health Sciences, Penn State, Hershey, PA*

MP 518 **Quantitative Analysis of Microcystins using A Newly Developed Triple Quadrupole Instrument;** Yanan Yang[1]; Cindy Tsai[2]; Anabel Fandino[1]; Cameron George[1]; Cynthia Hahm[1]; *[1]Agilent Technologies, Inc, Santa Clara, CA; [2]San Jose State University Research Foundation, Gold River, CA*

MP 519 **Post-column Mobile Phase Adjustment:A Strategy to Eliminate the Contradiction between Liquid Chromatography and Mass Spectrometry in Determinating Flavonoids;** Shirui Zheng; *Zhejiang University, Hangzhou, China*

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MP 521 **Portable Membrane Inlet Mass Spectrometer for Rapid Detection of Drugs, Explosives and Chemical Weapons;** Stamatios Giannoukos; Boris Brkić; Stephen Taylor; *University of Liverpool, Liverpool, UK*

MP 522 **Extractive Electrospray Mass Spectrometry of Triacetone Triperoxide Vapour in the Presence of Ionic Liquids;** Alex R. Hill; James C. Reynolds; Martin B. Smith; Paul F. Kelly; Colin S. Creaser; *Loughborough University, Loughborough, UK*

MP 523 **Detection and Characterization of Chemical Attribution Signatures from Smokeless Powders by Direct Analysis in Real Time – Mass Spectrometry;** Frederick Li[1]; Andrew Horsley[1]; Joseph Tice[2]; Brian Musselman[2]; Adam Hall[3]; *[1]Boston University School of Medicine, Boston, MA; [2]IonSense, Inc., Saugus, MA; [3]Northeastern University, Boston, MA*

MP 524 **Application of Capillary Atmospheric Pressure Electron Capture Ionization (cAPECI) for the Ultra-Sensitive Detection of Explosives, Drugs and Environmental Toxins;** Valerie Derpmann; David Mueller; Thorsten Benter; *University of Wuppertal, Wuppertal, Germany*

MP 525 **On-site Identification of Volatile Chemical Warfare Agents by Portable Gas-Chromatography Mass Spectrometry Instrument;** Hisayuki Nagashima[1]; Tomohide Kondo[1]; Tomoki Nagoya[1]; Takeshi Ohmori[1]; Mieko Kanamori-Kataoka[1]; Kouichiro Tsuge[1]; Isaac Ohsawa[1]; Yasuo Seto[1]; Toru Ikeda[2]; Naoko Kurimata[2]; Shohei Unoke[2]; Manabu Sodeyama[3]; *[1]National Research Institute of Police Science, Kashiwa, Japan; [2]INFICON Co., Ltd., Yokohama, Japan; [3]Teikoku-Sen-i Co., Ltd., Tokyo, Japan*

MP 526 **On-site Detection of Chemical Warfare Agents by Atmospheric Pressure Chemical Ionization Counterflow-Introduction Ion-Trap Mass Spectrometry with Swab Sampling Mode;** Yasuo Seto[1]; Hisayuki Nagashima[1]; Tomoki Nagoya[1]; Takeshi Ohmori[1]; Mieko Kanamori-Kataoka[1]; Koichiro Tsuge[1]; Isaac Ohsawa[1]; Susumu Watanabe[2]; Hiroaki Hashimoto[2]; Akihiko Okumura[3]; *[1]National Research Institute of Police Science, Kashiwa, Japan; [2]Hitachi High-Tech Solutions Co., Mito, Japan; [3]Hitachi Ltd., Kokubunji, Japan*

MP 527 **Multiplex Quantification of Microbial and Plant Protein Toxins in Complex Matrices by Immuno-Extraction And High Resolution Targeted Mass Spectrometry;** Mathieu Dupre[1]; Francois FENAILLE[1]; Cécile Feraudet-Tarisse[1]; Patricia Lamourette[1]; Hervé Volland[1]; Stéphanie Simon[1]; Christophe Junot[1]; Virginie Brun[2]; Francois Becher[1]; *[1]CEA, iBiTec-S, SPI, Gif Sur Yvette, France; [2]CEA, DSV, iRTSV, U1038 INSERM, EDyP, 38054 Grenoble, France*

MP 528 **Exploration of a Top-Down Absolute Quantification Approach of Staphylococcal enterotoxins by High Resolution Targeted Mass Spectrometry on the Q-Exactive Instrument;** Mathieu Dupre[1]; Alexandre Seyer[1]; Francois Fenaille[1]; Patricia Lamourette[1]; Hervé Boutal[1]; Hervé Volland[1]; Christophe Junot[1]; Virginie Brun[2]; Francois Becher[1]; *[1]CEA, iBiTec-S, SPI, 91191 Gif-sur-Yvette, France; [2]CEA, DSV, iRTSV, U1038 INSERM, EDyP, 38054 Grenoble, France*

MP 529 **Mass Spectrometric Forensic Analysis of Botulinum Neurotoxin Type A Isolated from Infant Formula and Patient Stool;** Suzanne R. Kalb; Jakub Baudys; John R. Barr; *CDC, Atlanta, GA*

MP 530 **Optimization of a Mass Spectrometer for Detection of Trace and Bulk Explosives and Narcotics;** Ross Harper; Rakesh Patel; Adam Keil; Mitch Wells; Dennis Barket; *FLIR Systems, West Lafayette, IN*

MP 531 **Characterization of Analytical Markers in Seized Opium Samples using an Enhanced Ion Mobility Spectrometry-Mass Spectrometry Method;** Peter Liuni[1]; Vladimir Romanov[2]; Marie-Josée Binette[3]; Hafid Zaknoun[3]; Maggie Tam[3]; Pierre Pilon[3]; Jan Hendrikse[2]; Derek Wilson[1]; *[1]York University, Toronto, ON; [2]Smiths Detection, Mississauga, ON; [3]Canada Border Services Agency, Ottawa, ON*

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MP 535 **Development and Validation of Direct Analysis Method for Screening and Quantitation of Amphetamines in Urine by LC/MS/MS;** Zhaoqi Zhan[1]; Zhe Sun[1]; Jie Xing[1]; Helmy Rabaha[2]; Swee Chin Lim[2]; *[1]Customer Support Centre, Shimadzu (Asia Pacific), Pte Ltd, Singapore; [2]Department of Scientific Services,, Ministry of Health, Brunei Darussalam*

MP 536 **Mass Spectrometry Based Hit Triage: A Case Study on a Protease using RapidFire Mass Spectrometry;** Juncai Meng[1]; Gregory Adam[1]; Keith Rickert[1]; Edward Hudak[1]; Ming-Tain Lai[2]; Jay Grobler[2]; Paul Zuck[1]; Eric Johnson[1]; Jeffrey Hermes[1]; *[1]Screening and Protein Sciences, Merck Research Lab, North Wales, PA; [2]Infectious Disease, Merck Research Labs, West Point, PA*

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MP 538 **High-Throughput Analysis and Characterization of Small and Large Molecules by Matrix Assisted Ionization *Vacuum* Ion Mobility Spetrometry Mass Spectrometry;** Daniel Woodall; Beixi Wang; Tarick El-Baba; Ellen Inutan; Sarah Trimpin; *Wayne State University, Detroit, MI*

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MP 550 **Temporal Characterization of Petroleum Residue in Louisiana Salt Marsh Sediments after the Deepwater Horizon Oil Spill by FT-ICR Mass Spectrometry;** Huan Chen[1]; Aixin Hou[2]; Nabanita Bhattacharyya[2]; Rui Zhang[2]; Rebecca L. Beasley[1]; Ryan P. Rodgers[1, 3]; Alan G. Marshall[1, 3]; Amy Mckenna[1]; *[1]Nat'l High Magnetic Field Lab, Tallahassee, FL; [2]Louisiana State University, Baton Rouge, LA; [3]Florida State University, Tallahassee, FL*

MP 551 **Rapid Screening and Confirmation Analysis of Polycyclic Aromatic Hydrocarbons (PAHs) with DART Mass Spectrometry;** Yu Takabayashi[1]; Jun Watanabe[2]; Motoshi Sakakura[3]; Teruhisa Shiota[3]; *[1]SHIMADZU TECHNO-Research, INC., Tokyo, Japan; [2]Shimadzu Corporation, Kyoto, Japan; [3]AMR, Inc., Tokyo, Japan*

MP 552 **Fast and Automated EPH Fractionation and Clean Up;** Kambiz Sadeghi; Rudolf Addink; *Fluid Management Systems, Watertown, MA*

MP 553 **Integration of an *in situ* Mass Spectrometer with an Autonomous Underwater Vehicle for Characterization of Dissolved Hydrocarbon Distributions;** Tim Short; Strawn Toler; John Kloske; Steve Untiedt; Mark Ryder; Andres Cardenas-Valencia; Charles Cullins; *SRI International, St Petersburg, FL*

MP 554 **Molecular Analysis of Aircraft-collected Atmospheric Particles and Cloud Water by nano-DESI and ESI High Resolution Mass Spectrometry;** Eric Boone[1]; Alexander Laskin[2]; Julia Laskin[2]; Christopher Wirth[3]; Paul B. Shepson[3]; Brian Stirm[3]; Kerri Pratt[1]; *[1]University of Michigan, Ann Arbor, MI; [2]Pacific NW National Laboratory, Richland, WA; [3]Purdue University, West Lafayette, IN*

MP 555 **Photochemically-Induced Leaching of Water-Soluble Organics from Macondo Crude Oil into the Environment;** David C. Podgorski[1, 2]; Phoebe Z. Ray[3]; Huan Chen[1]; Amy M. Mckenna[1]; Ryan P. Rodgers[1, 4]; Alan G. Marshall[1, 4]; Matthew A. Tarr[3]; *[1]National High Magnetic Field Laboratory, Tallahassee, FL; [2]Future Fuels Institute, Tallahassee, FL; [3]UNO Department of Chemistry, New Orleans, LA; [4]FSU Department of Chemistry and Biochemistry, Tallahassee, FL*

MP 556 **Condensed Phase Membrane Introduction Mass Spectrometry (CP-MIMS) for the Real Time, Trace Level Measurement of Naphthenic Acids;** Kyle D. Duncan[1, 3]; Gregory W. Vandergrift[1]; Dane R. Letourneau[1, 3]; Dietrich A. Volmer[1, 2]; Erik T. Krogh[1, 3]; Christopher G. Gill[1, 3]; *[1]Applied Environmental Research Laboratories (AERL), VIU, Nanaimo, BC, Canada; [2]Saarland University, Saarbrücken, Germany; [3]Chemistry Department, University of Victoria, Victoria, BC, Canada*

MP 557 **Direct Quantification by Isotope Dilution-Mass Spectrometry of Hydrophobic Analytes Extracted from Wastewater by Stir Bar Sorptive Extraction;** Andrew Boggess; H.M. Skip Kingston; *Duquesne University, Pittsburgh, PA*

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MP 560 **Elucidation of Synthetic Lignin Oligomers by Tandem Mass Spectrometry;** Fan Huang; Bert C. Lynn; *University of Kentucky, Lexington, KY*

MP 561 **A GC/MS Procedure for the Rapid Characterization of Algal Liquefaction Products and Process Optimization;** Anna Caldwell[1]; Christian Richard[2]; Bhavish Patel[2]; John M. Halket[1, 3]; *[1]King's College London, London, UK; [2]Imperial College London, London, UK; [3]Specialist Bioanalytical Services Limited, Egham, UK*

MP 562 **Metaproteogenomic Approaches for Target Discovery of Glycoside Hydrolases and Auxiliary Activities in the Digestome of Lower Termite Coptotermes gestroi;** Fabio Squina[1]; Macelo Falsarella Carazzolle[2]; Ana Maria Costa-Leonardo[4]; Ramon Oliveira Vidal[2]; Gonçalo Guimarães Pereira[2]; Adriana Franco Paes Leme[3]; João Paulo Franco Cairo[1]; *[1]CTBE - CNPEM, Campinas, Brazil; [2]UNICAMP, Campinas, Brazil; [3]LNBio - CNPEM, Campinas, Brazil; [4]UNESP, Rio Claro, Brazil*

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MP 566 **Exploring Molecular Structures using In-source CID on µPy-GC-APCI-TOF Mass Spectrometry;** Nathan Bond[1]; Daniel Cole[2]; Allison Kvam[1]; Carolyn Hutchinson[2]; Young Jin Lee[2]; *[1]Iowa State University, Ames, IA; [2]Iowa State Univ Chemistry Dept, Ames, IA*

MP 567 **Negative APPI Fourier Transform Ion Cyclotron Resonance Mass Spectrometry for Analysis of Fast Pyrolysis Bio-Oils;** Carolyn Hutchinson; Kaitlin Heinen; Young Jin Lee; *Iowa State University, Ames, IA*

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MP 573 **Advanced MS Analysis of a Novel Biodiesel Production Method;** Derek Waggoner; Patrick Hatcher; *Old Dominion University, Norfolk, VA*

MP 574 **Small Anhydrooligosaccharides Represent Key Intermediates in Cellulose Fast Pyrolysis;** John Degenstein[1]; Priya Murria[1]; Matthew Hurt[2]; James Riedeman[1]; Mckay Easton[1]; Linan Yang [1]; John Nash[1]; Rakesh Agrawal[1]; W. Nicholas Delgass[1]; Fabio Ribeiro[1]; *[1]Purdue University, West Lafayette, IN; [2]Chevron, Richmond, CA*

MP 575 **Liquid Chromatography/Tandem Mass Spectrometric Method for Quantitative Characterization of Bio-oil from Fast Pyrolysis of Biomass;** Alex Dow; Vinod Kumar Venkatakrishnan; John Degenstein; James Riedeman; Tiffany Jarrell; Christopher Marcum; Ximeng You; Hilkka Kenttamaa; *Purdue University, West Lafayette, IN*

MP 576 **Characterization of Biomass and Biochar by LDI-FTICRMS;** Thierry Ghislain[1, 2]; Vincent Carré[3]; Yann Le Brech[2]; Guillain Mauviel[2]; Anthony Dufour[1, 2]; Frédéric Aubriet[3]; *[1]CNRS, Nancy, France; [2]Université de Lorraine, Nancy, France; [3]Université de Lorraine, Metz, France*

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MP 581 **LC-HRMS and Data Mining Tools for the Combined Metabolomic and Lipidomic Serum Profiling of Human Cohorts;** Samia Boudah[1, 2]; Etienne Thévenot[3]; Alexandre Seyer[4]; Simon Broudin[4]; Lydie Oliveira[1]; Florence Castelli[1]; Jean-Claude Tabet[5]; Benoit Colsch [1]; Christophe Junot[1]; *[1]LEMM-CEA-Saclay, Gif-Sur-Yvette, France; [2]GlaxoSmithKline - Centre de recherche F.Hyafil, Villebon-sur-Yvette, France; [3]DRT/LIST/DM2I/LADIS-CEA-Saclay, Gif-sur-Yvette, France; [4]Profilomic SA, Boulogne-Billancourt, France; [5]LCSOB-UPMC, Paris, France*

MP 582 **Discriminant Biomarkers of ARDS Associated to H1N1 Influenza Identified by Metabolomics HPLC-QTOF-MS/MS platform;** Alessia Ferrarini[1]; Laura Righetti[1, 2]; Francisco J. Rupérez[1]; MPaz Martínez[1]; Federica Pellati[2]; José A. Lorente[3]; Nicolás Nin[3, 4]; Coral Barbas[1]; *[1]CEMBIO, San Pablo CEU University, Madrid, Spain; [2]Università degli Studi di Modena e Reggio Emilia, Modena, Italy; [3]Hospital Universitario de Getafe, CIBERES, Getafe, Madrid, Spain; [4]Hospital Universitario de Torrejón, Torrejón, Madrid, Spain*

MP 583 **UPLC-MS Placental Profiling to Investigate Diseases of Pregnancy;** Elizabeth J Want[1]; Leanne Nye[1]; Julia Langer[1]; Catherine Williamson[2]; Peter Dixon[2]; *[1]Imperial College, London, UK; [2]Kings College, London, UK*

MP 584 **Effect of Ventilation in an Animal Model of Sepsis through a Multiplatform Lung Fingerprinting Approach: From Method Development to Application;** Shama Naz[1]; Yeny Rojas [2]; Leticia Martínez-Caro [3]; Nicolas Nin[4]; Miguel A. de La Cal[2]; Antonia García [1]; José A. Lorente[3]; Coral Barbas[1]; *[1]CEMBIO, Universidad CEU San Pablo, Boadilla, Madrid, Spain; [2]Hospital Universitario de Getafe-CIBERES, Madrid, Spain; [3]H.U. Getafe-CIBERES, Universida Europea, Madrid, Spain; [4]H.U. Getafe-CIBERES, H.U. de Torrejón, Madrid, Spain*

MP 585 **Strategies for the Interrogation of Dynamic Exometabolomic Profiles from Mock-Organ Bioreactors;** Cody Goodwin[1]; Katrin Zeilinger[4]; Marc Luebberstedt[4]; Ed Darland[5]; Emma Rennie[5]; Rashi Iyer[3]; Srinivas Iyer[3]; John Wikswo[2]; John A. Mclean[2]; *[1]Vanderbilt Univ Dept of Chem, Nashville, TN; [2]Vanderbilt University, Nashville, TN; [3]Los Alamos National Lab, Los Alamos, NM; [4]Charite University, Berlin, Germany; [5]Agilent Technologies, Santa Clara, CA*

MP 586 **Urinary Metabolomics Analysis Reveals the Impact of the Experimental, Surgical Menopause in Rats;** John Cutts; Stephen Barnes; Landon Wilson; Helen Kim; *University of Alabama at Birmingham, Birmingham, AL*

MP 587 **Development of a Standard Protocol for High-Throughput Metabolome Profiling of Urine using FIA- and nano-ESI Coupled with FT/ICR-MS;** Baiyi Xue[1]; Sandra Alves[2]; Francois Fenaille[3]; Benoit Colsch[3]; Jean-Claude Tabet[2]; Richard B. Cole[2]; Alain Paris[4]; Christophe Junot[3]; Estelle Rathahao-Paris[1]; *[1]INRA, AgroParisTech, Équipe IAQA, UMR 1145 Ingéni, Paris, France; [2]Univ. P. et M. Curie (Paris 6), Paris Cedex 05, France; [3]CEA, iBiTec-S, SPI, Gif Sur Yvette, France; [4]INRA, AgroParisTech, Mét@risk, Paris, France*

MP 588 **Metabolomics and Lipidomics Analysis of Murine Plasma and Aortic Tissue in Low Carbohydrate High Protein Diet in Apolipoprotein E-knockout Mice;** Dajana Vuckovic; Mathilde Triquigneaux; Olivia Koury; Andreas Bergdahl; *Concordia University, Montreal, Canada*

MP 589 **A Data-Independent MS/MS Approach to Metabolomics Profiling;** Anne E. Blackwell[1]; Mark J. Sartain[2]; Daniel Cuthbertson[3]; *[1]Agilent Technologies, Wilmington, DE; [2]Agilent Technologies, Santa Clara, CA; [3]Agilent Technologies, Denver, CO*

MP 590 **Comparative Metabolomics Analyses with IMS-MS Techniques to Determine Molecular Changes in Plasma Upon Exposing Rats to TiO_2 Nanoparticles;** Hossein Maleki; Gregory Donohoe; Stephen Valentine; *West Virginia University, Morgantown, WV*

MP 591 **Comparison of LC/MS Data Processing Methods For Lipidomic Data using MZmine 2.10 and Agilent Profinder;** Stephanie Samra; Brian DeFelice; Ingrid Gennity; Oliver Fiehn; *UC Davis, Davis, CA*

MP 592 **Metabolomic Studies Reveal that Huntingtin Protein is Essential for Mitochondrial Metabolism, Bioenergetics and Structure in Murine Embryonic Stem Cells;** Steven Gross[1]; Qiuying Chen[1]; Ismail Ismailoglu[1]; Lili Yang[1]; Melissa Popowski[2]; Ali Brivanlou[2]; *[1]Weill Cornell Medical College, New York, NY; [2]The Rockefeller University, New York, NY*

MP 593 **Metabolic Signature of Autism Spectrum Disorders Revealed by High Performance Isotope Labeling LC-MS;** Yiman Wu[1]; Chiao-Li Tseng[1]; Sidney Tam[2]; Kelvin SY Leung[3]; Liang Li[1]; *[1]University of Alberta, Edmonton, Canada; [2]Dept. of Clinical Biochemistry,Queen Mary Hospital, Hong Kong, PR China; [3]Hong Kong Baptist University, Hong Kong, PR China*

MP 594 **Metabolomic Analysis of Human Serum using Isotopic Labeling and High-resolution LC-MS for Parkinson's Disease Biomarker Discovery;** Wei Han; Shraddha Sapkota; Richard Camicioli; Roger Dixon; Liang Li; *University of Alberta, Edmonton, Canada*

MP 595 **Ion Mobility-MS-Based Metabolic Profiling to Distinguish Cancerous and Non-cancerous Breast Tissue Diseases;** Kelly Hines[1]; Billy Ballard[2]; Dana Marshall[2]; Emma Rennie[3]; John McLean[1]; *[1]Vanderbilt University, Nashville, TN; [2]Meharry Medical College, Nashville, TN; [3]Agilent Technologies, Santa Clara, CA*

MP 596 **Metabolomic Profiling of Anionic Metabolites in Oral Cancer Cells by Capillary Ion Chromatography HR/AM Mass Spectrometry;** Junhua Wang[1]; Terri Christison[2]; Kaori Misuno[3]; Shen Hu[3]; Ralf Tautenhahn[1]; Linda Lopez[2]; Yingying Huang[1]; *[1]Thermo Fisher Scientific, San Jose, CA; [2]Thermo Fisher Scientific, Sunnyvale, CA; [3]School of Dentistry and Jonsson Compre. Cancer Ctr, Los Angeles, CA*

MP 597 **Creation of Reproducible UHPLC-MS/MS Methodology and Compound Libraries for Clinical Metabolomic Applications;** Li Zhang[1]; Anna Mathew[2]; Jaeman Byun[1]; Kari Bonds[1]; Heidi Baum[1]; Sasha Raskind[1]; Stephen Brown [1]; Charles Burant[1]; Subramaniam Pennathur[2]; *[1]University of Michigan, MRC2, Ann Arbor, MI; [2]University of Michigan, Department of Internal Med, Ann Arbor, MI*

MP 598 **Untargeted Metabolomics Reveals that Ascorbic Acid Attenuates Glyceryl Trinitrate-Mediated Activation of the (hypo)Xanthine/Xanthine Oxidase System;** Jaewoo Choi[1]; Eunice Lee[2]; Cristobal L. Miranda[1]; Jan F. Stevens[1]; *[1]Oregon State University, Corvallis, OR; [2]University of Notre Dame, Notre Dame, IN*

MP 599 **A Serum Metabolomic *in vitro* Diagnostic Multivariate Index Assay for Prostate Cancer Detection;** Xiaoling Zang[1]; Christina Jones[1]; Tran Long[1]; María Eugenia Monge[1, 2]; Manshui Zhou[1]; L. DeEtte Walker[1]; Roman Mezencev[1]; Alexander Gray[1]; John McDonald[1]; Facundo Fernández[1]; *[1]Georgia Institute of Technology, Atlanta, GA; [2]CIBION-CONICET, Ciudad de Buenos Aires , Argentina*

MP 600 **Metabolomic Study of the Rice Blast Fungus Magnaporthe oryzae by GC x GC x QTOFMS;** William Ledford[1]; Margarita Marroquin-Guzman[1]; Richard Wilson[1]; Qingping Tao [2]; Stephen Reichenbach[2]; Zhanpin Wu[3]; Edward Ledford[3]; Sofia Aronova[4]; Jennifer Gushue [4]; Harry Prest[4]; *[1]University of Nebraska at Lincoln, Lincoln, NE; [2]GC Image LLC, Lincoln, NE; [3]Zoex Corporation, Houston, TX; [4]Agilent Technologies, Inc., Santa Clara, CA*

MP 601 **Examination of Human Serum Samples from Subjects with and without a Chronic Neurodegenerative Disorder;** Jason Winnike[1]; Simon Gregory[1, 2]; Xiang Zhang[3]; *[1]David H. Murdock Research Institute, Kannapolis, NC; [2]Duke Molecular Physiology Institute, Durham, NC; [3]University of Louisville, Louisville, KY*

MP 602 **Optimizing and Benchmarking Untargeted Metabolomics - Quantitative Evaluation of Instrumentation and Methodology to Allow Cross-Lab Comparisons;** Nathaniel G. Mahieu; Amanda Chen; Kevin Cho; Gary J. Patti; *Washington University, St. Louis, MO*

MP 603 **Effect of Cinnamaldehyde as an Antibacterial Agent on E.coli Growth using 96-blade SPME;** Fatemeh Mousavi; Barbara Bojko; Janusz Pawliszyn; *University of Waterloo, Waterloo, Canada*

MP 604 **Global Profiling of *E. coli* Metabolites using Liquid Chromatography- and Gas Chromatography-Mass Spectrometry;** Kelly H. Telu; Nirina R. Andriamaharavo; Ramesh Marupaka; Xinjian Yan; Yamil Simón-Manso; Stephen E. Stein; *NIST, Gaithersburg, MD*

MP 605 **Untargeted Metabolomics of *Neurospora crassa* Wild Type and the Os-2 Mutant under Heat Shock Stress and 2-deoxyglucose Treatment;** Yuan Xu; Dana M. Freund; Nora Plesofsky; Robert Brambl; Stephen Brockman; Adrian D. Hegeman; Jerry D. Cohen; *University of Minnesota, St. Paul, MN*

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MP 607 **Characterization of Metabolites from Medicago truncatula using Gas Chromatography HIgh Resolution Time-of-Flight Spectrometry – Knowns and Unknowns;** Jeffrey Patrick[1]; Joe Binkley[1]; David Alonso[1]; David Huhman[2]; Feng Qiu[2]; Dennis Fine[2]; Lloyd W. Sumner[2]; *[1]LECO Corporation, St. Joseph, MI; [2]Samuel Roberts Noble Foundation, Ardmore, OK*

MP 608 **Electron and Chemical Ionization on a Novel GC High Resolution Mass Spectrometer – Tools for the Identification of Unknown Metabolites;** Lorne Fell[1]; Jeffrey Patrick[1]; Oliver Fiehn[2]; John Meissen[2]; *[1]LECO Corporation, St. Joseph, MI; [2]UC Davis, Davis, CA*

MP 609 **Targeting and Identifying Trace Metal Metabolites;** Rene Boiteau[1, 2]; Daniel Repeta[2]; *[1]Massachusetts Institute of Technology, Cambridge, Massachusetts; [2]Woods Hole Oceanographic Institution, Woods Hole, MA*

MP 610 **Analysis of Flavonoids from Lotus Leaves by Combining Macroporous Resin Chromatography and LC-MS/MS;** Mingzhi Zhu[1]; Lili Jiao[2]; Wei Wu[2]; Mingquan Guo[1, 3]; *[1]Wuhan Botanical Garden, Chinese Academy of Science, Wuhan, China; [2]Changchun University of Chinese Medicine, Changchun, China; [3]University of Southern California, Alhambra, CA*

MP 611 **Indole Metabolomics: A Facile Means for the Identification of Indolic Compounds from Plant Tissues;** Peng Yu[1]; Janet P. Slovin[2]; Adrian D. Hegeman[1]; Jerry D. Cohen[1]; *[1]University of Minnesota, Saint Paul, MN; [2]USDA/ARS, Beltsville, MD*

MP 612 **Tracking the Cryptic Biochemistry of Specialized Metabolites in the Medicinal Plant *Camptotheca acuminata* using ^{13}C Isotopic Labeling;** Sujana Pradhan; *Michigan State University, East Lansing, US*

MP 613 **Development of Compound Identification Technique for Conjugated Unknown Compounds using Ion Trap Time-of-Flight Mass Spectrometry;** Tairo Ogura[1, 2]; Akihiro Tai[3]; Takeshi Bamba[2]; Eiichiro Fukusaki[2]; *[1]Shimadzu corporation, Kyoto, Japan; [2]Osaka University, Osaka, Japan; [3]Prefectural University of Hiroshima, Hiroshima, Japan*

MP 614 **Development of Tandem Mass Spectral Libraries for Plant Metabolomics and Metabolite Identifications;** Dennis D. Fine[1]; Feng Qiu[1]; Sandy Yates[2]; Romano Hebeler[3]; Aiko Barsch[3]; Lloyd W. Sumner[1]; *[1]Plant Biology Division, The Noble Foundation, Ardmore, OK; [2]Bruker Daltonics, Fremont, CA; [3]Bruker Daltonics, Bremen, Germany*

MP 615 **Mass Spectral Based Strategies for Rapid Identification of Novel Metabolites Unraveling Evolutionary Patterns of HGL-DTG Biosynthesis in the genus *Nicotiana*;** Sven Heiling[1]; Emmanuel Gaquerel[2]; Aiko Barsch[3]; Arnd Ingendoh[3]; Ian T. Baldwin[1]; *[1]Max Planck Institute for Chemical Ecology, Jena, Germany; [2]Centre for Organismal Studies Heidelberg, Heidelberg, Germany; [3]Bruker Daltonik, Bremen, Germany*

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MP 618 **Structure Elucidation of Novel Natural Products of Streptomycetes by Molecular Networking and Ion-Mobility Spectrometry;** Andrew R. Johnson[1]; Chan Gao[2]; Marie Elliott[2]; Erin E. Carlson[1]; *[1]Indiana University, Bloomington, IN; [2]McMaster University, Hamilton, ON, Canada*

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MP 620 **The Electrochemical Simulation of Selegiline Metabolism Leads to Generation of Amphetamines;** Przemyslaw Mielczarek[1]; Marek Smoluch[1]; Krzysztof Labuz[2]; Piotr Suder[1]; Jerzy Silberring[1, 3]; *[1]AGH University of Science and Technology, Krakow, Poland; [2]The Rydygier Hospital, Addiction Outpatient Clinic, Krakow, Poland; [3]Centre of Polymer and Carbon Materials, PAN, Gliwice, Poland*

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MP 623 **Addressing Identification Ambiguity in Untargeted Metabolomics by Processing Raw Spectra into a High Quality Reference Data;** Juraj Lutisan[1]; Yingying Huang[2]; Mark Sanders[2]; Eric Genin[3]; Robert Mistrik[1]; *[1]HighChem, Bratislava, Slovakia; [2]Thermo Fisher Scientific, San Jose, CA; [3]Thermo Fisher Scientific, Villebon sur Yvette, France*

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MP 629 **SWATH Libraries and Common Fragment Libraries for Metabolites Identification in Urine;** Gerard Hopfgartner[1]; Emmanuel Varesio[1]; Lyle Burton[2]; Eva Duchoslav[2]; Ron Bonner[2]; *[1]University of Geneva, Geneva, Switzerland; [2]AB SCIEX, Concord, ON*

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MP 632 **Integrated Metabolic Platform Including Automated Bligh and Dyer Extraction and Dual-Columns UHPLC-MS/MS Separations for the Analyses of Tissues and Cells;** Emmanuel Varesio[1]; Guenter Boehm[2]; Sandra Jahn[1]; Sandrine Cudre Correia De Almeida[1]; Renzo Picenoni[2]; Gerard Hopfgartner[1]; *[1]University of Geneva, Geneva, Switzerland; [2]CTC Analytics AG, Zwingen, Switzerland*

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MP 637 **Improved Methodology for Quantitative SRM Based LC-MS/MS for the Analysis of AcylCoAs for Rational Design of Synthetic Biology Processes;** Alex Apffel[1]; Laurakay Bruhn[1]; Jeff Hanson[2]; Michelle Chang[2]; *[1]Agilent Laboratories, Santa Clara, CA; [2]Dept. of Chemistry, UC Berkeley, Berkeley, CA*

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Somang Kim[11]; Kevin Bateman[11]; [1]*Lead Molecular Design, S.L., Sant Cugat Del Valles, Spain;* [2]*AbbVie, Ludwigshafen, Germany;* [3]*Biogen Idec, Cambridge, MA;* [4]*Bristol-Myers Squibb Company, Wallingford, CT;* [5]*Bruker, Billerica, MA;* [6]*F. Hoffmann-La Roche Ltd, Basel, Switzerland;* [7]*Pfizer Inc., Groton, CT;* [8]*Pompeu Fabra University, Barcelona, Spain;* [9]*University of Perugia, Perugia, Italy;* [10]*Merck Research Labs, Kenilworth, NJ;* [11]*Merck & Co., West Point, PA*

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MP 688 **A Mass Analyser Utilising a Toroidal DC Electrostatic Field: A Theoretical Approach;** Will Johnson; *Swansea University, Swansea, UK*

MP 689 **Large and Small, See Them All. A Study of Dynamic, Signal Dependent Optimization of Detector Gain in Triple Quad MS;** Felician Muntean; Barry Nesmith; Zicheng Yang; Ed George; Desmond Kaplan; *Bruker Daltonics, Fremont, CA*

MP 690 **Using a Fourier-Transform Quadrupole Ion Trap Operating with Advanced Ion Excitation Methods for High Performance Mass Analysis of Organic Hydrocarbons;** Michael Schmidt[1]; Albrecht Brockhaus[1];

Klaus Brockmann[1]; Thorsten Benter[1]; Alexander Laue[2]; Michel Aliman[2]; *[1]University of Wuppertal, Wuppertal, Germany; [2]Carl Zeiss AG, Oberkochen, Germany*

MP 691 **Microfabricated Silicon Ion Traps for Portable, High Pressure Mass Spectrometry;** Kenion Blakeman; Tina Stacy; Craig Cavanaugh; J. Michael Ramsey; *University of North Carolina, Chapel Hill, NC*

MP 692 **Tandem Mass Spectrometry using Miniature Cylindrical Ion Traps Operated at Ultra High Pressures;** Andrew Hampton; J. Michael Ramsey; *UNC - Chapel Hill, Chapel Hill, NC*

MP 693 **Study of the Impact of Gas Flow in a Microscale Ion Trap Operated at High Pressure;** Bruno Coupier; Dmitriy Chernookiy; Sorin Mitran; J. Michael Ramsey; *UNC Chapel Hill, Chapel Hill, NC*

MP 694 **Optimization of the Cylindrical Ion Trap Geometry USING Mesh Endcaps;** Dmitriy Chernookiy; Bruno Coupier; J. Michael Ramsey; *University of North Carolina at Chapel Hill, Chapel Hill, NC*

MP 695 **An Investigation of the Space of Trajectories in a Novel oa-TOF Geometry;** Keith Richardson; John B Hoyes; *Waters Corporation, Manchester, UK*

MP 696 **Toroidal Multipole Expansion for the Design of Circular Ion Traps;** Steve Lammert[1]; Ed Lee[1]; Joe Oliphant[1]; Randy Waite[1]; Daniel Austin[2]; Dennis Tolley[2]; Karl Warnick[2]; *[1]Torion Technologies, Inc, American Fork, UT; [2]Brigham Young University, Provo, UT*

MP 697 **Development of a Miniature Laser Desorption TOF-MS for Field Portable, High Confidence Detection of Low- and Non-volatile Samples;** Timothy Cornish[1]; Scott Ecelberger[1]; William Brinckerhoff[2]; Stephanie Getty[2]; *[1]C&E Research, Inc., Columbia, MD; [2]NASA GSFC, Greenbelt, MD*

MP 698 **Improved Electrostatic Ion Trap for Charge Detection Mass Spectrometry;** Deven Shinholt; Martin Jarrold; *IU Chemistry Dept., Bloomington, IN*

MP 699 **Simulation, Construction and Experimental Characterization of A Modified Dynamically Harmonized FT-ICR Cell;** Tong Chen[1]; Nathan K. Kaiser[1]; Chad R. Weisbrod[1]; Steven C. Beu[2]; Gregory T. Blakney[1]; John P. Quinn[1]; Daniel G. McIntosh[1]; Vaughan Williams[1]; Christopher L. Hendrickson[1]; Alan G. Marshall[1, 3]; *[1]National High Magnetic Field Laboratory, Tallahassee, FL; [2]S C Beu Consulting, Austin, TX; [3]Dept. of Chem. and Biochem., Florida State Univ., Tallahassee, FL*

MP 700 **Theory and Application of Instantaneous Frequency in FTMS;** Oleg Yu. Tsybin[1]; Anton N. Kozhinov[2]; Konstantin O. Nagornov[2]; Yury O. Tsybin[2]; *[1]Saint-Petersburg State Polytechnical University, Saint-Petersburg, Russia; [2]Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland*

MP 701 **Mapping Ion Cloud Dynamics Reveals Optimal Operation Regimes in FT-ICR MS;** Konstantin O. Nagornov; Anton N. Kozhinov; Yury O. Tsybin; *Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland*

MP 702 **Bringing Triple Quadrupole Detection Limits to a New Standard – in Theory and in Practice;** Michael Ugarov[1]; Anabel Fandino[1]; Michael Flanagan[1]; Thomas Glauner[2]; László Toelgyesi[2]; *[1]Agilent Technologies, Santa Clara, CA; [2]Agilent Technologies, Waldbronn, Germany*

MP 703 **Accurate Simulation of Image Charge Effects in Cylindrical and Harmonized FT-ICR Cells via Particle-in-Cell Method;** Joshua Driver[2]; Jon Amster[1]; Andriy Kharchenko[1]; Ron M.A. Heeren[3]; *[1]University of Georgia, Athens, GA; [2]Univ of Georgia, Athens, GA; [3]FOM Institute AMOLF, Amsterdam, Netherlands*

MP 704 **Investigation of Image Charge Effects in Electrostatic FT Mass-Analyzers by Computer Simulations;** Gleb Vladimirov[1, 2]; Andriy Kharchenko[4, 5]; Ron M.A. Heeren[4]; Eugene Nikolaev[1, 3]; *[1]Institute for Energy Problems of Chemical Physics, Moscow, Russia; [2]Emanuel Institute of Biochemical Physics, RAS, Moscow, Russia; [3]Orekhovich Institute of Biomedical Chemistry, RAMS, Moscow, Russia; [4]FOM Institute for Atomic and Molecular Physics, Amsterdam, Netherlands; [5]Glushkov Institute of Cybernetics of NAS, Kyiv, Ukraine*

MP 706 **Miniaturized Planar Electrode Linear Ion Trap (LIT) Mass Analyzer;** Ailin Li; Brett J. Hansen; Andrew T. Powell; Yuan Tian; Aaron R. Hawkins; Daniel E. Austin; *Brigham Young University, Provo, UT*

MP 707 **How Far Can Ion Trap Miniaturization Go? Space-Charge Limits and Scaling Parameters for Very Small Cylindrical Ion Traps (CITs);** Yuan Tian; Daniel Austin; *Brigham Young University, Provo, UT*

LCMS: Instrumentation, 709 - 726

MP 709 **Identification and Quantification of Electrochemically Generated Metabolites of Thyroxine (T4) by Means of LC-ESI-MS and LC-ICP-MS with Counter Gradient Elution;** Chun Kong Mak[1, 2]; Christoph A. Wehe[1]; Michael Sperling[1, 3]; Uwe Karst[1]; *[1]University of Muenster, Muenster, Germany; [2]NRW Graduate School of Chemistry, Muenster, Germany; [3]EVISA, Muenster, Germany*

MP 710 **Maximizing Nanoflow Spray Stability and Sensitivity using Automated Emitter Rinsing;** Amanda Berg; Helena Svobodova; Gary A. Valaskovic; *New Objective, Inc., Woburn, MA*

MP 711 **Validation of an In-Source Micro Flow LC-MS/MS Method for Bioanalysis;** Casey Johnson; Chad Christianson; Shane Needham; Sharon DeChenne; *Alturas Analytics, Moscow, ID*

MP 712 **Continuous Sampling System for Liquid Chromatography-Mass Spectrometry-Based Detection of Intact Proteins and Small Molecules;** Kendra R. Evans; Braydon L. Dymm; Dominick J. Alton; *University of Detroit Mercy, Detroit, U.S.*

MP 713 **Preparative Two Dimensional LC-SFC/MS Techniques for the Purification of Organic Compounds from the Complex Mixtures;** Zahid Ali; Mary Ababat; Lu Zeng; *Takeda California, San Diego, CA*

MP 714 **Applications of Supercritical Fluid Chromatography for Chiral Metabolite Separations in a DMPK Bioanalytical Laboratory;** Hermes Licea Perez[1]; Dana Knecht[1]; Christopher Evans[1]; Mark Wrona[2]; Paul Rainville[2]; *[1]Bioanalysis / GSK, King Of Prussia,; [2]Waters, Milford, MA*

MP 715 **A Novel Hybrid SFC/UHPLC/MS System Optimized for Low Peak Dispersion;** Patric Hoerth[1]; Rick Wikfors[2]; Tom A. van de Goor[1]; *[1]Agilent Technologies R&D, Waldbronn, Germany; [2]Agilent Technologies, Toughkenamon, PA*

MP 716 **Intelligent Algorithm for Multidimensional Optimization of Time of Flight Instrumentation;** Javier Satulovsky; Huy Bui; Brian Smart; William Frazer; Maithilee Samant; George Stafford; Gregor Overney; *Agilent Technologies, Santa Clara, CA*

MP 717 **Exploring the Uncharted Depths of the Complex Human Proteome using the Orbitrap Fusion Mass Spectrometer;** Graeme Mcalister; Jesse D. Canterbury; Philip M Remes; Shannon Eliuk; Vlad Zabrouskov; Michael W. Senko; *Thermo Fisher Scientific, San Jose, CA*

MP 718 **Q-Exactive Plus and Orbitrap Fusion: Determination of Optimal Settings for Peptide and Phosphopeptide Identification;** Thiago Verano-Braga; James Williamson; Alistair Edwards; Ole Nørregaard Jensen; Frank Kjeldsen;

Martin Røssel Larsen; *University of Southern Denmark, Odense, Denmark*

MP 719 **Qualitative and Quantitative Comparison of Q Exactive Plus and Orbitrap Fusion for Label Free and Isobaric Tag Based Quantification;** James Williamson; Thiago Verano-Braga; Alistair Edwards; Ole Nørregaard Jensen; Frank Kjeldsen; Martin Røssel Larsen; *University of Southern Denmark, Odense, Denmark*

MP 720 **Robustness Study of Peptides in Plasma using Novel Technologies in an LC-MS Instrument;** Karen Salomon; Maurizio Splendore; Louis Maljers; Zicheng Yang; Steven Schachterle; *Bruker, Fremont, CA*

MP 721 **Extending Inter Scan Linear Dynamic Range on a QqTOF platform;** Feng Zhong; Doug Simmons; J.C. Yves Leblanc; Nic Bloomfield; *AB SCIEX, Concord, On, Canada*

MP 722 **Electron Ionization in LC-MS: Increasing Selectivity and Sensitivity;** Achille Cappiello[1]; Hanno Evard[2]; Giorgio Famiglini[1]; Pierangela Palma[1]; Veronica Termopoli[1]; *[1]University of Urbino, Urbino, Italy; [2]University of Tartu, Tartu, Estonia*

MP 723 **Improved Sensitivity for Shotgun Proteomics on an ES TOF Instrument through a Combination of Acetonitrile Dopant and Zero Dead-Volume CaptiveSpray;** Scarlet Beck[1]; Igor Paron [1]; Annette Michalski[2]; Stephanie Kaspar[2]; Markus Lubeck[2]; Carsten Baessmann[2]; Juergen Cox[1]; Matthias Mann[1]; *[1]Max Planck Institute of Biochemistry, Martinsried, Germany; [2]Bruker Daltonik GmbH, Bremen, Germany*

MP 724 **Coupling Laser Ablation Sample Transfer and LC-ESI-MS for tissue imaging;** Fabrizio Donnarumma; Kermit K. Murray; *Louisiana State University, Baton Rouge, LA*

MP 725 **Capillary Exit Voltage-Induced vs. CID Fragmentation Behavior of Four Antiviral Drugs in an Agilent Ion Trap Mass Spectrometer;** Mohamed W Attwa; Nasser Salem; Ali S. Abdelhameed; A. F. M. Motiur Rahman; Adnan A. Kadi; *King Saud University, Riyadh, Saudi Arabia*

MP 726 **A Comparative Study of Chalcones Fragmentation: Induced In-source Fragmentation in ESI-Triple Quadrupole with MS3 in ESI-Ion Trap;** Adnan A Kadi; Mohamed W. Attwa; A. F. M. Motiur Rahman; *King Saud University, Riyadh, Saudi Arabia*

LCMS Chromatography, 727 - 752

MP 727 **Spectroscopic Investigation in Differentiating Random from Block Polyether Copolymers using Reversed-Phase LC Coupled with ELSD or MS;** Robielyn Ilagan; Shenmin Pan; Ernest Long; *MacDermid Electronics Solutions, Waterbury, CT*

MP 728 **Combining Mass Spectra with UV Spectra for Orthogonal Chromatographic Detection and Peak Identification;** Thomas E. Wheat[1]; Aparna Chavali[2]; Sean McCarthy[2]; Paula Hong[2]; Patricia McConville[2]; *[1]Waters Corporation, Hopedale, MA; [2]Waters Corporation, Milford, MA*

MP 729 **Routine MS Detection Applied to USP Chromatographic Methods;** Thomas E. Wheat[1]; Daniel Root[2]; Aparna Chavali[2]; Patricia McConville[2]; *[1]Waters Corporation, Hopedale, MA; [2]Waters Corporation, Milford, MA*

MP 730 **Applicability of novel Supercritical Fluid Chromatography Tandem Quadrupole-Time of Flight Mass Spectrometry;** Jianzhong Li; Ying Meng; Tao Bo; Rong An; *Agilent Technologies(China), Beijing, China*

MP 731 **Coupling of HPLC with ESI-MS for Studying the Aging of Ultrasmall Multimodal Nanoparticles;** Charles Truillet; François Lux; Olivier Tillement; Philippe Dugourd; Rodolphe Antoine; *Institut Lumière Matière, UMR5306 Université Lyon, Villeurbanne, France*

MP 732 **Sensitivity of Detection of 12 Aminoglycoside Antibiotics by Positive ESI – Comparison between HILIC and Reverse Phase Methods;** Olga Shimelis; Emily Barrey; Dave Bell; Craig Aurand; *Sigma-Aldrich, Bellefonte, PA*

MP 733 **Orthogonal Fast and Ultra-Fast Reverse Phase Chiral LC/MS Methods for the Analysis of Stereoisomeric Pharmaceutical Compounds;** Alfonso Espada; Cristina Anta; *Lilly S.A., Alcobendas, Spain*

MP 734 **Improved LC-MS/MS Method for the Quantitation of the Plant Hormones Abscisic Acid and Indole-3-Acetic Acid;** Yongxin Nie[1]; Yinggao Liu[1]; Hongxia Jiang[1]; Ron Orlando[2]; *[1]ShanDong Agricultural University, Taian, SD; [2]University of Georiga, Athens, GA*

MP 735 **Development of a Sensitive LC/MC/MS Assay for the Analysis of Total Testosterone and Steroids in Human Serum;** Liming Peng[1]; Cheni Krishnan[2]; Eric Davis[2]; Xiaohong Chen[1]; Bhasin Shalender[1]; *[1]Brigham and Women's Hospital, Boston, Massachusetts; [2]AB Sciex, Foster City, CA*

MP 736 **The Application of Multiple LC/MS Methods to Help Determine the m/z of a Low Level Impurity in a Drug Product;** Wendy Hengwen Zhong; Michael Matchett; Randy Wilhelm; *Mallinckrodt, Saint Louis, MO*

MP 737 **Selection of Negative Mode Standard in LC-MS under Neutral Condition for Assessing Solvent Quality;** Subhra Bhattacharya; Deva H. Puranam; Stephen C. Roemer; *Thermo Fisher Scientific, Fair Lawn, NJ*

MP 738 **Improved Automated Reversed-Phase HPLC-MS Methods for Quantitative Amino Acid Analysis;** Keely Glass[1]; Jen Skerritt[1]; Carol Jiang [1]; Roman Lin[1]; George Dubay[1]; Amy Huang[1]; John Simon[1, 2]; *[1]Duke University, Durham, NC; [2]Univeristy of Virginia, Charlottesville, VA*

MP 739 **Analysis of D- and L-amino Acids using Automated Pre-Column Derivatization and Liquid Chromatography-Electrospray Ionization Mass Spectrometry;** Kenichiro Tanaka[1]; Hidetoshi Terada[2]; Yoshiko Hirao[2]; Kiyomi Arakawa[2]; Yoshihiro Hayakawa[2]; *[1]Shimadzu Scientific Instruments, Inc., Columbia, MD; [2]Shimadzu Corporation, Kyoto, Japan*

MP 740 **Development of a Novel Amino Acids Analysis Column for LC-MS without Derivatization;** Itaru Yazawa; Hiroshi Tachikawa; *Imtakt Corporation, Kyoto, Japan*

MP 741 **LC-MS Analysis of "Dirty" Food and Pharma Samples with Monolithic Silica Columns;** Stephan Altmaier; Egidijus Machtejevas; Karin Cabrera; *Merck Millipore, Merck KGaA, Darmstadt, Germany*

MP 742 **Full Optimization of LCMS Methods to Increase Robustness of Complicated Matrix Containing Samples using Active Flow Management Chromatography;** Eric Stover[1]; Mark Dreyer[1]; Mary Blackburn[1]; Luisa Pereira[2]; *[1]Thermo Fisher Scientific, San Jose, CA; [2]Thermo Fisher Scientific, Runcorn, Cheshire, UK*

MP 743 **Analyzing Highly Organic Samples, Polar Analytes, and Large Volume Injections using Microflow Chromatography Coupled with Mass Spectroscopy;** Subodh Nimkar[1]; Khaled Mriziq[1]; Leo Wang[2]; *[1]SCIEX Separations, Division of AB SCIEX, Redwood City, CA; [2]AB SCIEX, Redwood City, CA*

MP 744 **Fabrication of Stage-Frit NanoLC column for Proteomic Analysis;** Ming-Yueh Hsieh; He-Hsuan Hsiao; *NCHU, Department of Chemistry, Taichung, Taiwan*

MP 745 **Advancing Host Cell Protein Analyses through Improved Microscale Peptide Separations and 2D UHPLC Chromatography;** Matthew Lauber; Catalin Doneanu; Stephan Koza; Weibin Chen; Kenneth Fountain; *Waters Corporation, Milford, MA*

MP 746 **Design and Evaluation of a Modified Salt Pulse Scheme for Increased Measurement Depth in a MudPIT Proteome Experiment;** Ramsunder Iyer[1, 2]; Richard J. Giannone[1]; Robert Hettich[1]; *[1]Oak Ridge National Laboratory, Oak Ridge, TN; [2]University of Tennessee, Knoxville, TN*

MP 747 **Finding the Appropriate LC Setup for Proteomics Experiments Depending on the Sample Complexity using Chip-Based Columns;** Jan Muntel[1]; Helena Svobodova[2]; Gary A. Valaskovic[2]; Saima Ahmed[1]; Kevin Broadbelt[1]; Omar Barnaby[1]; Hanno Steen[1]; *[1]Boston Children's Hospital, Boston, MA; [2]New Objective, Woburn, MA*

MP 748 **Improved Protein Identification by nanoLC/MS/MS using Chip Based Columns with Integrated Post-Column Addition of DMSO for Increased Sensitivity;** Remco van Soest[1]; Christie Hunter[2]; Hao Yang[1]; *[1]Sciex Separations, Redwood City, CA; [2]AB SCIEX, Redwood City, CA*

MP 749 **Normal Phase LC/MS Post Additive Infusion for Vitamin D3 EP Method 01/2013:0072 With No LC Modifications;** Keith Rippel; *Pfizer Consumer Healthcare, Richmond, VA*

MP 750 **Enhancing MS Sensitivity in Negative Electrospray Mode by Post-Column Addition of a Modifier;** Angela Doneanu[1]; James Murphy[2]; *[1]Waters, Milford, MA; [2]Waters Corporation, Milford, MA*

MP 751 **Optimization of Intact Protein RP-LC-MS Analysis using a Characterized Standard Protein Mix;** Benjamin Cutak; Jim Blasberg; Gordon Nicol; Kevin Ray; *Sigma-Aldrich, Saint Louis, MO*

MP 752 **Assessment of the Effects of Intact Protein Mass Measurements by On-Line Liquid Chromatography Coupled with Mass Spectrometry;** Jinghua Zhu; Qishan Lin; *State University of New York at Albany, Rensselaer, NY*

LCMS Sample Preparation I (Drugs and Metabolites), 753 - 786

MP 753 **Automating On-Line Extraction, Derivatization and Cleanup with LC-MS to Measure Estrogens in Biological Fluids;** Jennifer Poshkus[1]; Heather Heilman[1]; Joseph Di Bussolo[2]; *[1]West Chester University of Pennsylvania, West Chester, PA; [2]Thermo Fisher Scientific, West Chester, PA*

MP 754 **LC-MS/MS with Novel Online Cleanup Valving Solution for Quantitative Analysis of Testosterone in Serum;** Andre Szczesniewski; Sheher Bano Mohsin; *Agilent Technologies, Schaumburg, IL*

MP 755 **Analysis of Vitamin D3 in Dietary Supplements by 2-dimensional LC System;** Taku Tsukamoto; Kazuhiro Sonomura; Keiko Yamabe; Kiyomi Arakawa; Yoshihiro Hayakawa; *Shimadzu Corporation, Kyoto, Japan*

MP 756 **A Reduced Workflow Method for the Extraction of Vitamin B7 from Human Serum with No Drydown Prior to Mixed-Mode LC-MS/MS;** Frank Kero; Victor Vandell; Lee Williams; Geoff Davies; Adam Senior; Rhys Jones; Helen Lodder; Elena Gairloch; Claire Desbrow; Wendy Hartsock; *Biotage, Charlotte, NC*

MP 757 **Comparison of SPE Approaches for the Extraction of Thyroid Hormones: T3, rT3 and T4 prior to LC-MS/MS Analysis;** Lee Williams[1]; Helen Lodder[1]; Adam Senior[1]; Rhys Jones[1]; Alan Edgington[1]; Geoff Davies[1]; Steve Jordan[1]; Claire Desbrow[1]; Victor Vandell[2]; Frank Kero[2]; *[1]Biotage GB Limited, Cardiff, UK; [2]Biotage LLC, Charlotte, NC*

MP 758 **Supported Liquid Extraction of Vitamin D Metabolites: 25-hydroxy and 1α,25-dihydroxy Vitamin D_2/D_3 using PTAD Derivatization Prior to LC-MS/MS Analysis;** Rhys Jones[1]; Alan Edgington[1]; Lee Williams[1]; Adam Senior[1]; Helen Lodder[1]; Geoff Davies[1]; Steve Jordan[1]; Claire Desbrow[1]; Victor Vandell[2]; Frank Kero[2]; *[1]Biotage GB Limited, Cardiff, UK; [2]Biotage LLC, Charlotte, NC*

MP 759 **Vitamin D Metabolites in Serum: Extraction using Phospholipid Depletion Technology (PLD) Prior to UPLC-MS/MS Analysis;** Victor Vandell[1]; Lee Williams[2]; Alan Edgington[2]; Frank Kero[1]; Elena Gairloch[1]; Rhys Jones[2]; Adam Senior[2]; *[1]Biotage, Charlotte, NC; [2]Biotage GB Limited, Cardiff, N/A*

MP 760 **Extraction of Antiepileptic Drugs from Biological Fluids using Supported Liquid Extraction (ISOLUTE® SLE+) in 96-Well Plate Prior to LC-MS-MS Analysis;** Victor Vandell[1]; Frank Kero[1]; Elena Gairloch[1]; Lee Williams[2]; Adam Senior[2]; Rhys Jones[2]; Geoff Davies[2]; Alan Edgington[2]; *[1]Biotage, Charlotte, NC; [2]Biotage GB Limited, Cardiff*

MP 761 **Extraction of Mycophenolic Acid and Mycophenolic Acid Metabolite from Serum using Supported Liquid Extraction Prior to LC-MS-MS Analysis;** Victor Vandell[1]; Frank Kero[1]; Elena Gairloch[1]; Lee Williams[2]; Adam Senior[2]; Rhys Jones[2]; Geoff Davies[2]; Alan Edgington[2]; Martin Cherrier[1]; *[1]Biotage, Charlotte, NC; [2]Biotage GB Limited, Cardiff, N/A*

MP 762 **Single Step Separation of Plasma from Whole Blood without the Need for Centrifugation Applied to the Quantitative Analysis of Warfarin;** Alan J Barnes[1]; Adam McMahon[2]; Neil J Loftus[1]; *[1]Shimadzu, Manchester, UK; [2]WMIC, University of Manchester, Manchester, UK*

MP 763 **Fully Automated Analysis of Immunosuppressant Drugs with ZinMass-200 Clinical LC-MS/MS Analyzer;** Murat Celik; Huseyin Avni Cavdar; *ZIVAK Technologies, Istanbul, Turkey*

MP 764 **Challenges and Strategies in Developing an Ultrafiltration/LC/MS/MS Assay for Quantitation of Unbound Paclitaxel in Human Plasma Following Abraxane Treatment;** Linge Li; Michael P. Waldron; Bruce Hidy; Rand Jenkins; *PPD, Richmond, VA*

MP 765 **Troubleshooting of Low Recovery of LC-MS Method for 2-Hydroxypyridine-N-oxid (HOPO) in a Drug Candidate Substance during Technical Transfer;** Gang Tang; Qinggang Wang; Peter Tattersal; *Bristol-Myers Squibb, New Brunswick, NJ*

MP 766 **Removal of Phospholipids using Phosphate-Selective Sorbent;** Chiaki Aoyama; Shigenori Ota; Yuko Yui; Kosuke Osaka; Masakazu Takahashi; Masayoshi Ohira; *GL Sciences Inc., Shinjuku-Ku, Japan*

MP 767 **Extraction of Telmisartan from Human Plasma using an Improved Capacity Supported Liquid Extraction (SLE) 96-well Plate;** Matthew Cleeve; Tina Ovitt; *Kinesis, St Neots, UK*

MP 768 **Extraction of Indomethacin and Ibuprofen from Small Volume Biological Fluid Samples using a New Versatile µElution SPE 96-well Plate Format;** Matthew Cleeve; *Kinesis, St Neots, UK*

MP 769 **Quantification of 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanol (NNAL) in Urine using Solid-Phase Extraction and UPLC-ES/MS/MS;** Kellie Woodling[1]; Frank Kero[2]; Victor Vandell[2]; Goncalo Gamboa da Costa[1]; *[1]NCTR, Jefferson, AR; [2]Biotage, Charlotte, NC*

MP 770 **High-Throughput SPME-UPLC-MS as a Convenient Method for the Simultaneous Determination of Various Prohibited Substances in Urine and Plasma;** Nathaly Reyes-Garcés; Ezel Boyaci; Krzysztof Gorynski; Ángel Rodríguez-Lafuente; Barbara Bojko; Janusz Pawliszyn; *University of Waterloo, Waterloo, Canada*

MP 771 **A New Approach to Automated Method Development for LC-MS/MS Sample Preparation;** Guy Burssens[1]; Roland Geyer[1]; Jeffrey Enders[2]; *[1]Tecan, Männedorf, Switzerland; [2]Ameritox, Ltd., Greensboro, TN*

MP 772 **Automated Hydrolysis, DPX Extraction and LC/MS/MS Analysis of Pain Management Drugs from Urine;** Fred Foster[1]; Oscar Cabrices[1]; John Stuff[1]; Edward Pfannkoch[1]; William Brewer[2]; *[1]Gerstel, Inc., Linthicum, MD; [2]University of South Carolina, Columbia, SC*

MP 773 **Utilizing Beta Glucuronidase Enzymatic Digest for LC/MS Analysis for Glucuronide Metabolites;** Craig Aurand; Dave Bell; Emily Barrey; Olga Shimelis; *Sigma Aldrich, Bellefonte, PA*

MP 774 **Aminoglycoside Analysis in Pork Muscle using Molecularly Imprinted Polymer Cleanup and LC-MS/MS Detection;** Emily Barrey; Olga Shimelis; Carmen Santasania; Xiaoning Lu; *Sigma-Aldrich, Bellefonte, PA*

MP 775 **Identification and Quantification of Lignin Degradation Products in Highly Saline Mixtures by Two-Stage HPLC Coupled with ESI Tandem Mass Spectrometry;** Hanyu Zhu[1]; Christopher Marcum[1]; Christopher Gulvik[2]; Alison Buchan[2]; Hilkka Kenttämaa[1]; *[1]Purdue University, West Lafayette, IN; [2]University of Tennessee, Knoxville, TN*

MP 776 **A New Fully Automated Online SPE/HPLC-MS/MS Method for the Determination of Phenoxycarboxylic Acids in Water;** Franziska Chmelka[1]; Oscar Cabrices[2]; Edward Pfannkoch[2]; *[1]Labor Dr. Helle GmbH & Co.KG, Bremerhaven, Germany; [2]Gerstel Inc., Linthicum, MD*

MP 777 **Simplified Dioxin Sample Preparation using a Novel Carbon Adsorbent;** Dr. Conor Smith; *United Science Corp, Minneapolis, MN*

MP 778 **Removing Phthalate Contamination from Organic Solvents using a Novel Carbon Sorbent;** Doug Fryer; *United Science Corp, Minneapolis, MN*

MP 779 **New Solvent Grade Targeted for Trace Analysis by UHPLC-MS;** Subhra Bhattacharya; Deva H. Puranam; Stephen C. Roemer; *Thermo Fisher Scientific, Fair Lawn, NJ*

MP 780 **Aminopyrene and Aminopyrene-based GUMBOS as Novel Matrices for MALDI-MS;** Hashim Alghafly; Kermit K. Murray; Isiah M. Warner; *Baton Rouge, LA*

MP 781 **Bioanalytical Considerations for Utilizing a Capillary Micro-sampling Device for Plasma Collection and Isolation with LC-MS Detection;** Sharon Boram[1]; Chester L Bowen[1]; Jim Kenney[2]; Joseph Siple[2]; *[1]GlaxoSmithKline, King Of Prussia, PA; [2]Drummond Scientific, Broomall, PA*

MP 782 **A Simplified Load-Wash-Elute Solid Phase Extraction Protocol for the Oasis® HLB µElution Plate;** Xin Zhang; Pamela Iraneta; Frank Marszalkowskil; *Waters Corp, Milford, MA*

MP 783 **Evaluation of a Novel 96-well Filter Plate for the Effective Removal of Serum Protein and Phospholipids prior to LC-MS/MS Analysis;** Lee Williams[1]; Helen Lodder[1]; Geoff Davies[1]; Steve Plant[1]; Adam Senior[1]; Alan Edgington[1]; Rhys Jones[1]; Steve Jordan[1]; Claire Desbrow[1]; Victor Vandell[2]; Frank Kero[2]; *[1]Biotage GB Limited, Cardiff, UK; [2]Biotage, Charlotte, NC*

MP 784 **Assessing Efficiency of Matrix Cleanup using Concise LC-QQQ Methods of Lipid Detection;** Irina Dioumaeva[1]; Bruce Richter[2]; *[1]Agilent Technologies, Inc., Lake Forest, CA; [2]Agilent technologies, Inc., Little Falls, DE*

MP 785 **Evaluation of Electrospray Ionization Effects on Jurkat-T Human Leukemia Cell Washing Buffers & Lipid Extraction Methods by LC-MS;** Candice Ulmer[1]; Jing Chen[2]; Timothy Garrett[3]; Clayton Matthews[2]; Richard A. Yost[1]; *[1]Dept. of Chemistry, Univ of Florida, Gainesville, FL; [2]Immunology & Laboratory Science, Univ of Florida, Gainesville, FL; [3]CTSI, Dept. of Pathology, Univ of Florida, Gainesville, FL*

MP 786 **The Impact of Euthanasia Methods and Preanalytical Sample Handling in Lipid Analysis;** Fredrik Jernerén[4]; Jörg Hanrieder[2]; Marcus Söderquist[3]; Oskar Karlsson[1]; *[1]Uppsala University, Uppsala, Sweden; [2]Chalmers Tech. University, Gothenburg, Sweden; [3]Denator, Uppsala, Sweden; [4]University of Oxford, Oxford, UK*

7:30 – 8:00 am..... Set up all Tuesday posters
10:30 am – 1:00 pm.....Odd-numbered posters present
12:00 – 2:30 pm..... Even-numbered posters present
7:30 – 8:00 pm..... Remove all Tuesday posters

Imaging MS: Method Development, 001 - 013

TP 001 **High-Throughput Single Cell Profiling via Optically-Guided MALDI-TOF MS;** Ta-Hsuan Ong; David Kissick; Stanislav Rubakhin; Jonathan Sweedler; *University of Illinois at Urbana-Champaign, Urbana, IL*

TP 002 **Imaging of Lipids in Kidney using Silver Nanoparticles;** Shelley N Jackson[1]; Ajay Kailas[1]; Ludovic Muller[1]; Aurelie Roux[1]; J Albert Schultz[2]; Amina S. Woods [1]; *[1]NIDA-IRP, NIH, Baltimore, MD; [2]Ionwerks Inc, Houston, TX*

TP 003 **Imaging of N-linked Glycans from Formalin-fixed Paraffin-embedded Tissue Sections Using MALDI Mass Spectrometry;** Shadi Toghi Eshghi; Shuang Yang; Punit Shah; Jered Pasay; Xingde Li; Hui Zhang; *Johns Hopkins University, Baltimore, MD*

TP 004 **Lipid Visualisation and Identification through collision Cross Section Aided Correlation of MALDI Imaging and MS/MS Fragmentation Data Sets;** Mark Towers; Emmanuelle Claude; Johannes Pc Vissers; *Waters Corporation, Manchester, UK*

TP 005 **Comprehensive Characterization of the Mouse Brain Proteome Sampled in Mass Spectrometry Imaging studies;** Bram Heijs[1]; Ricardo J. Carreira[1]; Reinald Shyti[2]; Arn van den Maagdenberg[2]; Peter van Veelen[3]; Liam McDonnell[1]; *[1]Center for Proteomics and Metabolomics, LUMC, Leiden, The Netherlands; [2]Department of Human Genetics, LUMC, Leiden, The Netherlands; [3]Dept of Immunohematology & Blood Transfusion, LUMC, Leiden, The Netherlands*

TP 006 **Correlated Imaging Mass Spectrometry and Raman Spectroscopy for Oncology and Drug Resistance;** Dorothy Ahlf[1]; Amanda B. Hummon[2]; Paul Bohn[2]; *[1]University of Notre Dame, South Bend, IN; [2]University of Notre Dame, Notre Dame, IN*

TP 007 **On-Chip Characterization of Brain Tumor Heterogeneity and Single-Cell Drug Susceptibility Analysis by Mass Spectrometry Imaging;** David Calligaris[1]; Denis Loginov[2]; Revaz Machaidze[1]; Isaiah Norton[1]; Daniel R. Feldman[3]; John A. Alberta[4]; Charles D. Stiles[4]; Christopher J. Love[2]; Nathalie Y. R. Agar[1]; *[1]Department of Neurosurgery, BWH/HMS, Boston, MA; [2]Department of Chemical Engineering, MIT, Cambridge, MA; [3]Department of Pathology, BWH/HMS, Boston, MA; [4]Department of Cancer Biology, DFCI/HMS, Boston, MA*

TP 008 **Improved Spatial Resolution in the Analysis of FFPE Tissue after Tryptic Digestion;** Janine Beckmann[1]; Nannan Tao[2]; Janina Oetjen[3]; Detlev Suckau[1]; Theodore Alexandrov[4]; Michael Becker[1]; *[1]Bruker Daltonik GmbH, Bremen, GERMANY; [2]Bruker Daltonics Inc., Freemont, CA; [3]MALDI Imaging Lab, University of Bremen, Bremen, Germany; [4]Center for Industrial Mathematics, Bremen, Germany*

TP 009 **Assessment of Blood-Brain Barrier Crossing using MSI: New Predictive Tools for CNS Targeted Drug Efficacy Study;** Gregory Hamm; Fabien Pamelard; David Bonnel; Raphael Legouffe; Guillaume Hochart; Jonathan Stauber; *ImaBiotech, MS Imaging Dept., Loos, FRANCE*

TP 010 **3D Imaging of TiO_2 Nanoparticle Exposure Effects on Tetrahymena pyriformis;** Tina B. Angerer; John S. Fletcher; *University of Gothenburg, Gothenburg, Sweden*

TP 011 **Toward Quantitative Infrared Matrix Assisted Laser Desorption Electrospray Ionization (IR-MALDESI) Mass Spectrometry Imaging of Biological Tissue;** Mark Bokhart[1]; Guillaume Robichaud[1]; Jeremy Barry[1]; Angela Kashuba[2]; Craig Sykes[2]; David Muddiman[1]; *[1]North Carolina State University, Raleigh, NC; [2]The University of North Carolina, Chapel Hill, NC*

TP 012 **Quantitative Laser Desorption Ionization Mass Spectrometry Imaging of Elements Directly in Histological Tissue Sections;** Jinrui Gan; Mohammadreza Shariatgorji; Anna Nilsson; Patrik Kallback; Per E. Andren; *Uppsala University, Uppsala, Sweden*

TP 013 **On tissue Chemical Derivatization of Primary Amines: Application to Quantitative MALDI-MS Imaging of Neuropeptides and Amino Acids;** Mohammadreza Shariatgorji[1]; Oskar Karlsson[1]; Anna Nilsson[1]; Henrik Lodén[1]; Xiaoqun Zhang[2]; Per Svenningsson[2]; Per E. Andren[1]; *[1]Uppsala University, Uppsala, Sweden; [2]Karolinska Institutet, Stockholm, Sweden*

Imaging MS: Small Molecules and Drugs, 014 - 046

TP 014 **Quercetin as a Highly Efficient MALDI Matrix for Negative-Ion Tissue Imaging by FTICR-MS;** Xiaodong Wang[1]; Jun Han[1]; Juncong Yang[1]; Jingxi Pan[1]; Christoph Borchers[1, 2]; *[1]University of Victoria-Genome BC Proteomics Centre, Victoria, Canada; [2]UVic Dept of Biochemistry and Microbiology, Victoria, Canada*

TP 015 **Mass Spectrometry Imaging Data Co-Registered with Allen Brain Atlas Reveals the Accumulation of fatty Acids in the Hindbrain of MFP-2 Deficient Mice;** Karolina Škrášková[1, 2]; Gert Eijkel[1]; Myriam Baes[3]; Paul P. Van Veldhoven[4]; Stephanie de Munter[3]; Artem Khmelinskii[5, 6]; Walid M. Abdelmoula[6]; Jouke Dijkstra[6]; Ron M.A. Heeren[1, 2]; *[1]FOM Institute AMOLF, Amsterdam, The Netherlands; [2]TI-COAST, Amsterdam, The Netherlands; [3]Laboratory of Cellular Metabolism, KU Leuven, Leuven, Belgium; [4]LIPIT, KU Leuven, Leuven, Belgium; [5]Percuros B.V., Enschede, The Netherlands; [6]Department of Radiology, LUMC, Leiden, The Netherlands*

TP 016 **Quantitative Molecular Imaging of Neurotransmitters Measured Directly from Histological Tissue Sections in Experimental Models of Parkinson's Disease;** Mohammadreza Shariatgorji[1]; Anna Nilsson[1]; Nicoletta Schintu[2]; Richard J. A. Goodwin[1]; Xiaoqun Zhang[2]; Alan Crossman[3]; Erwan Bezard[4]; Per Svenningsson[2]; Per E. Andren[1]; *[1]Uppsala University, Uppsala, Sweden; [2]Karolinska Institutet, Stockholm, Sweden; [3]University of Manchester, Manchester, UK; [4]University of Bordeaux 2, Bordeaux, France*

TP 017 **Detection of Ammonia on Human Colon Cancer-Bearing Livers of Superimmunideficient NOG Mice by MALDI MS Imaging;** Akiko Kubo[1, 2]; Mitsuyo Ohmura[1]; Tsuyoshi Nakanishi[3]; Makoto Suematsu[1, 2]; *[1]Keio University, Tokyo, Japan; [2]ERATO Suematsu gas biology project, Tokyo, Japan; [3]Shimadzu Corporation, Kyoto, Japan*

TP 018 **Food-induced Changes of Lipids and Vitamins in Rat Neuronal and Intestinal Tissue Visualized by Imaging ToF-SIMS;** Masoumeh Dowlatshahipour[2]; Eva Jennische[3]; Stefan Lange[3]; Per Malmberg[1]; Andrew Ewing[1]; *[1]University of Gothenburg, Gothenburg, Sweden; [2]Chalmers University of Technology, Gothenburg, Sweden; [3]Institute of Biomedicine, Gothenburg, Sweden*

TP 019 **Characterizing the Chemotypic Landscape of Polymicrobial Biofilms;** Vanessa Phelan[1]; Julieta Aguilar[1]; Kit Pogliano[1]; Pieter Dorrestein [2]; *[1]UC, San Diego, La Jolla, CA; [2]University of California, San Diego, Skaggs school, La Jolla, CA*

TP 020 **High Resolution Mass Spectrometry Imaging of Plant Tissues: Towards a Plant Metabolome Atlas;** Andreas Roempp[1]; Dhaka Bhandari[1]; Wolfgang Friedt[2]; Sven Gottwald[2]; Bernhard Spengler[1]; *[1]Analytical Chemistry, Justus Liebig University, Giessen, Germany; [2]Plant Breeding, Justus Liebig University, Giessen, Germany*

TP 021 **MALDI/LDI-FTICR Mass Spectrometry Imaging for Plant Tissue Analysis to Distinguish Changes in Metabolite Distributions under Different Stimulus Environments;** Katsutoshi Takahashi; *Nat'l Institute Advan. Indus. Sci Tech, Tokyo, Japan*

TP 022 **Chemical Interface of Plant-Pathogen Interactions Explored by MALDI MS Imaging;** Adam Klein[1, 2]; Gargey Yagnik[1, 2]; Rebecca Hansen[1, 2]; Young Jin Lee[1, 2]; *[1]Iowa State University, Ames, IA; [2]Ames Laboratory-USDOE, Ames, IA*

TP 023 **Biopsy Analysis Using Flowprobe Mass Spectrometry;** Mariam S ElNaggar[1]; Brendan Prideaux[2]; Veronique Dartois[2]; Justin Wiseman[1]; *[1]Prosolia, Inc., Indianapolis, IN; [2]PHRI, Newark, NJ*

TP 024 **Investigating Absolute Quantitation of Small Molecule Drugs Profiled in Tissue Sections using Liquid Extraction Surface Analysis (LESA)-MRM analysis;** Edward Takach; Tom Clinckemaillie; Thomas O'Shea; Hanlan Liu; *Sanofi, Waltham, MA*

TP 025 **ESI-MS Fingerprinting and HPTLC/DESI-MS Imaging of the Crude Extract from the Peels of *Citrus aurantium* L. (*Rutaceae*);** Bianca Bagatela[1, 2]; Andrey Lopes[1, 2]; Elaine Cristina Cabral[1]; Fábio Perazzo[2]; Demian Ifa[1]; *[1]York University, Toronto, ON, Canada; [2]UNIFESP, São Paulo, SP, Brazil*

TP 026 **Imaging and Spatial Profiling of Anti-Tuberculosis Drugs in Tissue using Liquid Microjunction Surface Extraction, MALDI-MS Imaging, and Micro-Dissection LC-MS/MS;** Brendan Prideaux[1]; Mariam S Elnaggar[2]; Jansy Sarathy[1]; Matthew Zimmerman[1]; Justin Wiseman[2]; Veronique Dartois[1]; *[1]Public Health Research Institute, Rutgers, Newark, NJ; [2]Prosolia, Inc., Indianapolis, IN*

TP 027 **High Sensitive Quantitation of Raclopride in Rat Brain by Liquid Extraction Surfaced Analysis Mass Spectrometry;** Jun Tadano; Toichiro Yamada; Kenichi Watanabe; Tetsuya Nakagawa; Masashi Yabuki; *Dainippon Sumitomo Pharma Co., Ltd., Suita, Japan*

TP 028 **Drug Distribution and Pharmacokinetics in an Orthotopic Brain Tumor Model by MS Imaging and LCMS;** Stacey R. Oppenheimer[1]; Matt Teague[1]; Justine Lam[2]; Jinwei Wang[2]; Konstantinos Tsaparikos[2]; Hui Wang[2]; Justin Stroh[1]; Emily Miller[1]; Wei Song[1]; Tod Smeal[2]; Ted W. Johnson[2]; *[1]Pfizer, Groton, CT; [2]Pfizer, La Jolla, CA*

TP 029 **A Nano-PALDI Approach for Absolute Quantitation of Anticancer Drugs in Tumor Tissues;** Enrico Davoli; Roberta Pastorelli; Massimo Zucchetti; Silvia Giordano; Lavinia Morosi; *IRCCS Istituto Mario Negri, Milano, Italy*

TP 030 **Spatially Correlated Quantitative MALDI Analyses of Rifampicin in Liver;** Chad W. Chumbley[1]; Michelle L. Reyzer[1]; Gwendolyn A. Marriner[2]; Laura E. Via[2]; Clifton E. Barry, III[2]; Richard M. Caprioli[1]; *[1]Vanderbilt University, Nashville, TN; [2]NIAID, National Institutes of Health, Bethesda, MD*

TP 031 **Imaging LA-ICP-MS as a Powerful Tool for the Investigation of Toxic Mercury Species in *Drosophila melanogaster*;** Ann-Christin Niehoff[1]; Stefanie Fingerhut[2]; Sabrina Kröger[2]; Oliver Bolle Bauer[2]; Jacqueline Schulz[4]; Sören Meyer[1]; Michael Sperling[2]; Astrid Jeibmann[4]; Tanja Schwerdtle[3]; Uwe Karst[2]; *[1]NRW Graduate School of Chemistry, Münster, Germany; [2]Westfälische Wilhelms-Universtität Münster, Münster, Germany; [3]Universität Potsdam, Nuthetal, Germany; [4]University Hospital Münster, Münster, Germany*

TP 032 **Quantitative LA-ICP-MS Imaging of Silver in Different Target Organs of Rats after Intratracheal Instillation of Silver Nanoparticles;** Franziska Blaske; Olga Reifschneider; Mandy Grossgarten; Michael Sperling; Uwe Karst; *Westfälische Wilhelms-Universität Münster, Muenster, GERMANY*

TP 033 **Effects of Oral Administration of Methylphenidate on Drosophila Brain Studied by Imaging Mass Spectrometry;** Nhu Phan[1]; Amir Mohammadi[2]; Masoumeh Pour[2]; Jörg Hanrieder[2]; John Fletcher[1]; Andrew Ewing[1, 2]; *[1]Gothenburg University, Gothenburg, Sweden; [2]Chalmers University of Technology, Gothenburg , Sweden*

TP 034 **PET Ligand distribution in rat brain by MALDI Imaging: Impact of the tissue preparation on Raclopride distribution;** Emeline Falaux; David Bonnel; Gregory Hamm; Jonathan Stauber; *ImaBiotech, MS Imaging Dept., Loos, France*

TP 035 **Visualizing First Pass Hepatic Metabolism of Amodiaquine using MALDI Mass Spectrometry Imaging;** Stephanie Dale[3]; Beth DiTondo[1]; Kerstin Strupat[2]; Patrick Rudewicz[3]; *[1]AB SCIEX, Framingham, MA; [2]Thermo Fisher Scientific, Bremen, Germany; [3]Novartis, Emeryville, CA*

TP 036 **Identification of the Neuroanatomical Substrate Involved in ICVNPY Inhibitory Effects on Reinstatement of Cocaine-Induced Behavior in Rats by MALDI IMSitle;** Leila Hosseinzadehshahri; *Student, Buffalo, NY*

TP 037 **Visualization of Lipids and Small Metabolites in *Arabidopsis thaliana* Seed by MALDI–MS imaging;** Maria Dueñas[1,2]; Andrew Korte[1,2]; Kent Chapman[3]; Drew Sturtevant[3]; Young Jin Lee[1,2]; *[1]Iowa State University, Ames, IA; [2]Ames Laboratory US Dept. of Energy, Ames, IA; [3]University of North Texas, Denton, TX*

TP 038 **Mapping Regional Localization in Rat Brain of Reduced Lipoic Acid by Laser Ablation Electrospray Ionization Tandem Mass Spectrometry (LAESI-MS/MS);** Marina Galvez-Peralta[1]; Callee M. Walsh[2]; Aric F. Logsdon[1]; Jason D. Huber[1]; Paul R. Lockman[1]; Patrick S. Callery[1]; *[1]West Virginia University, Morgantown, WV; [2]Protea Biosciences, Morgantown, WV*

TP 039 **Mapping Metabolite and Protein Changes in the Cataractous Lens using MALDI Imaging Mass Spectrometry;** Mitchell G. Nye-Wood[1]; Jeffrey Spraggins[2]; Richard M. Caprioli[2]; Kevin L. Schey[2]; Paul J. Donaldson[1]; Angus C. Grey[1]; *[1]University of Auckland, Auckland, New Zealand; [2]Vanderbilt University, Nashville, TN*

TP 040 **High Spatial Resolution Laser Microdissection LC-MS/MS analysis of rat liver histology samples;** Paul Moench; Christopher DeBenedetto; James Glick; Robert Johnson; Jimmy Flarakos; *Novartis Institutes for Biomedical Research, East Hanover, NJ*

TP 041 **A Multidimensional Approach for Identification of Isobaric Lipids Detected in Direct MS Analysis and Imaging of Human Liver;** Joscelyn Sarsby[1]; Alan Race[1]; Patricia F. Lalor[1]; Josephine Bunch[2]; Helen Cooper[1]; *[1]University of Birmingham, Birmingham, UK; [2]National Physical Laboratory, London, UK*

TP 042 **Strategies for Optimizing Detection of Endogenous Metabolites Directly from Tissue via MALDI MS;** Michelle L. Reyzer; Jeffrey Spraggins; Richard M. Caprioli; *Vanderbilt University, Nashville, TN*

TP 043 **Finding Biomarkers in *Arabidopsis* FERONIA Receptor Kinase using MALDI-MSI;** Rebecca Hansen[1,2]; Gargey Yagnik[1,2]; Young Jin Lee[1,2]; *[1]Iowa State University, Ames, IA; [2]Ames Laboratory-USDOE, Ames, IA*

TP 044 **Phenotype Determination of *Caenorhabditis Elegans* with Matrix-Assisted Laser Desorption/Ionization Mass Spectrometric Imaging;** Robert Menger; Chaevien Clendinen; Louis Searcy; Richard A. Yost; Arthur S. Edison; *University of Florida, Gainesville, FL*

TP 045 **Characterizing the Novel Synthetic Cannabinoid, RCS-4's Metabolism – Human Hepatocytes Applicability in Clinical and Forensic Drug Testing;** Adarsh Gandhi[1]; Mingshe Zhu[2]; Shaokun Pang[3]; Ariane Wohlfarth[4]; Karl Scheidweiler[4]; Marilyn Huestis[4]; *[1]Lundbeck Research USA Inc., Paramus, NJ; [2]Bristol-Myers Squibb, Princeton, NJ; [3]AB SCIEX, San Diego, CA; [4]NIDA, NIH, Baltimore, MD*

TP 046 **Classification of Drug Induced Toxicology in Tissue Samples using MALDI Mass Spectrometry Imaging;** Anna Nilsson[1]; Richard Goodwin[2]; Benita Forngren[3]; Suzanne Iverson[4]; Johan Lindberg[5]; Per E. Andren[1]; *[1]Uppsala University, Uppsala, Sweden; [2]AstraZeneca, Macclesfield, UK; [3]former AstraZeneca, Södertälje, Sweden; [4]AstraZeneca, Göteborg, Sweden; [5]Swedish Toxicology Sciences Research Center, Södertälje, Sweden*

Imaging MS: Disease Markers, 047 - 073

TP 047 **Quantitative 3D MALDI-MS Imaging of Neurotransmitters and Metabolites in Aging Models of the Mouse Brain;** Mohammadreza Shariatgorji[1]; Anna Nilsson[1]; Dennis Trede[2,3]; Theodore Alexandrov[2,4]; Nicoletta Schintu[5]; Per Svenningsson[5]; Per E. Andren[1]; *[1]Uppsala University, Uppsala, Sweden; [2]SCiLS GmbH, Bremen, Germany; [3]Steinbeis Innovation Center SCiLS Research, Bremen, Germany; [4]University of Bremen, Bremen, Germany; [5]Karolinska Institutet, Stockholm, Sweden*

TP 048 **Spatial Metabolites and Lipids Profiling in a Rat Model of Experimental Autoimmune Mycarditis by Matrix-assisted Laser Desorption/Ionization Imaging Mass Spectrometry;** Jin Woo Jung[1]; Kwan Soo Hong[2]; Geum-Sook Hwang[1]; Jungju Seo [1]; *[1]Korea Basic Science Institute, Seoul, South Korea; [2]Korea Basic Science Institute, Ochang, South Korea*

TP 049 **Classification of Soft Tissue Sarcomas using MALDI Imaging Mass Spectrometry;** Sha Lou; Benjamin Balluff; Marieke A. de Graaf; Judith V.M.G. Bovée; Liam A. McDonnell; *Leiden University Medical Center, Leiden, the Netherlands*

TP 050 **Importance of Tissue Suppression Effect on Biomarkers by MSI–Application to Mouse Xenografts;** Guillaume Hochart[1]; Fred Fack[2]; David Bonnel[1]; Olivier Keunen[2]; Simone P. Niclou[2]; Jonathan Stauber[1]; *[1]ImaBiotech, MS Imaging Dept., Loos, France; [2]Norlux Neuro-Oncology Laboratory, CRP-Santé, Luxembourg, Luxembourg*

TP 051 **Discrimination of Metastasis from Breast and Pancreatic Cancer by MALDI Imaging;** Rita Casadonte[1]; Mark Kriegsmann[3]; Katrin Friedrich[4]; Gustavo Baretton[4]; Mike Otto[1,2]; Soeren Deininger[5]; Detlev Suckau[5]; Martin Schuerenberg[5]; Jörg Kriegsmann[1,2]; *[1]Proteopath, Trier, Germany; [2]Center for Histology, Cytology & Mol. Diagnostics, Trier, Germany; [3]University of Heidelberg, Department of Pathology, Heidelberg, Germany; [4]University of Dresden, Department of Pathology, Dresden, Germany; [5]Bruker Daltonik GmbH, Bremen, Germany*

TP 052 **De Novo Discovery of Tumor Clones Linked to Metastasis and Poor Prognosis Using MALDI Imaging Mass Spectrometry;** Benjamin Balluff[1]; Christian Frese[4]; Stefan Maier[5]; Cedrik Schoene[2]; Bernhard Kuster [3]; Manfred Schmitt[6]; Michaela Aubele[2]; Heinz Hoefler[2]; André Deelder[1]; Albert Heck[4]; Johannes Morreau[1]; A.F. Maarten Altelaar[4]; Axel Walch[2]; Liam Mcdonnell[1]; *[1]Leiden University Medical Center, Leiden, Netherlands; [2]Helmoltz Zentrum Muenchen, Munich, Germany; [3]Technical Universitiy Munich, Freising, Germany; [4]Utrecht University, Utrecht, N/A; [5]TU Muenchen, Freising, Germany; [6]Klinikum Rechts der Isar, Munich, Germany*

TP 053 **Histodiagnostic Differentiation of Primary Mamma Carcinoma Tumor and Metastasis by MALDI-TOF Imaging and Intact Cell Mass Spectrometry;** Sophie Froehlich[1]; Dontscho Kerjaschki[2]; Guenter Allmaier[1]; Martina Marchetti-Deschmann[1]; *[1]Vienna University of Technology, Vienna, Austria; [2]Medical University Vienna, Vienna, Austria*

TP 054 **Validation of Mass Spectrometry Imaging as a Tool for the Detection of Cancer Tissue in Tissue Sections;** Olga Kraus[1]; Pierre Abramowski[2]; Kristoffer Riecken[2]; Boris Fehse[2]; Sascha Rohn[3]; Hartmut Schlüter[1]; *[1]Clinical Chemistry, University Hamburg Eppendorf, Hamburg, Deutschland; [2]Research Department Cell and Gene Therapy, Clinic, Hamburg, uswählen (nur für USA / Kan. / Aus.); [3]Institute of Food Chemistry, University Hamburg, Hamburg, uswählen (nur für USA / Kan. / Aus.)*

TP 055 **Identification and Spatial Localization of Proteins from Mouse Brain Tumor Using a Combination of MALDI Imaging and LC-MALDI;** Sergei Dikler[1]; Daniel R. Feldman[2]; Jennifer L. Ide[2]; Mark A. Marchionni[3]; Charles D. Stiles[3]; Nathalie Y.R. Agar[2,3]; *[1]Bruker Daltonics, Billerica, MA; [2]Brigham and Women's Hospital, HMS, Boston, MA; [3]Dana-Farber Cancer Institute, HMS, Boston, MA*

TP 056 **Proteomic Analysis of Formalin-Fixed Paraffin-Embedded Renal Amyloidosis Tissues using MALDI Imaging Mass Spectrometry;** Rita Casadonte[1]; Mark

Kriegsmann[2]; Mike Otto[1, 3]; Rainer Paape[4]; Detlev Suckau[4]; Sören-Oliver Deininger[4]; Kerstin Amann[5]; Jörg Kriegsmann[1, 3]; *[1]Proteopath GbR, Trier, Germany; [2]University of Heidelberg, Department of Pathology, Heidelberg, Germany; [3]Center for Histology, Cytology and Molecular Diagn, Trier, Germany; [4]Bruker Daltonik GmbH, Bremen, Germany; [5]University of Erlangen-Nuremberg, Erlangen, Germany*

TP 057 **Differences in the Proteomic Pattern of Colon and Pancreatic Carcinoma using High-Throughput Imaging Mass Spectrometry (IMS);** Jörg Kriegsmann[1, 5]; Mark Kriegsmann[2]; Vanessa Schommer[1]; Daniela Aust[3]; Gustavo Baretton[3]; Sören-Oliver Deininger[4]; Detlev Suckau[4]; Mike Otto[1, 5]; Rita Casadonte[5]; *[1]Center for Histology, Cytology and Molecular Diagn, Trier, Germany; [2]University of Heidelberg, Department of Pathology, Heidelberg, Germany; [3]University of Dresden, Department of Pathology, Dresden, Germany; [4]Bruker Daltonik GmbH, Bremen, Germany; [5]Proteopath GbR, Trier, Germany*

TP 058 **Imaging Mass Spectrometry to Uncover Proteomic Differences in Non-Hodgkin's Lymphomas;** Kristina Schwamborn[1]; Martina Rudelius[2]; Richard Caprioli[3]; *[1]Technical University Munich, Munich, Germany; [2]University of Wuerzburg, Wuerzburg, Germany; [3]Vanderbilt University, Nashville, TN*

TP 059 **Multimodal Imaging Mass Spectrometry for Probing the Protein-Lipid Interplay Underlying Amyloid-Beta Plaque Formation in Experimental Alzheimers Disease;** Jorg Hanrieder[1, 2]; Stina Syvänen[3]; Andrew G. Ewing[1, 2]; *[1]Chalmers Tech. University, Gothenburg, Sweden; [2]National Center for Imaging Mass Spectrometry, Gothenburg, Sweden; [3]Uppsal University, Uppsala, Sweden*

TP 060 **MALDI Imaging of Lipid and Protein Changes in the Human Alzheimer's Disease Hippocampus;** Angus C. Grey; Lakshini Mendis; Richard L.M. Faull; Maurice A. Curtis; *Auckland University, Auckland, New Zealand*

TP 061 **Tracking Cholesterol Distribution following Plaque Formation in a Mouse Model of Atherosclerosis using Dietary d6-cholesterol and MALDI Imaging Mass Spectrometry;** Nathan Hatcher[1]; Jose Castro-Perez[2]; Vivienne Mendoza[2]; Nana Kofi Karikari[1]; Karen Gagen[2]; Henry Shion[3]; Alan Millar[3]; John Shockcor[3]; David McLaren[2]; Vinit Shah[2]; Stephen Previs[2]; Karen Akinsanya[2]; Michele Cleary[1]; Thomas P Roddy[2]; Douglas G Johns[2]; Sheng-Ping Wang[2]; *[1]Merck Research Labs, West Point, PA; [2]Merck Research Labs, Kenilworth, NJ; [3]Waters Corporation, Milford, MA*

TP 062 **Mass Spectrometry Imaging of Breast Tumor Hypoxia Using 2-Nitroimidazoles as Chemical Markers;** Nadine E. Mascini[1]; Asif Rizwan[2]; Lu Jiang[2]; Menglin Cheng[2]; Kristine Glunde[2]; Ron M.A. Heeren[1]; *[1]FOM Institute AMOLF, Amsterdam, Netherlands; [2]Johns Hopkins University, Baltimore, MD*

TP 063 **Imaging MS Sheds Light on What's Happening in Traumatic Brain Injury;** Ludovic Muller[1, 2]; Aurelie Roux[1]; Shelley N Jackson[1]; Brian M Cox[3]; J Albert Schultz[4]; Amina S Woods[1]; *[1]NIH/NIDA-IRP, Baltimore, MD; [2]University of Pittsburgh, Pittsburgh, PA; [3]Uniformed Services University, Bethesda, MD; [4]Ionwerks, Houston, TX*

TP 064 **Profiling and Imaging of Lipids in Demyelinated Rat Spinal Cord Using Mass Spectrometry;** Roberto Fernandez[1]; Pau Gonzalez[2]; Javier Díez-García[3]; Begoña Castro[3]; Francisco J. Rodríguez[2]; Jose A. Fernandez[1]; *[1]Universidad del Pais Vasco, Leioa, Spain; [2]Hospital Nacional de Parapléjicos, Toledo, Spain; [3]Histocell S. L., Derio, Spain*

TP 065 **Defining the Tissue Distribution of Glycosphingolipid Species in Model Tissue Systems using High Resolution MALDI Imaging Mass Spectrometry;** E. Ellen Jones[1]; Shaalee Dworski[2]; Mustafa Kamani[3]; Jeffrey Medin[2, 3]; Tamara Nowling[4]; James Norris[1]; Richard Drake[1]; *[1]Department of Cell and Molecular Pharmacology,MUSC, Charleston, South Carolina; [2]Institute of Medical Science University of Toronto, Ontario, Canada; [3]University Health Network, University of Toronto, Ontario, Canada; [4]Division of Rheumatology & Immunology, MUSC, Charleston, SC*

TP 066 **MALDI-IMS of Brain Tissue from a Mouse Model of Timothy Syndrome;** William Friesen; Brian Schultz; Sarbajit Banerjee; Troy Wood; *SUNY at Buffalo, Buffalo, NY*

TP 067 **MALDI-MSI Lipidomic Investigation into the Delayed Effect of Acute Radiation Exposure: The Lung Syndrome and Efficacy of a Medical Countermeasure;** Claire L. Carter; Jace W. Jones; Isabel Jackson; Zeljko Vujaskovic; Stephanie Tabisz; Allison Gibbs; Jamie Haper; Kory Barrow; Ann M. Farese; Thomas J. MacVittie; Maureen A. Kane; *University of Maryland, Baltimore, MD*

TP 068 **MALDI-IMS Profiling of N-Linked Glycans in FFPE Tissue Blocks and On-tissue Characterization of Glycan Structures;** Richard R Drake[1]; Powers Thomas[1]; Yuan Shao[1]; Haab Brian[2]; Anand Mehta[3]; *[1]Medical University of South Carolina, Charleston, SC; [2]Van Andel Research Institute, Grand Rapids, MI; [3]Drexel University, Doylestown, PA*

TP 069 **A MALDI-IMS Workflow for Assessment of Global Changes in N-linked Glycan Profiles in Tumor Tissue Microarrays;** Thomas Powers[1]; Benjamin Neely[1]; Yuan Shao[1]; Raymond Lance[2]; Dean Troyer[2]; Anand Mehta[3]; Brian Haab[4]; Richard R Drake[1]; *[1]Medical University of South Carolina, Charleston, SC; [2]Eastern Virginia Medical School, Norfolk, VA; [3]Drexel University, Doylestown, PA; [4]Van Andel Research Institute, Grand Rapids, MI*

TP 070 **High Spatial and Mass Resolution Imaging of Human Age Matched Healthy and Age Related Macular Degenerated Retinal Tissue;** David M. Anderson[1]; Zsolt Ablonczy[2]; Jeffrey Spraggins[1]; Yannis Koutalos[2]; Rosalie Crouch[2]; Anne Hanneken[3]; Richard Caprioli [1]; Kevin Schey[1]; *[1]Vanderbilt University School of Medicine, Nashville , TN; [2]Medical University of South Carolina, Charleston , SC; [3]The Scripps Research Institute, La Jolla, CA*

TP 071 **Mass Spectrometric Imaging in Malaria Research;** Saleh Mahmud Khalil; Andreas Römpp; Jette Pretzel; Katja Becker; Bernhard Spengler; , *Giessen, GERMANY*

TP 072 **Lipidomic analysis of Nipah Virus Infection in a Mouse Model by MALDI-MS Imaging;** Alexander Shavkunov[1]; Bjorn Nilsson[1]; Tatyana Yun[2]; Terry Juelich[2]; Jennifer Smith[2]; Alexander Freiberg[2]; Carol Nilsson[1]; *[1]Department of Pharmacology and Toxicology, UTMB, Galveston, TX; [2]Department of Pathology, UTMB, Galveston, TX*

TP 073 **Oxidative Damage During *Staphylococcus aureus* Infection Revealed by High Mass Resolution MALDI Protein Imaging;** Jessica L. Moore[1]; Jeffrey Spraggins[2]; Neal D. Hammer[3]; Kristie Lindsey Rose[1]; Eric P. Skaar[3]; Richard M. Caprioli[1]; *[1]Vanderbilt University MSRC, Nashville, TN; [2]Vanderbilt University, Nashville, TN; [3]Vanderbilt University Medical Center, Nashville, TN*

Informatics: Peptide Identification and Characterization, 074 - 091

TP 074 **Automated Parameter Setting for Protein Database Searches;** Wilfred Tang; Yong Joo Kil; Chris Becker; Marshall W. Bern; *Protein Metrics Inc., San Carlos, CA*

TP 075 **MS Amanda Stand-Alone for Integration into Proteomic Workflows;** Viktoria Dorfer[1]; Peter Pichler[2]; Thomas

Stranzl[2]; Stephan Winkler[1]; Karl Mechtler[2]; *[1]University of Applied Sciences Upper Austria, Hagenberg, Austria; [2]IMP Vienna, Vienna, Austria*

TP 076 **Mixture Peptide Identifications with Proteomic Software from Complex Mixtures in Isolation Events from Hybrid and Tribrid Mass Spectrometers;** Leeann Higgins[1]; Todd Markowski[1]; Pratik Jagtap[1]; Susan K. Van Riper[2]; *[1]University of Minnesota, St. Paul, MN; [2]University of Minnesota, Minneapolis, MN*

TP 077 **Identifying Novel Peptide Sequence Variants from High Throughput RNA-Seq Data Via Flexible Proteomic Database Generation using the Galaxy Framework;** James Johnson[1]; Gloria Sheynkman[2]; Pratik Jagtap[3]; Michael Shortreed[2]; Getiria Onsongo[1]; Lloyd Smith[2]; Tim Griffin[3]; *[1]Minnesota Supercomputing Institute, Minneapolis, MN; [2]University of Wisconsin, Madison, WI; [3]University of Minnesota, Minneapolis, MN*

TP 078 **Towards a Novel Unprecedentedly Comprehensive Protein Identification Strategy, Mass Spectrometry and Ribosome Profiling: The Perfect Match;** Jeroen Crappé[1]; Alexander Koch[1]; Elvis Ndah[1, 2]; Sandra Steyaert[1]; Daria Gawron[1, 2]; Ellen De Meester[1]; Sarah De Keulenaer[1]; Petra Van Damme[1, 2]; Gerben Menschaert[1]; *[1]Ghent University, Ghent, Belgium; [2]VIB, Ghent, Belgium*

TP 079 **A Mutated Peptide Database for the Analysis of Aberrant Protein Sequences in Cancer;** Xu Yang; Iuliana Lazar; *Department of Biological Sciences, Virginia Tech, Blacksburg, VA*

TP 080 **Accurate FDR (False Discovery Rate) Estimation for Database Searching in Proteogenomics Studies;** Yoonsung Joh[1]; Hyunwoo Kim[1]; Kyubaek Hwang[2]; Heejin Park[1]; Eunok Paek[1]; *[1]Hanyang University, Seoul, KOREA; [2]Soongsil University, Seoul, KOREA*

TP 081 **Proteogenomic Approach to Cancer Cell Line Differentiation using Exome-Derived Variant Peptides: NCI-60 Panel Case Study;** Maria A. Karpova[1]; Dmitry S. Karpov[1]; Mark V. Ivanov[2]; Alexey L. Chernobrovkin[1, 3]; Mikhail A. Pyatnitsky[1]; Andrey V. Lisitsa[1]; Alexander I. Archakov[1]; Mikhail V. Gorshkov[2]; Sergei A. Moshkovskii[1]; *[1]Orekhovich Institute of Biomedical Chemistry, Moscow, Russia; [2]Institute for Energy Problems of Chemical Physics, Moscow, Russia; [3]Karolinska Institutet, Stockholm, Sweden*

TP 082 **Assessing Depth of Proteome Coverage Required for Novel Peptide Detection in Breast Cancer using Patient Derived Xenograft Models;** Kelly Ruggles[1]; Zuojian Tang[1]; Zuya Wang[1]; Jennifer Teubl[1]; Manor Askenazi[2]; Christopher Maher[3]; Song Cao[3]; Li Ding[3]; Michael McLellan[3]; Karl Clauser[4]; Philipp Mertins[4]; Robert Kitchens[3]; Charles Perou[5]; Steven Carr[4]; R. Reid Townsend[3]; Sherri Davies[3]; Matthew Ellis[3]; David Fenyo[1]; *[1]NYU Langone Medical Center, New York, NY; [2]Biomedical Hosting LLC, Arlington, MA; [3]Washington University, St. Louis, MO; [4]Broad Institute of MIT and Harvard, Boston, MA; [5]University of North Carolina, Chapel Hill, NC*

TP 083 **IC: A New Peptide Identification Tool for Both Data-Dependent and Data-Independent Acquisition;** Sangtae Kim[1]; Ying Sonia Ting[2]; Alex Hu[2]; Richard D. Smith[1]; William Stafford Noble[2]; Michael J. Maccoss[2]; Samuel H. Payne[1]; *[1]Pacific Northwest National Laboratory, Richland, WA; [2]University of Washington, Seattle, WA*

TP 084 **Peptide-Centric Database Search Engines Applied to Data Independent Acquisition UDMS^E Data;** Pedro Navarro; Jennifer Hahlbrock; Jörg Kuharev; Ute Distler; Stefan Tenzer; *Institute for Immunology, Univ. Medical Center, Mainz, Germany*

TP 085 **Direct Non-Targeted Protein Identification from Data Independent Acquisition (DIA) Data Using Database Search;** Ignat Shilov[1]; Sean L. Seymour[1]; Christie Hunter[1]; Stephen A Tate[2]; Gordana Ivosev[1]; Ahmad Hosseingholizadeh[2]; *[1]AB Sciex, Redwood City, CA; [2]AB SCIEX, Concord, ON*

TP 086 **Optimized Spectral Library Generation for HRM/SWATH Acquisition as Implemented in Spectronaut;** Tejas Gandhi; Roland M. Bruderer; Magdalena Bober; Vito Zanotelli; Oliver M. Bernhardt; Oliver Rinner; Lukas Reiter; *BiognoSYS AG, Zurich, Switzerland*

TP 087 **MSPLIT-SWATH: a New Spectral Library Search Algorithm for Data Independent Acquisition of Complex Protein Mixtures;** Jian Wang[1]; Monika Tucholska[2]; Jean Philippe Lambert[2]; Brett Larsen[2]; Stephen A Tate[3]; Anne-Claude Gingras[2]; Nuno Bandeira[1]; *[1]UCSD, La Jolla, CA; [2]Lunenfeld-Tanenbaum Research Institute, Toronto, ON; [3]AB SCIEX, Concord, ON*

TP 088 **The Generating Function Approach for Peptide Identification in Spectral Networks;** Adrian Guthals[1]; Christina Boucher[2]; Nuno Bandeira[1, 3]; *[1]Department of Computer Science, UCSD, La Jolla, CA; [2]Department of Computer Science, CSU, Fort Collins, CO; [3]Skaggs School of Pharmacy and Pharm. Sci., UCSD, La Jolla, CA*

TP 089 **Spectral Library Searching for Samples where the Amount of Sample is Severely Limited;** Himanshu Grover[1]; Sarah Keegan[1]; Siyang Li[2]; Xianzhe Wang[2]; Shashi Murthy[2]; Barry L. Karger[2]; Alexander R. Ivanov[2]; David Fenyo[1]; *[1]New York University, New York, NY; [2]Barnett Inst., Northeastern University, Boston, MA*

TP 090 **A Better Scoring Function for Top-Down Spectral Deconvolution;** Qiang Kou[1]; Xiaowen Liu[1, 2]; *[1]Indiana University-Purdue University Indianapolis, Indianapolis, IN; [2]Indiana University School of Medicine, Indianapolis, IN*

TP 091 **Top-down Proteomics with a Bottom-up Algorithm;** Marshall W. Bern[1]; Yong J. Kil[1]; Wilfred Tang[1]; Chris Becker[1]; Xuemei Han[2]; John R. Yates, III[2]; Kristie Rose[3]; Dhananjay Sakrikar[3]; Kevin L. Schey[3]; Richard Caprioli[3]; *[1]Protein Metrics Inc., San Carlos, CA; [2]The Scripps Research Institute, La Jolla, CA; [3]Vanderbilt University, Nashville, TN*

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TP 092 **A New *N*-linked Glycopeptide Identification Tool, for Large-Scale Glycoproteomics Analysis by Spectral Library Searching;** Yingwei Hu; Pei-Jing Pai; Henry Lam; *The Hong Kong University of Science and Technology, Hong Kong, CHINA*

TP 093 **Data-Independent Mass Spectrometry for the Analysis of Red Blood Cell Protein Degradation and Aging;** Huisong Pak[1]; Pierre Lescuyer[3]; Markus Muller[2]; Alexander Scherl[1]; *[1]University of Geneva, Geneva, Switzerland; [2]SIB, Geneva, Switzerland; [3]Geneva University Hospital, Geneva, Switzerland*

TP 094 **A Computational Framework for Mining MS1 Data for Post Translational Modifications;** Bruce D. Pascal; Graham M. West; Yelenis Mari; Patrick R. Griffin; *The Scripps Research Institute, Scripps Florida, Jupiter, FL*

TP 095 **Software for Differential Characterization of PTMs: Approaches in Data Acquisition and Processing;** Jean L. Spencer; Vivek N. Bhatia; Amanuel Kehasse; Stephen A. Whelan; Christian F. Heckendorf; Catherine E. Costello; Mark E. McComb; *Boston University School of Medicine, Boston, MA*

TP 096 **Simultaneous Localization and Assignment of Different Post-Translational Modifications using ptmRS;** Etienne Beltzung[1]; Thomas Taus[2]; Gerhard Dürnberger[2, 3]; Johannes Stadlmann[2]; Dea Slade[1]; Karl Mechtler[2]; *[1]MFPL, Vienna, AT; [2]IMP/IMBA, Vienna, AT; [3]GMI, Vienna, AT*

TP 097 **Correction of Errors in Tandem Mass Spectrum Extraction Enhances Phosphopeptide Identification;** Piliang Hao; Yan Ren; James Tam; Siu Kwan Sze; *Nanyang Technological University, Singapore, Singapore*

TP 098 **Algorithm for Accurate Estimation of False Localization Rates in Phosphoproteomics;** Thomas Taus[1]; Thomas Köcher[1]; Etienne Beltzung[2]; Gerhard Dürnberger[1, 3]; Karl Mechtler[1]; *[1]IMP/IMBA, Vienna, Austria; [2]MFPL, Vienna, Austria; [3]GMI, Vienna, Austria*

TP 099 **Evaluation of Accessible Database Searching Engines for Accurate Identification of Histone Post-Translational Modifications;** Zuofei Yuan; Shu Lin; Benjamin A. Garcia; *University of Pennsylvania, Philadelphia, PA*

TP 100 **SAHA Treatment Reveals the Link between Histone Lysine Acetylation and Proteome in Non-small Cell Lung Cancer A549 Cells;** Quan Wu[1]; Lejie Cao[1]; Xiaojun Peng[2]; Tieming He[2]; Zhongyi Cheng[2]; *[1]Central Laboratory, Affiliated Provincial Hospital, Hefei, CN; [2]PTM Biolabs, Inc, Hangzhou, China*

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TP 101 **Functional Control of AP2 Transcription Factors in Plasmodium Falciparum is Mediated via acetyl-CoA Metabolism and Extensive Lysine Acetylation;** Simon A. Cobbold[1]; Joana Santos[2]; David H. Perlman[3]; Manuel Llinás[2]; *[1]Bio21 Institute, University of Melbourne, Melbourne, Australia; [2]The Pennsylvania State University, Unniversity Park, PA; [3]Princeton University, Princeton, NJ*

TP 102 **Discovery of a Methylglyoxal (MGO) Modification in a Recombinant Monoclonal Antibody;** Chris Chumsae; *AbbVie Bioresearch Center, Worcester, MA*

TP 103 **Quantification of Aspirin's Pharmacodynamic Effect by Targeted Mass Spectrometry Analysis of Platelet Cyclooxygenase-1 Acetylation;** Xuanwen Li; Susanne Fries; Ruizhi Li; John A. Lawson; Scott L. Diamond; Ian A. Blair; Garret A. FitzGerald; Tilo Grosser; *University of Pennsylvania, Philadelphia, PA*

TP 104 **Narrow IEF Windows and Superficially Porous Liquid Chromatography MS Allow for Efficient Characterization and Stoichiometric Quantitation of Heterogeneous Proteins;** John Corbett; Daniel Plymire; Junmei Zhang; Steven Patrie; *University of Texas Southwestern Medical Center, Dallas, Texas*

TP 105 **Multiple PTMs Play a Role in the Regulation of Platelets in Health and Disease;** Florian Beck[1]; Fiorella Solari[1]; Stefan Loroch[1]; Saskia Venne[1]; Marc Vaudel[2]; Lennart Martens[3]; Ulrich Walter[4]; Johan Heemskerk[5]; Albert Sickmann[1]; René Zahedi[1]; *[1]Leibniz-Institut für Analytische Wissenschaften, Dortmund, Germany; [2]Department of Biomedicine, University of Bergen, Bergen, Norway; [3]VIB Ghent University, Ghent, Belgium; [4]Center for Thrombosis and Hemostasis CTH, Mainz, Germany; [5]Cardiovascular Research Institute CARIM, Maastricht, The Netherlands*

TP 106 **Comprehensive Profiling of Lysine Acetylome in *Staphylococcus aureus*;** Yi Zhang[1]; Zhixiang Wu[1]; Xuelian Wan[1]; Ping Liu[1]; Yingming Zhao[2]; Minjia Tan[1]; *[1]Shanghai Institute of Materia Medica, Shanghai, CHINA; [2]the University of Chicago, Chicago, IL*

TP 107 **Variability in the Glycosylation Patterns of gp120 proteins from Different Human Immunodeficiency Virus Type 1 Isolates Expressed in Different Cells;** Ehwang Song[1]; Samantha Rice-Williams[2]; Fan Jiang[2]; Ghalib Alkhatib[2]; Yehia Mechref[1]; *[1]Texas Tech University, Lubbock, TX; [2]Southern Research Institute, Birmingham, AL*

TP 108 **Large-Scale Analysis of Lysine SUMOylation by SUMO Remnant Immunoaffinity Profiling;** Frederic Lamoliatte[1]; Danielle Caron[1]; Chantal Durette[1]; Louiza Mahrouche[1]; Mohamed Ali Maroui[2]; Olivier Caron-Lizotte[1]; Eric Bonneil[1]; Mounira Chelbi-alix[2]; Pierre Thibault[1]; *[1]Institute for Research in Immunology and Cancer, Montréal, Qc, CANADA; [2]CNRS FRE3235, Université Paris Descartes, Paris, France*

TP 109 **Automated Immunoaffinity-Based Proteomic Methods for the Study of Post-Translational Modification;** Matthew P. Stokes[1]; Jeffrey C. Silva[1]; Steven Murphy[2]; Jason Russell[2]; Jian Min Ren[1]; Kimberly Lee[1]; *[1]Cell Signaling Technology, Danvers, MA; [2]Agilent Technologies, Inc., Santa Clara, CA*

TP 110 **Protein and Glycoprotein LC/MS Using HILIC;** Barry Boyes[1, 2]; Ron Orlando[2]; Stephanie Schuster[1]; Joseph Destefano[1]; *[1]Advanced Materials Technology Inc,, Wilmington, DE; [2]University of Georgia, Athens, GA*

TP 111 **A Phosphoproteomic Approach to Enrich and Identify Mono- and poly(ADP-ribosyl)ation Sites in Whole Cell Lysate;** Casey M. Daniels[1]; Shao-En Ong[2]; Anthony K.L. Leung[1]; *[1]Johns Hopkins Bloomberg School of Public Health, Baltimore, MD; [2]University of Washington, Seattle, WA*

TP 112 **The Novel Lysine Glutarylation Pathway, Its Regulatory Enzyme SIRT5, Its Substrates and Regulatory Role in Metabolism;** Minjia Tan[1]; Chao Peng[2]; Kristin A. Anderson[3]; Peter Chhoy[3]; Zhongyu Xie[2]; Lunzhi Dai[2]; Yi Zhang[1]; Matthew D. Hirschey[3]; Yingming Zhao[2]; *[1]Shanghai Institute of Materia Medica, Shanghai, CHINA; [2]the University of Chicago, Chicago, IL; [3]Duke University Medical Center, Durham, NC*

TP 113 **Site-Specific Quantitation of Lysine Acetylation in Isomeric Peptides of Histones H3 and H4;** Nebiyu Abshiru[1, 2]; Olivier Caron-Lizotte[1, 2]; Roshan Elizabeth[1, 2]; Alain Verreault[1, 2]; Pierre Thibault[1, 2]; *[1]University de Montreal, Montreal, Canada; [2]Institute for Research in Immunolgy and Cancer, Montreal, QC*

TP 114 **Affinity-based Quantitative Proteomics Reveals Non-histone Substrates of Methyltransferases G9a/GLP in Human Breast Adenocarcinoma Cell MDA-MB-231;** Xing-Jun Cao; Benjamin A. Garcia; *University of Pennsylvania, Philadelphia, PA*

TP 115 **A Cell Line-Specific Atlas of Protein Asp- and Glu-ADP-Ribosylation;** Yajie Zhang; Jianqi Wang; Ming Ding; Yonghao Yu; *UT Southwestern Medical Center, Dallas, TX*

TP 116 **Structural and Functional Analysis of the Role of Multisite Phosphorylation in Irreversible Fatty Acylation by Mass Spectrometry;** Hongying Zhong; *Central China Normal University, Wuhan, CHINA*

TP 117 **Simultaneous Monitoring of Protein Methylation and Acetylation Expands the Post-Translational Modification Network in a Human Gastric Cancer Cell Line;** Hongbo Gu; Charles L. Farnsworth; Kimberly A. Lee; Jianmin Ren; Xiaoying Jia; Jeffrey C. Silva; *Cell Signaling Technology, Danvers, MA*

TP 118 **PTM Directed Re-Wiring and Their Networks in Oncogene Mutant and Knock-Out Cancer Cells;** Jing Song; Benlian Wang; Zhenghe Wang; Mark R. Chance; *Case Western Reserve University, Cleveland, OH*

TP 119 **Glycan Site Mapping of Glycoproteins in Serum;** Qiuting Hong; Evan Parker; Ting Song; Carlito Lebrilla; *Chemsitry, UC, Davis, Davis, CA*

TP 120 **Comprehensive Mapping of Ribosomal Protein Post-Translational Modifications by LC-MS/MS Analysis of Tryptic and Microwave-Assisted HCL Partial Hydrolysates;** Yuwei Chang; Rueyhung Weng; Chen-Chung Liao; Wailap Ng; *National Yang Ming University, Taipei, Taiwan*

TP 121 **Identification and Quantification of Reversible Cysteine Modification Sites in GPx7-deficient Mice using Multiplexed iodoTMT tags for Irreversible Labeling and Enrichment;** Yi-Yun Chen[1]; Ping-Kun Hsieh[2]; Suh-Yuen Liang[1]; Wen-Hwa Lee[2]; Tzu-Ching Meng[1]; Kay-Hooi Khoo[1]; *[1]Institute of Biological Chemistry, Academia Sinica, Taipei, Taiwan; [2]Genomics Research Center, Academia Sinica, Taipei, Taiwan*

TP 122 **Lysine Acetylome in Streptomyces roseosporus Reveals the Roles of Lysine Acetylation in Regulating Biosynthesis of Secondary Metabolites;** Guojian Liao[1]; Xiaojun Peng[2]; Zhongyi Cheng[2]; Jianping Xie[1]; *[1]College of Pharmaceutical Sciences, Southwest Univ, Chongqing, CN; [2]PTM Biolabs, Inc, Hangzhou, China*

TP 123 **Quantification of Lysine Acetylation in Human Oligodendroglia Cells in Response to Borna Disease Virus Infection;** Xia Liu[1, 2]; Xiaojun Peng[3]; Zhongyi Cheng[3]; Peng Xie[1, 2]; *[1]Institute of Neuroscience, Chongqing Medical Unive, Chongqing, CN; [2]The First Affiliated Hospital, Chongqing Medical U, Chongqing, CN; [3]PTM Biolabs, Inc, Hangzhou, China*

TP 124 **A Comprehensive Workflow for Simultaneous Assessment of Multiple PTMs;** Martin R. Larsen; Alistair V.G. Edwards; Giuseppe Palmisano; *Univ. Southern Denmark, Odense, Denmark*

TP 125 **Elucidation of Diverse and Divergent Post-Translational Modification of Proteins in Closely Related Bacteria in a Natural Microbial Community without Enrichment;** Zhou Li[1, 2]; Yingfeng Wang[2]; Qiuming Yao[3]; Nicholas Justice[4]; Tae-Hyuk Ahn[2]; Dong Xu[3]; Robert Hettich[1, 2]; Jillian Banfield[4]; Chongle Pan[1, 2]; *[1]University of Tennessee, Knoxville, TN; [2]Oak Ridge National Lab, Oak Ridge, TN; [3]University of Missouri, Columbia, MO; [4]University of California, Berkeley, CA*

TP 126 **Functional Proteomics Defines the Molecular Mechanisms underlying Receptor Tyrosine Kinases (RTKs) signaling specificity;** Chiara Francavilla[1]; Kristoffer T.G. Rigbolt[2]; Kristina B. Emdal[1]; Moreno Papetti[1]; Jesper V. Olsen[1]; Blagoy Blagoev[3]; *[1]NNF CPR, Copenhagen, Denmark; [2]FRIAS, University of Freiburg, Freiburg, Germany; [3]University of Southern Denmark, Odense, Denmark*

TP 127 **Uncovering Novel Redox Regulated Cysteines in the Mitochondrial Proteome Governed by Distinct Sites of Reactive Oxygen Species Production;** Casey Quinlan[1]; Bradford Gibson[2]; Martin Brand[2]; Jason Held[3]; *[1]Pfizer, La Jolla, CA; [2]Buck Institute for Research on Aging, Novato, CA; [3]Washington University Medical School, St. Louis, MO*

TP 128 **Phosphorylation Dynamics of PTH Receptor Signaling In Osteoblasts;** Grace Williams; Jennifer Bethard; Mary Berkaw; Louis Luttrell; Lauren Ball; *Medical Univ of S Carolina, Charleston, SC*

TP 129 **Isomer Proteomics: A Case Study of Epimerization and Isomerization in Crystallins;** Yuanqi Tao; Ryan R. Julian; *University of California, Riverside, Riverside, CA*

TP 130 **Probing the Regulation of Ubc9 Activity using a Mass Spectrometry-Based *in vitro* SUMOylation Assay;** Francis McManus[1]; Danielle Caron[2]; Frederic Lamoliatte[1]; Pierre Thibault[1]; *[1]Université de Montréal, Montréal, Canada; [2]Université Laval, Québec, Canada*

TP 131 **Evaluating the Relationship between *N*-glycosylation and Protein Stability in the Enteric Pathogen *Campylobacter jejuni*;** Joel Cain[1]; Nichollas Scott[2]; Nestor Solis[1]; Melanie White[1]; Stuart Cordwell[1]; *[1]The University of Sydney, Sydney, Australia; [2]University of British Columbia, Vancouver, BC*

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TP 132 **Robust and Sensitive Methodologies of Chemical Crosslinking and Mass Spectrometry for Hybrid Structural Characterization of Endogenous Protein Complexes;** Yi Shi[1]; Javier Fernandez-Martinez[1]; Riccardo Pellarin[2]; Peter Fridy[1]; Elina Tjioe[2]; Seung Joong Kim[2]; Qingjun Wang[3]; Andrej Sali[2]; Michael P. Rout[1]; Brian T. Chait[1]; *[1]The Rockefeller University, New York, NY; [2]University of California, San Francisco, CA; [3]University of Kentucky, Lexington, KY*

TP 133 **Analysis of Ferritin and Apoferritin by MALDI-TOF with STJ Cryodetection;** Logan Plath[1]; Alexander Aksenov[2]; Abdil Ozdemir[3]; David Sipe[1]; Mark E. Bier[1]; *[1]Carnegie Mellon University, Pittsburgh, PA; [2]University of California - Davis, Davis, CA; [3]Sakarya University, Adapazari, Turkey*

TP 134 **Study of the Mitochondrial Importome in Trypanosoma brucei using SILAC, RNAi and high resolution MS;** Silke Oeljeklaus[1]; Christian Peikert[1]; Jan Mani[2]; André Schneider[2]; Bettina Warscheid[1]; *[1]Faculty of Biology, University of Freiburg, Freiburg, Germany; [2]University of Bern, Bern, Switzerland*

TP 135 **Binding Properties of Copper(II)-Human Amylin Complexes Revealed by Laser Ablation Electrospray Ionization Mass Spectrometry;** Emmeline Ha; Hang Li; Robert P. Donaldson; Aleksander Jeremic; Akos Vertes; *The George Washington University, Washington, DC*

TP 136 **Optimizing an Orbitrap Mass Spectrometer for the High Resolution Analysis of Intact Mega Dalton Virus Capsids;** Joost Snijder[1]; Michiel van den Waterbeemd[1]; Eugen Damoc[2]; Eduard Denisov[2]; Dmitry Grinfeld[2]; Alexander Makarov[1, 2]; Albert J.R. Heck[1]; *[1]Utrecht University, Utrecht, The Netherlands; [2]Thermo Fisher Scientific, Bremen, Germany*

TP 137 **The Monitoring of the Protein Complex Landscape in Response to Apoptosis using PCP-SILAC;** Nichollas Scott; Anders Kristensen; Leonard Foster; *University of British Columbia, Vancouver, Canada*

TP 138 **Scoring Protein Interactions Using the CRAPome: A Contaminant Repository for Affinity Purification Mass Spectrometry Data;** Dattatreya Mellacheruvu[1]; Zachary Wright[1]; Anne-Claude Gingras[2]; Alexey Nesvizhskii[1]; *[1]University of Michigan, Ann Arbor, MI; [2]Samuel Lunenfeld Research Institute, Mount Sinai H, Toronto, ON*

TP 139 **Identification of Protein Interaction Partners of Protein Phosphatase 2A Catalytic Subunit Using Quantitative Mass Spectrometry;** Divyasri Damacharla[1]; Xiangmin Zhang[1]; Danjun Ma[1]; Monique Lewis[1]; Michael Caruso[1]; Wissam Anteer[1]; Yue Qi[1]; zhao yang[1]; Rodney Berry[1]; Abdullah Mallisho[1]; Zaher Msallaty[1]; Sorin Draghici[1]; Jeffrey Horowitz[2]; Berhane Seyoum[1]; Zhengping Yi[1]; *[1]Wayne State University, Detroit, MI; [2]University of Michigan, Ann Arbor, MI*

TP 140 **Identification of BK Protein Partners in Mouse Cerebellum using Proteomic Mass Spectrometry;** Lancia Darville; Bernd Sokolowski; *University of South Florida, Tampa, FL*

TP 141 **New Interactors of the Peroxisomal Receptor Export Complex Revealed by Affinity Purification and SILAC Mass Spectrometry;** Jason Tonillo [1]; Sascha Steltgens[1]; Claudia Lindemann[1]; Thilo Lerari[1]; Helmut E. Meyer[1]; Ralf Erdmann[2]; Katja Kuhlmann[1]; *[1]Medical Proteome Center, Ruhr-University, Bochum, Germany; [2]Institute of Physiol. Chemistry, Ruhr-University, Bochum, Germany*

TP 142 **The Msx1 Homeoprotein Regulates Target Gene Expression during Development by Forming Protein Complexes;** Jiange Yang; Jingqiang Wang; *Fudan University, Shanghai, P. R. China*

TP 143 **Protein Phosphatase 1 Catalytic Subunit Protein Interaction Partners in Human Skeletal Muscle Revealed by Targeted Proteomics;** Zhao Yang; Michael Caruso; Danjun Ma; Abdullah Mallisho; Berhane Seyoum; Monique Lewis; Xiangmin Zhang; Wissam Al-Janabi; Yue Qi; Divyasri Damacharla; Rodney Berry; Zaher Msallaty; Sorin Draghici; Assia Shisheva; Zhengping Yi; *Wayne State University, Detroit, MI*

TP 144 **Structural Probing of Calmodulin Interaction Network by Protein Engineering, Chemical Cross-Linking and Mass Spectrometry;** Katarzyna Kulej; Morten Rasmussen; Simone Sidoli; Martin R. Larsen; *University of Southern Denmark, Odense M, Denmark*

TP 145 **High-Throughput Proteomic Mapping of Protein Interaction Networks: Toward a Global View of the Human Interactome;** Edward L. Huttlin[1]; Lily Ting[1]; Raphael Bruckner[1]; Joao Paulo[1]; Melanie Gygi[1]; Ramin Rad[1]; Deepak Kolippakkam[1]; John Szpyt[1]; Gabriela Zarraga[1]; Stanley Tam[1]; Fana Gebreab[1]; Greg Colby[1]; Robert Obar[1]; Virginia Guarani-Pereira[1]; Timothy Harris[2]; Spyros Artavanis-Tsakonas[1, 2]; Mathew Sowa[1]; J. Wade Harper[1]; Steven Gygi[1]; *[1]Harvard Medical School, Boston, MA; [2]Biogen Idec, Boston, MA*

TP 146 **Molecular Composition of HIV-1 Virion-Associated Lipid Rafts: Insights into Pathogenesis;** David R Graham[1]; Veronica Aquino[1]; Brandon Bullock[1]; Brian Agnew[2]; Rhoel Dinglasan[1]; David Colquhoun[3]; Ravi Tharakan[4]; Hung Trinh[5]; Katherine Bruner[1]; Ceereena Ubaida Mohien[1]; *[1]Johns Hopkins University, Baltimore, MD; [2]LifeTech, Eugene, Or; [3]Shimadzu Scientific Instr, Columbia, MD; [4]JHU, Baltimore, MD; [5]Walter Reed Army Institute of Research, Silver Spring, MD*

TP 147 **Characterization of Membrane Protein Complexes in Photoreceptor Outer Segments using Size Fractionation-Based Protein Correlation Profiling;** Nikolai Skiba; Vadim Arshavsky; *Duke University, Durham, NC*

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TP 148 **Understanding N-terminal Variation in Therapeutic Proteins by High Resolution Mass Spectrometry: from Top-down to Bottom-up;** Guilong (Charles) Cheng; Adriana Kita; Gomathinayagam Ponniah; Hongcheng Liu; Bruce Andrien; *Alexion Pharmaceutical Inc., Cheshire, CT*

TP 149 **Middle-down and Bottom-Up Characterization of a Monoclonal Antibody Trastuzumab with Sheathless CESI-MS Coupled to the Orbitraps Mass Spectrometers;** Marcia Santos[1]; David Bush[5]; Hans Dewald[1]; Rosa Viner[2]; Alain Beck[3]; Antonius Heemskerk[4]; Barry Karger[5]; Alexander Ivanov[5]; *[1]AB Sciex LLC, Brea, CA; [2]Thermo Fisher Scientific, San Jose, CA; [3]Centre d'Immunologie Pierre Fabre (CIPF), Saint-Julien-en-Genevois, France; [4]Leiden University Medical Center, Leiden, The Netherlands; [5]Barnett Institute, Northeastern University, Boston, MA*

TP 150 **Rapid Identification and Characterization of Biopharmaceuticals using Capillary Electrophoresis – Mass Spectrometry Coupled with Supercharging;** Rajeswari Lakshmanan[1]; Chitra K. Ratnayake[1]; Rachel O. Loo[2]; Joseph A. Loo[2]; *[1]AB Sciex, Brea, CA; [2]UCLA, Los Angeles, CA*

TP 151 **Primary Structure Characterization of a Therapeutic Protein by nano-LC-MS/MS to Elucidate Proteolytic Instability;** Xian Huang; Dan Rock; *Amgen, Inc., Seattle, WA*

TP 152 **Characterization of Disulfide Variants and Free Sulfhydryls by Mass Spectrometry Using Non-reduced Multi-Attribute Method;** Yuling Zhang; Robert Bailey; Nancy Nightlinger; Alison Gillespie; Alain Balland; Richard Rogers; *Amgen, Seattle, WA*

TP 153 **Monosaccharide Profiling by Intact Mass Analysis - Method Qualification of a New Approach for the Characterization of Highly Glycosylated Biopharmaceuticals;** Benjamin Mueller; Stefanie Fitzek; Stefanie Janzen; Elke Schwitulla; Andreas Wattenberg; *Protagen Protein Services, Dortmund, Germany*

TP 154 **Advanced LC-MS Based Characterization for Determination of Critical Quality Attributes in Therapeutic Proteins;** Chen Li[1]; Anna Zhang[2]; Serah Liu[2]; Peter Li[1]; Julian Saba[3]; Zhiqi Hao[3]; Shiaw-Lin Wu[1, 2]; *[1]BioAnalytix Inc., Cambridge, MA; [2]Barnett Institute, Northeastern University, Boston, MA; [3]ThermoFisher Scientific, San Jose, CA*

TP 155 **Size Exclusion Isotope Dilution Mass Spectrometry: An Alternative Method for Influenza Vaccine Potency Determination;** Jonathan Bundy; Zsuzsanna Kuklenyik; Yulanda Williamson; Maria Solano; Tracie Williams; John R. Barr; *Centers for Disease Control and Prevention, Atlanta, GA*

TP 156 **Quantitative Profiling Glycoforms of Therapeutic mAb using Orthogonal Techniques: Comparison of subunit 1/2Fc analysis with the released glycan assay;** Henry Shion[1]; Mark Hilliard[2]; Ying-Qing Yu[1]; Weibin Chen[1]; Niaobh McLoughlin[2]; Pauline Rudd[2]; *[1]Waters Corp., Milford, MA; [2]NIBRT, Dublin, Ireland*

TP 157 **Increasing the Confidence of Sequence Variant Identification by the Development of Integrated Mass Spectrometric and Informatics Workflow;** Stephane Houel[1]; Scott Geromanos[1]; Andrew Tudor[2]; Barry Dyson[2]; Ying Qing Yu[1]; Weibin Chen[1]; *[1]Waters Corporation, Milford, MA; [2]Waters Corporation, Manchester, UK*

TP 158 **Automating Characterization of mAb Charge Variants Isolated by Cation Exchange Chromatography using Integrated LCMS Peptide Mapping and Informatics Workflow;** Vera Ivleva; Robert Birdsall; Ying Qing Yu; Weibin Chen; *Waters Corporation, Milford, MA*

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TP 210 **Two Shiga toxin 2 Subtypes in a Single Shiga Toxin-Producing Escherichia Coli Analyzed by RT-qPCR, MALDI-TOF-TOF-MS and Top-Down Proteomic Analysis;** Clifton K. Fagerquist; William J. Zaragoza; *USDA/ ARS, Albany, CA*

TP 211 **Quantitative Proteomics in Giardia Duodenalis: Investigating Host Origin, Assemblage and Isolate Variation;** Samantha Emery[1]; Ernest Lacey[2]; Paul Haynes[1]; *[1]Macquarie University, Sydney, Australia; [2]Microbial Screening Technologies, Sydney, Australia*

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TP 213 **Sequence Level and Dual-phase Flagella Antigen Identification of Salmonella by Liquid Chromatography-Tandem Mass Spectrometry (LC-MS/MS);** Keding Cheng; Angela Sloan; Julie Meakin; Stuart McCorrister; Morganne Jerome; Garrett Westmacott; Mike Drebot; Celine Nadon; J. David Knox; Gehua Wang; *Public Health Agency of Canada, Winnipeg, Canada*

TP 214 **Study of MALDI Sample Preparation for Bacterial Identification;** Eun-kyeong Choi[1]; Hanyoung Jung[1]; Kyu Hwan Park[1]; Yangsun Kim[2]; *[1]Applied Surface Technology Inc., Suwon, KOREA; [2]Hudson Surface Technology Inc., Old Tappan, NJ*

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TP 220 **A Rapid Fungal De-Replication/Identification Method Based on Laser Ablation Electrospray Ionization (LAESI) Mass Spectrometry Technology and Principle Component Analysis (PCA);** Lin Du[1]; Haddon Goodman[2]; Robert Cichewicz[1]; *[1]University of Okalahoma, Norman, OK; [2]Protea Biosciences, Inc., Morgantown, WV*

TP 221 **Rapid Assays of Bacteria Binding to Oligosaccharides;** Qian Wang[1]; Zachery Lewis[2, 3]; Andres Guerrero[1]; David Mills[2, 3]; Carlito Lebrilla[1]; *[1]Department of Chemistry, UC Davis, Davis, CA; [2]Department of Viticulture & Enology, UC Davis, Davis, CA; [3]Department of Food Science & Technology, UC Davis, Davis, CA*

TP 222 **An LC-MALDI Method for the Discovery and Identification of Markers of Antibiotic Resistance in *Enterobacteriaceae*;** Philippa Hart[1]; Emmanuel Wey[2]; Timothy McHugh[3]; Indran Balakrishnan[2]; Omar Belgacem[1]; *[1]Shimadzu, Manchester, UK; [2]Royal Free Hospital NHS Foundation Trust, London, UK; [3]UCL Centre for Clinical Microbiology, London, UK*

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TP 224 **Development of an LC-HRMS-based Metabolomic Approach to Study Methicillin-Resistant *Staphylococcus aureus*;** Sandrine Aros-Calt[1, 2]; Bruno Muller[2]; Céline Ducruix[1, 2]; Samia Boudah[1, 3]; Guillaume L'hostis[2]; Gaspard Gervasi[2]; Christophe Junot[1]; François Fenaille[1]; *[1]LEMM-CEA-Saclay, Gif sur Yvette, France; [2]bioMérieux, Marcy l'Etoile, France; [3]GlaxoSmithKline - Centre de recherche F.Hyafil, Villebon-sur-Yvette, France*

TP 225 **Identification and Characterization of *Francisella* Strains by MALDI-TOF Detection for Biodefense Purposes;** Emie Durighello[1]; Alain Lorphelin[1]; Marie-Anne Roncato[2]; Eric Ezan[3]; Laurent Bellanger[2]; Jean Armengaud[1]; *[1]CEA, DSV/ IBEB/SBTN/LBSP, Bagnols Sur Cèze, France; [2]CEA, DSV/ IBEB/SBTN/LICB, Bagnols sur Cèze, France; [3]CEA, DSV/ IBEB/SBTN, Bagnols sur Cèze, France*

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TP 228 **A Multi-Instrumental Targeted Proteomics Approach is Sufficient and Necessary for Comprehensive Analysis of *Mycobacterial* Protein Secretion;** Matthew M Champion; Emily Williams; George Kennedy; Patricia Digiuseppe-Champion; *University of Notre Dame, Notre Dame, IN*

TP 229 **AlignGF - Assessing the Statistical Significance of Pairwise Spectral Alignments in Spectral Networks;** Seungjin Na[1]; Stephen Callister[2]; Samuel Payne[2]; Nuno Bandeira[1]; *[1]University of California, San Diego, La Jolla, CA; [2]Pacific Northwest National Laboratory, Richland, WA*

TP 230 **Escherichia Coli Outer Membrane Protein A (OMP-A) sequence differentiation by MALDI-TOF-TOF analyses of cyanogen bromide digestion products;** Leslie Harden; Michael Cooley; *USDA/WRRC, Albany, CA*

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TP 232 **Liquid Extraction Surface Analysis Mass Spectrometry of Intact Proteins from Bacterial Colonies;** Elizabeth C. Randall[1]; Josephine Bunch[2]; Iain B. Styles[1]; Helen J. Cooper[1]; *[1]University of Birmingham, Birmingham, UK; [2]National Physical Laboratory, London, UK*

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TP 234 **Characterization of Antibody Drug Conjugates Prepared on Magnetic Protein A and G Particles by MS Analysis following IdeS Digestion;** Chris Hosfield[1]; Becky Godat[1]; Nidhi Nath[1]; Archer Smith[2]; Philip Compton[2]; Paul Thomas[2]; Neil L. Kelleher[2]; Michael Rosenblatt[1]; Marjeta Urh[1]; *[1]Promega, Madison, WI; [2]Northwestern University, Evanston, IL*

TP 235 **Evaluation of an LC/MS Microfluidic Platform for Quantification of Intact Monoclonal Antibodies;** Catalin Doneanu; Brad Williams; Paul Rainville; Weibin Chen; *Waters Corporation, Milford, MA*

TP 236 **Development of Integrated Informatics Workflows for the Automated Assessment of Comparability for Antibody Drug Conjugates (ADCs) using LC/UV and LC/UV/MS;** Robert Birdsall[1]; Henry Shion[1]; Frank Kotch[2]; April Xu[3]; Thomas Porter[4]; Weibin Chen[1]; *[1]Waters Corporation, Milford, MA; [2]Pfizer Bioprocess Research & Development, Pearl River, NY; [3]Pfizer Analytical Research & Development, Pearl River, NY; [4]Pfizer Analytical Research & Development, Andover, MA*

TP 237 **Analysis of C1q Binding by Engineered IgG hexamers and the Initiation of Fluid Phase Complement Activation;** Guanbo Wang[1, 2]; Sara Rosati[1, 2]; Ewald T. J. van den Bremer[3]; Frank J. Beurskens[3]; Janine Schuurman[3]; Paul W.H.I. Parren[3]; Rob N. de Jong[3]; Albert J.R. Heck[1, 2]; *[1]Utrecht University, Utrecht, The Netherlands; [2]Netherlands Proteomics Center, Utrecht, The Netherlands; [3]Genmab, Utrecht, The Netherlands*

TP 238 **The Characterization of Pentameric IgM (MORAb-028) using Enzymatic Digestion and LC-MS/MS: Disulfide Bond Assignment and Glycosylation Site Analysis;** Xin Cheng; Sara Jacob; Andrew Milinichik; Howard Turchin; Young Park; Wolfgang Ebel; Matthew Reeser; Luigi Grasso; Earl Albone; *Morphotek Inc., Exton, PA*

TP 239 **Investigation of the Free Heavy Chain-Heavy Chain (HC-HC) Species of a Monoclonal Antibody;** Hyo (Helen) Chung; Lynette Buck; Kristi Daris; Quanzhou Luo; Jette Wypych; *From the Department of Drug Substnace Development, Amgen Inc., Thousand Oaks, CA*

TP 240 **Conformational Difference in IgG2 Disulfide Isoforms Revealed by Hydrogen/Deuterium Exchange Mass Spectrometry;** Zhongqi Zhang; Aming Zhang; Jing Fang; Robert Chou; Pavel Bondarenko; *Amgen, Inc., Thousand Oaks, CA*

TP 241 **Improved Sequence Variant Analysis Strategy by Automated False Positive Removal;** Wenzhou Li; Robert Duff; *Department of Analytical Sciences, Amgen Inc, Thousand Oaks, CA*

TP 242 **Mass Spectrometry Characterization of the Heterogeneity of a Plant-Derived Therapeutic Monoclonal Antibody;** Yanyan Lu; Catherine E. Costello; *Boston University School of Medicine, Boston, MA*

TP 243 **Improved Identification of Host Cell Proteins in a Mammalian Cell-Derived Antibody Drug Using LCMS in Conjunction with an Enrichment Strategy;** Jenny Heidbrink Thompson; Wai Keen Chung; Min Zhu; Liu Tie; Yali Lu; Nabila Aboulaich; Robert Strouse; Wenjun (David) Mo; *MedImmune, Gaithersburg, MD*

TP 244 **Identification of Antibody Specificity using Complex Biological Fluids;** Dimitrios Korbakis[1]; Davor Brinc[2]; Ioannis Prassas[1, 2]; Ihor Batruch[2]; Bryan Krastins[4]; Mary F. Lopez[4]; Eleftherios P. Diamandis[2, 3]; *[1]Department of Laboratory Medicine and Pathobiology, University of Toronto, Toronto, Canada; [2]Department of Pathology and Laboratory Medicine, Mount Sinai Hospital, Toronto, Canada; [3]Department of Clinical Biochemistry, University Health Network, Toronto, Canada; [4]Thermo Fisher Scientific BRIMS, Cambridge, Massachusetts, MA*

TP 245 **Novel Sample Treatment and LC/MS Strategies Achieved Highly Accurate and Sensitive Investigation of Tissue Distributions of Therapeutic Monoclonal Antibody;** Ming Zhang[1, 2]; Bo An[1, 2]; Eslam Nouri-Nigjeh[1, 2]; Haoying Yu[1, 2]; Samuel Wopperer[2]; Jun Qu[1, 2]; *[1]SUNY at Buffalo, Buffalo, NY; [2]New York State Center of Excellence, Buffalo, NY*

TP 246 **High Sensitivity Native Antibody Drug Conjugate (ADC) Analysis using LC Mass Spectrometry;** Caroline S. Chu; Andy Gieschen; Ning Tang; *Agilent Technologies, Santa Clara, CA*

TP 247 **Monoclonal Antibodies Complete Primary Structure and Biosimilarity Assessment in a Single Analysis using Transient Isotachophoresis Sheathless Capillary Electrophoresis-Tandem Mass Spectrometry;** Rabah Gahoual[1]; Jean-Marc Busnel[2]; Johana Chicher[3]; Lauriane Kuhn[3]; Philippe Hammann[3]; Alain Beck[4]; Yannis Francois[1]; Emmanuelle Leize-Wagner[1]; *[1]LSMIS, UMR-CNRS 7140 ,University of Strasbourg, Strasbourg, FRANCE; [2]Beckman Coulter, Brea, CA; [3]Institut de Biologie Moléculaire et Cellulaire, Strasbourg, France; [4]Centre d'immunologie Pierre Fabre, Saint-Julien en Genevois, France*

TP 248 **Accurate Quantitation of Deamidated Peptides to Accelerate Formulation Process Development in Therapeutic Proteins;** Michael Peddicord[1]; Difei Qiu[1]; Ming Gu[2]; Yongdong Wang[2]; *[1]Bristol-Myers Squibb, New Brunswick, NJ; [2]Cerno Bioscience, Norwalk, CT*

TP 249 **Mass Spectrometry Imaging of Therapeutic Antibodies: Distribution of Trastuzumab in CB.17 SCID mice Implanted with the Human Breast BT474 Xenograft;** Aurore Tomezyk[1]; David Bonnel[1]; Chassidy Hall[2]; Robert J. Mullin[2]; Gregory Hamm[1]; Kathryn Simon[2]; Jonathan Stauber[1]; *[1]ImaBiotech, MS Imaging Dept., Loos, France; [2]Charles River Discovery Research Services, Morrisville, NC*

TP 250 **Disulfide Bond Analysis on Q Exactive Mass Spectrometry;** Xiaoxi Zhang[1]; Jing Feng[2]; *[1]ThermoFisher Scientific, Shanghai, China; [2]Kawin Technology, Beijing, China*

TP 251 **"Minimalistic Sample Preparation Strategies for LCMS Quantification of Protein Therapeutics: A Case Study Highlighting Alpha-1 Antitrypsin";** Katherine Wright; Dawn Dufield; *Pfizer, Andover, MA*

TP 252 **Middle-Down MS Characterization of a mAb Reference Material;** Lisa E. Kilpatrick; John Schiel; Trina Formolo; Eric L. Kilpatrick; Karen Phinney; *NIST, Gaithersburg, MD*

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TP 253 **Mass Spectrometry Characterization of Bioactive Peptide - Synthetic Polymer - Conjugates;** Ahlam Alalwiat; Wen Tang; Matthew Becker; Chrys Wesdemiotis; *The University of Akron, Akron, U.S.A*

TP 254 **Bottom-up and Top-down LC-MS Approach for Comprehensive Characterization of Low Molecular Weight Heparins (LMWHs);** Lingyun Li; Robert J. Linhardt; *Rensselaer Polytech Institute, Troy, NY*

TP 255 **Comprehensive Structural Characterization of Biopharmaceuticals by Top-Down Mass Spectrometry and Hydrogen/Deuterium Exchange: Implications for Biosimilars;** Jingxi Pan[1]; Derek Smith[1]; Christoph Borchers[1, 2]; *[1]University of Victoria-Genome BC Proteomics Centre, Victoria, Canada; [2]UVic Dept of Biochemistry and Microbiology, Victoria, Canada*

TP 256 **Comparison of Hydrogen/Deuterium Exchange Mass Spectrometry and Nuclear Magnetic Resonance Spectroscopy using Granulocyte-Colony Stimulating Factor as a Model Protein;** Elyssia S. Gallagher[1]; Robert G. Brinson[1]; J. Todd Hoopes[2]; John P. Marino[1]; Jeffrey W. Hudgens[1]; *[1]NIST, Rockville, MD; [2]University of Maryland, Rockville, MD*

TP 257 **Rapid and Structure-Specific LC/MS/MS Screening for Bioactive Glycan Motifs in Therapeutic Glycoproteins;** Myung Jin Oh[1]; Serenus Hua[1]; Youngsook Seo[1]; Jong Shin Yoo[2]; Rudolf Grimm[3]; Hyun Joo An[1]; *[1]AGRS, Chungnam National University, Daejeon, Korea; [2]Korea Basic Science Institute, Ochang, Korea; [3]Agilent Technologies, Santa Clara, CA*

TP 258 **Characterization of Glycoengineered Biopharmaceuticals;** Andres Guerrero[1]; Yanhong Li[1]; Salem Alkanaimsh[2]; Lucas Arzola[2]; Bryce Hashimoto[2]; Minsook Hwang[3]; Aye Tu[4]; My Phu[4]; Abhaya Dandekar[4]; Bryce Falk[3]; Somen Nandi[5]; Raymond Rodriguez[5]; Karen McDonald[2]; Xi Chen[1]; Carlito Lebrilla[1]; *[1]UC Davis, Chemistry Department, Davis, CA; [2]UC Davis, Chemical Engineering & Materials Science, Davis, CA; [3]UC Davis, Plant Pathology, Davis, CA; [4]UC Davis, Plant Science, Davis, CA; [5]UC Davis, Molecular & Cellular Biology, Davis, CA*

TP 259 **Rapid and Complete Structural Assignments of Recombinant Monoclonal Antibody Glycans;** Ting Song; Sureyya Ozcan; Alicia Becker; Carlito Lebrilla; *University of California Davis, Davis, California*

TP 260 **Biosimilar Glyco-analysis Comparison via Procainamide Labeling and Tandem LC-MS;** Charles Nwosu; Natalie Yau; Steven Becht; *Pharmaceutical Product Development, Middleton, WI*

TP 261 **2D UPLC and Synapt G2 Mass Spectrometry Facilitates mAb Biosimilar Study;** Suping Zheng; Shirley Lin; Steve Becht; *PPD, Inc., Middleton, WI*

TP 262 **Analysis of Monoclonal Antibody using High Flow HPLC coupled to Time-of-Flight Mass Spectrometry;** Ravindra Gudihal[1]; Suresh Babu CV[1]; Ning Tang[2]; *[1]Agilent Technologies India Pvt. Ltd, Bangalore, INDIA; [2]Agilent Technologies, Inc.,, Santa Clara, CA*

TP 263 **Modular Workflow for Biosimilar Antibody Characterization at the Intact and Middle-Down Level;** Zsolt Gengeliczki; Marcell Olajos; Tamás Kiss; János Varga; Krisztián Lenkey; Katalin Baranyáné Ganzler; *Gedeon Richter Plc., Budapest, Hungary*

TP 264 **Structure Characterization and Differentiation of Biosimilar and Reference Products using Unique Combination of Complementary Fragmentation Mechanisms;** Zhiqi Hao[1]; Fan Zhang[2]; Shiaw-Lin Wu[2, 3]; David Horn[1]; *[1]Thermo Fisher Scientific, San Jose, CA; [2]BioAnalytix, Cambridge, MA; [3]Barnett Institute, Northeastern University, Boston, MA*

TP 265 **Comprehensive Assessment of the Biosimilarity of Protein Biotherapeutics Based on Ion Signal Statistics in LC/MS Peptide Mapping Data;** Stephane Houel[1]; Mark Bennett[2]; Ying Qing Yu[1]; Weibin Chen[1]; *[1]Waters Corp, Milford, MA; [2]Nonlinear dynamics, Newcastle, UK*

TP 266 **Absolute Quantification Strategies for Total Protein and Monosaccharide Concentration in a Monoclonal Antibody (IgG) using 'bottom-Up' ID LC-MS/MS Hydrolysis Techniques;** Mark Lowenthal; Eric Kilpatrick; John Schiel; Karen Phinney; *National Institute of Standards and Technology, Gaithersburg, MD*

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TP 267 **Rapid Measurement of Food Adulteration with Minimal Sample Preparation and No Chromatography using DSA/TOF;** Avinash Dalmia[1]; Thomas White [2]; Craig M. Whitehouse[2]; *[1]Perkinelmer, Shelton, CT; [2]PerkinElmer, Branford, CT*

TP 268 **Determination of the Mycotoxin T2 from Oats by Direct Analysis in Real Time - Mass Spectrometry (DART-MS);** Mark Busman; *USDA, ARS, NCAUR, BFP, Peoria, IL*

TP 269 **Profiling Beer: Solid Phase Micro-Extraction (SPME) Analysis via Direct Analysis in Real Time HRMS;** Joseph Lapointe; Brian Musselman; Robert Goguen; *Ionsense Inc., Saugus, MA*

TP 270 **Same Day Analysis of Persistent Organic Pollutants in Food;** Sevag Palanjian; Lawrence Kramer; *Fluid Management Systems, Watertown, MA*

TP 271 **Total Extractable Fat Using Pressurized Liquid Extraction (PLE);** Jim Ceven; Tom Hall; *Fluid Management Systems, Watertown, MA*

TP 272 **Simultaneous Positive/Negative Dielectric Barrier Discharge Microplasma Ionization for Multiclass Organic Contaminants' Determination in complex matrices by LC/HRMS;** Heiko Hayen[1, 2]; Bienvenida Gilbert-López[3]; Juan F Garcia-Reyes [3]; Antonio Molina-Díaz[3]; Joachim Franzke[4]; *[1]University of Wuppertal, Wuppertal, Germany; [2]University of Muenster, Muenster, Germany; [3]University of Jaén, Jaén, Spain; [4]Leibniz-Institut für Analytische Wissenschaften, Dortmund, Germany*

TP 273 **Analyses of Chlorinated Contaminants in Food Products by Atmospheric-Pressure Dissociative Electron Attachment Ionization;** Carina Minardi[1]; Paolo Lecchi [2]; Kaveh Jorabchi[1]; *[1]Georgetown Univ., Washington, DC; [2]DSM Nutritional Products, Columbia, MD*

TP 274 **Development and Validation of a Highly Sensitive LC-MS/MS Method for Quantitation and Confirmation of Oxytocin in Milk;** Prasanth Joseph[1]; Praveen Kumar Sharma[1]; Manoj Pillai[1]; Sanjivan Bahman[2]; Ajit Dua[2]; S.S. Marwaha[2]; *[1]AB SCIEX, Gurgaon, INDIA; [2]Punjab Biotechnology Incubator, Mohali, India*

TP 275 **High Sensitivity Quantitation Method of Dicyandiamide and Melamine in Milk Powders by Liquid Chromatography Tandem Mass Spectrometry;** Zhi Wei Ting[1]; Jing Cheng Ng*[2]; Jie Xing[1]; Zhaoqi Zhan[1]; *[1]Customer Support Centre, Shimadzu (Asia Pacific) Pte Ltd, Singapore Science Park 1, Singapore; [2]Department of Chemistry, National University of Singapore, Singapore, *Student*

TP 276 **Accurate Mass Screening of Nitrogenous Economic Adulterants in Milk Proteins;** Nicholas Cellar[1]; Jonathan Draher[1]; Nicholas Baldauf[2]; Todime Reddy[1]; *[1]Abbott Laboratories, Columbus, OH; [2]Advanced Testing Laboratory, Blue Ash, OH*

TP 277 **Determination of Emerging Nitrogenous Economic Adulterants in Milk Proteins by HPLC/Compact Mass Spectrometry;** Stefan Ehling[1]; Jonathan Draher[1]; Nick Cellar[1]; Todime Reddy [1]; Jack Henion[2]; Nigel Sousou[2]; *[1]Abbott Nutrition, Columbus, OH; [2]Advion, Inc., Ithaca, NY*

TP 278 **Enhanced Reduction of Matrix Effects using LC-MS/MS with Online Extraction for the Rapid Quantitation of Antibiotics in Milk;** Louis Maljers; Helen Qingyu Sun; *Bruker Daltonics Inc, Fremont, Ca*

TP 279 **Simultaneous Determination of Aminoglycoside in Food Products by Ultra-High Performance Liquid Chromatography Tandem Mass Spectrometry with Triggered Multiple Reaction Monitoring;** Wen-Yen Lee; Shan-An Chan; *Agilent Technology, Inc., Taipei, Taiwan*

TP 280 **Quick and Sensitive Analysis of Multiclass Veterinary Drug Residues in Animal Products using a Novel Benchtop Orbitrap Mass Spectrometry System;** Olaf Scheibner[1]; Maciej Bromirski[1]; Markus Kellmann[1]; Sebastian Westrup[2]; Charles T. Yang[3]; *[1]Thermo Fisher Scientific, Bremen, Germany; [2]Thermo Scientific, Dreieich, Germany; [3]Thermo Fisher Scientific, San Jose, CA*

TP 281 **Determination of Benzimidazole Residues in Animal Tissue by Ultra High Performance Liquid Chromatography/Tandem Mass Spectrometry;** Yin Huo; Changku Li; Qian Sun; Jinting Yao; Song Zhan; Taohong Huang; Shin-ichi Kawano; Yuki Hashi; *Shimadzu Global COE, Shimadzu (China) Co., Ltd., Guangzhou, CHINA*

TP 282 **Rapid Determination of Residues of Beta-Agonists in Animal Tissues using Liquid Chromatography-Tandem Mass Spectrometry including Mass Spectral Library Searching;** Simon Ashton[1]; David Baker[1]; Neil Loftus[1]; Simon Hird[2]; *[1]Shimadzu, Manchester, UK; [2]The Food and Environment Agency, York, UK*

TP 283 **Detection the Residues of Tetracycline Antibiotics in Pork and Chicken Meat by SPE-LC/MS/MS;** Xuan Su[1]; Guotao Lu[2]; *[1]Bonna Agela Technologies. Ltd, Tianjin, China; [2]Bonna Agela Technologies. Inc, Wilmington, DE*

TP 284 **Analysis of 200+ Pesticides at 500 SRMs/s Using Non-Timed SRMs on a Triple Quadrupole Mass Spectrometer;** Jia Wang; Charles T. Yang; Jonathan Beck; Jennifer Massi; Dipankar Ghosh; Mary Blackburn; *Thermo Fisher Scientific, San Jose, CA*

TP 285 **Quantitative Analysis of Anabolic Steroids in Control Samples from Food-Producing Animals using a Column-Switching LC-HESI-MS/MS Assay;** John Warrander[1]; David Baker[1]; Neil Loftus[1]; Simon Hird[2]; *[1]Shimadzu, Manchester, UK; [2]The Food and Environment Agency, York, UK*

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TP 286 **A Combinatronics Approach To Lipid A Structure Identification;** Tao Liang; Michael C. Wilson; Sung Hwan Yoon; Lisa Leung; Robert K. Ernst; David R. Goodlett; *University of Maryland Baltimore, Baltimore, MD*

TP 287 **Mass Spectrometric Investigation of Rhamnolipids;** Beate Behrens[1, 2]; Jeannine Engelen[1]; Heiko Hayen[1, 2]; *[1]University of Wuppertal, Wuppertal, Germany; [2]University of Muenster, Muenster, Germany*

TP 288 **Ion Mobility Spectrometry and Tandem Mass Spectrometry for the Characterization of Ganglioside Lipids from Mouse Brain Tissue using *Vacuum* Ionization;** Corinne Lutomski[1]; Tarick El-Baba[1]; James Wager-Miller[2]; Ken Mackie[2]; Sarah Trimpin[1]; *[1]Wayne State University, Detroit, MI; [2]Indiana University, Bloomington, IN*

TP 289 **Structural Characterization of Phospholipids Using Ultraviolet Photodissociation;** Dustin Klein; Jennifer Brodbelt; *University of Texas at Austin, Austin, TX*

TP 290 **Method of Coupling Solution-Phase Paterno-Buchi Reaction with on-line MS for Locating C=C Bond in Unsaturated Lipids;** Craig Stinson; Xiaoxiao Ma; Yu Xia; *Purdue University, West Lafayette, IN*

TP 291 **Influence of Anaerobic Conditions on Activation of CF Specific Modifications to *Pseudomonas aeruginosa* Lipid A by MALDI-TOF MS;** Lauren Hittle; Robert Ernst; *University of Maryland, Baltimore, Baltimore, Maryland*

TP 292 **Structural Analyses of Lipid A from *Burkholderia pseudomallei* and *Burkholderia thailandensis* by Mass Spectrometry;** Ravi Chandran Reddy Alla[1]; Michael Bechill[2]; Susan Salari[1]; Austen Mance[1]; Kevin Samson[1]; Dragan Isailovic[1]; Mark Wooten[2]; *[1]University of Toledo, Toledo, OH; [2]University of Toledo College of Medicine, Toledo, OH*

TP 293 **Improved Neutral Steroids Detection and Evidence for Their Regiospecific Decompositions using Anion Attachment Mass Spectrometry;** Quentin Dumont[1]; Nalaka Rannulu[2]; Isabelle Bailloux[3]; Corinne Buisson[3]; Nathalie Mechin[3]; Françoise Lasne[3]; Richard B. Cole[1]; *[1]Université Pierre et Marie Curie, Paris, FRANCE; [2]Johnson & Johnson, Philadelphia, PA; [3]Agence Française de Lutte contre le Dopage, Châtenay-Malabry, France*

TP 294 **Separation of Lipid Classes, Subclasses and Isobaric/Isomeric Lipids Using a Novel FAIMS Device;** Julie Horner; David A. Peake; Michael Belford; Satendra Prasad; *Thermo Fisher Scientific, San Jose, CA*

TP 295 **Alkali and Alkaline Earth Metal Anionic Complexes with Unsaturated Fatty Acids: Position of Deprotonation and CID Fragmentation Mechanisms;** Michael Thomas; Geoffrey Nette; *IMBCR, Dunwich, Australia*

TP 296 **Rapid Identification of Lipids in Human RBC membrane using Direct Infusion MS/MS^{all} and Online Information Dependent Analysis Methods;** Chao Zhang; Ting Liu; *AB Sciex Company, Shanghai, China*

TP 298 **Shotgun Lipidomics with High Analytical Confidence;** Julio Sampaio[1]; Kai Schuhmann[2]; Madalina Oppermann[3]; Kai Simons[1]; Markus Kellmann[3]; Andrej Shevchenko[2]; *[1]Lipotype GmbH, Dresden, Germany; [2]MPI-CBG, Dresden, Germany; [3]Thermo Fisher Scientific, Bremen, Germany*

TP 299 **Electron-Induced Dissociation (EID) of Physiologically Relevant Phospholipids and Glycophospholipids;** Jace W. Jones[1]; Christopher Thompson [2]; Claire L. Carter[1]; Gregory Tudor[3]; Catherine Booth[3]; Isabel L. Jackson[1]; Zeljko Vujaskovic[1]; Thomas J. Macvittie[1]; Maureen A. Kane[1]; *[1]University of Maryland, Baltimore, MD; [2]Bruker Daltonics Inc., Billerica, MA; [3]Epistem Ltd,, Manchester , UK*

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TP 300 **Doxorubicin-Induced Mitochondrial Toxicity and Metabolomic Lipid Profile;** Ying Zhou[1]; Meredith Crosby[2]; Harriet Kamendi[3]; *[1]AstraZeneca, Infection Chemistry, Analytical Group, Waltham, MA; [2]AstraZeneca, Drug Safety and Metabolism, Waltham, MA; [3]Kandih Group, LLC, Burtonsville, MD*

TP 301 **Metabolic Profiling of Gottingen Minipig Plasma Using GC-MS and LC-MS;** Jeffrey Mcguire[1]; Nicholas Vaccaro[2]; *[1]US Army ECBC, Aberdeen Proving Ground, MD; [2]The Tome School, North East, MD*

TP 302 **Formation of Mono- and Di-nitrosopiperazine in Gastric Juices and Their Relationships between Concentrations of Nitrite, Nitrate, Piperazine;** Mehmet Akyüz; Şevket Ata; *Bülent Ecevit University, Zonguldak, Turkey*

TP 303 **Venom proteome of Malaysian *Bungarus candidus* and *Bungarus fasciatus*;** Iekhsan Othman[1]; Muhamad Rusdi Ahmad Rusmili[1, 2]; Ting Yee Tee [1]; Wayne C. Hodgson[2]; *[1]Monash University Malaysia, Jln Lagoon Selatan, Bandar Sunway, MALAYSIA; [2]Monash University, Clayton Campus, Melbourne, Vic*

TP 304 **Quantitation of Pyrethroids in Rat Liver and Muscle Using Gas Chromatography Negative Chemical Ionization Mass Spectrometry;** Darren Gullick; Andrew Popovici; Holly Young; James Bruckner; Brian Cummings; Michael G. Bartlett; *University of Georgia, Athens, GA*

TP 305 **Identification of Rat Liver Protein Targets of Acrylonitrile *in vivo* using Two-Dimensional Liquid Chromatography and Mass Spectrometry;** Jian Cai; Harrell E. Hurst; Donald E. Nerland; Daniel W. Wilkey; Michael L. Merchant; Frederick W. Benz; *University of Louisville, Louisville, KY*

TP 306 **Study on the Aconitine-Type Alkaloids of Radix Aconiti Lateralis and Its Stir-Fried Product using HPLC-ESI-MSn;** Beibei wang; Shuang Zhao; Yonggang Liu; Tan Peng; *Beijing, China*

TP 307 **The Formation of N-nitrosopyrrolidine and N-nitrosopiperidine in Foods;** Şevket Ata; Mehmet Akyüz; *Bülent Ecevit University, Zonguldak, Turkey*

TP 308 **Analysis of Fluorinated Derivatives of Carcinogenic Aryl Amines Utilizing MRM with a Tandem-Quadrupole;** Matthew Curtis; Rafael Acosta; Fred Feyerherm; *Agilent Technologies, Santa Clara, CA*

TP 309 **Metabolism of the Two Endocrine Disruptors Benzophenone-2 and Bisphenol-S Studied in Zebrafish and Human Cell Models using LC-HRMS;** Vincent Le Fol[2, 4]; Daniel Zalko[2, 3]; Selim Aït-Aïssa[4]; François Brion[4]; Laurent Debrauwer[1, 3]; *[1]INRA UMR 1331 Toxalim - AXIOM Platform, Toulouse, France; [2]INRA UMR 1331 Toxalim - MeX Team, Toulouse, France; [3]Toulouse University, INP, Toxalim, Toulouse, France; [4]INERIS, ECOT Unit, Verneuil-en-Halatte, France*

TP 310 **Rotenone Causes Alterations to Lipid Metabolism in SH-SY5Y Cells;** Andrew J. Worth; Sankha S. Basu; Nathaniel W. Snyder; Ian A. Blair; *University of Pennsylvania, Philadelphia, PA*

TP 311 **An Aquatic Ecotoxicological Proteomic Study on the Effects of Spironolactone;** Barbara S. Larsen[1]; Robert Hoke[1]; Kimberly Ralson-Hooper[2]; Gary Ankley[3]; Dan Villeneuve[3]; Carlie LaLone[4]; *[1]The DuPont Company, Wilmington, DE; [2]Dow AgroSciences LLC, Indianapolis, In; [3]US EPA, Duluth, Mn; [4]University of Minnesota, Duluth, Mn*

TP 312 **The Metabolic Profiling and Toxicity Study of Maleic Acid in Sprague-Dawley Rats following a Four-Week Oral Gavage Exposure;** Hsin-Chang Chen[1]; Yee-Soon Ling[1]; Charlene Wu[1]; Su-Yin Chiang[2]; Kuen-Yuh Wu*[1]; *[1]National Taiwan University, Taipei, Taiwan; [2]China Medical University, Taichung, Taiwan*

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TP 319 **Characterization of Carbohydrate-Monophosphoryl Lipid Conjugate Cancer Vaccine Candidates using Matrix Assisted Ionization *Vacuum* Mass Spectrometry;** Beixi Wang; Guochao Liao; Zhongwu Guo; Sarah Trimpin; *Wayne State University, Detroit, MI*

TP 320 **Developments towards Full Heparanome Sequence Analysis: Sequencing of a Natural Heparan Sulfate dp4 Library;** Rongrong Huang; Chengli Zong; Andre Venot; Yulun Chiu; Dandan Zhou; Geert-Jan Boons; Joshua S. Sharp; *CCRC, University of Georgia, Athens, GA*

TP 321 **Reconfirmation of the "Charge-Localization Isomers" of Dibasic Acids using Another GAG Disaccharide;** Yoko Ohashi[1]; Yuya Otsuka[2]; Toshikazu Minamisawa[2]; Takashi Hirano[1]; *[1]The University of Electro.-Communications, Chofu, Tokyo, Japan; [2]seikagaku Corporation, Higashiyamato-Shi, Tokyo, Japan*

TP 322 **The Effects of Linkage Stereochemistry and Protecting Groups on Glycosidic Bond Stability of Sodium Cationized Glycosyl Phosphates;** Zhihua Yang; Weiwei Chen; David Crich; Mary T. Rodgers*; *Wayne State University, Detroit, MI*

TP 323 **Deciphering the Glycan Electron Activated Dissociation Processes;** Yiqun Huang[1]; Yi Pu[2]; Xiang Yu[1]; Catherine E. Costello[1]; Cheng Lin[1]; *[1]Boston University School of Medicine, Boston, MA; [2]Boston University, Boston, MA*

TP 324 **Evidence for Polysialylated N-Glycans in Serum Generated by GlyQ-IQ Software and Long Column Liquid Chromatography-Subambient Pressure Electrospray Ionization Mass Spectrometry;** Scott R. Kronewitter; Gordon W. Slysz; Ioan Marginean; Jonathan T. Cox; Clay D. Hagler; Brian L. LaMarche; Rui Zhao; Myanna Y. Harris; Matthew E. Monroe; Christina A. Polyukh; Kevin L. Crowell; Anil K. Shukla; Timothy S. Carlson; David G. Camp II; Keqi Tang; Josh N. Adkins; Ronald J. Moore; Gordon A. Anderson; Samuel H. Payne; Karin D. Rodland; Richard D. Smith; *Pacific Northwest National Lab, Richland, WA*

TP 325 **In-ESI source Hydrogen/Deuterium Exchange of Carbohydrates Ions;** Yury Kostyukevich[1]; Alexey Kononikhin[1, 2]; Igor Popov[1, 2]; Eugene Nikolaev[1, 2]; *[1]Institute for Energy Problems of Chemical Physics, Moscow, Russia; [2]Emanuel Institute of Biochemical Physics, Moscow, Russia*

TP 326 **Carbonyl-Reactive Tandem Mass Tag (TMT) Reagents for Mass Spectrometry-Based Quantitative Glycomics: Enabling Quantitative LC-MS Workflows;** Sergei Snovida[1]; Rosa Viner[2]; John C. Rogers[1]; *[1]Thermo Fisher Scientific, Rockford, IL; [2]ThermoFisher Scientific, San Jose, CA*

TP 327 **Top-Down Meets Bottom-Up Glycoproteomics of IgG Monoclonal Antibodies;** Arun Everest-Dass[1]; Xiaomin Song[2]; Matthew Fitzhenry[2]; Mark Molloy[1, 2]; Nicolle Packer[1]; *[1]Macquarie University, Sydney, Australia; [2]Australian Proteome Analysis Facility, Sydney, Australia*

TP 328 **Application of Automated High-Throughput Serum N-Glycan Processing to Ovarian Cancer Biomarker Discovery;** Seunghyup Jeong[1, 2]; Jaehan Kim[1]; Serenus Hua[1, 2]; Yong-il Kwon[3]; Andrew Kim[4]; Hyun Joo An[1, 2]; *[1]Chungnam National University, Daejeon, South Korea; [2]Asia Glycomics Reference Site, Daejeon, South Korea; [3]Hallym University Colleage of Medicine, Seoul, South Korea; [4]Beckman Coulter Korea, Seoul, South Korea*

TP 329 **Separation and Structural Characterization of Epimeric Mixtures of Chondroitin and Dermatan Sulfate GAGs using Field Asymmetric Ion Mobility Spectrometry (FAIMS);** Muchena J. Kailemia[1]; Isaac Agyekum[1]; Melvin A. Park[2]; Robert J. Linhardt[3]; Lingyun Li[3]; Jon Amster[1]; *[1]University of Georgia, Athens, GA; [2]Bruker Daltonics, Inc., Billerica, MA; [3]Rensselaer Polytechnic University, Troy, NY*

TP 330 **A Rapid Method to Distinguish 2,3 and 2,6-sialic Acid without Chemical Labeling and Enzyme Treatment;** Chein-Hung Chen; Ya-Ping Lin; Jung-Lee Lin; Chung-Hsuan Chen; *Genomics Research Center, Academia Sinica, Taipei, Taiwan*

TP 331 **Separation and Quantitation of N-glycans with Different Sialic Acid Linkages;** Shujuan Tao[1]; Yining Huang[1]; Barry Boyes[1, 2]; Ron Orlando[1]; *[1]University of Georgia, Athens, GA; [2]Advanced Materials Technology Inc, Wilmington, DE*

TP 332 **Human Platelet Function and Stability: Sequential Mass Spectrometry (MSn) and Spectrum-matching Applied to Glycomic Structure Elucidation;** Andrew Hanneman[1, 2]; David Ashline[1, 2]; Hailong Zhang[1]; Melissa Lee[3]; Joseph Lau[3]; Renata Grozovsky[4]; Karin Hoffmeister[4]; Vernon Reinhold[1]; *[1]Glycomics Center, University of New Hampshire, Durham, NH; [2]Glycan Connections, Durham, NH; [3]Roswell Park Cancer Institute, Buffalo, NY; [4]Brigham and Women's Hospital and Harvard Medical, Boston, MA*

TP 333 **Determination of Changes in Cell Surface Glycosylation with Cellular Transformations;** Dayoung Park; Narine Arabyan; Cynthia Williams; Ting Song; Bart Weimer; Carlito Lebrilla; *University of California, Davis, Davis, CA*

TP 334 **High Sensitivity Analysis of N-glycans by LC-FLD-MRM;** Oscar Potter; Hongfeng Yin; Kevin Killeen; *Agilent Technologies, Santa Clara, CA*

TP 335 **Human Milk Glycans: Isomeric Mixtures, Novel Structures, and MSn;** David Ashline[1, 2]; Hailong Zhang[2]; Vernon Reinhold[2]; *[1]Glycan Connections, Lee, NH; [2]University of New Hampshire, Durham, NH*

TP 336 **A Sensitive On-Line MS/MS Method for Characterizing N-glycans;** Yaping Sun; Dingyi Wen; *biogenidec, Cambridge, MA*

TP 337 **Deep Sequencing Using an Ultra High Resolution Column and Mass Spectrometer for Isomer Separation and Structural Identification of Glycans;** Julian Saba[1]; Udayanath Aich[2]; Rosa Viner[1]; Xiaodong Liu[2]; Srinivasa Rao[2]; Jeff Rohrer[2]; Andreas Huhmer[1]; Chris Pohl[2]; *[1]Thermo Fisher Scientific, San Jose, CA; [2]Thermo Fisher Scientific, Sunnyvale, CA*

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TP 339 **Generation of Radical Peptide Cations using Ion/Ion Reactions Coupled with Collisional Activation or 266 nm Photoexcitation;** Joshua D. Gilbert; Jiexun Bu; Boone M. Prentice; Christine M. Fisher; James G. Redwine; Scott A. McLuckey; *Purdue University, West Lafayette, IN*

TP 340 **Exploration of the Energy Surface of a Gas Phase Ion/Ion Reaction between Peptide Cations and sulfo-*N*-*hydroxysuccinimide* Ester Anions;** Jiexun Bu; Christine M. Fisher; Joshua D. Gilbert; Boone M. Prentice; Scott A. McLuckey; *Purdue University, West Lafayette, IN*

TP 341 **Selective Removal of Metals from Multiply-Charged Ions via Gas Phase Ion/Ion Reactions Using Weakly Coordinating Anions;** Carl Luongo[1]; Jiexun Bu[1]; Joshua Gilbert[1]; Boone Prentice[1]; Steven Cummings[2]; Christopher Reed[2]; Scott McLuckey[1]; *[1]Purdue University, West Lafayette, IN; [2]University of California Riverside, Riverside, CA*

TP 342 **Gas Phase Studies Involving Radical Migrations in Tyrosine- and Cysteine-Containing Peptides;** Michael Lesslie; Victor Ryzhov; *Northern Illinois University, Dekalb, IL*

TP 343 **Hydrogen-Deuterium Exchange Combined with Electron Capture Dissociation to Probe the Conformation of Gaseous Peptide Ions;** Rita Straus[1]; Rebecca A. Jockusch[2]; *[1], Toronto, Cananda; [2]University of Toronto, Toronto, ON*

TP 344 **Structural Effects in Electron Capture Dissociation of High-Valence Metal-Peptide Complexes;** Tao Jiang; Kristina Hakansson; *University of Michigan, Ann Arbor, MI*

TP 345 **Reactivity of Carboxylates with N-Hydroxysuccinimide Esters via Ion/Ion Reactions: Observations of New Covalent Chemistry in the Gas Phase;** Zhou Peng; William Mcgee; Nathan Barefoot; Scott McLuckey; *Purdue University, West Lafayette, IN*

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TP 350 **Distinguishing Amorphous and Crystalline Ices by Ultra-Low Energy Collisions of Reactive Ions;** Radha Gobinda Bhuin; Soumabha Bag; T. Pradeep; *Indian Institute of Technology, Madras, Chennai, INDIA*

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TP 353 **Reactions of Biomolecule Ions with Pyrolysis-formed Carbene;** Ziqing Lin[1]; Lei Tan[2]; Yang Yang[2]; Mingji Dai[2]; Frantisek Tureček[3]; Zheng Ouyang[1]; Yu Xia[2]; *[1]Weldon Sch of Biomedical Engr, Purdue University, West Lafayette, IN; [2]Department of Chemistry, Purdue University, West Lafayette, IN; [3]Department of Chemistry, University of Washington, Seattle, WA*

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TP 355 **Ligand Tuning for the Selective Oxidation of Methanol by $[LFeO]^+$;** Richard A. J. O'Hair[1]; Simon Svane[4]; George N. Khairallah[2]; W. Alex Donald[3]; Christopher Hansen[5]; Christine McKenzie[4]; Fantong Zhang[3]; Gabriel Da Silva[1]; Adam J. Trevitt[5]; *[1]University of Melbourne, Victoria, Australia; [2]Bio21 Inst,Uni of Melbourne, Melbourne, Australia; [3]University of New South Wales, Sydney, Australia; [4]University of Southern Denmark, Odense M, Denmark; [5]University of Wollongong, Wollongong, NSW, Australia*

TP 356 **Experimental Study of Alpha Nucleophile Reactivity;** Jennifer Reece[1]; Charles Nichols[1]; Ditte Thomsen[2]; Veronica M. Bierbaum [1]; *[1]University of Colorado, Boulder, CO; [2]University of Copenhagen, Copenhagen, Denmark*

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TP 358 **Gas-Phase Reactivity of a Substituted Charged para-Benzyne, the 6-Cyano-2,5-didehydropyridinium Cation;** Huaming Sheng; Weijuan Tang; Hilkka Kenttämaa; *Purdue University, West Lafayette, IN*

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TP 364 **IRMPD Spectroscopy Reveals a Novel Rearrangement Reaction for Modified Peptides that involves Elimination of the N-terminal Amino Acid;** Khiry Patterson[1]; John K. Gibson[2]; Giel Berden[3]; Jos Oomens[3]; Michael J. Van Stipdonk[1]; *[1]Duquesne University, Pittsburgh, PA; [2]Lawrence Berkeley Laboratory, Berkeley, CA; [3]Radboud University Nijmegen, Nijmegen, The Netherlands*

TP 365 **Fragmentation Chemistry of Asparagine and Glutamine Containing Peptides by IRMPD Spectroscopy;** Josipa Grzetic; Jonathan Martens; Giel Berden; Jos Oomens; *Radboud University Nijmegen, Nijmegen, Netherlands*

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TP 371 **Action Spectroscopy of Protonated Pyridines and Diazines: Vibronic Detail and Product Characterization;** Christopher S. Hansen[1]; Stephen J Blanksby[2]; Adam J Trevitt[1]; *[1]School of Chemistry, University of Wollongong, Australia; [2]Central Analytical Research Facility, Queensland University of Technology, Australia*

TP 372 **Probing Mobility Selected Isomers: Selective Ion-Molecule Reactions and Wavelength-Specific IR Activation;** Oscar Hernandez[1]; Samantha Isenberg[2]; Vincent Steinmetz[1]; Gary L. Glish[2]; Philippe Maitre[1]; *[1]Université Paris Sud, Orsay, France; [2]University of North Carolina, Chapel Hill, NC*

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TP 383 **Ionization Characteristics of Amino Acids in Direct Analysis in Real Time-Mass Spectrometry (DART-MS);** Kanako Sekimoto[1]; Motoshi Sakakura[2]; Takatomo Kawamukai[2]; Hiroshi Hike[2]; Teruhisa Shiota[2]; Fumihiko Usui[2]; Yasuhiko Bando[2]; Mitsuo Takayama[1]; *[1]Yokohama City University, Yokohama, Japan; [2]AMR, Inc., Tokyo, Japan*

TP 384 **High-Mass Cluster Ions of Ionic Liquids in Positive-Ion and Negative-Ion DART-MS and their Application for Wide Range Mass Calibrations;** Juergen Gross; *Organisch-Chemisches Institut, Heidelberg, Germany*

TP 385 **Selective Replacement of Carbon in Aromatics with Nitrogen in an Ambient Discharge;** Zhiping Zhang[1]; Yajun Zheng[1]; Xinrong Zhang[2]; Zheng Ouyang[3]; *[1]Xi'an Shiyou University, Xi'an, China; [2]Tsinghua University, Beijing, China; [3]Purdue University, West Lafayette, IN*

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TP 388 **Extractive Electrospray Ionization Mass Spectrometry of Ionic Liquids;** Yafei Zhou[1]; Konstantin Chingin[1]; Shuiping Yang[1]; Saijin Xiao[1]; Liang Zhu[2]; Eric Handberg[1]; Huanwen Chen[1]; *[1]East China Institute of Technology, Nanchang, China; [2]ETH Zurich, Zurich, Switzerland*

TP 389 **Electrostatic Spray Ionisation for Ambient Mass Spectrometry Imaging;** Liang Qiao[1]; Hubert Girault[1]; Elena Tobolkina[1]; Andreas Lesch[1]; Xiaoqin Zhong[1]; Alexandra Bondarenko[1]; Baohong Liu[2]; Horst Pick[1]; Horst Vogel[1]; *[1]École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; [2]Fudan University, Shanghai, China*

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TP 398 **Electrospray Ionization of Noble Metals and the Collection of Metal Ions toward the Synthesis of Metallic Nanoparticles and Organometallics;** Anyin Li[1]; Qingjie Luo[2]; Zane Baird[1]; Depanjan Sarkar[3]; Anirban Som[3]; Bootharaju M. S.[3]; Pradeep T.[3]; R. Graham Cooks[1]; *[1]Purdue University, West Lafayette, IN; [2]University of Pennsylvania, Philadelphia, PA; [3]Department of Chemistry, IIT Madras, Chennai, India*

TP 399 **Ambient Detection of Chelation Complexes of Metals from Solids using Electrospray Laser Desorption Ionization Mass Spectrometry;** Christopher Shiea[1]; Yi-Lun Chen[2]; Yeou-Lih Huang[1]; Min Zong Huang[2]; *[1]Dept. of Medical Lab Sci. & Biotech., KMU, Kaohsiung, Taiwan; [2]Dep. of Chemistry National Sun Yat-Sen University, Kaoshiung, Taiwan*

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TP 401 **Desorption Atmospheric Pressure Photoionization-High Resolution Mass Spectrometry Fingerprinting of Urinary Steroids during Pregnancy;** Anu Vaikkinen[1]; Tiina J Kauppila[1]; Josef Cvacka[2]; Risto Kostiainen[1]; *[1]University of Helsinki, Helsinki, FINLAND; [2]Institute of Organic Chemistry and Biochemistry, v, Praha, CZECH REPUBLIC*

TP 402 **On-line Breath Analysis of VOCs in Breath using Atmospheric Pressure Chemical Ionisation with a Compact Quadrupole Mass Spectrometer;** Matthew Turner; Liam Heaney; Kayleigh Arthur; Dorota Ruskiewicz; Colin Creaser; Paul Thomas; James Reynolds; *Loughborough University, Loughborough, UK*

TP 403 **Development of a Digital Microfluidic-Surface Acoustic Wave Nebulization Affinity Chip for MS Analysis;** Yue Huang[1]; Michael Wilson[1]; Scott Heron[1]; John S. Edgar[2]; Sung Hwan Yoon[1]; Patrick Langridge-Smith[3]; David Goodlett [1]; *[1]University of Maryland, Baltimore, MD; [2]Deurion, LLC, Seattle, WA; [3]University of Edingburgh, edingburgh, UK*

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TP 407 **Internal Energy Deposition for Ultrafast Laser Vaporization and Electrospray Postionization Using Thermometer Ions and Peptides;** Paul Flanigan; Fengjian Shi; Johnny Perez; Santosh Karki; Conrad Pfeiffer; Robert Levis; *Temple University, Philadelphia, PA*

TP 408 **Metabolite and Lipid Turnover Rates in Live Microalgae by Pulse-Chase Analysis and Laser Ablation Electrospray Ionization Mass Spectrometry;** Tarek Mansour[1]; Sylwia Stopka[1]; Éric Maréchal[2]; Denis Falconet [2]; Akos Vertes[1]; *[1]George Washington University, Washington, District Of Columbia; [2]CEA-CNRS-INRA-Univ. Grenoble Alpes, Grenoble, France*

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[2]Institute for Energy Problems of Chemical Physics, Moscow, Russian Federation; [3]Pirogov Russian National Research Medical Univers., Moscow, Russian Federation; [4]Moscow Institute of Physics and Technology, Moscow, Russian Federation

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TP 413 **Comparative Study of the Efficiency of Different Matrices for the Analysis of Microalgae Intact Cells by MALDI TOF TOF Technique;** Lidiane Maria de Andrade[1]; Maria Anita Mendes[1]; Claudio Augusto Oller do Nascimento[1]; Paul Kowalski[2]; *[1]Chemical Engineering Departament of POLI/USP, Sao Paulo, Brazil; [2]Bruker Daltonics, Billerica, MA*

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TP 416 **Increased Survival Yields of Labile Molecules using New Electron Transfer MALDI Matrices;** Laura Castellanos[1]; Brian Castro[2]; Hernando Rosales[1]; Cesar Sierra[2]; Cristian Blanco[1]; Marianny Combariza[1]; *[1]Universidad Industrial de Santander, Bucaramanga, Colombia; [2]Universidad Nacional de Colombia, Bogota, Colombia*

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TP 418 **On the Way to Quantification of Endogenous Lipids by MALDI MSI: a Practical Study of Crucial Sample Preparation Parameters;** Laure Jadoul; Rémi Longuespée; Delphine Debois; Gauthier Eppe; Edwin De Pauw; *Mass Spectrometry Laboratory, University of Liège, Liège, Belgium*

TP 419 **Deducing Protein Composition from Complex Protein Preparations by MALDI without Peptide Separationer;** Kenneth Parker; *SimulTOF/ VIC Instruments, Sudbury, MA*

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TP 422 **Probing the Role of APOE in Global Proteomic Changes of Cerebrospinal Fluid in Preclinical Alzheimer's Disease;** Jingxin Wang; Ozioma Okonkwo; Lingjun Li; *UW-Madison, Madison, WI*

TP 423 **Proteomics Profiling of Pediatric Serum and Discovery of Biomarkers for Differentiation of the Cause of Febrile Illnesses in Madagascar;** Laetitia Cortes[1]; Yiyong Zhou[1]; Melina Messaoudi[4]; Muriel Maeder[2]; Rudolf Guilbaud[1]; Michael Schirm[1]; Jonathan Hoffmann[4]; Bénédicte Contamin[2]; Martin Randriamarotia[3]; Valentina Picot[4]; Glaucia Paranhos-Baccalà[4]; Eustache Paramithiotis[1]; *[1]Caprion, Montreal, CANADA; [2]Centre d'Infectiologie Charles Mérieux (CICM), Antananarivo, Madagascar; [3]Fondation Médicale d'Ampasimanjeva (FMA), Ampasimanjeva, Madagascar; [4]Emerging Pathogens Laboratory, Fondation Mérieux, Lyon, France*

TP 424 **Lipidomic and Transcriptomic Profiling in Mental Disease;** Raissa Lerner; Beat Lutz; Laura Bindila; *, Mainz, Germany*

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TP 426 **Improved Detection and Quantification in Plasma-based Biomarker Discovery;** Michael Burgess[1]; Hasmik Keshishian[1]; D.R. Mani[1]; Philipp Mertins[1]; Karl Clauser[1]; Michael A. Gillette[1, 2]; Robert Gerszten[1, 2]; Steven A. Carr[1]; *[1]Broad Institute, Cambridge, MA; [2]Massachusetts General Hospital, Boston, MA*

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TP 428 **Evaluation of Multiple Search Engines for the Proteomic Analysis of Pap Tests for Biomarker Discovery in Gynecological Malignancies;** Somi Afiuni; Kristin Boylan; Timothy Griffin; Amy Skubitz; *University of Minnesota, Minneapolis, MN*

TP 429 **Proteomic Investigation of Saliva from Children with Autism Spectrum Disorder and Matched Controls by SDS-PAGE and DIGE and LC-MS/MS;** Katherine Beglinger[1]; Kelly Wormwood[1]; Armand Ngounou[1]; Jeanne Ryan[2]; Costel Darie[1]; Alisa G. Woods[1]; *[1]Clarkson University, Potsdam, NY; [2]SUNY, Plattsburgh, NY*

TP 430 **Multiplexed Protein Expression Profiling of Pancreatic Stellate Cells under Nicotine Stress;** Joao Paulo; Steven Gygi; *Harvard Medical School, Boston, MA*

TP 431 **Application of iTRAQ Proteomics to Study Biotherapeutic mAb Production in CHO Cells;** Deniz Baycin Hizal[1]; David Gold[1]; Huifang Dong[1]; Wei Zhu[1]; Raghothama Chaerkady[2]; Robert Cole[2]; Herren Wu[1]; Michael Bowen[1]; Jie Zhu[1]; *[1]MedImmune, Gaithersburg, MD; [2]Johns Hopkins University, Baltimore, MD*

TP 432 **Metabolic Profiling of Transgenic Mouse Model for Polyp-Stage Colorectal Cancer;** Michael Williams[1]; Xing Zhang[1]; Amy Belton[2]; Jeong-Jin Park[1]; William Siems[1]; David Gang[1]; Linda Resar[2]; Raymond Reeves[1]; Herbert Hill[1]; *[1]Washington State University, Pullman, Washington; [2]Johns Hopkins University School of Medicine, Baltimore, MD*

TP 433 **Application of Mass Spectrometry for Tumor Proteogenomic Signature Discovery;** Michael C. Wendl[1]; Song Cao[1]; R. Jay Mashl[1]; Kelly Ruggles[4]; Philipp Mertins[5]; Pei Wang[6]; Harsha Gunawardena[7]; John Wrobel[7]; Beifang Niu[1]; Kai Ye[1]; Matthew A. Wyczalkowski[1]; Michael McLellan[1]; Christopher A. Maher[1, 2]; Sherri R. Davies[2]; R.

Reid Townsend[2]; David Fenyo[4]; Steven A. Carr[5]; Xian Chen[7]; Matthew J. Ellis[2, 3]; Li Ding[1, 2]; *[1]The Genome Institute at Washington University, St. Louis, MO; [2]Washington University Dept of Medicine, St. Louis, MO; [3]Siteman Cancer Center, St. Louis, MO; [4]NYU Langone Medical Center, New York, NY; [5]Broad Institute, Cambridge, MA; [6]Fred Hutchinson Cancer Research Center, Seattle, WA; [7]UNC School of Medicine, Chapel Hill, NC*

TP 434 **Investigating Post-Transcriptional Modifications of Viral RNA by Affinity Capture and MS Analysis;** W. McIntyre[1]; Rebecca E. Rose[1]; M. Arra[2]; M. Canki[2]; C. Pager[1]; D. Fabris[1]; *[1]The RNA Institute, University at Albany, Albany, NY; [2]Albany Medical Center, Albany, NY*

TP 435 **Proteins Regulated by Shear Stress (SS) Intensity and Their Correlation with Atherosclerosis;** Gabriela Venturini[1]; Rafael Dariolli[1]; Jéssica Silva Salgueiro[2]; Karina Helena Morais Cardozo[2]; Valdemir Melechco Carvalho[2]; José Eduardo Krieger[1]; Alexandre da Costa Pereira[1]; *[1]Heart Institute - FMUSP, Sao Paulo, SP - Brazil; [2]Fleury Group, São Paulo, SP - Brazil*

TP 436 **Understanding the Effect of Cysteine on Proteomic Profiles in *Saccharomyces cerevisiae* with High Consistency and Accuracy using Data Independent Acquisition;** Ajay Bhat[1, 2]; Trayambak Basak[1, 2]; Dipankar Malakar[3]; Manoj Pillai[3]; Shantanu Sengupta[1, 2]; *[1]CSIR-Institute of Genomics and Integrative Biology, New Delhi, India; [2]Academy of Scientific and Innovative Research, New Delhi, India; [3]AB Sciex, India, Gurgaon, India*

TP 437 **Label-free Quantitative Analysis of Radiation-induced Differential Protein Expression in The Mouse Lung Proteome;** Bao Quoc Tran[1]; Young Ah Goo[1]; Catherine Booth[2]; Greg Tudor[2]; Wenjing Li[1]; David R. Goodlett [1]; Thomas J. MacVittie[1]; Maureen A. Kane[1]; *[1]University of Maryland, Baltimore, MD; [2]Epistem Ltd, Maschester, UK*

TP 438 **Integrated Phosphoproteogenomic Analyses of Patient-Derived Breast Cancer Xenograft Models Allow Molecular Characterization of Human Disease Biology and Therapeutic Response;** Michael A. Gillette[1, 2]; Philipp Mertins[1]; Jana W. Qiao[1]; D. R. Mani[1]; Karl R. Clauser[1]; Sherri R. Davies[5]; Kelly V. Ruggles[3]; Song Cao[5]; Christopher A. Maher[5]; Michael McLellen[5]; David Fenyo[4]; Li Ding[5]; Matthew J. Ellis[5]; Steven A. Carr[1]; *[1]Broad Institute of Harvard and MIT, Cambridge, MA; [2]Massachusetts General Hospital, Boston, MA; [3]NYU Langone Medical Center, New York, NY; [4]New York University, New York, NY; [5]Washington University, St. Louis, Missouri*

TP 439 **Deciphering Systemic Responses to Brain Disorders by Quantitative Proteomics;** Li Cao; Fang Bian; An Zhou; *Morehouse school of medicine, Atlanta, GA*

TP 440 **Robotic Preparation of Hundreds of Clinical Samples for Protein Biomarker Verification and Validation;** Tony Tegeler[1]; Matthew Rosenow[1]; Paul Russo[2]; Ruben Magni[2]; Alessandra Luchini[2]; Lance Liotta[2]; Emanuel Petricoin[2]; Patrick Pirrotte [1]; *[1]Translational Genomics Research Institute, Phoenix, AZ; [2]Center for Applied Proteomics & Molecular Medicine, Manassas, VA*

TP 441 **Discovery of Tissue Regenerating Biomarkers in the Secretome Released from Human Embryonic Stem Cell-derived Hepatocytes by Using Proteomic Approach;** Hee-Joung Lim[1, 2]; Jiyou Han[1]; Yu Jin Jang[1]; Ae Eun Seok[2]; Jong-Moon Park[3]; Hyun-Jin Jung[4]; Yong-Seung Shin[4]; HooKeun Lee[3]; Jong-Hoon Kim[1]; Hee-Gyoo Kang[2]; *[1]Laboratory of Stem Cells, Korea University, seoul, Republic of Korea; [2]Bio-medical Laboratory, Eulji University, Seongnam, Republic of Korea; [3]Laboratory of Proteomics, Gachon University, Incheon, Republic of Korea; [4]Agilent technologies Ltd, Suwon, Republic of Korea*

TP 442 **Comparative N-glycoproteome of the Secretome of Human Metastatic Hepatocellular Carcinoma Cell Lines;** Wantao Ying; Xianyu Li; Xiaohong Qian; *Beijing Institute of Radiation Medicine, Beijing, China*

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TP 443 **Lipidomics Driven Biomarker Identification and Validation Brings Ceramides into Diagnostics for Determining the Lipid Related Risk of Cardiovascular Death;** Kim H Ekroos[1]; Helena Simolin[1]; Matti Suoniemi[1]; Markus Kleber[2]; Reini Hurme[1]; Juha Sinisalo[3]; Winfried März[4]; Reijo Laaksonen[1]; *[1]Zora Biosciences Oy, Espoo, Finland; [2]Mannheim Institute of Public Health, Mannheim, Germany; [3]University Hospital of Helsinki, Helsinki, Finland; [4]Synlab Academy, Mannheim, Germany*

TP 444 **PZP as a Novel Biomarker for Early Alzheimer's Disease;** Diana A.T. Nijholt; A. Ikram; J.M. Kros; P.A.E. Sillevis Smitt; P.J. Koudstaal; T.M. Luider; *Erasmus Medical Centre, Rotterdam, Netherlands*

TP 445 **Biomarker Discovery in Cerebrospinal Fluid for Schizophrenia and Antipsychotic Drug Treatment-Induced Weight Gain;** Geun-Cheol Gil[1]; Bich Nguyen[1]; Yiyong Zhou[2]; Xiaolei Xie[1]; Rene Allard[2]; Howard Schulman[1]; Daniel Chelsky[1]; Sushmita Mimi Roy [1]; *[1]Caprion Proteomics US LLC, Menlo Park, CA; [2]Caprion Proteomics Inc, Montreal, Canada*

TP 446 **Elucidation of Epileptogenic Mechanisms using a Mass Spectrometry-Based Metabolomics Approach;** Svenja Heischmann[1]; Kevin Quinn[2]; Charmion Cruickshank-Quinn[2]; Lindsey B. Gano[1]; Joe Gomez[1]; Nicole Reisdorph[2]; Manisha Patel[1]; *[1]University of Colorado Denver, School of Pharmacy, Aurora, CO; [2]National Jewish Health, Denver, CO*

TP 447 **Profiling Urinary Proteome for Stress Induced Female Urinary Incotinence;** Marianne Koch[2]; Rosa Laterza[2]; Wei-Qiang Chen[1]; Miloš Barut[3]; Sonja Seyfert[4]; Heinz Kölbl[2]; Goran Mitulovic[1]; *[1]Medical University of Vienna, KIMCL, Vienna, Austria; [2]Medical Univ of Vienna, Dept. of Gyn. and Obst., Vienna, Austria; [3]BIA Separations, Ajdovščina, Slovenia; [4]Medical Univ of Vienna, Proteomics Core Facility, Vienna, Austria*

TP 448 **Immuno-based-LC/SRM as a Diagnostic tool for Measuring Protein Dynamics of Amyloid β Isoforms Instead of ELISA in the Clinical Laboratory;** Kwasi Mawuenyega; Tom Kasten; Vitaliy Ovod; Brendan Lucey; Wendy Sigurdson; Randall Bateman; *Washington University School of Medicine, Saint Louis, MO*

TP 449 **Proteome Analysis of Exhaled Breath Condensate for Lung Cancer Biomarker Discovery;** NL Starodubtceva[1, 3]; AM Ryabokon[1]; AS Kononikhin[2, 3]; EN Kukaev[1, 2]; IA Popov[1, 2]; VA Bagrov[4]; OV Pikin[4]; VV Barmin[4]; EC Anaev[5]; SD Varfolomeev[1]; EN Nikolaev[1, 2]; *[1]Emanuel Institute of Biochemical Physics, Moscow, Russia; [2]Institute for Energy Problems of Chemical Physics, Moscow, Russia; [3]Research Center for Obstetrics, Gynecology, Moscow, Russia; [4]Gertsen Institute of Oncology, Moscow, Russia; [5]Research Institute of Pulmonology, Moscow, Russia*

TP 450 **Analysis of Extracellular Matrix Peptides in Chronic Obstructive Pulmonary Disease (COPD) by LC/MS;** Jiangtao He[1, 1]; Shuren Ma[1]; Yong Y Lin[1]; Jerome Cantor[2]; Gerard Turino[1]; *[1]Icahn School of Medicine at Mount Sinai, New York, NY; [2]St. John's University, New York, NY*

TP 451 **The Mitochondrial Deacetylase SIRT3 is a Host Defense Factor Hijacked during Viral Infection;** Rommel Mathias; Matthew Lefebvre; Ileana M. Cristea; *Princeton University, Princeton, NJ*

TP 452 **Investigation on Redox Metabolism and Dopaminergic Cell Death in Response to Neuron Toxins by a MS and NMR Combined Technique;** Shulei Lei; Darrell Marshall; Yuting Huang; Aracely Garcia-Garcia; Renu Nandakumar; Eric Dodds; Rodrigo Franco; Robert powers; *university of nebraska lincoln, lincoln, NE*

TP 453 **Defining the Exposome: a Critical Quantity to Determine the Causes of Chronic Human Disease;** Anthony Macherone[1,2]; *[1]Agilent Technologies, Inc., Wilmington, DE; [2]Johns Hopkins University, Baltimore, MD*

TP 454 **Identification of Potential Metabolite Biomarkers of Lower Urinary Tract Symptoms (LUTS) in Mouse and Human Urines;** Ling Hao[1]; Tyler Greer[2]; Chad Vezina[3]; Will Ricke[4]; Paul Marker[1]; Dale Bjorling[3]; Wade Bushman[4]; Lingjun Li[1,2]; *[1]School of Pharmacy,University of Wisconsin-Madison, Madison, WI; [2]Department of Chemistry, UW-Madison, Madison, WI; [3]School of Veterinary Medicine, UW-Madison, madison, WI; [4]Department of Urology, UW-Madison, madison, WI*

TP 455 **A quantitative LC-MS/MS (Qtrap) Method to Profile Sphingolipids in Pancreatic β-cells;** Kumari Ubhayasekera; Bo EK; Jonas Bergquist; *Uppsala University, Uppsala, Sweden*

TP 456 **Differential Accumulation of Glycosphingolipids in a Tay-Sachs Disease Brain;** Huan He[1]; Yu-Teh Li[2]; Su-Chen Li[2]; Nicolas L. Young[1]; Alan G. Marshall[1,3]; *[1]Ion Cyclotron Resonance Program, NHMFL, Tallahassee, FL; [2]Tulane University School of Medicine, New Orleans, LA; [3]Department of Chemistry and Biochemistry, FSU, Tallahassee, FL*

TP 457 **Quantitative Phosphoproteomic Phenotyping of Acquired Resistance to HER2 Kinase Inhibitors in Breast Cancer using Multimodal Phosphopeptide Enrichments;** Erik J. Soderblom[1]; Hongbo Gu[2]; Jeffrey Sliva[2]; J. Will Thompson[1]; Wenle Xia[1]; Neil Spector[1]; M. Arthur Moseley[1]; *[1]Duke University School of Medicine, Durham, NC; [2]Cell Signaling Technology, Danvers, MA*

TP 458 **Proteomics Study of SCYL2-Knockdown Effect on the Distribution of Amyloid Precursor Protein and Its Fragments in the APP-Overexpressing N2a Cells;** Ko-Yi Chien; Rong Wang; *Icahn School of Medicine at Mount Sinai, New York, NY*

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TP 459 **A Sensitive Isotopic Dilution LC/MS Methodology to Evaluate Asymmetric Dimethyl Arginine Levels as a Plasma Biomarker of Endothelial Function;** Jose Castro-Perez; Paul Miller; Sheng-Ping Wang; Dan Xie; Stephen Previs; Doug Johns; *Merck Research Laboratories, Kenilworth, NJ*

TP 460 **Quantification of Intact and Truncated Stromal cell-derived factor-1α (SDF-1α) in Circulation by Immunoaffinity Enrichment and Tandem Mass Spectrometry;** Weixun Wang[1]; Bernard Choi[1]; Wenyu Li[1]; Julie Lao[1]; Anita Lee[1]; Sandra Souza[1]; Nathan Yates[2]; Timothy Kowalski[1]; Alessandro Pocai[3]; Lucinda Cohen[1]; *[1]Merck Research Labs, Rahway, NJ; [2]University of Pittsburgh, Pittsburgh, PA; [3]Janssen R&D, Spring House, PA*

TP 461 **Detection of Endothelial Cell Surface Proteins following Irradiation as Potential Targets for Brain Arteriovenous Malformations Molecular Therapy;** Margaret Simonian; *UCLA, Los Angeles, CA*

TP 462 **Measuring Protein Analyte Panels in Dried Blood Spots (DBS) using an Automated SISCAPA-MS Workflow;** Morteza Razavi[1]; Leigh Anderson[1]; Selena Larkin[1]; Terry Pearson[1,2]; *[1]SISCAPA Assay Technologies, Washington, DC; [2]University of Victoria, Victoria, BC Canada*

TP 463 **Quantitative Activity-Based Kinase Profiling in Lung Cancer;** Bin Fang; Jiannong Li; Elizabeth Wood; Y. Ann Chen; Stephen Brantley; Fumi Kinose; Wei Guan; Andrew Myers; Steven Eschrich; Uwe Rix; Eric Haura; John Koomen; *H. Lee Moffitt Cancer Center, Tampa, FL*

TP 464 **Determination of Urea in Human Serum and Epithelial Lining Fluid Using LCMS; Benchmarking to a Traditional Diagnostic Colorimetric Kit;** Christopher A Evans; Chester L Bowen; Amanda Watkins; Bonnie Orr; *GlaxoSmithKline, King Of Prussia, PA*

TP 465 **Investigation of Angiotensin Biomarker Dynamics Employing Micro-Flow LC and Microfluidic ESI-MS;** Thomas Mencken; Jonathan Kehler; Matthew Szapacs; Chester Bowen; *GlaxoSmithKline, Collegeville, PA*

TP 466 **Cross-Validation of a Ligand Binding and Immunocapture / LC-MS Assay for the Determination of the Biomarker Periostin;** Jonathan Kehler; Matthew Szapacs; *GlaxoSmithKline, King Of Prussia, PA*

TP 467 **Targeted MS2 Quantitation of Exon Skipping Restored Dystrophin in a Mouse Model of Duchenne Muscular Dystrophy;** Kristy J. Brown; Kitipong Uaesoontrachoon; Aiping Zhang; Conner Shaughnessy; Ramya Marathi; Sree Rayavarapu; Maria Candida Vila; Eric Hoffman; Kanneboyina Nagaraju; Yetrib Hathout; *Children's National Health System, Washington, DC*

TP 468 **An Omics study of CSF from HAND patients under cART reveals evidence for macrophage activation and perturbations in glutamate metabolism;** Adriana Bora[1]; Ceereena Ubaida Mohien[1]; Alexey Lyashkov[3]; Anne Blackwell[2]; Linda Chang[4]; Richard IV Moxley[1]; Ned Sacktor[1]; Justin C. McArthur[1]; Norm Haughey[1]; Avindra Nath[3]; David R. Graham[1]; *[1]Johns Hopkins Medical School, Baltimore, MD; [2]Agilent Technologies, Santa Clara, CA; [3]National Institute of Health, Bethesda, MD; [4]Hawaii University, Honolulu, HI*

TP 469 **Simultaneous Quantitation of Neurotransmitters in Dialysates Using LC/MS-MS;** Shiling Jia; Fan Wang; Charles Yang; Wei Tang; Alicia Y Du; *Chempartners, Shanghai, Zhang, Jiang, China*

TP 470 **Development of a Multiplexed Targeted SRM Assay for NCI's Top Tumor Associated Antigens for Biomarker Screening in Multiple Cancer Types;** Erik J. Soderblom; Lisa St. John - Williams; Wenle Xia; Meredith E. Turner; Matthew W. Foster; Neil Spector; M. Arthur Moseley; *Duke University School of Medicine, Durham, NC*

TP 471 **Discovery and Verification of Neurotrauma Markers by High Mass Accuracy/High Resolution Mass Spectrometry;** Sean Shen[1]; Ina Wanner[2]; Joseph A. Loo[1]; *[1]Department of Chemistry and Biochemistry, Los Angeles, CA; [2]Semel Institute for Neuroscience & Human Behavior, Los Angeles, CA*

TP 472 **Sequence Quantitative Analysis (SEQUANA): targeted-Proteomic Method for Accurate Alzheimer's Disease Diagnostic by CSF Tau Proteoforms Monitoring;** Nicolas Barthélemy[1,2]; Christophe Hirtz[2]; François Fenaille[1]; Susanna Schraen-Maschke[3]; Audrey Gabelle[2]; Christophe Junot[1]; Sylvain Lehmann[2]; François Becher[1]; *[1]CEA Saclay, DSV/iBiTec-S/LEMM, Gif s/Yvette, France; [2]CHU Montpellier, Hôpital St Eloi, IRMB/LBPC, Montpellier, France; [3]Inserm, UMR 837, IMPRT, Faculté de Médecine, Lille, France*

TP 473 **ATP7B Analysis by Immuno-SRM-MS for Wilson Disease;** Sunhee Jung; Si Houn Hahn; *Seattle Children's, Seattle, WA*

TP 474 **Development of a LC-MS/MS Method to Biomonitor 1,3-Butadiene Exposure and Early Biological Effects in Nonsmokers and Smokers;** Xiaotao Zhang[1,2]; Hongwei

Hou[1]; Longkai Shi[1]; Yong Liu[2]; An Wang[2]; Qingyuan Hu[1]; *[1]China National Tobacco Quality Supervision & Test, Zhengzhou, CHINA; [2]Anhui Institute of Optics and Fine Mechanics, Hefei, China*

TP 475 **Simultaneous Determination of N3-methyladenine, N3-ethyladenine and N3-(2-hydroxyethyl)adenine in Human Urine by Liquid Chromatography-Tandem Mass Spectrometry;** Yongfeng Tian[1]; Hongwei Hou[1]; Xiaotao zhang[1]; An Wang[2]; Yong Liu[2]; Qingyuan Hu[1]; *[1]China National Tobacco Quality Supervision & Test, Zhengzhou, China; [2]Anhui Institute of Optics and Fine Mechanics, Hefei, China*

TP 476 **Variability of Urinary VOC Metabolites Concentration in Before Bed, First Morning Void, and Spot Urine Samples;** Deepak Bhandari[1]; K. Udeni Alwis[1]; B. Rey deCastro[1]; Connie Sosnoff[1]; Yu Qiu[1]; Marsha Morgan[2]; Jon Sobus[2]; Benjamin Blount[1]; *[1]Centers for Disease Control and Prevention, Atlanta, GA; [2]US Environmental Protection Agency, Research Triangle Park, NC*

TP 477 **Identification and Quantitation of N-glycans in Dyssynchronus Heart Failure;** Shuang Yang[1]; Lijun Chen[1]; Punit Shah[1]; Jonathan Kirk[2]; David A. Kass[2]; Jennifer E. van Eyk[3]; Hui Zhang[1]; *[1]John Hopinks Dept. of Pathology, Baltimore, MD; [2]Johns Hopkins Cellular and Molecular Medicine, Baltimore, MD; [3]Johns Hopkins Institute for Computational Medicine, Baltimore, MD*

TP 478 **Automated Extraction of Glycans and Peptides for Glycomic and Proteomic Analyses;** Jing Chen; Shuang Yang; Hui Zhang; *Johns Hopkins University, Baltimore, Maryland*

TP 479 **Utilizing Online Extraction Techniques to Increase Sensitivity and Improve Sample Preparation Efficiency for Quantitative LCMS: A cGMP Biomarker Case Study;** Elisabeth Lonie; Dawn Dufield; *Pfizer, Andover, MA*

TP 480 **Accurate Quantitation of Endogenous Compounds by Standard Addition Amended Calibration (SAAC) in Matched Matrix;** Zhenmin Liang; John Hanley; Lisa Borbridge; *Allergan, Irvine, CA*

TP 481 **Comparison of Label-Free and Label-Based Strategies for Proteome Analysis of Hepatoma Cell Lines;** Dominik Andre Megger[1]; Leona Louise Pott[1]; Kristin Rosowski[1]; Birgit Korte[1]; Don Marvin Voss[1]; Stephanie Tautges[1]; Thilo Bracht[1]; Maike Ahrens[1]; Juliet Padden[1]; Martin Eisenacher[1]; Katja Kuhlmann[1]; Helmut E. Meyer[1,2]; Barbara Sitek[1]; *[1]Ruhr-Universitaet Bochum, MPC, Bochum, Germany; [2]Leibniz-Institut für Analytische Wissenschaften, Dortmund, Germany*

TP 482 **Quantitative Analysis of the PTEN-Induced Kinase (Pink-1) Mutant in C. elegans using Tandem Mass Tags;** Geert Baggerman[1,2]; Dirk Valkenborg[1,2]; Evelyne Maes[1,3]; Karin Schildermans[2]; Inge Mertens[1,2]; *[1]VITO, Mol, Belgium; [2]CFP-CeProMa,University of Antwerp, Antwerp, Belgium; [3]Functional Genomics and Proteomics lab, Leuven, Belgium*

TP 483 **Identification of Protein Biomarkers for the Cellular Response to Proteasome Inhibition using a Simple, Robust Platform Enabling Proteome-Wide, Label-Free Quantification;** Aaron Aslanian[1,2]; Xuemei Han[1]; John Yates III[1]; *[1]The Scripps Research Institute, La Jolla, CA; [2]Salk Institute for Biological Studies, La Jolla, CA*

TP 484 **Development and Application of a Quantitative Proteomic Method for Verification of Neurodegenerative-related Biomarkers in Human CSF;** Andrew Percy[1]; Juncong Yang[1]; Andrew Chambers[1]; Romain Simon[1]; Darryl Hardie[1]; Christoph Borchers[1,2]; *[1]University of Victoria-Genome BC Proteomics Centre, Victoria, Canada; [2]UVic Dept of Biochemistry and Microbiology, Victoria, Canada*

TP 485 **Improving Selectivity and Sensitivity in Clinical Assays using Parallel Reaction Monitoring;** Bruno Domon[1]; Sebastien Gallien[1]; Yeoun-Jin Kim[1]; Guy Berchem[2]; *[1]Luxembourg Clinical Proteomics Center, Strassen, Luxembourg; [2]CRP-Sante, Strassen, Luxembourg*

TP 486 **High Sample Throughput SISCAPA-UMRM MS Quantitation of Prostate Specific Antigen in Nondepleted Serum;** Mary Joan Castillo; Adam Mcshane; Min Cai; Alexander Gomes; Xudong Yao; *University of Connecticut, Storrs, CT*

TP 487 **An Alternative Computational Solution to Protein Quantitation in Plasma Proteome Analysis using LC-MS/MS with Travelling Wave Ion Mobility;** Charlotte E. Daly; Leong L. Ng; Amirmansoor Hakimi; Richard Willingale; Donald J.L. Jones; *University of Leicester, Leicester, UK*

TP 488 **Impaired Regulation of Tyrosine Phosphorylation in Skeletal Muscle in Type 2 Diabetes;** Danjun Ma[1]; Berhane Seyoum[1]; Michael Caruso[1]; Zaher Msallaty[1]; Monique Lewis[1]; Chengjian Tu[2]; Michael Diamond[1]; Abdul Abou-Samra[1]; Xiangmin Zhang[1]; Wissam Al-janabi[1]; Rodney Berry[1]; Kurt Højlund[3]; Jeffrey Horowitz[4]; Rebecca Tagett Tagett[1]; Sorin Draghici[1]; Zhengping Yi[1]; *[1]Wayne state university, Detroit, MI; [2]University at Buffalo, Buffalo, NY; [3]Odense University Hospital, Odense, Denmark; [4]University of Michigan, Ann Arbor, MI*

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TP 489 **Application of Novel Pre-Charged and Highly Specific Fluorinated Azide for the Trace Analysis of Ethinylestradiol using Copper-Catalyzed Click Reaction;** Priyanka Chitranshi; Lucie Loukotkova; Goncalo Gamboa Da Costa; *US-FDA/NCTR, Jefferson, AR*

TP 490 **On-Line Pre-Treatment and Quantification of Trace Estrogens in Serum by Bulk Derivatization and Direct Cation ExchangeTrap-and-Elute LC/MS/MS;** Liangqiao Bian[1,2]; Jana Chalupová[4,5]; Hui Fan[3]; Marek Šebela[4,5]; Maciej Kukula[1,2]; Joe Barrera[2]; Kevin A. Schug[3]; *[1]Shimadzu Center for Advanced Analytical Chemistry, The University of Texas at Arlington, Arlington, TX; [2]Shimadzu Institute for Research Technologies, The University of Texas at Arlington, Arlington, TX; [3]Department of Chemistry and Biochemistry, The University of Texas at Arlington, Arlington, TX; [4]Department of Biochemistry, Palacký University, Olomouc, Czech; [5]Department of Protein Biochemistry and Proteomics, Palacký University, Olomouc, Czech*

TP 491 **Development and Validation of LC/MS/MS Methods to Quantify EC1456 and Tubulysin B Hydrazide in Rat Plasma;** Michael Pugh; Satish Rao; Patrick J. Klein; Christopher P. Leamon; *Endocyte, Inc., West Lafayette, IN*

TP 492 **Development and Qualification of a Fast and Sensitive LC-MS/MS Method for the Simultaneous Quantification of Microdosed Statins in Human Plasma;** Cynthia M. Chavez-Eng; Ryan Lutz; Dina Goykhman; Kevin Bateman; *Merck & Co., West Point, PA*

TP 493 **Development of an Ultra-Sensitive, High-Throughput Multiplexed LC(HILIC)-MS/MS Method for the Simultaneous Quantitation of Naloxone, Buprenorphine, and Norbuprenorphine;** Xiaodong Zhu; Thomas Horuath; Jingguo Hou; Edward Wells; Steve Unger; *Worldwide Clinical Trials Drug Development Solutio, Austin, TX*

TP 494 **Challenges in Quantification of Metal-based Oncology Drugs in Human Plasma Using Triple Quard 5500 System;** Feng Yin; Guangnong Zhang; Urszula Lorent; Emily Epure; Andrew Swenson; Yong-Xi Li; *Medpace Bioanalytical Laboratories, Cincinnati, OH*

TP 495 **Simultaneously Sensitive and Accurate Measurements of Seven Steroid Hormones in Post-Menopausal Women Serum by a Robust LC-MS/MS Method;** Yuyong Ke; Renaud Gonthier; Jonathan Bertin; Fernand Labrie; *EndoCeutics Laboratory, Québec, Canada*

TP 496 **Highly Sensitive Quantitative Estimation of Genotoxic Impurities using LC/MS/MS;** Shruti Raju; Deepti Bhandarkar; Rashi Kochhar; Shailesh Damale; Shailendra Rane; Ajit Datar; Pratap Rasam; Jitendra Kelkar; *Shimadzu Analytical (India) Pvt. Ltd., Andheri (E), Mumbai-400059, Maharashtra, India*

TP 497 **Highly sensitive Quantitative Analysis of Felodipine and Hydrochlorothiazide from Plasma using LC/MS/MS;** Shailendra Rane; Rashi Kochhar; Deepti Bhandarkar; Shruti Raju; Shailesh Damale; Ajit Datar; Pratap Rasam; Jitendra Kelkar; *Shimadzu Analytical (India) Pvt. Ltd., Andheri (E), Mumbai-400059, Maharashtra, India*

TP 498 **Low level Quantitation of Loratidine from Plasma using LC/MS/MS;** Shailesh Damale; Deepti Bhandarkar; Shruti Raju; Rashi Kochhar; Shailendra Rane; Ajit Datar; Pratap Rasam; Jitendra Kelkar; *Shimadzu Analytical (India) Pvt. Ltd., Andheri (E), Mumbai-400059, Maharashtra, India*

TP 499 **High Throughput Analysis of Liquiritigenin and Isoliquiritigenin In Rodent Serum Using UPLC-Tandem Mass Spectrometry;** Nathan C. Twaddle[1]; Mona I. Churchwell[1]; Estatira Sepehr[1]; Ashish Sawhney[1]; William G. Helferich[2]; Daniel R. Doerge[1]; *[1]NCTR/FDA, Jefferson, AR; [2]University of Illinois at Urbana-Champaign, Urbana, IL*

TP 500 **An Analytical Method for Automated Analysis of Plasma Dapsone, Trimethoprim, Sulfamethoxazole, Sulfamethazine, Sulfamethizole, and Sulfathiazole for Dose Optimization;** Claudia Meek; Nyokabi Miingi; Erling Beck; Ronald Hall; Richard Leff; *Texas Tech University Health Sciences Center, Dallas, TX*

TP 501 **LC-MS/MS Bioanalysis of Dapagliflozin and Its Glucuronide Metabolite in Human Blood Using Dried Blood Spot;** Jane Liu[1]; Sophia (Xiaohui) Xu[1]; Guowen Liu[1]; David Boulton[1]; Melanie Pe Benito[1]; Marsha Epstein[1]; Michael Waldron[2]; Pathanjali Kadiyala[1]; Jim Shen[1]; mark arnold[1]; Qin ji[1]; *[1]Bristol-Myers Squibb Co., Princeton, NJ; [2]PPD, Richmond, , VA*

TP 502 **Determination of Pradigastat, a DGAT1 Inhibitor in Human Plasma using Microlc-MS/MS;** Tapan Majumdar; Shari Wu; Cindy Chen; Adam Bentley; Jimmy Flarakos; *Novartis Institutes for Biomedical Research, East Hanover, NJ*

TP 503 **Quantitative Estimation of Potential Genotoxic Impurities in Drug Development without Synthetic Standards by High Resolution Mass Spectrometer and UV Detection;** Chunang (Christine) Gu; Andrew McClory; Sarah Stowers; Jason Gruenhagen; Alan Deese; *Genentech, South San Francisco, CA*

TP 504 **Overcoming Chiral Method Development Challenges: UPLC-MS/MS Method for Determination of Dextroamphetamine and Levoamphetamine in Human Plasma after Chiral Derivatization;** Yuwen Zhao; Vi Dan; Yuan-Shek Chen; Luca C. Matassa; *QPS, LLC, Newark, DE*

TP 505 **Ultra-Trace Quantitation of Catechins in Human Blood Plasma to Facilitate Kinesiology Study using Restricted Access Media LC/MS/MS;** Alonna Guerrero[1]; Sarah Hughes[1]; Hui Fan[1]; Michelle Harrison[2]; Kevin Schug[1]; *[1]UT Arlington, Arlington, TX; [2]UT Austin, Austin, TX*

TP 506 **Development and Validation for the Simultaneous Determination of Emtricitabine and Tenofovir in Human Plasma by LC-MS/MS;** Jingguo Hou; Laura Binneboese; Melody Adam; Steven Hoehne; Kevin McManus; Xiaodong Zhu; Edward Wells; *WWCT, Austin, TX*

TP 507 **Absolute Quantitation of Aminoglycoside Antibiotics in Mouse Plasma by a HILIC-based LC-MS/MS Method;** Ludmila Alexandrova[1]; Allis Chien[1]; Robert Greenhouse[2]; Anthony Ricci[3]; *[1]Stanford University Mass Spectrometry, Stanford, CA; [2]SPARK, Stanford University School of Medicine, Stanford, CA; [3]Department of Otolaryngology, School of Medicine, Stanford, CA*

TP 508 **A Simple, Reliable and Rapid LC-MS/MS Method for Simultaneous Determination of Carbamazepine and Carbamazepine-10,11-epoxide in human plasma;** Shuyu Hou; Yuan-Shek Chen; *QPS, LLC, Newark, DE*

TP 509 **Supercritical Fluid Chromatography-Tandem Mass Spectrometry for Fast Chiral Separation of Cetirizine in Human Plasma;** Han Young Eom; Hyun-Deok Cho; Joon Hyuk Suh; Unyong Kim; Junghyun Kim; Yura Jung; Bong-Joon Kim; Sang Beom Han; *Chung-Ang University, Seoul, South Korea*

TP 510 **Simultaneous Quantitative Analysis of 20 Amino Acids in Food Samples without Derivatization using LC-MS/MS;** Keiko Matsumoto[1]; Jun Watanabe[1]; Itaru Yazawa[2]; *[1]Shimadzu Corporation, Kyoto, Japan; [2]Imtakt Corporation, Kyoto, Japan*

TP 511 **Assay of Human Saliva Steroids by Stable Isotope Coded Derivatization (ICD) and Tandem Mass Spectrometry;** Fabio Mazzotti[1]; Leonardo Di Donna[1]; Domenico Taverna[1]; Anna Napoli[1]; Constantinos M. Athanassopoulos[2]; Giovanni Sindona[1]; *[1]University of Calabria, Arcavacata Di Rende, Italy; [2]University of Patras, Patras , Greece*

TP 512 **A generic LC-MS Cleaning Verification Assay for High Potency Drugs;** Vinayak AK[1]; Syed Lateef[1]; Chunang (Christine) Gu[2]; Michael Dong[2]; *[1]Agilent Technologies, Bangalore, India; [2]Genentech, South San Francisco, CA*

TP 513 **Automated Bioanalytical Method Development for Methotrexate and Sulfasalazine Utilizing Quality-by-Design Approach;** Syed Salman Lateef; Siji Joseph; *Agilent Technologies, Bangalore, INDIA*

TP 514 **Verification of an LC-MS/MS Method for 14 Antidepressants Utilizing Dried Blood Spots;** Kerry Hassell; Sarah Fair-Wandland; Joseph L. Herman; *ThermoFisher Scientific, Franklin, MA*

TP 515 **Evaluation and Application of a Non-contact Digital Dispenser, HP D300, in Bioanalysis;** Debra Liao; Susan Chen; Martin Paton; Mark Qian; *Millennium: The Takeda Oncology Company, Cambridge, MA*

TP 516 **Can DMSO Provide Benefit in Application beyond Proteomic?;** J.C. Yves Leblanc; *AB SCIEX, Concord, On, Canada*

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TP 518 **Compound Dependence of LC-MS-MS Flow Rate Sensitivity;** Jay Corr; Thomas Covey; *AB SCIEX, Concord, Canada*

TP 519 **Development of a Highly Sensitive, Efficient, Combo Extraction Method for the Quantitation of Formoterol and Budesonide by UPLC/MS/MS;** Ryan S. Adler; Sherry Liu; Alicia Pietrasiewicz; Spencer J. Carter; Qiuying Zhu; Min Meng; *Tandem Labs, Salt Lake City, UT*

TP 520 **A Simple, Selective and Highly Sensitive UPLC-MS/MS Method for Determination of Mometasone Furoate in Human Plasma;** Hao Li; Huafang Jiang; Ling Zhou; Xiaohang Shen; Jinsong Xing; Wenzhong Liang; *WuXi AppTec (Shanghai) Co. Ltd., Shanghai, China*

TP 521 **Improving Detection Limits of Prohibited Substances and Therapeutics by Solid Phase Microextraction (SPME) Coupled to LC-MS/MS;** Frenny Ruparelia[1]; Lisa Cousins[1]; Nathaly Reyes-Garcés[2]; Germán Augusto Gómez-Ríos[2]; Barbara Bojko[2]; Janusz Pawliszyn[2]; *[1]IONICS Mass Spectrometry, Bolton, Canada; [2]Department of Chemistry, University of Waterloo, Waterloo, Canada*

TP 522 **LC-MS/MS Methods Development for the Analysis of Polymeric Materials and Related Metabolites in Biological Matrices;** Changyu Quang; Brett D. Dunbar; Nichole R. Myers; William C. Nethero; Michael P. Donegan; Elizabeth A. Groeber; *WIL Research, Ashland, OH*

TP 523 **LC-MS/MS Method of Isradipine: Unsuitability of Isradipine-D3 as Internal Standard Due to Temperature-dependent Transesterification in Ion Source;** Hao Li[1]; Jie Zhang[2]; Yan Fu[1]; Changqing Lin[1]; xiaohang shen[1]; jinsong xing[1]; Wenzhong Liang[1]; *[1]WuXi AppTec (Shanghai) Co. Ltd., Shanghai, CHINA; [2]Novartis Institutes for BioMedical Research, East Hanover, NJ*

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TP 525 **Understanding of Fundamental Ion Behavior Leads to Routine Substructure Identification: A Mechanistic Study on Precursor Ions;** Michal Raab; Robert Mistrik; *HighChem, Bratislava, Slovakia*

TP 526 **Autonomous Orbitrap Platform for Acquisition of MS^n Spectral Trees Based on intelligent, Real Time Decision Making Logic;** Robert Mistrik[1]; Jakub Mezey[1]; Juraj Lutisan[1]; Tim Stratton [2]; Lukas Najdekr[2, 3]; *[1]HighChem, Bratislava, Slovakia; [2]Thermo Fisher Scientific, San Jose, CA; [3]IMTM, Palacky University, Olomouc, Czech Republic*

TP 527 **Parylene-Matrix Target Chip for Small Molecule Analysis using MALDI-TOF Mass Spectrometry;** Jo-Il Kim; Jong-Min Park; Jae-Chul Pyun; *Yonsei University, Seoul, South Korea*

TP 528 **"nMS^2" Approach Aids Characterization of Impurities at Sub-ppm Levels – Capecitabine, an Anti-Cancer Drug;** Janani Thyagarajan; Saravanan Subramaniyan; Rampriya Uthayakumar; Raman Palvannanathan; Govindarajan Chandramohan; Mohan Kasi; Venkat Manohar; *IICMS, Chennai, India*

TP 529 **Tandem Mass Spectrometry Characterizes the Related Substances of Second Generation FLT3 Inhibitor Quizartinib, Anti-Cancer Compound for Myeloid Leukemia;** Saravanan Subramaniyan[1]; Arvind Thyagarajan[1]; Rampriya Uthayakumar[1]; Raman Palvannanathan[1]; Govindarajan Chandramohan[1]; Mohan Kasi[1]; Venkat Manohar[1]; Thaminum Ansari Abubacker[2]; *[1]IICMS, Chennai, INDIA; [2]Muthurangam Govt. Arts. College,, Vellore, Tamil Nadu,, India*

TP 530 **Rapid Screening of Adulterated & Counterfeit Products using Bench-Top High Resolution Mass Spectrometer and mzCloud Database Search;** Philippe Lebel[1]; Alexandra Furtos[1]; Karen Waldron[1]; Kate Comstock[2]; Tim Stratton[2]; Maroun El Khoury[2]; *[1]Université de Montréal, Montréal, Qc, Canada; [2]Thermo Fisher Scientific, San Jose, CA*

TP 531 **Automated Off-Line SPE LC-MS/MS Method Development using Instrumentation with On-Line SPE Functionality;** Roy (TY) Huang; Mike Hastings; Lisa Buchholz; Mingming Ma; *Dow AgroSciences, Indianapolis, IN*

TP 532 **Degradation Products Analysis of Pantoprazole using High Resolution Mass Spectrometry;** Anoop Kumar[1]; Manoj Pillai[1]; Devkant Shandilya[2]; *[1]AB SCIEX, DHR holdings India, Gurgaon, India; [2]Bhagwant University, Ajmer, India*

TP 533 **Mass Spectrometry based Combinational Strategy for *in vitro* and *in vivo* Metabolite Identification and Confirmation;** Zheng-Xiang Zhang; Tao Bo; *Agilent Technologies (China), Beijing, CHINA*

TP 534 **Analysis of Additional Impurities in Riboflavin (Vitamin B2) Using a Proposed Alternative USP Method Utilizing LC-MS;** Carmen T. Santasania[1]; Nicolas J. Hauser[2]; *[1]Supelco/Sigma-Aldrich, Bellefonte, PA; [2]RTC/Sigma-Aldrich, Laramie, WY*

TP 535 **Identification of Catechol-Group-Contained Compounds by Chloride Anion Approach using APCI/QTOF Mass Spectrometry;** Emily Lichtenberger; Yufei Chen; MIn Li; Nelson Vinueza; *NC State University, Raleigh, NC*

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TP 537 **Enzymatic Characterization of Recombinant Nepenthesin II, as a New Tool for Hydrogen/Deuterium Exchange Mass Spectrometry;** Menglin Yang; Martial Rey; David C. Schriemer; *University of Calgary, Calgary, Canada*

TP 538 **SWATH-based HX-MS^2 to Investigate Protein Stability of Mitotic Centromere-Associated Kinesin (MCAK) on the Microtubule Lattice;** Kyle Burns; David Schriemer; *University of Calgary, Calgary, Canada*

TP 539 **Significance of Measured Differences in Comparison Hydrogen Exchange Mass Spectrometry Experiments;** Rane Harrison[1]; Damian Houde[2]; John Engen[1]; *[1]Northeastern University, Boston, MA; [2]Biogen Idec, Inc., Cambridge, MA*

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TP 542 **Deuteration Effects on the Intrinsic Photophysical Properties of Oxazine Dyes;** Matthew Kusinski; *University of Toronto, Toronto, Canada*

TP 543 **A two-Site Evaluation of the Repeatability and Precision of an Automated HDX MS Platform;** Alfonso Espada[2]; David Cummins[1]; Scott Novick[3]; Manuel Molina-Martin[2]; Devrishi Goswami[3]; Bruce Pascal[3]; Ryan Stites[1]; Howard Broughton[2]; Michael Chalmers[1]; Patrick Griffin[3]; Jeffrey Dodge[1]; Juan Espinosa[2]; *[1]Eli Lilly and Company, Indianapolis, IN; [2]Lilly S.A., Alcobendas, Spain; [3]The Scripps Research Institute, Jupiter, FL*

TP 544 **Subzero Temperature Chromatography Combined with Electron Capture Dissociation for Top-Down Protein Hydrogen Exchange Measurements;** Jingxi Pan[1]; Suping Zhang[1]; Christoph Borchers[1, 2]; *[1]University of Victoria-Genome BC Proteomics Centre, Victoria, Canada; [2]UVic Dept of Biochemistry and Microbiology, Victoria, Canada*

TP 545 **Purified Protease Type XIII for Enhanced Sequence Coverage in Hydrogen Deuterium Exchange Mass Spectrometry;** Gary Wei; Chengjie Ji; *NovaBioAssays, Woburn, MA*

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TP 550 **Quantitative Determination of Antidepressants and Transformation Products by LC ESI-MS/MS in Terrestrial Environments that Receive Biosolids;** Melissa M. Schultz; Maria Dawaher; Maura Hall; Lydia Niemi; *The College of Wooster, Wooster, OH*

TP 551 **High Resolution Mass Spectrometry Detection and Identification of Pharmaceutical Transformation Products and Metabolites in Hospital Effluents and Wastewater;** Damià Barceló[1, 2]; Bozo Zonja[1]; Noelia Negreira[1]; Laura Ferrando - Climent[2]; Meritxell Gros[2]; Tina Kosjek[3]; Sandra Pérez[1]; Sara Rodriguez-Mozaz[2]; Ester Heath[3, 4]; Miren Lopez de Alda[1]; *[1]Water and Soil Quality Research Group, IDAEA-CSIC, Barcelona, SPAIN; [2]Catalan Institute for Water Research (ICRA),, Girona, Spain; [3]Jozef Stefan Institute, Ljubljana, Slovenia; [4]Jozef Stefan International Postgraduate School, Ljubljana, Slovenia*

TP 552 **Determination of Emerging Contaminants in Iowa Surface Water at Low PPT Levels Using Direct Injection and SPE LCMSMS;** John Vargo[1]; Michael Schueller[1]; Mary Skopec[2]; *[1]State Hygienic Laboratory - University of Iowa, Coralville, IA; [2]Iowa Geological & Water Survey, Iowa City, IA*

TP 553 **Analysis of Trace Organic Pollutants in Wastewater to Assess Biodegradation using Wrong-way-round Ionization in Liquid Chromatography Tandem Mass Spectrometry;** Lijuan Su[1]; Wendell Khunjar[2]; Diana Aga[1]; *[1]University at Buffalo, Buffalo, NY; [2]Hazen and Sawyer P.C., Fairfax, VA*

TP 554 **Analysis of Veterinary Antimicrobials in Stockpiled Feedlot Manure using LC-ESI/MS/MS;** Srinivas Sura[1, 2]; Dani Degenhardt[3]; Kerry M. Peru[1]; Jonathan Bailey[1]; Allan Cessna[1, 2]; Francis Larney[4]; Tim McAllister[4]; Dena McMartin[5]; John Headley[1]; *[1]Environment Canada, Saskatoon, CANADA; [2]Agriculture and Agri-Food Canada, Saskatoon, Canada; [3]Alberta Innovates Technolgy Futures, Edmonton, Canada; [4]Agricutlure and Agri-Food Canada, Lethbridge, Canada; [5]University of Regina, Regina, Canada*

TP 555 **Investigation of the UV degradation of Diclofenac by means of liquid chromatography and mass spectrometry;** Jörg Roscher; Uwe Karst; *, Münster, Germany*

TP 556 **Rapid and Selective MS/MS Method for Quantification of Light Sensitive Chlortetracycline Drug in Wastewater and Sludge using LDTD Ion Source;** Rama Pulicharla[1]; Serge Auger[2]; Satinder Kaur Brar[1]; Patrick Drogui[1]; Rao Y. Surampalli[3]; *[1]INRS-ETE, Université du Québec, Québec, Canada; [2]Phytronix Technologies, Quebec, CANADA; [3]US Environmental Protection Agency, Kansas City, KS*

TP 557 **Identification and Quantitation of Pyrethroids using a GC/QTOF in Negative Chemical Ionization Mode;** Ron Honnold[1]; Rafael Acosta[2]; Matthew Curtis[3]; *[1]Agilent Technologies, Riverside, CA; [2]Agilent Technologies, Mexico City, Mexico; [3]Agilent Technologies, San Jose, CA*

TP 558 **Sorption Capacities and Interactions of a Mixture of Chemically Diverse Pesticides on Soil using LC-MS/MS;** Heather A. Gamble[1]; Donald S. Gamble[2]; Sha Joshua Ye[1]; Ellie Majdi[1]; *[1]IONICS Mass Spectrometry Group, Inc., Bolton, Canada; [2]Department of Chemistry, St. Mary's University, Halifax, Nova Scotia*

TP 560 **Multi-Residue Analysis of Pyrethroids in Soil and Sediment using QuEChERS by LC/MS/MS;** Yuka Fujito[1]; Kiyomi Arakawa[2]; Yoshihiro Hayakawa[2]; *[1]Shimadzu Techno Research, Inc., Kyoto, Japan; [2]Shimadzu Corporation, Kyoto, Japan*

TP 561 **Measurement of Multi-Class Herbicides in Dried Environmental Matrices by Paper Spray Ionization Mass Spectrometry;** Steven L. Reeber; Sneha Gadi; Gary L. Glish; *University of North Carolina, Chapel Hill, NC*

TP 562 **Application of LC-MS/MS for Monitoring Multiclass Pollutants in Surface and Groundwater;** Zhen Liu[1]; Qinghe Wang[2]; Keyu Zhou[2]; Kefei Wang[2]; *[1]Southwest Jiaotong University, Chengdu, China; [2]Bruker Daltonics, Shanghai, China*

TP 563 **Analysis of Pesticides in Foodstuffs by Gas Chromatography Mass Spectrometry: Evaluation of Various Extraction Procedures;** Mohamed S. Muthanna[1]; Esraa Y. Abbas[1]; Siham S. Hersi[1]; Noor M. Bader[1]; Omar Y. Aljarod[1]; Abdullah A. Abdulbaker[1]; Mohammed F Rakib[1]; Shifa M Shaikh[1]; Ahmed A. Ramadan[1]; Basem Shomar[2]; Khalid A. Al-Saad[1]; *[1]Qatar University, Doha, Qatar; [2]Qatar Environment and Energy Research Institute, Doha, Qatar*

TP 564 **Evaluation of EN15662:2008 - Determination of Pesticide Residue in Food of Plant Origin, by an Automated QuEChERS Solution;** Tyler Trent[1]; James Barlow[2]; Simon Hird[2]; Sadat Nawaz[2]; Tom Hartlein[1]; *[1]Teledyne Tekmar, Mason, ohio; [2]The Food and Environment Research Agency, York, UK*

TP 565 **Rapid Identification of Environmental Contaminants using High Resolution LC/MS/MS in Combination with Library Search;** Michael P. Schluesener[1]; Jianru Stahl-Zeng[2]; Thomas A. Ternes[1]; Detlev Schleuder[2]; *[1]Federal Institute of Hydrology, Department Aquatic, Koblenz, Germany; [2]AB Sciex, Darmstadt, Germany*

TP 566 **Chiral Separation of Three β-blocking Pharmaceuticals and a Major Metabolite using SFC-MS;** Alfred Svan[1]; Mikael Hedeland[2]; Torbjörn Arvidsson[1]; Curt Pettersson[1]; *[1]Uppsala University, Uppsala, Sweden; [2]Nat'l Veterinary Institute, Uppsala, Sweden*

TP 567 **Multiple Elemental Compound Identification by GCxGC-ICP-MS;** Kevin Huncik; *National Institute of Standards and Technology, Charleston, SC*

TP 568 **An Enhanced Method for Extraction and Quantification of Highly Lipophilic Pyrethroid Pesticides from Adipose Tissue;** Holly C. Young; Darren R. Gullick; Andrew Popovici;

James V. Bruckner; Brian S. Cummings; Michael G. Bartlett; *University of Georgia, Athens, GA*

TP 569 **Unusual Fragmentation of N-Perfluoroacylaryl(cycloalkyl)amines;** Kirill V. Tretyakov; Nino G. Todua; Anzor I. Mikaia; *National Institute of Standards and Technology, Gaithersburg, MD*

TP 570 **Detection of Herbicidal Glyphosate from Environmental Matrices using Matrix-Assisted Inlet Ionization Mass Spectrometry (MAII-MS);** Julie Mercadante; Sarah Saylor; Catherine Bentzley; *University of the Sciences, Philadelphia, PA*

TP 571 **Automated Detection of Trace Level Basic and Acidic Pesticides and Herbicides in Drinking Water by Online SPE LC/MS;** Edgar Naegele[2]; Dorothy Yang[1]; *[1], Santa Clara, CA; [2]Agilent Technologies, Waldbronn, N/A*

TP 572 **Accurate LCMS Spectral Assignments and Quantification: Methodology and Tools for Pesticides Analyses;** Tukiet T. Lam[1]; Ming Gu[2]; Jean Kanyo[1]; Yongdong Wang[3]; *[1]Yale University, New Haven, CT; [2]Cerno Bioscience, Yardley, PA; [3]Cerno Bioscience, Norwalk, CT*

TP 573 **Glyphosate and AMPA Analysis in Drinking Water Using Two-Dimensional Liquid Chromatography Mass Spectrometry (2D LC/MS/MS);** Claude Mallet; *Waters Corporation, Milford, MA*

TP 574 **Quantitative Performance of the Q-Exactive High-Resolution Accurate-Mass (HR/AM) Spectrometer for the Analysis of Tetracyclines in a Complex Environmental Matrix;** Morgan Solliec; Audrey Roy-Lachapelle; *Université de Montréal, Montréal, Canada*

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TP 576 **Pre-concentration, Separation and high-Resolution Tandem Mass Spectrometry Identification of Intermediate Products of Sulfamethazine Antibiotic Formed by Photochemical Degradation in Water;** Tanare Ferreira; Júlia Martins; Amanda Imamura; Leonardo Medinilha; Fernando Lanças; Alvaro Santos-Neto; *University of São Paulo, São Carlos, Brazil*

TP 577 **High Resolution Mass Spectrometry Based Metabolomics: a New Tool to Detect and Characterize Emerging Pollutants in Water and Food Matrices;** Jerome Cotton[1, 2]; Fanny Leroux[2]; Simon Broudin[2]; Bruno Corman[2]; Jean-Claude Tabet[3]; Celine Ducruix[2]; Christophe Junot[1]; *[1]CEA, iBiTec-S/SPI/LEMM, Gif-Sur-Yvette, FRANCE; [2]Profilomic, Boulogne-Billancourt, France; [3]UPMC - LCSOB, Paris, France*

TP 578 **Quantitative and Semi-Quantitative Determination of PPCPs and By-products in Wastewater Treatment Plants Samples Using UHPLC-Orbitrap MS and Data Mining Technologies;** Paul Yang[3]; Tung-Vi Nguyen[1]; Ramin Farnood[1]; Dipankar Ghosh[4]; Jonathan Beck[4]; Maciej Bromirski[2]; Charles Yang[4]; *[1]University of Toronto, Toronto, Canada; [2]Thermo Fisher Scientific GmbH, Bremen, N/A; [3]Ontario Ministry of the Environment, Etobicoke, Canada; [4]Thermo Fisher Scientific, San Jose, CA*

TP 579 **EPA Draft Method 543 Quantitation of Organic Pesticides in Drinking Water Using Online Pre-concentration/Solid Phase Extraction and Tandem Mass Spectrometry;** Jonathan Beck; Charles Yang; *Thermo Fisher Scientific, San Jose, CA*

TP 580 **Semi Real Time Screening of PPCP and Pesticide by Field Type Water Sampler with Online SPE-HRAM;** Jaewon Choi[1]; Charles T. Yang[2]; Dipankar Ghosh[2]; *[1]Kwater, Daejeon, South Korea; [2]Thermo Fisher Scientific, San Jose, CA*

TP 581 **Systematic Elucidation of Matrix Effects in liquid Chromatography Hyphenated to Mass Spectrometry;** Norbert Wenkel[1]; Thorsten Teutenberg[2]; Jochen Tuerk[2]; Christoph Portner[2]; Claudia Vom Eyser[2]; Sandy-Dominic Freihoff[2]; *[1]Axel Semrau GmbH, Sprockhovel, Germany; [2]Institut für Energie- und Umwelttechnik e.V., Duisburg, Germany*

TP 582 **Gain Productivity and Increase Data Quality with the GC/MS/MS Pesticide Analyzer;** Jessica Westland; Bruce Quimby; Kai Meng; *Agilent Technologies, Wilmington, Delaware*

TP 583 **Fast and Highly Sensitive Analysis of Multiple Drugs in Ground-, Surface- and Wastewater;** Klaus Bollig[1]; Sven Vedder [2]; Anja Grüning[2]; *[1]Shimadzu Deutschland GmbH, Duisburg, Germany; [2]Shimadzu Europe GmbH, Duisburg, Germany*

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TP 584 **Crude Oil Transformation during Rock Migration via FTICR-MS: From Source Rock to Reservoir;** Marcos Pudenzi[1]; Eduardo Schmidt[1]; Jose Jara[1]; Heliara Nascimento[1]; Elias Tessaro[1]; Vanessa Santos[1]; Pedro Henrique Vendramini[1]; Rosana Pereira[2]; Wagner Bastos[2]; Erica Morais[2]; Alessandro Batezelli[1]; Marcos Eberlin[1]; *[1]UNICAMP, Campinas, BRASIL; [2]Petrobras, Rio de Janeiro, Brasil*

TP 585 **Structural Study of Asphaltenes by Laser Desorption Ionization Mass Spectrometry Coupled to Traveling Wave Ion Mobility;** Hector Koolen; Alexandre Gomes; Lyzette Moura; Francia Marcano; Felipe Cardoso; Paulo Rosa; Fabio Gozzo; *UNICAMP, Campinas, Brazil*

TP 586 **Petroleomics by TWIM-MS: Print Screen of Addictives used in Crude Oil Industry;** Jandyson Machado Santos[1]; Heliara D. L. Nascimento[1]; Elias Tessaro[1]; Vanessa Gonçalves Santos[1]; Marcos A. Pudenzi[1]; Eduardo M. Schmidt[1]; Renan de S. Galaverna[1]; Rosana C. L. Pereira[2]; Wagner L. Bastos[2]; Erica T. de Morais[2]; Gleber Tacio Teixeira[2]; Maíra Fasciotti[3]; Alberto Wisniewski Junior[4]; Marcos N. Eberlin[1]; *[1]Institute of Chemistry - UNICAMP, Campinas, BRAZIL; [2]PETROBRAS, Rio de Janeiro, Brazil; [3]INMETRO, Rio de Janeiro, Brazil; [4]Chemistry Department - UFS, São Cristóvão, Brazil*

TP 587 **Study of Asphaltene Aggregation by MALDI-TOF-MS;** Martha L. Chacón-Patiño[1]; Andrea Gómez-Escudero[2]; Cristian Blanco-Tirado[1]; Marianny Y. Combariza[1]; *[1]Universidad Industrial de Santander, Bucaramanga, Colombia; [2]Instituto Colombiano del Petróleo, Piedecuesta, Colombia*

TP 588 **Phenylenevinylene Derivatives as MALDI Matrices for Electron Transfer Ionization of Asphaltene Model Compounds;** Laura J. Castellanos-García[1]; Martha L. Chacón-Patiño[1]; Brian Castro[2]; Alexander Scherer[3]; Xiaoli Tan[4]; Rik R. Tykwinski[3]; Murray R. Gray[4]; César A. Sierra-Ávila[2]; Cristian Blanco-Tirado[1]; Marianny Y. Combariza[1]; *[1]Escuela de Química, Univ Industrial de Santander, Bucaramanga, Colombia; [2]Departamento de Química, Univ Nacional de Colombia, Bogotá, Colombia; [3]University of Erlangen-Nürnberg, Erlangen, Germany; [4]Dept of Chem and Mat Eng, University of Alberta, Edmonton, Canada*

TP 589 **Elucidation of Structural Information for Asphaltenes via Collision-Activated Dissociation of Their Molecular Ions in MS^n Experiments: A Model Compound Study;**

Chunfen Jin[1]; Tiffany Jarrell[1]; James Riedeman[1]; Benjamin Owen[1]; Xiaoli Tan[3]; Alexander Scherer[2]; Rik Tykwinski[2]; Murray Gray[3]; Peter Slater[4]; Hilkka Kenttämaa[1]; *[1]Purdue University, West Lafayette, IN; [2]University of Erlangen-Nuremberg, Erlangen, Germany; [3]University of Albert, Edmonton, Alberta; [4]ConocoPhillips, Houston, TX*

TP 590 **Distillate Fraction Composition Estimation Using Crude Oil Petroleomics;** Fan Huang; Kermit K. Murray; *Louisiana State University, Baton Rouge, LA*

TP 591 **Analysis of Pre-Separated Crude Oil Using an Orbitrap;** Matthew Hurt; Michael Cheng; *Chevron, Richmond, CA*

TP 592 **Electrospray Ionization for Determination of Non-Polar Polyaromatic Hydrocarbons and Polyaromatic Heterocycles in Crude Oil Asphaltenes;** Lilla Molnárné Guricza; Wolfgang Schrader; *Max-Planck Inst für Kohlenforschung., Mülheim / Ruhr, Germany*

TP 593 **High-Resolution Online LC/MS for Characterizing Crude Oils – Grinding the Data;** Alessandro Vetere; Wolfgang Schrader; *Max-Planck Inst für Kohlenforschung., Mülheim / Ruhr, Germany*

TP 594 **Evaluation of Polar Composition Changes in Diesel Fuels by FT-ICR MS after Stability Test;** Rosana C. L. Pereira[1]; Helineia O. Gomes[1]; Manoel J.R. Guimarães Neto[1]; Felipe C. Gouveia[1]; Boniek G. Vaz[2]; *[1]Petrobras/ CENPES, Rio de Janeiro, Brazil; [2]UFG, Goiânia, Brazil*

TP 595 **Dynamic Range Enhancement Stitching of Multiple Ultrahigh Resolution FT-ICR Mass Spectral Segments;** Logan C. Krajewski[1]; Yuri E. Corilo[2, 3]; Ryan P. Rodgers[2, 3]; Alan G. Marshall[1, 3]; *[1]FSU Department of Chemistry and Biochemistry, Tallahassee, FL; [2]Florida State University Future Fuels Institute, Tallahassee, FL; [3]Ion Cyclotron Resonance Prog, Tallahassee, FL*

TP 596 **Targeted Ionization of Oxygen-Containing Compounds in Petroleum Crude Oil by Lithium Cationization Electrospray Ionization FT-ICR Mass Spectrometry;** Rebecca Beasley[1]; Vladislav Lobodin[2, 3]; Alan Marshall[1, 3]; Ryan Rodgers[1, 3]; *[1]Florida State University, Tallahassee , FL; [2]Future Fuels Institute, Tallahassee , FL; [3]National High Magnetic Field Laboratory, Tallahassee, FL*

TP 597 **FT-ICR MS Imaging of Thin Layer Chromatograms of Crude Oil, Field Deposit, and Weathered Oil;** Donald F. Smith[1, 4]; Amy M. Mckenna[1]; Yuri E. Corilo[1, 2]; Ryan P. Rodgers[1, 3]; Alan G. Marshall[1, 3]; Ron M.A. Heeren[4]; *[1]National High Magnetic Field Laboratory, Tallahassee, FL; [2]Future Fuels Institute, Florida State University, Tallahassee, FL; [3]Department of Chemistry and Biochemistry, FSU, Tallahassee, FL; [4]FOM Institute AMOLF, Amsterdam, The Netherlands*

TP 598 **Modifications to a Novel Method for the Isolation of Interfacial Material from Athabasca Bitumen: Characterization by FT-ICR Mass Spectrometry;** Amy C. Clingenpeel[1]; Jacqueline M. Jarvis[2]; Winston K. Robbins[3]; Alan G. Marshall[1, 2]; Ryan P. Rodgers[1, 2]; *[1]Florida State University, Tallahassee, FL; [2]National High Magnetic Field Laboratory, Tallahassee, FL; [3]Future Fuels Institute, Tallahassee, FL*

TP 599 **Structural Investigation of Interfacially Active Compounds from Petroleum Crude Oil by FT-ICR Mass Spectrometry;** Jacqueline M. Jarvis[1]; Benjamin J. Bythell[2]; Chad R. Weisbrod[1]; Alan G. Marshall[1, 3]; Ryan P. Rodgers[1, 3]; *[1]National High Magnetic Field Laboratory, Tallahassee, FL; [2]University of Missouri-St. Louis, St. Louis, MO; [3]Florida State University, Tallahassee, FL*

TP 600 **Characterization, Chromatographic Enrichment, and Trace Metal Analysis of Nickel and Vanadyl Petroporphyrins from Weathered Natural Seeps by FT-ICR and ICP-MS;** Jonathan Putman[1]; Amy M. McKenna[1]; Jeffrey T. Williams[1]; Ryan P. Rodgers[1, 2]; Alan G. Marshall[1,2]; *[1]National High Magnetic Field Laboratory, Tallahassee, Fl; [2]Department of Chemistry and Biochemistry, Tallahassee, Fl*

TP 601 **Determination of Isomers in Petroleum by Ion Mobility Mass Spectrometry;** Priscila M. Lalli[1]; Steven M. Rowland[1]; Yuri E. Corilo[1, 2]; Ryan P. Rodgers[1, 2]; Alan G. Marshall[1, 3]; *[1]National High Magnetic Field Laboratory, Tallahassee, FL; [2]Florida State University Future Fuels Institute, Tallahassee, FL; [3]Florida State University, Department of Chemistry, Tallahassee, FL*

TP 602 **Petroleomics: Progress Toward its Full Predictive Power via a Comprehensive Model of the Petroleum Continuum;** Yuri E. Corilo[1, 2]; Priscila M. Lalli[1]; Ryan P. Rodgers[1, 3]; Alan G. Marshall[1, 3]; *[1]National High Magnetic Field Laboratory, Tallahassee, FL; [2]Future Fuels Institute, Florida State University, Tallahassee, FL; [3]Department of Chemistry and Biochemistry, FSU, Tallahassee, FL*

TP 603 **High Performance Time-of-Flight Mass Spectrometry for Comprehensive Petroleum Analysis;** Clécio Klitzke; David Alonso; Joe Binkley; Jeffrey Patrick; *LECO Corporation, St. Joseph, Michigan*

TP 604 **Identification of Organic Compounds in Crude Oils with/ without Catalyst Treatment by Comprehensive Two-Dimensional GC/HRTOFMS;** Morio Ueda[1]; Koji Okuda[2]; Jun Onodera[2]; Akihiko Kusai[2]; Jonathon Bunn[3]; Yoshika Tennichi[1]; Hidehisa Kawamura[1]; Joo-il Park[4]; Seongho YOON[4]; Isao Mochida[4]; *[1]Kyushu Environmental Evaluation Association, Fukuoka, Japan; [2]JEOL Ltd., Tokyo, Japan; [3]JEOL USA, Inc., MA; [4]Kyushu University, Fukuoka, Japan*

TP 605 **Genetic Link between Fatty Acids and Hydrocarbons produced During Artificial Maturation of a Type I Kerogen using ESI-FT-ICR-MS and GCxGC-MS;** Albert Kamga[1]; Francoise Behar[2]; Patrick G. Hatcher[1]; *[1]ODU Research Foundation, Norfolk, VA; [2]TOTAL SA, Paris, France*

TP 606 **Pressurized Heating for the Rapid Preparation/ Extraction of Coal Samples for Broad Spectrum GC-MS Analysis;** Franco Basile[1]; Rajendra Mahat[1]; Wesley Rodgers[2]; *[1]University of Wyoming, Laramie, WY; [2]JR Simplot Co, Boise, ID*

TP 607 **Ultra-Fast Profiling of C20-C60 Alkanes in Waxed Samples using LDTD-MS/MS;** Serge Auger; Gregory Blachon; Pierre Picard; *Phytronix Technologies, Quebec, Canada*

TP 608 **Pulsed Flow Modulation GCxGC-MS with Cold EI;** Uri Keshet[1]; Tal Alon[1, 2]; Alexander Fialkov[1]; Aviv Amirav[1, 2]; *[1]Tel-Aviv University, Tel-Aviv, ISRAEL; [2]Aviv Analytical LTD, Tel Aviv, Israel*

TP 609 **Correlation Studies between Chemical Properties of Crude Oils and Mass Spectrometric Analysis on the Molecular Level using LDI and APPI;** Matthias Witt; Gökhan Baykut; *Bruker Daltonik GmbH, Bremen , Germany*

TP 610 **Molecular Level Analysis of TLC Fractions of Crude Oil by LDI FT-ICR Mass Spectrometry;** Matthias Witt[1]; Mike Easterling[2]; *[1]Bruker Daltonik GmbH, Bremen, Germany; [2]Bruker Daltonics Inc., Billerica, MA*

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TP 611 **Rapid Mass Spectrometric Detection of Drug Metabolites Generated in a Microfluidic Electrochemical Cell;** Lars Büter[1]; Floris T.G. van den Brink[2]; Mathieu Odijk[2]; Wouter Olthuis[2]; Albert van den Berg[2]; Uwe Karst[1]; *[1]University of Münster, Münster, Germany; [2]University of Twente, Enschede, The Netherlands*

TP 612 **Simulation of Metabolic Processes of Polycyclic Aromatic Hydrocarbons using Electrochemistry/Mass Spectrometry;** Tina Wigger[1,2]; Lars Büter[1,2]; Uwe Karst[1]; *[1]University of Münster, Münster, Germany; [2]NRW Graduate School of Chemistry, Münster, Germany*

TP 613 **MsXelerator: A Software Platform for Drug Metabolite Detection and Identification using High-Resolution Mass Spectrometry and Post-Acquisition Data Mining;** Marco Ruijken; *MsMetrix, Maarssen, Netherlands*

TP 614 **Application of LC-MS^n and NMR Techniques in Identification of *In Vitro* Metabolites;** Regina V. Oliveira[1]; Josiane de O. Cardoso[1]; Bianca F. da Silva[1]; Tiago Venâncio[1]; Rosângela G. Peccinini[2]; Ivan R. Pitta[3]; Maria do Carmo A. de Lima[3]; *[1]Chemistry Department, Federal University of São Carlos, São Carlos, SP, Brazil; [2]College of Pharmaceutical Sciences, State University of São Paulo, Araraquara, SP, Brazil; [3]Group of Research in Therapeutic Innovation, Federal University of Pernambuco, Recife, PE, Brazil*

TP 615 **Antitumor Steroidal Lactone Withaferin A in Human Breast Cancer Cells Is Covalently Bound to Cysteine-303 of β-Tubulin;** Guy Uechi; Marie Lue Antony; Eun-Ryeong Hahm; Shivendra Singh; Nathan Yates; *University of Pittsburgh, Pittsburgh, PA*

TP 616 **Metabolite Profiling Using Human Hepatocyte Co-cultures and UHPLC-Q-TOF-MS with Data Independent MS/MS;** Ronghua Wang[1]; Ragu Ramanathan[1]; Cornelia Smith[2]; Caroline Lee[2]; Helen Shen[1]; Zamas Lam[1]; *[1]QPS, LLC, Newark, DE; [2]QPS Hepatic Biosciences, Research Triangle Park , NC*

TP 618 **Characterisation of Metabolites by Utilising Collision Cross Section Measurements in Conjunction with an Integrated Microfluidic Device;** Richard T. Gallagher[1]; Christine Pattison[1]; Kathryn Pickup[1]; Kristin Samuelsson[1]; Mike McCullagh[2]; David S Douce[2]; *[1]AstraZeneca, Macclesfield, UK; [2]Waters (MS Technologies), Manchester, UK*

TP 619 **Identification of the Microbial Fermentation Products for Curcumin using Metabolite ID Workflow Based on High Resolution Mass Spectrometry;** Dezhao Lu[1]; Xiaoyan Xu[2]; Ting Liu[2]; Kerong Zhang[2]; Huafen Liu[2]; Xingde Wo[1]; *[1]College of Life Science,, Zhejiang Chinese Medical Unversity, Hangzhou, Zhejiang Province, China; [2]AB SCIEX Asia Pacific Application Support Center, Shanghai, China*

TP 620 **Are Low Flow Mass Spectrometry Techniques Reliable Enough to be used for Metabolite Estimation from Human Samples without Standards?;** Jill L. Pirhalla; *GlaxoSmithKline, King Of Prussia, PA*

TP 621 **Identification of Rilpivirine Metabolites in Human Liver Microsomes and Characterization of Cytochrome P450 Enzymes Involved in the Biotransformation by LC-MS/MS;** Josiane de Oliveira Cardoso[1,2]; Jessica Bo Li Lu[1]; Regina Vincenzi Oliveira[2]; Zeruesenay Desta[1]; *[1]Division of Clinical Pharmacology, Indiana University School of Medicine, Indianapolis, IN; [2]Chemistry Department, Federal University of São Carlos, São Carlos, SP, Brazil*

TP 622 **Electrochemistry/MS – a Powerful Tool in Drug Metabolism;** Martin Eysberg; Agnieszka Kraj; Hendrik-Jan Brouwer; Nico Reinhoud; Jean-Pierre Chervet; *Antec (USA), Boston, MA*

TP 623 **Development of an *in vitro* Platform for Peptide Therapeutic Metabolite Identification;** Joshua L. Johnson; Amin Kamel; *NIBR, Cambridge, MA*

TP 624 **Investigation of d6-Bisphenol A Diconjugates in Humans Following Oral Administration of d6-BPA on a Cookie;** Mona I. Churchwell; Nathan C. Twaddle; Daniel R. Doerge; *NCTR/FDA, Jefferson, AR*

TP 625 **Automated Soft-Spot Identification: Success Rate, Limitations, Code Logic and Functionality;** Veronica Zelesky[1]; Nathaniel Woody[1]; Carrie Funk[1]; Hao Sun[1]; John Janiszewski[1]; Christopher Keefer[1]; Ismael Zamora[2]; *[1]Pfizer Inc., Groton, CT; [2]Lead Molecular Design, S.L., Sant Cugat Del Valles, Spain*

TP 626 **Soft-Spot Identification for Drug Discovery: Utilizing Sciex AB 5600 Information Dependent Acquisition Scanning, MassMetasite Software and WebMetabase Browser;** Kerry Fillgrove[1]; Diane Grotz[2]; Somang Kim[1]; Ian Knemeyer[3]; Kevin Bateman[1]; *[1]Merck Research Labs, West Point, PA; [2]Merck Research Labs, Kenilworth, NJ; [3]Merck Research Labs, Boston, MA*

TP 627 **Exploiting Variable Swath Techniques to Maximize the Quality of MS/MS Spectra for Metabolite Identification Studies;** Richard Schneider[1]; Veronica Zelesky[2]; Eva Duchoslav[3]; *[1]Pfizer Global R&D, Groton, CT; [2]Pfizer Inc., Groton, CT; [3]AB Sciex, Concord, ON*

TP 628 **High Resolution Mass Spectrometric Investigation of the *in vivo* Metabolism of Selective Androgen Receptor Modulators (SARMs) in the Horse;** Mikael Hedeland[4]; Annelie Hansson[1]; Axel Rydevik[1]; Oliver Krug[2]; Mario Thevis[2]; Ulf Bondesson[4]; Heather Knych[3]; Scott Stanley[3]; *[1]Uppsala University, Uppsala, Sweden; [2]German Sport University, Cologne, Germany; [3]University of California - Davis, Davis, CA; [4]National Veterinary Institute, Uppsala, Sweden*

TP 629 **Utilizing Ion Mobility Drift Times to Correlate and Track Metabolites across Changing Chromatographic Methods and Modes including SFC and UHPLC;** Hernando Olivos[1]; Adam Ladak[1]; Andrew Baker[3]; Steven Lai[1]; Yun Alelyunas[2]; Paul Rainville[2]; Mark Wrona[2]; *[1]Waters, Beverly, MA; [2]Waters, Milford, MA; [3]Waters, Pleasanton, CA*

TP 630 **A Quantitative Determination of Methadone and its Metabolite (EDDP) in Dry Blood Spot by LC-MS/MS;** Hui Qiao; Joshua Sha Ye; Changtong Hao; *IONICS Mass Spectrometry Group Inc, Bolton, Canada*

TP 631 **Studying Drug Metabolism by Isotope Labeling and High Resolution Tandem Mass Spectrometry;** Leanne Ohlund; Lekha Sleno; *UQAM, Montreal, Canada*

TP 632 **Application of High Resolution Mass Spectrometry for Unmasking Hidden Genetic Toxicity Structural Alerts from Early Metabolism Studies;** Jackie X. Shang; Qing Chen; Bella Yao; Narciso Alvarez; Kaushik Mitra; *PPDM, Merck Research Lab, Kenilworth, NJ*

TP 633 ***In vitro* Species Comparison using Long-term Hepatocyte Co-Culture Models and Highly Sensitive UHPLC-Q-TOF-MS with SWATH Analysis;** Jian Yu[1]; Ragu Ramanathan[1]; Cornelia Smith[2]; Caroline Lee[2]; Helen Shen[1]; Zamas Lam[1]; *[1]QPS, LLC, Newark, DE; [2]QPS Hepatic Biosciences, Research Triangle Park, NC*

TP 634 **Metabolic Stability Assay Using Human Hepatocyte Co-cultures and Integrated Qualitative/Quantitative High Resolution Mass Spectrometry;** Alex Zang[1]; Ragu Ramanathan[1]; Cornelia Smith[2]; Caroline Lee[2]; Helen Shen[1]; Zamas Lam[1]; *[1]QPS, LLC, Newark, DE; [2]QPS Hepatic Biosciences, Research Triangle Park , NC*

TP 635 **Metabolite Identification in Biological Matrices Utilizing High Resolution MS: Comparison of SynaptG2S using MSe and Orbitrap using DDS Methodology;** Amanda Culp; Vishal Shah; David Wagner; *GlaxoSmithKline, Rtp, NC*

TP 636 **Degradation of B-lactam and Cephalosporin Antibiotics using Chlorine Dioxide and Identification of the Products by ESI and APPI LC/MS/MS;** Robert D. Voyksner[1]; Paul Lorcheim[2]; *[1]LCMS Limited, Durham, NC; [2]ClorDiSys Solutions, Inc, Lebanon, NJ*

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TP 637 **Mass Spectrometry Fingerprinting of Yeast Metabolome Cultivated under Environmental Stressful Conditions;** Mireia Farres; Benjamí Piña; Romà Tauler; *IDAEA-CSIC, Barcelona, Spain*

TP 638 **Development of a Biological Internal Reference for Full Scan LC-MS Metabolomics Applied to the Cellular Stress Response;** Amy Caudy; Olga Zaslaver; Julia Hanchard; Christopher Go; Ying Zhang; Adam Rosebrock; *University of Toronto, Toronto, Canada*

TP 639 **Untargeted Metabolomic Analysis for the Evaluation of Stress Effects on Model Organisms;** Joaquim Jaumot[1]; Meritxell Navarro[1]; Elena Ortiz[1]; Alejandro García-Reiriz[1, 2]; Marta Casado[1]; Benjamín Piña[1]; Romà Tauler[1]; *[1]IDAEA-CSIC, Barcelona, Spain; [2]IQUIR-CONICET, Rosario, Argentina*

TP 640 **Single-cell Metabolomics and Proteomics by Capillary Electrophoresis ESI MS;** Peter Nemes[1]; Jordan T. Aerts[2]; Rosemary M. Onjiko[1]; Stanislav S. Rubakhin[2]; Jonathan V. Sweedler[2]; *[1]George Washington University, Washington, DC; [2]University of Illinois--Urbana-Champaign, Urbana, IL*

TP 641 **Direct Tissue Spray Ionization of Living Plants by Mass Spectrometry for Metabolomics;** Dana M. Freund; Amanda C. Martin; Jerry D. Cohen; Adrian D. Hegeman; *University of Minnesota, St. Paul, Minnesota*

TP 642 **Metabolomics Analysis of Soy Hydrolysate for the Identification of Productivity Markers of Mammalian Cells for Manufacturing Therapeutic Proteins;** Jason L. Richardson; Bhavana Shah; Michele Nicklaus; Pavel Bondarenko; Zhongqi Zhang; *Amgen, Inc., Thousand Oaks, CA*

TP 643 **Metabolomics Profiling using Atmospheric Pressure Gas Chromatography-MS;** Vladimir Shulaev[2]; Ghaste Manoj[2, 3]; Steven Lai[1]; Carolina Salazar [2]; Nobuhiro Suzuki[2]; Janna Crossley[2]; Ron Mittler[2]; James Langridge[1]; Giuseppe Astarita[1]; Fulvio Mattivi[3]; *[1]Waters Corporation, Milford, MA; [2]University of North Texas, Denton, TX; [3]Fondazione Edmund Mach, San Michele all'Adige, Italy*

TP 644 **Differential Metabolomics of Cob Tissues from Maize Genotypes Resistant and Susceptible to Aflatoxin Accumulation;** Olga Pechanova; *MSU, Mississippi State, MS*

TP 645 **Comparative Metabolomic Studies on Two Chinese Podophyllum Plants;** Xiaoming Jiang[1]; Mingquan Guo[1, 2]; *[1]Wuhan Botany Garden, Chinese Academy of Sciences, Wuhan, China; [2]University of Southern California, Alhambra, CA*

TP 646 **Profiling of Specialized Metabolites that Accumulate in Trichomes of *Petunia* species;** Xiaoxiao Liu[1]; Cornelius S. Barry[3]; A. Daniel Jones[1, 2]; *[1]Department of Chemistry, Michigan State University, East Lansing, MI; [2]Department of Biochemistry and Molecular Biology, Michigan State University, East Lansing, MI; [3]Department of Horticulture, Michigan State University, East Lansing, MI*

TP 647 **Comprehensive Untargeted Metabolite Profiling of Alangifolium Salvifolium Bark using LCMS and GCMS Techniques;** Siddaiah Chandranayak[1]; Harischandra Sripathi Prakash[1]; Syed Salman Lateef[2]; Saligrama Adavigowda Deepak[2]; *[1]Department of Studies in Applied Botany/Biotechnol, Mysore, Karnataka, India; [2]Agilent Technologies, Bangalore, INDIA*

TP 648 **Analysis of Differentially Expressed Metabolites Induced by NPM-ALK in Anaplastic Lymphoma Kinase-Positive Anaplastic Large Cell Lymphoma;** Difei Sun; Kathleen Bone; Raymond Lai; Liang Li; *University of Alberta, Edmonton, Canada*

TP 649 **Colorectal Cancer, Diet and Lipid Oxidation: towards Non-Targeted LC/HRMS Aldehydomics for Trapping and Analyzing Reactive Aldehydes in the Intestinal Lumen;** Sylvie Chevolleau[1, 3]; Isabelle Jouanin[1, 3]; Françoise Guéraud[2, 3]; Fabrice Pierre[2, 3]; Laurent Debrauwer[1, 3]; *[1]INRA UMR 1331 Toxalim - AXIOM Platform, Toulouse, France; [2]INRA UMR 1331 Toxalim - PPCA Team, Toulouse, France; [3]Toulouse University, INP, Toxalim, Toulouse, France*

TP 650 **High Performance Isotope Labeling Liquid Chromatography Mass Spectrometry for Investigating the Effect of Drinking Goji Tea on Urine Metabolome Profiling;** Chiao-Li Tseng; Liang Li; *University of Alberta, Edmonton, Canada*

TP 651 **GC/MS Metabolomics: Metabolic Mapping of the Mouse Gastrointestinal Tract;** Jan Crowley; Chia Hung; Kevin Yarasheski; Jeffrey Henderson; *Washington University, St Louis, MO*

TP 652 **Assigning Adduct, Charge and Polymer States to High-Resolution Accurate-Mass Spectral Data using Frequency of Assignment in Multiple Difference Networks;** Thomas Mcclure; Matthew Kump; Michael Athanas; *Thermo Fisher Scientific, San Jose, CA*

TP 653 **Bioprocess of Yeast Fermentation using IROA Protocol;** Chris Beecher[1]; Felice de Jong[2]; *[1]IROA Technologies, Ann Arbor , Michigan; [2]IROA Technologies LLC, Bolton, MA*

TP 654 **A New GC Retention Database for Accurate, Reliable Calculation of Retention Times and Tolerance Windows under a Range of Conditions;** Baijie Peng; Mei-Yi Kuo; Josh Hewitt; Daniel Abate; Paul Boswell; *University of Minnesota, Minneapolis, MN*

TP 655 **Rapid and Accurate Metabolite Identification using a High Resolution MS/MS Human Metabolite Spectral Library for Human Biofluid Metabolomics;** Zhendong Li[1]; Mingguo Xu[1]; Yiman Wu[1]; Chiao-Li Tseng[1]; Tao Huan[1]; Wei Han[1]; Jaspaul Tatlay[1]; Tran Tran[1]; Aiko Barsch[2]; Carsten Baessmann [2]; Liang Li[1]; *[1]UofA, Edmonton, Canada; [2]Bruker Daltonics, Bremen, Germany*

TP 656 **Hemorrhagic Shock "fingerprint" Based on Global Metabolite Profiling of Porcine Urine Sample;** Monika Tokmina-Lukaszewska[1]; Navid Movahed[1]; Elizabeth Lusczek[2]; Kristine Mulier[2]; Greg Beilman[2]; Brian Bothner[1]; *[1]Department of Chemistry & Bichemistry, Bozeman, MT; [2]Department of Surgery, University of Minnesota, Minneapolis, MN*

TP 657 **A Systematic Approach to Untargeted Metabolomics Data Analysis: Comparison of Peak Picking Workflows;** Atefeh Rafiei; Lekha Sleno; *UQAM, Montreal, Canada*

TP 658 **GCAnalyzer: An Untargeted GC/MS Metabolomics Platform for Quality Control, Accurate Deconvolution and Data Analysis;** Claartje Van Der Kroft; *MsMetrix, Maarssen, Netherlands*

TP 659 **New Correlation Techniques in the Chemical Assignment and Biomarker Analysis of Metabolomics LC/MS Data;** Stephen L Coy[1]; John B. Tyburski[2]; Frank J. Gonzalez[3]; Albert J. Jr. Fornace[2]; *[1]Northeastern U., Boston, MA; [2]Georgetown U, Washington, DC; [3]National Cancer Institute, Bethesda, MD*

TP 660 **Using Novel Metabolomics Approaches to Understand Microbial Carbon Cycling in Soil;** Tami Swenson[1]; Stefan Jenkins[1]; Benjamin Bowen[1]; Susan Spaulding[2]; David Burstein[2]; Brian Thomas[2]; Mary Power[2]; Blake Suttle[3]; Jill Banfield[2]; Trent Northen[1]; *[1]Lawrence Berkeley National Laboratory, Berkeley, CA; [2]University of California, Berkeley, CA; [3]Imperial College, London, UK*

TP 661 **Complimentary LC- and GC-Mass Spectrometry Techniques Provide Broader Coverage of the Metabolome;** Baljit Ubhi[1]; Jeff Patrick[2]; Joe Shambaugh[3]; *[1]AB SCIEX, Redwood City, CA; [2]Leco Corporation, St. Joseph, MI; [3]Genedata Inc, Lexington, MA*

TP 662 **Incorporating Multiple Chromatographic Methods and High Resolution Accurate Mass Mass Spectrometry into a High Throughput Metabolomics Platform;** Anne Evans[1]; Brandi Bridgewater[1]; Qiang Liu[2]; Matthew Mitchell[1]; Richard Robinson[1]; Hongping Dai[1]; Sandy Steward[1]; Corey DeHaven[1]; Luke Miller[1]; *[1]Metabolon, Inc., Durham, NC; [2]Analytical Research Laboratories, Oklahoma City, OK*

TP 663 **Ultrafast Online SPE/MS Work-flow for High Throughput Global Profiling of Human Urine Metabolome;** Michelle Romm; Sumit Shah; *Agilent Technologies, Inc., Wakefield, MA*

TP 664 **Untargeted Exhaled Breath Condensate Metabolomics by ESI, ESCi, and DART Ion Mobility-Time-of-Flight Mass Spectrometry;** José J. Pérez[1]; María Eugenia Monge[1, 2]; Nael A. McCarty[3]; Facundo M. Fernández[1]; *[1]Georgia Institute of Technology, Atlanta, GA; [2]CIBION-CONICET, Ciudad de Buenos Aires, Argentina; [3]Emory University School of Medicine, Atlanta, GA*

TP 665 **Search for Chemical Signatures for Aggressive Corrosion in Produced Water Samples Obtained from Oil-Field Systems;** Vincent Bonifay; Whitney Smith; Christopher R. Marks; Eric Kaufman; Brian Harriman; Joseph M. Suflita; Jan Sunner; *University of Oklahoma, Norman, OK*

TP 666 **Metabolomics of Anaerobic Hydrocarbon Biodegradation by *Desulfoglaeba alkanexedens* and Its Association with Carbon Steel Biocorrosion;** Egemen Aydin; Vincent Bonifay; Renxing Liang; Jan Sunner; Joseph M. Suflita; *University of Oklahoma, Norman, OK*

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TP 667 **Retention 'Projection' Enables Reliable Use of Shared HPLC Metabolite Retention Data Across Labs and Methods;** Daniel Abate-Pella[1]; Dana Freund[1]; Yan Ma[2]; Birgit Beck[3]; Emma Schymanski[3]; Tobias Kind[2]; Adrian Hegeman[1]; Paul Boswell[1]; *[1]University of Minnesota, St. Paul, MN; [2]University of California, Davis, CA; [3]Eawag, Dubendorf, Switzerland*

TP 668 **MudPIT Analyses Reveal Auxin Mediated Proteases in Poplar during Storage Protein Remobilization;** Nazrul Islam[1]; Bret Cooper[2]; Wesley M Garrett[2]; Chioma Egekwu[1]; Angus Murphy[1]; Gary D Coleman[1]; *[1]University of Maryland, College Park, MD; [2]USDA, Beltsville, MD*

TP 669 **A Protein Expression Atlas of Medicago Truncatula;** Catherine Minogue; Alicia Richards; Dhileepkumar Jayaraman; Shanmugam Rajasekar; Junko Maeda; Michael Westphall; Michael Sussman; Jean-Michel Ané; Joshua J. Coon; *University of Wisconsin, Madison, WI*

TP 670 **Developing Highly Sensitive Phosphoproteomics for Signaling in Mature Plants;** Chuan-Chih Hsu[1]; Pengcheng Wang[2]; Liang Xue[1]; Jian-Kang Zhu[2]; Weiguo Andy Tao[1]; *[1]Biochemistry, Purdue University, West Lafayette, IN; [2]Horticulture, Purdue University, West Lafayette, IN*

TP 671 **Atmospheric Pressure Photoionization Combined with a UV Femtosecond Laser for Plant Metabolite Imaging;** Katherine-Jo Galayda; Timothy Anderson; Patrick McVey; R.S. Houk; *Iowa State University, Ames, IA*

TP 672 **The Steady State N-terminal Proteome of Chloroplasts; Determinants of Protein Maturation and Stability;** Elden Rowland[1, 2]; Klaas van Wijk[1, 2]; *[1]Cornell University, Ithaca, NY; [2]Cornell University, Ithaca , NY*

TP 673 **Mass Spectrometry as a Tool for the Detection of Emerald Ash Borer Attack;** Naomi Stock[1]; Michael Doran[1]; Ron Bonner[2]; Raymond March[1]; *[1]Trent University, Peterborough, Canada; [2]AB SCIEX, Concord, ON*

TP 674 **iTRAQ Analysis Reveals Mechanisms of Enantioselective of Imazethapyr on Root Growth in Arabidopsis thaliana;** Haifeng Qian[1]; Haiyan Ding[1]; Zhongyi Cheng[2]; Zhengwei Fu[1]; *[1]Zhejiang University of Technology, Hangzhou, CN; [2]PTM Biolabs, Inc, Hangzhou, China*

TP 675 **Capturing the Dynamics of Crassulacean Acid Metabolism (CAM): Transcriptome and Proteome Analysis of Diel Cycle Gene Expression in *Agave americana*;** Paul Abraham; Hengfu Yin; Gerald Tuskan; Xiaohan Yang; Robert Hettich; *Oak Ridge National Laboratory, Oak Ridge, TN*

TP 676 **Multi-OMICs Evaluation of Arogenate Dehydrates Knock-Out and Over Expression Mutants in Arabidopsis thaliana;** Kim K. Hixson[1]; Oliver Corea[2]; Alan Budgeon[1]; Sarah Brewer[1]; Karl Weitz[3]; Rosey Chu[3]; Matthew Monroe[3]; Ljiljana Pasa-Tolic[3]; Mary Lipton[3]; Laurence Davin[1]; Norman Lewis[1]; *[1]Washington State University, Pullman, WA; [2]Simon Fraser University, Vancouver, British Columbia, Canada; [3]Pacific Northwest National Laboratory, Richland, WA*

TP 677 **Proteomic Analysis of Wastewater Cultured Chlamydomonas reinhardtii: Comparing protein Expression for Enhanced Phycoremediation and Biomass Production;** Anil Patel; Eric Huang; Mark Lefsrud; *Bioresource Engineering, McGill University, Ste-Anne-de-Bellevue, Canada*

TP 678 **Molecular and Genomic Mechanisms for Plant Defense Revealed by Improved Proteomics Method;** Yixiang Zhang[2]; Joshua Yuan[2]; Susie Dai[1]; *[1]Office of the Texas State Chemist, Department of V, College Station, TX; [2]Department of Plant Pathology and Microbiology, College Station, TX*

TP 679 **Combination of Different Extraction, Separation and Mass-Spectrometric Approaches for Identification of Complex Mixtures of Volatile Compounds Emanated from Tropical Flowers;** Elena Stashenko; Silvia Cardenas; Corina Bernal; Jairo Rene Martinez; *Universidad Industrial de Santander, Bucaramanga, Colombia*

TP 680 **Overcoming the Challenges in Proteome Analysis of *Populus tremuloides* using High-Throughput RNA Sequencing;** Landon Wilson[1]; Avinash Sreedasyam[2]; Geetika Trivedi [2]; Leland Cseke[2]; Helen Kim[1]; Stephen Barnes[1]; *[1]University of Alabama at Birmingham, Birmingham, AL; [2]University of Alabama-Huntsville, Huntsville, AL*

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TP 682 **Separation and Quantitation of three surfactants in a formulation using LC/ESI/MS;** Teresa E. Peterson; *Kimberly-Clark, Roswell, GA*

TP 683 **Intensity-based Label-Free Quantification of the Kinome across 64 colorectal Cancer Cell Lines;** Martin Frejno[1]; Susan Klaeger[2]; Mathias Wilhelm[2]; Guillaume Médard[2]; Bernhard Kuster [2]; Stephan Feller[1]; *[1]Oxford University, Oxford, UK; [2]Technical Universitiy Munich, Freising, Germany*

TP 684 **Dwell Time, a Critical Factor on Precision in N-in-One Assays Utilizing UPLC-MS/MS;** Lan Li; Tracey Wilson; Yuan-Shek Chen; Luca Matassa; *QPS, LLC, Newark, DE*

TP 685 **Quantitative analysis of sodium arsenite-induced kinome perturbation in human skin fibroblasts with ATP-affinity probes;** Lei Guo; Yongsheng Xiao; Yinsheng Wang; *University of California, Riverside, Riverside, CA*

TP 686 **Cross-Species Quantification of Snake Venoms using iTRAQ;** Erika Velásquez[1]; Rafael D Melani[1]; Paulo Costa Carvalho[2]; Diogo B Lima[2]; Magno Junqueira[1]; Fabio CS Nogueira[1]; Gilberto Domont[1]; *[1]Univ Federal Do Rio De Janeiro, Rio De Janeiro, Brazil; [2]Carlos Chagas Institute, Curitiba, Pr*

TP 687 **Improved Identification and Extended Quantitative Mass Range of Peptide Tagged TMT by Combined N-Terminal Enzyme and Triple-Stage Mass Spectrometry;** Ya-Ping Lin; Chein-Hung Chen; Jung-Lee Lin; Chung-Hsuan Chen; *Genomics Research Center, Academia sinica, Taipei, Taiwan*

TP 688 **Application of Multistage Tandem Mass Spectrometry for Quantification of Endogenous Metabolites In Lung Tissue;** Keely Pierzchalski[1]; Jace W. Jones[1]; Catherine Booth[2]; Gregory Tudor[2]; Alexander Bennett[3]; Ann Farese[3]; Thomas MacVittie[3]; Pu-Ting Xu[3]; Isabel Jackson[3]; Zeljko Vujaskovic[3]; Maureen Kane[1]; *[1]University of Maryland, School of Pharmacy, Baltimore, MD; [2]Epistem Ltd, Manchester, UK; [3]University of Maryland, School of Medicine, Baltimore, MD*

TP 689 **Stable Isotope Labeled Internal Standards in Quantification of Biomolecules using LC MS/MS;** Meiyao Wang; Illarion Turko; *NIST, IBBR, Rockville, MD*

TP 690 **Improved Uncertainty in the Analysis of PETN in APCI$^-$ LCMS Determinations using Ammonium Nitrate as an Ionization Additive;** William Maccrehan; *NIST, Gaithersburg, MD*

TP 691 **Examination of Imported Children's Toys for the Presence of Toxic Elements using Digestion and Migration Testing Methods;** Patricia Atkins; *Spex Certiprep, Metuchen, NJ*

TP 692 **Understanding Protein Expression Levels and Quantitation in Single Cell Analyses Using ICP-QQQ;** Jonathan Wanagat[1]; Amir Liba[2]; *[1]UCLA, Dept. of Medicine, Los Angeles, CA; [2]Agilent Tech., Wilmington, DE*

TP 693 **Achieving Maximal Sensitivity Gain When Scaling a Protein Immunocapture Assay from Traditional to Low Micro-Flow LC-MS/MS;** Eugene F. Ciccimaro[1]; Bogdan Sleczka[1]; John T. Mehl[1]; Lorell Discenza[1]; Asoka Ranasinghe[1]; Celia D'Arienzo[1]; Jim Murphy [3]; Brad Coopersmith[2]; Paul Rainville[3]; Catalin Doneanu[3]; Timothy Olah[1]; *[1]Bristol-Myers Squibb, Princeton, NJ; [2]Waters, Richboro, PA; [3]Waters, Milford, MA*

TP 694 **Trypsin as the Ligase for N-terminal Labeling of Tryptic Peptides for Proteomics Analysis;** Mingliang Ye; Yanbo Pan; Hanfa Zou; *Dalian Institute of Chemical physics, CAS, Dalian, China*

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TP 710 **Ion Enhancement and MS/MS for Analysis of Organics in Complex Mars Analog Matrices with the MOMA Ion Trap Mass Spectrometer;** Ryan M. Danell[1]; Friso H.W. van Amerom[2]; Veronica Pinnick[3]; Xiang Li[3]; Stephanie Getty[3]; Ricardo Arevalo[3]; William Brinckerhoff[3]; Paul Mahaffy[3]; *[1]Danell Consulting, Inc., Winterville, NC; [2]Mini-Mass Consulting, Inc., Hyattsville, MD; [3]NASA GSFC, Greenbelt, MD*

TP 711 **High Speed and Accurate Pressure Measurement with a micro Pirani Pressure Gauge for Pressures from 100 mTorr to sub 1mTorr. ;** Adrian Southard[1]; Tomoko Adachi[2]; Ricardo Arevalo[3]; Gary Brown[3]; Christopher Johnson[3]; Zachary Gonnsen[4]; Stephen Meyer[3]; William Brinckerhoff[3]; Paul Mahaffy[3]; *[1]University Space Research Agency, Greenbelt, Maryland; [2]Catholic University, Washington, DC; [3]NASA GSFC, Greenbelt, MD; [4]Microtell LLC, Greenbelt, MD - Maryland*

TP 712 **Micro Mass Analyzer for the Investigation of Cometary Bodies;** Ashish Chaudhary[1]; Tim Short[1]; Michelle Cardenas[1]; Emily Barrentine[2]; Danny Glavin[2]; Paul Mahaffy[2]; William Brinckerhoff[2]; Yun Zheng[2]; Friso H.W. Van Amerom[1]; *[1]SRI International, St. Petersburg, Fl; [2]NASA GSFC, Greenbelt, MD*

TP 713 **A multi-stage Image-Charge Detector Made from Printed Circuit Boards;** Brandon L Barney; Daniel E Austin; *Brigham Young University, Provo, UT*

TP 714 **Development of a Hybrid Ion Mobility Spectrometry/ Time-of-Flight Mass Spectrometer with Printed Circuit Board Technology;** Ian K. Webb; Tsung-Chi Chen; Xinyu Zhang; Sandilya V. B. Garimella; Randolph V. Norheim; Gordon A. Anderson; Yehia M. Ibrahim; Keqi Tang; Richard D. Smith; *Pacific Northwest National Laboratory, Richland, WA*

TP 715 **Improving Mass Spectrometric Sensitivity and Ionization Efficiency Using a nanoESI Emitter Array at Subambient Pressures;** Jonathan T. Cox; Ioan Marginean; Ryan Kelly; Richard D. Smith; Keqi Tang; *Pacific Northwest National Laboratory, Richland, WA*

TP 716 **Simulation Driven Design and Development of Structures for Lossless Ion Manipulations;** Sandilya V.B. Garimella; Ian K. Webb; Yehia M. Ibrahim; Aleksey V. Tolmachev; Keqi Tang; Gordon A. Anderson; Richard D. Smith; *Pacific Northwest National Laboratory, Richland, WA*

TP 717 **Fundamental Aspects of Ion Confinement in SLIM Devices;** Aleksey V. Tolmachev; Xinyu Zhang; Sandilya V.B. Garimella; Ian K. Webb; Yehia M. Ibrahim; Gordon A. Anderson; Richard D. Smith; *Pacific Northwest National Laboratory, Richland, WA*

TP 718 **A Novel Linear Ion Trap Mass Analyzer built with Triangular Electrodes;** Chuan-fan Ding; Yu Xiao; *Fudan University, Shanghai, China*

TP 719 **Accelerating 2D FT-ICR by non-Uniform Sampling and Maximum Entropy Reconstruction for Increased Resolution and/or Decreased Acquisition Time;** Fabrice Bray[1]; Lionel Chiron[2]; Marie-Aude Coutouly[2]; Caroline Tokarski[1]; Marc-André Delsuc[3]; Christian Rolando[1]; *[1]Univ. de Lille 1, Sciences et Technologies, Villeneuve d'Ascq, France; [2]NMRTEC, Illkirch-Graffenstaden, France; [3]IGBMC, Illkirch-Graffenstaden, France*

TP 720 **Toward Determination of Ion Collision Cross Sections for Biomolecules within FT-ICR Cells;** Lu Mao[1]; Yu Chen[1]; Yu Chen[2]; Nathan K. Kaiser[2]; Alan G. Marshall[2, 3]; Wei Xu[1]; *[1]Beijing Institute of Technology, Beijing, CHINA; [2]ICR Program, National High Magnetic Field Lab, Tallahassee, FL; [3]Department of Chemistry & Biochemistry, FSU, Tallahassee, FL*

TP 721 **Kinetic Study of Novel Precursors for the Hot-Wire Chemical Vapor Deposition;** Ismail Badran; Yujun Shi; *University of Calgary, Calgary, Canada*

TP 722 **Novel Operating Modes of an Ion Mobility Quadrupole Time of Flight Hybrid Instrument;** Jason L Wildgoose; Kevin Giles; Steven Pringle; Keith Richardson; *Waters Corporation, Manchester, UK*

TP 723 **Design and Utility of a Multi-Pass Cyclic Ion Mobility Separator;** Kevin Giles; Jason L Wildgoose; Steven Pringle; John Garside; Peter Carney; Peter Nixon; David Langridge; *Waters Corporation, Wilmslow, UK*

TP 724 **The Extraction of Maximum Information from Individual Ion Arrivals and Its Application to Extending the Dynamic Range of IMS-oaToF-MS Data;** Martin Green; Garry Scott; Darrell Williams; Tony Gilbert; Keith Richardson; Martin Palmer; Nick Tomczyk; *Waters Corporation, Manchester, UK*

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TP 726 **Analysis of Non-Volatile Samples by Flash Desorption/ Mass Spectrometry;** Kenzo Hiraoka[1]; Dilshadbek Usmanov[1, 2]; Satoshi Ninomiya[1]; *[1]University of Yamanashi, Kofu, Japan; [2]Institute of Ion-Plasma and Laser Technologies, Tashkent, Uzbekistan*

TP 727 **Applications of Super-Atmospheric Pressure ESI in Superheated ESI-MS and Nano-ESI using Disposable Pipet Tip;** Lee Chuin Chen; Md. Matiur Rahman; Kenzo Hiraoka; *University of Yamanashi, Kofu, Japan*

TP 728 **Plasma Induced Secondary Ionization - Ion Mobility Spectrometry (PISI-IMS) for Real Time Drug Quality Assessment;** Prabha Dwivedi[1]; Paula Holmes[2]; Adam Kaylor[1]; Facundo M. Fernandez[1]; *[1]Georgia Institute of Technology, Atlanta, GA; [2]Photonis USA Inc., Sturbridge, MA*

TP 729 **Microplasma Ion Source for Rapid Air/Water Volatile Organic Contaminant Analysis on board the International Space Station;** Rosana M. Alberici[2]; Joel D. Keelor[1]; Josh M. Symonds[1]; Thomas M. Orlando[1]; Ariel Macatangay[3]; Prabha Dwivedi[1]; Facundo M. Fernandez[1]; *[1]Georgia Institute of Technology, Atlanta, GA; [2]ThoMSon Mass Spectrometry Laboratory, UNICAMP, Campinas, Brazil; [3]NASA Johnson Space Center, Houston, TX*

TP 730 **Liquid Chromatography Plasma-Spray Ionization-Mass spectrometry (LC-PLASI-MS): Overcoming ESI Limitations;** Adam Kaylor[1]; Prabha Dwivedi[1]; Guilong Cheng[2]; Jian Wang[2]; Shelly Li[2]; Jennifer L. Belsky[3]; Facundo M. Fernandez[1]; *[1]Georgia Institute of Technology, Atlanta, GA; [2]Pfizer Analytical R&D, Eastern Point Road, CT; [3]U.S. Pharmacopeial Convention, Rockville, MD*

TP 731 **Validation of Computational Fluid dynamic Simulations (CFD) with Background Oriented Schlieren technique (BOS);** Sebastian Klopotowski; Alexander Haack; Walter Wissdorf; Thorsten Benter; *University of Wuppertal, Wuppertal, Germany*

TP 732 **Investigation of Gas- and Ion-Dynamics in Heated Glass and Metal Inlet Capillaries: Work in progress …;** David Mueller; Yessica Brachthaeuser; Valerie Derpmann; Sebastian Klopotowski; Markus Langner; Christine Polaczek; Hendrik Kersten; Walter Wissdorf; Thorsten Benter; *University of Wuppertal, Wuppertal, Germany*

TP 733 **Fundamental Ion-Molecule Reaction Studies at Elevated Ion Temperatures and Analytical Application of an Ion Activation Stage ("ion tunnel");** Sonja Klee; Albrecht Brockhaus; Marco Thinius; Walter Wissdorf; Thorsten Benter; *University of Wuppertal, Wuppertal, Germany*

TP 734 **Development of a Compact Multiple-Ionization-Stage TOF Mass Analyzer System for Trace Component Monitoring within Chemically Challenging Process Gas Matrices;** Yessica Brachthaeuser; David Mueller; Hendrik Kersten; Klaus J. Brockmann; Thorsten Benter; *University of Wuppertal, Wuppertal, Germany*

TP 735 **Integrated Ion Trajectory Simulations in OpenFOAM, an Open Source Framework for Complex Numerical Simulations;** Walter Wissdorf; Thorsten Benter; *University of Wuppertal, Wuppertal, Germany*

TP 736 **An Efficient Ion Funnel Operated at 100 mbar Background Pressure;** Sascha Albrecht[1]; Jochen Barthel[1]; Armin Afchine[1]; Fred Stroh[1]; Thorsten Benter[2]; *[1]Forschungszentrum Jülich GmbH, Jülich, Germany; [2]University of Wuppertal, Wuppertal, Germany*

TP 737 **Kinetic Measurements of Electronically Excited Noble Gas Species Radiating in the Far VUV;** Ian Barnes; Sebastian Klopotowski; Kai Kroll; Hendrik Kersten; Thorsten Benter; *University of Wuppertal, Wuppertal, Germany*

TP 738 **A Microfabricated Ionizer for High Pressure Mass Spectrometry;** Craig Cavanaugh[1]; Kenion Blakeman[1]; Tina Stacy[1]; Stanley Pau[2]; J Michael Ramsey[1]; *[1]University of North Carolina, Chapel Hill, NC; [2]University of Arizona, Tuscon, AZ*

TP 739 **Coupling Electrospray Ionization with High Pressure Mass Spectrometry;** William M. Gilliland, Jr; J. Scott Mellors; J. Michael Ramsey; *UNC-Chapel Hill, Chapel Hill, NC*

TP 740 **Evaluation of Monolithic Silicon-Chip-Based Multinozzle Emitter Arrays for Nano- and Micro-Electrospray Mass Spectrometry;** Eloy R. Wouters[1]; Pan Mao[2]; Jean-Jacques Dunyach[1]; Daojing Wang[2]; *[1]Thermo Fisher Scientific, San Jose, CA; [2]Newomics Inc., Emeryville, CA*

TP 741 **Preparation and Reactions of Metal Cluster Ions;** Soumabha Bag; Michael Wleklinski; R. Graham Cooks; *Purdue University, West Lafayette, Indiana*

TP 742 **Characterization and Application of Nanoliter Sample Infusion Into a Miniaturized Liquid Bridge using a Capillary Gap Sampler;** Volker Neu[1]; Pablo Dörig[1]; Müller Stephan[2]; Christof Fattinger[2]; Renato Zenobi[1]; *[1]ETH Zurich, Zurich, Switzerland; [2]Hoffmann-La Roche AG, Basel, Switzerland*

TP 743 **Slurry Flow Injection Analysis Coupled with Atmospheric Pressure Chemical Ionization Mass Spectrometry for Quantitative Real-Time Monitoring of Batch Slurry Reactions;** Zhenqian Zhu[1]; David S. Cho[2]; John E. Bartmess[1]; Mary Ellen McNally[3]; Ron M. Hoffman[3]; Kelsey D. Cook[1]; Liguo Song[1]; *[1]Department of Chemistry, University of Tennessee, Knoxville, TN; [2]Oak Ridge Institute for Science and Education, FBI, Quantico, VA; [3]Analytical Sciences, DuPont Crop Protection, Newark, DE*

TP 744 **Detection of Explosives by using a Low Pressure Dielectric Barrier Discharge Ion Source;** Masuyuki Sugiyama; Shun Kumano; Hideki Hasegawa; Kazuki Tanaka; Yuichiro Hashimoto; *Hitachi, Ltd., Tokyo, Japan*

TP 745 **IR Laser Ablation with Plume Capture by a Continuous Flow Solvent Probe;** Jeremy T. O'Brien[1, 2]; Evan R. Williams[1, 2]; Hoi-Ying Holman[1]; *[1]Lawrence Berkeley National Laboratory, Berkeley, CA; [2]University of California, Berkeley, Berkeley, CA*

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TP 747 **A Microfluidic Derivatization Device for GC/MS in Chromatographic Column Chips;** Sanggoo Kim; Sungmin Lim; *Korea Basic Sci. Institute, Seoul, South Korea*

TP 748 **Laser Ablation Sample Transfer Coupled to Gas Chromatography Mass Spectrometry;** Chinthaka A. Seneviratne; Suman Ghorai; Kermit K. Murray; *Louisiana State University, Baton Rouge, LA*

TP 749 **Development of a Standard Gas Generating Vial for Performing Quality Control and Evaluation of Portable GC-MS Instrumentation with Solid-Phase Microextraction;** Jonathan Grandy; German Augusto Gómez-Ríos; Janusz Pawliszyn; *University of Waterloo: Pawliszyn Research Group, Waterloo, Canada*

TP 750 **Improvements in Quantitative and Qualitative Metabolic Profiling using a Novel Atmospheric Pressure GC Source Coupled to High Resolution TOF-MS Analysis;** Christian Wachsmuth[1]; Katja Dettmer-Wilde[1]; Peter J. Oefner[1]; Christoph Gebhardt[2]; Verena Tellström[2]; Aiko Barsch[2]; Thomas Arthen-Engeland[2]; *[1]University of Regensburg, Regensburg, Germany; [2]Bruker Daltonik, Bremen, Germany*

TP 751 **Methods for Improving the Reproducibility of an Atmospheric Pressure Chemical Ionisation Source for Gas Chromatography Analysis;** Gareth Rhys Jones[1]; David S Douce[2]; *[1]Waters UK Ltd, Wilmslow, UK; [2]Waters (MS Technologies), Manchester, UK*

TP 752 **Identification of Polycyclic Aromatic Sulfur Heterocycles in Petroleum Using Soft-Ionization GC-QTOFMS;** Viorica Lopez-Avila; Patrick J. Roach; Randall Urdahl; *Agilent Technologies, Santa Clara, CA*

TP 753 **Exploring the Ionization Space in Traditional EI with high-resolution ToF-MS for Thermally Labile Compounds;** Jonathan Byer; Charles Lyle; Joe Binkley; Jeffrey Patrick; *Leco Corporation, St Joseph, MI*

TP 754 **Innovative Approach to Helium Carrier Gas Conservation in Analytical Gas Chromatography – Mass Spectrometry;** Alexander Semyonov[1]; Massimo Santoro[2]; Sergio Guazzotti[1]; *[1]Thermo Fisher Scientific, Austin, TX; [2]Thermo Fisher Scientific, Milan, Italy*

TP 755 **Identification of Co-Eluted Components by High Mass Accuracy and Spectral Accuracy with Quadrupole GC-MS Systems;** Alexander Semyonov[1]; Mark Belmont[2]; Massimo Santoro[3]; Sergio Guazzotti[1]; Ming Gu[4]; Yongdon Wang[4]; *[1]Thermo Fisher Scientific, Austin, TX; [2]Thermo Fisher Scientific, Schaumburg, IL; [3]Thermo Fisher Scientific, Milan, Italy; [4]Cerno Bioscience, Norwalk, CT*

TP 756 **Metabolomic Analysis of Human Plasma by GC-MS;** Yue Luo; Cristina Di Poto; Mohammad R Nezami Ranjbar; Rency Varghese; Chi Zhang; Mahlet Tadesse; Habtom Ressom; *Georgetown University, Washington, DC*

TP 757 **Simultaneous Determination of 20 Kinds of Common Drugs and Pesticides in Human Blood by GPC-GC-MS/MS;** Qian Sun; Changkun Li; Jun Fan; Taohong Huang; Shin-ichi Kawano; Yuki Hashi; *Shimadzu Global COE, Shimadzu (China) Co., Ltd, Shanghai, China*

TP 758 **Quechers Sample Preparation and Gas Chromatography-Tandem Mass Spectrometry Analysis of Multi-Pesticide Residues in Tea and Grain;** Zeying He[1]; Shanshan Chen[1]; Xiaowei Liu[1]; Wenwen Wang[2]; Chang Liu[2]; *[1]Agro-Environmental Quality Supervision & Testing, Tianjin, CHINA; [2]Agilent Technologies Co. Ltd, Beijing, China*

TP 759 **Headspace GC/MS Analysis of Hydrogen Cyanide in Mainstream Cigarette Smoke;** Megan Mcguigan; LaQuasha Gaddis; Dana Chafin; Sydney Holmberg; Yan Ding; Clifford Watson; *Centers for Disease Control and Prevention, Atlanta, GA*

TP 760 **Identification of Oxygenate Compounds In Gas-to-Olefin Products by Comprehensive Two-Dimensional Gas Chromatography Coupled with Time of Flight Mass Spectrometer;** Junyan Liu; Zhenlei Peng; Jiwen Li; *Sinopec SH. Research Inst. of Petrochemical Tech., Shanghai, China*

TP 761 **Analysis of Allergens found in Cosmetics using MDGC-GCMS (Multi-dimensional gas chromatography mass spectrometer);** Sanket Chiplunkar; Prashant Hase; Dheeraj Handique; Ankush Bhone; Durvesh Sawant; Ajit Datar; Jitendra Kelkar; Pratap Rasam; *Shimadzu Analytical (India) Pvt. Ltd., Andheri (E), Mumbai, Maharashtra, India*

TP 762 **Multi pesticide Residue Analysis in Tobacco by GCMS/MS using QuEChERS as an Extraction Method;** Durvesh Sawant[1]; Ankush Bhone[1]; Dheeraj Handique[1]; Prashant Hase[1]; Sanket Chiplunkar[1]; Ajit Datar[1]; Jitendra Kelkar[1]; Pratap Rasam[1]; Kaushik Banerjee[2]; Zareen Khan[2]; *[1]Shimadzu Analytical (India) Pvt. Ltd., Andheri (E), Mumbai-400059, Maharashtra, India; [2]National Referral Laboratory, NRCG, Pune-412307, Maharashtra, India*

TP 763 **Analysis of Styrene Leached from Polystyrene Cups using GCMS Coupled with Headspace (HS) Sampler;** Ankush Bhone[1]; Dheeraj Handique[1]; Prashant Hase[1]; Sanket Chiplunkar[1]; Durvesh Sawant[1]; Ajit Datar[1]; Jitendra Kelkar[1]; Pratap Rasam[1]; Nivedita Subhedar[2]; *[1]Shimadzu Analytical (India) Pvt. Ltd., Andheri (E), Mumbai-400059, Maharashtra, India; [2]Ramnarain Ruia College, Matunga (E), Mumbai-400019, Maharashtra, India*

TP 764 **GC-MSMS Characterization of EDCS in Human Tissues for Environmental Risk Factors Assessment in the Sudden Infant and Sudden Intrauterine Death Syndromes;** Pierangela Palma; Veronica Termopoli; Giorgio Famiglini; Fabiana Capriotti; Achille Cappiello; *University of Urbino, Urbino, Italy*

TP 765 **Simultaneous Determination of Polybrominated Diphenyl Ethers (PBDEs) and Their Hydroxylated Metabolites in Bovine Milk;** Yan-Ping Lin; Katherine Dang; Birgit Puschner; *University of California, Davis, CA*

TP 767 **Flavor and Aroma Profiles of Truffle Oils by Thermal Desorption GC/MS;** Ronald Shomo; Robert Frey; Christopher Baker; John Manura; *Scientific Instrument Services, Ringoes, NJ*

TP 768 **Profiling Organic Composition of Art Samples Through HPLC-MS, GC-MS, and Multi-Dimensional Analysis;** Ching Ying Lin[1]; Keely Glass[1]; Amy Huang[1]; Carol Jiang[1]; Jen Skerritt[1]; George Dubay[1]; John Simon[2]; *[1]Duke University, Durham, NC; [2]University of Virginia, Charlottesville, VA*

TP 769 **Analyzing Archaeological Sample Composition through HPLC-MS, GC-MS and Principle Component Analysis;** Amy Huang[1]; Keely Glass[2]; Michael Wei[2]; Roman Lin [2]; Carol Jiang[2]; Jen Skerritt[2]; Carla Antonaccio [2]; George Dubay [2]; *[1], Coral Springs, FL; [2]Duke University, Durham, NC*

TP 770 **GCMS as the Ion Chromatograph of the 21st Century: Determination of Inorganic Anions in Matrices of Environmental and Biomedical Interest;** Enea Pagliano[1]; Juris Meija[1]; Massimo Onor[2]; Sara Ammazzini[2]; Emanuela Pitzalis [2]; Emilia Bramanti[2]; Alessandro D'Ulivo[2]; Zoltán Mester[1]; *[1]National Research Council Canada, Ottawa, Canada; [2]Consiglio Nazionale delle Ricerche, Pisa, Italy*

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TP 773 **In-line RP-LC-ESI-MS of Gen3 PAMAM Dendrimers;** John R. Lloyd; M. P. Suresh Jayasekara; Kenneth A. Jacobson; *NIH/NIDDK, Bethesda, MD*

TP 774 **Detecting Peptide and Protein Biomarkers in Serum using Polymeric Reverse Micelles and MALDI-MS Analysis;** Mahalia Serrano; Huan He; Rajasekhar Ramireddy; Sankaran Thayumanavan; Richard Vachet; *University of Massachusetts Amherst, Amherst, MA*

TP 775 **Evaluation of ASAP-IM/MS(/MS) Technique for the Characterization of PEEK;** Emilie Cossoul[1]; Marie Hubert-Roux[1]; Muriel Sebban[1]; Florence Churlaud[2]; Hassan Oulyadi[1]; Carlos Afonso[1]; *[1]University of Rouen - UMR CNRS 6014 Cobra, Mont-Saint-Aignan, FRANCE; [2]Arkema - CERDATO, Serquigny, France*

TP 776 **Composition and Architecture of Hyperbranched, Highly Fluorinated Polymers;** Lydia Cool[1]; Matthew Quast[2]; Anja Mueller[2]; Chyrs Wesdemiotis[1]; *[1]The University of Akron, Akron, Ohio; [2]Central Michigan University, Mount Pleasant, MI*

TP 777 **Rapid, Simplified Analysis and Data Interpretation of Biodegradable Polymer Mixtures using MALDI-IMMS;** Kirsten Craven; *Waters, Manchester, UK*

TP 778 **Gas-phase Chemistry of Lithiated Synthetic Polymers: Folding, Charge Solvation and Fragmentation;** Benjamin Bythell; *Univ. of Missouri-St. Louis, St. Louis, MO*

TP 779 **Negative Ion Electrospray Ionization Mass Spectrometry of Polyglycerol;** Xiaodong Huang; Xiaojin Li; *Ecolab Inc., Naperville, IL*

TP 780 **Combined Developments in MALDI Mass Spectrometry, Size Exclusion Chromatography and Diffusion NMR for a Successful Characterization of poly(4-vinylpyridine) Molecular Weight;** Christophe Chendo; Marion Rollet; Trang Phan; Stephane Viel; Esra Altuntas; Didier Gigmes; Laurence Charles; *Aix-Marseille University, Marseille Cedex 20, France*

TP 781 **ESI-MS/MS Structural Characterization of a New Impurity during the Synthesis of PAMAM Dendrimers;** Aura Tintaru; Rémi Ungaro; Xiaoxuan Liu; Laurent Giordano; Ling Peng; Laurence Charles; *Aix-Marseille University, Marseille, France*

TP 782 **Rapid Analysis of Carbon Fiber Reinforced Plastic using DART-MS;** Hideaki Kusano[1]; Jun Watanabe[1]; Yuki Kudou[3]; Teruhisa Shiota[2]; *[1]Shimadzu Corporation, Kyoto, Japan; [2]AMR, Inc., Tokyo, JAPAN; [3]BioChromato, Fujisawa, Japan*

TP 783 **Rapid Qualitative and Semi-Quantitative Analysis of PAEs in PVC Samples by Direct Injection Proble APCI High Resolution TOF Mass Spectrometry;** Zhaoyang Liu; *Bruker Daltonics, Inc, Shanghai, China*

TP 784 **Glycopolymers – Separating Oligomers and Identifying Structural Isomers;** Sarah Robinson; Lydia Cool; Cesar Lopez Gonzalez; Coleen Pugh; Chrys Wesdemiotis; *The University of Akron, Akron, Ohio*

TP 785 **Characterization of Poly-L-Lysine and Its Noncovalent Complexes by Ion-Mobility- Mass Spectrometry;** Mehmet Atakay[1, 2]; Bekir Salih[2]; Chrys Wesdemiotis[1]; *[1]Department of Chemistry, The University of Akron, Akron, OH; [2]Department of Chemistry, Hacettepe University, Ankara, Turkey*

TP 786 **MALDI-TOF Characterization of α,α-Difunctionalized Poly(ethylene glycol) for Bioconjugate Synthesis;** C. Adrian Figg; Maria Cristina A. Dancel; Bryan S. Tucker; Brent S. Sumerlin; *University of Florida, Gainesville, FL*

TP 787 **Quantitative Analysis of Bulk and Extractable PVP incorporated in Silicone Hydrogel Contact Lenses using APCI HR/AM-SIM Mass Spectrometry;** William Nichols[1]; Andrew J. Hoteling[2]; Lawrence Salvati III[2, 2]; Patricia Harmon[2]; *[1]Mass2Charge Consulting LLC, Newark, NY; [2]Bausch+Lomb, Rochester, NY*

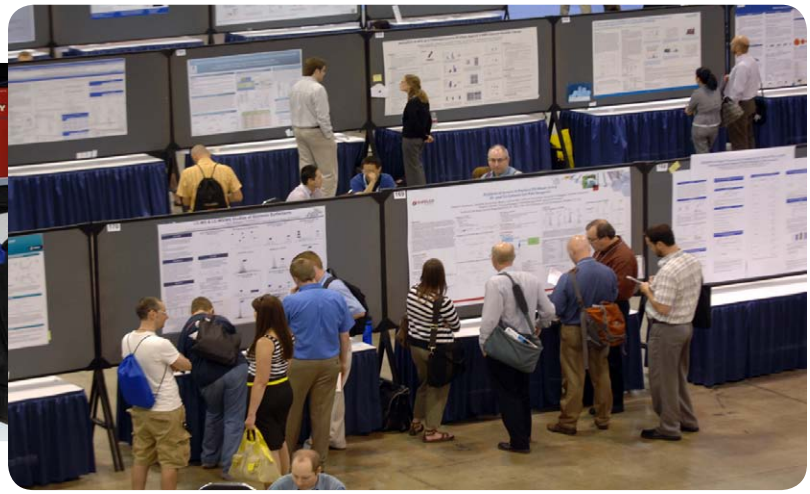
TP 788 **Structural and Mixture Characterization of Polysorbate 60 using GPC-Spray Deposition and MALDI-ToF MS;** Mark Arnould; *Xerox, Webster, NY*

TP 789 **Direct Analysis in Real Time (DART) Ion Trap Mass Spectrometry for Detection and Identification of poly(dimethylsiloxane) Polymers on Surfaces;** Curtis Mowry; Michael Brumbach; Adam Pimentel; Alex Mirabal; *Sandia National Laboratories, Albuquerque, NM*

TP 790 **Characterization of Homo-arm and Mikto-arm Poly(ethylene Glycol) Stars using Vacuum Ionization-Ion Mobility Spectrometry-Mass Spectrometry;** Casey Foley[1]; Tarick El-Baba[1]; Boyu Zhang[2]; Scott Grayson[2]; Sarah Trimpin[1]; *[1]Wayne State University, Detroit, MI; [2]Tulane University, New Orleans, LA*

TP 791 **Comprehensive Analysis of Extractable from Rubber Stopper used in Medical Devices and Pharmaceutical Products;** Andrew Feilden[1]; Amalendu Sarkar[2]; Kate Comstock[3]; *[1]Smithers Rapra, Shrewsbury, UK; [2]Qure Medical, Rock Hill, SC; [3]Thermo Fisher Scientific, San Jose, CA*

TP 792 **Comparing Additives and other Extractables from Primary and After-Market Cell Phone Cases by Gas Chromatography-Time of Flight Mass Spectrometry;** Christina Nieh[1]; Joe Binkley[2]; *[1]LECO Corporation, Saint Joseph, MI; [2]LECO Corporation, St. Joseph, MI*



7:30 – 8:00 am.....Set up all Wednesday posters
10:30 am – 1:00 pm.....Odd-numbered posters present
12:00 – 2:30 pm.....Even-numbered posters present
7:30 – 8:00 pm.....Remove all Wednesday posters

Imaging MS: Sample Preparation, 001 - 013

WP 001 **Highly Robust Sample Preparation with 2,5-dihydroxyacetophenone for MALDI Imaging of Proteins （2 -70 kDa） at High Spatial Resolution (5 µm);** Junhai Yang; Andre Zavalin; Richard Caprioli; *Vanderbilt University, Nashville, TN*

WP 002 **Digging Deeper: Using Acid-Cleavable Detergents to Uncover More of the MSI Proteome;** Peggi Angel; Erin H. Seeley; Gregory Boyce; Greg W. Kilby; *Protea Biosciences, Inc., Morgantown, WV*

WP 003 **Photo-Thermal Decomposition/Digestion (Photo-TDD) of Proteins and Its Application in MALDI-MS Imaging;** Rong Zhou; Franco Basile; *University of Wyoming, Laramie, WY*

WP 004 **Infrared Laser Ablation Sample Transfer with On-Target Digestion for MALDI Imaging;** Fan Cao; Kermit K. Murray; *Louisiana State University, Baton Rouge, LA*

WP 005 **Imaging MALDI MS of Dosed Mouse Brain Utilizing Novel Sample Preparation Technique;** Cristine Quiason; Sheerin K. Shahidi-Latham; Justin Q. Ly; Edna F. Choo; *Genentech Inc., South San Francisco, CA*

WP 006 **In-Depth Characterization of the Neuropeptidome in Crustacean Stomatogastric Nervous System by Imaging Mass Spectrometry on an Orbitrap Platform;** Chuanzi Ouyang[1]; Bingming Chen[2]; Albert Kim[3]; Lingjun Li[1, 2]; *[1]Department of Chemistry, UW-Madison, Madison, WI; [2]School of Pharmacy, UW-Madison, Madison, WI; [3]Department of Biochemistry, UW-Madison, Madison, WI*

WP 007 **A High Throughput Method for Mass Spectrometric Profiling of Glycomics and Proteomics from Tissue Microarrays;** Chun Shao; Lilla Turiák; Le Meng; Qi Wang; Nancy Leymarie; Cheng Lin; Joseph Zaia; *School of Medicine, Boston University, Boston, MA*

WP 008 **Simultaneous Proteomics and Glycomics Profiling from Histological Tissue;** Lilla Turiák; Le Meng; Chun Shao; Kshitij Khatri; Nancy Leymarie; Qi Wang; Joseph Zaia; *Boston University School of Medicine, Boston, MA*

WP 009 **High-resolution Ambient Mass Spectrometry Imaging of Mouse Tissues by Surface Micro-Extraction using the Single-probe;** Wei Rao; Ning Pan; Renmeng Liu; Zhibo Yang; *University of Oklahoma, Norman, OK*

WP 010 **Heat Fixation Inactivates Viral and Bacterial Pathogens and is Compatible with Downstream MALDI Mass Spectrometry Tissue Imaging;** Lisa H. Cazares[1, 2]; Sean Vantongeren[3]; Tara Kenny[3]; Douglas Lane[3]; Rekha Panchal[3]; Sina Bavari[3]; *[1]Henry M. Jackson Foundation, Frederick, MD; [2]DoD, BHSAI, Fredrick, MD; [3]USAMRIID/ Molecular and Translational Sciences, Frederick, MD*

WP 011 **Investigating the Use of Heat Stabilization during Sample Preparation of Tissues for Mass Spectrometry Imaging;** Suzanne Robertson[1]; Jeremy Barry[1]; Guillaume Robichaud[1]; Nagendran Muthusamy[1]; Craig Sykes[2]; Corbin Thompson[2]; Troy Ghashghaei[1]; Angela Kashuba[2]; David C. Muddiman[1]; *[1]North Carolina State University, Raleigh, NC; [2]University of North Carolina at Chapel Hill, Chapel Hill, NC*

WP 012 **High Quality Sections and Molecular Distribution Images of Neuropeptides From Heat Stabilized Tissue;** Mats Borén[1]; Olof Sköld[1]; Anna Nilsson[2]; Richard Goodwin[2, 3]; Per E. Andren[2]; *[1]Denator AB, Uppsala, Sweden; [2]Uppsala University, Uppsala, Sweden; [3]AstraZeneca, Macclesfield, UK*

WP 013 **Measuring MALDI: Investigating MALDI Fundamentals with ToF-SIMS;** Melissa K. Passarelli[1]; Ian S. Gilmore[1]; Josephine Bunch[1]; Peter Marshall[2]; Sophie Myhill[2]; Andy West[2]; *[1]National Physical Laboratory, Teddington, U.K; [2]GlaxoSmithKline, Stevenage, U.K.*

Informatics: Profile Analysis, 014 - 023

WP 014 **Comprehensive Characterization of the Secretome of CNS Cell Lines using High-Resolution LC-MS/MS;** Jongmin Woo[1]; Dohyun Han[2]; Youngsoo Kim[2]; *[1]Department of Biomedical Sciences, SNU, Seoul, Korea; [2]Department of Biomedical Engineering, SNU, Seoul, Korea*

WP 015 **An Extensive and Reproducible Ion-Current-based Proteomic Profiling Provided New Insights into the Understanding the Mechanism of Myogenic Differentiation;** Jun Qu[1]; Chengjian Tu[1]; Jun Li[1]; Shichen Shen[1]; James Clements[2]; yahao Bu[2]; David Hangauer[2]; *[1]University at Buffalo, Buffalo, NY; [2]Kinex Pharmaceuticals LLC, Buffalo, NY*

WP 016 **The Omics Evidences: Single Nucleotide Variants Transmissions on Chromosome 20 in Liver Cancer Cell Lines;** Quanhui Wang[1, 2]; Bo Wen[2]; Shaohang Xu[2];

Zhe Ren[2]; Guixue Hou[1, 2]; Ruo Zhou[2, 2]; Jin Zi[2]; Xiaomin Lou[1]; Haidan Sun[1]; Fan Zhong[3]; Qingyu He[4]; Ping Xu[5]; Liang Lin[2]; Siqi Liu[1, 2]; *[1]Beijing Institute of Genomics, CAS, Beijing, China; [2]BGI-Shenzhen, Shenzhen, China; [3]Fudan University, Shanghai, China; [4]Jinan University, Guangzhou, China; [5]Beijing Proteome Research Center, Beijing, China*

WP 017 **A Cloud Computing Implementation of Differential Mass Spectrometry: A Label Free Method for Proteomic Profiling;** Nathan Yates[1]; Christine Wu[2]; Michael J. Maccoss[3]; Andrey Bondarenko[4]; *[1]University of Pittsburgh, Pittsburgh, PA; [2]University of Pittsburgh School of Medicine, Pittsburgh, PA; [3]Univ of Washington, Seattle, WA; [4]InfoClinika, Bellevue, WA*

WP 018 **mTMT-visHTS: A Novel Method for Multiplexing TMT Datasets with a Tunable Visualization High Throughput Screening Software for Easy Protein Profiling;** Piero Ricchiuto[1]; Katsumi Yabusaki[1, 2]; Hiroshi Iwata[1]; Iwao Yamada[1, 2]; Masanori Aikawa[1]; Sasha Singh[1]; *[1]Harvard Medical School & BWH, Boston, MA; [2]Kowa Company, Ltd., Tokyo, Japan*

WP 019 **The Modelling and Poisson Harvesting of LC-MS Spectra;** Edmond Breen; *APAF, Sydney, AUSTRALIA*

WP 020 **Automated Classification and Visualization of Histological Features by Mass Spectrometry Imaging;** Ottmar Golf[1, 2]; Nazanin Zounemat Kermani[1]; Sabine Guenther[1, 2]; Robert D. Goldin[1]; James Kinross[1]; Abigail V. M. Speller[1]; Zoltan Takats[1]; Kirill Veselkov[1]; *[1]Imperial College London, London, UK; [2]Justus Liebig University, Giessen, Germany*

WP 021 **An Informatics Approach for Evaluating and Guiding Method Development for Biomarker;** Y. Melodie Du[1]; R. Graham Cooks[1]; Yu Xia[1]; Ye Hu[2]; Zheng Ouyang[1]; *[1]Purdue University, West Lafayette, IN; [2]The Methodist Hospital Research Institute, Houston, TX*

WP 022 **The Use of Fragment Ion and Collision Cross Section for Confident Identification from LC-Ion Mobility-MS Metabolomics Data;** Giorgis Isaac[1]; Giuseppe Astarita[1]; Steven Lai[1]; Adam Ladak[1]; James Langridge[3]; John Shockcor[1]; Andy Borthwick[2]; *[1]Waters Corporation, Milford, MA; [2]Nonlinear Dynamics, Newcastle, UK; [3]Waters Corporation, Manchester, UK*

WP 023 **Automated Glycan Assignment using Accurate Mass Measurement with a Calibrated Retention Time in Glucose Units;** Ying-Qing Yu[1]; Weibin chen[1]; Mark Hilliard[2]; Niaobh McLoughlin[2]; Pauline Rudd[2]; *[1]Waters Corporation, Milford, MA; [2]NIBRT, Dublin, Ireland*

Informatics: General, 024 - 037

WP 024 **Application of Performance Metrics Software for Optimization of Proteomics Data Acquisition;** David Mccaskill; Yaw Nti-Addae; Suresh Babu Annangudi Palani; Tao Xu; Jeffrey Gilbert; *Dow AgroSciences, Indianapolis, IN*

WP 025 **An Innovative Software Platform for the Visualization of Routine GC and LC-MS Data;** David Hardy[1]; Vitaly Lashin[2]; Pranas Japertas[3]; *[1]ACD/Labs, Bracknell, UK; [2]ACD/Labs, Moscow, Russia; [3]ACD/Labs, Vilnius, Lithuania*

WP 026 **Reconstruction of Mass Spectra Using Fuzzy Optimal Associative Memories (FOAMs);** Zhengfang Wang; Mengliang Zhang; Peter Harrington; *Ohio University, Athens, Ohio*

WP 027 **Carbocationic Mass Tags for Information Encoding and Multiplex Bioanalytical Applications;** Artyom Topolyan[1]; Vladimir Brylev[1]; Alexey Ustinov[2]; Andrey Formanovsky[1]; Vladimir Korshun[1]; *[1]Institute of Bioorganic Chemistry RAS, Moscow, Russia; [2]Lumiprobe Corporation, Hallandale Beach, FL*

WP 028 **Analysis of Longitudinal Serum Proteomics Profiles from Studies of a T1D-risk Cohort;** Robert Moulder[1]; Santosh Bhosale[1]; Heikki Hyöty[2, 3]; Riitta Veijola[4]; Mikael Knip[5, 6]; Jorma Ilonen[7, 8]; Tuula Simell[10]; Jorma Toppari[1, 12]; Harri Lähdesmäki[11]; Olli Simell[10]; Riitta Lahesmaa[1]; David Goodlett [1, 9]; *[1]Turku Centre for Biotechnology, Turku, Finland; [2]School of Medicine, University of Tampere, Tampere, Finland; [3]Fimlab Laboratories, Pirkanmaa Hospital District, Tampere, Finland; [4]Dept. of Pediatrics, Uni.of Oulu &Central Hospital, Oulu, Finland; [5]Dept. Pediatrics, Helsinki Uni. Central Hospital, Helsinki, Finland; [6]Dept. of Pediatrics, Tampere University Hospital, Tampere, Finland; [7]Dept. of Clinical Microbiology, Uni.Eastern Finland, Kuopio, Finland; [8]Immunogenetics Laboratory, University of Turku, Turku, Finland; [9]University of Maryland, Baltimore, MD; [10]Department of Pediatrics, University of Turku, Turku, Finland; [11]Aalto University School of Science, Espoo, Finland; [12]Department of Physiology, University of Turku, Turku, Finland*

WP 029 **PEFF: A Common Sequence Database Format in Proteomics;** Pierre-Alain Binz[1]; Eugene Kapp[2]; Jim Shofstahl[3]; David Creasy[4]; Lydie Lane[5]; Robert Chalkley[6]; Matt Chambers[7]; Harald Barsnes[8]; Sean L. Seymour[9]; *[1]CHUV, Lausanne, Switzerland; [2]Ludwig Institute for Cancer Research, Melbourne, Australia; [3]Thermo Fisher Scientific, San Jose, CA; [4]Matrix Science Ltd, London, United-Kingdom; [5]Swiss Institute of Bioinformatics, Geneva 4, Switzerland; [6]UCSF, San Francisco, CA; [7]Vanderbilt University, Nashville, TN; [8]University of Bergen, Bergen, Norway; [9]AB Sciex, Foster City, CA*

WP 030 **Automated Mass Shift Detection, Accurate Peak Area Integration, Identification and Relative Quantification of INLIGHT™ Derivatized N-Glycans for LC-MS Comparative Glycomics;** Kenneth Garrard; Amber Cook; Guillaume Robichaud; David C. Muddiman; *North Carolina State University, Raleigh, NC*

WP 031 **Critical Assessment of the Elemental Isotope Definition in Mass-Spectrometry-Based Proteomics;** Jürgen Claesen[1]; Frank Sobott[3]; Tomasz Burzykowski[1]; Dirk Valkenborg[2]; *[1]Hasselt University, Diepenbeek, Belgium; [2]VITO, Mol, Belgium; [3]CFP-CeProMa, University of Antwerp, Antwerp, Belgium*

WP 032 **Identification of Non-Synonymous SNP Products to Search High Resolution Tandem Mass Spectra Against a Novel Protein Database;** Carol Nilsson [1]; Cheryl Lichti [1]; Ekaterina Mostovenko[1]; Fabrizio Donnarumma[2]; Melinda Rezeli[3]; György Marko-Varga[3]; Akos Vegvari[3]; *[1]UTMB, Galveston, TX; [2]Louisiana State University, Baton Rouge , LA; [3]Lund University, Lund, Sweden*

WP 033 **The Probabilistic Convolution Tree: A Dynamic Programming Algorithm for Sub-Quadratic Inference with Generic Causal Graphical Models;** Oliver Serang; *Thermo Fisher Scientific, Bremen, Germany*

WP 034 **GradientOptimizer: An Open-Source Graphical Environment for Calculating Optimized Gradients in Reversed-Phase Liquid Chromatography;** Luminita Moruz[1]; Lukas Käll[2]; *[1]Stockholm University, Stockholm, Sweden; [2]Royal Institute of Technology, Stockholm, Sweden*

WP 035 **McFine - An Algorithm to Approximate the Isotope Fine Structure of Peptides and Proteins;** Piotr Dittwald[1]; Dirk Valkenborg[2, 3]; Alan L. Rockwood[4, 5]; Anna Gambin[1]; *[1]University of Warsaw, Warsaw, Poland; [2]VITO, Mol, Belgium; [3]I-Biostat, Hasselt University, Diepenbeek, Belgium; [4]ARUP Laboratories, Salt Lake City, UT; [5]Department of Pathology, University of Utah, School of Medicine, Salt Lake City, UT*

WP 036 **Persistent Myths and Uncomfortable Truths: Taking MS-omics Data Processing from the Emperor's New Clothes to a Rigorous Science;** Rob Smith; Dan Ventura; John Prince; *Brigham Young University, Provo, UT*

WP 037 **CHORUS: A Community Based Solution for the Storage, Analysis, and Exchange of Mass Spectrometry Data and Information;** Andrey Bondarenko[1]; Michael J. Maccoss[2]; Christine Wu[4]; Nathan Yates[3]; *[1]InfoClinika, Bellevue, WA; [2]Univ of Washington, Seattle, WA; [3]University of Pittsburgh, Pittsburgh, PA; [4]University of Pittsburgh School of Medicine, Pittsburgh, PA*

Informatics: Peptide Identification and Characterization, 038 - 054

WP 038 **Altered Fragmentation Patterns in Amidinated Tryptic Peptides Enhance Peptide Identification;** Sujun Li; Suraj Saraswat; James P. Reilly; Haixu Tang; Predrag Radivojac; *Indiana University, Bloomington, IN*

WP 039 **Cleaved and Missed Sites for Trypsin, Lys-C, Lys-N can be Predicted with High Confidence on the Basis of Sequence Context;** Andrew J Alpert[2]; Paul Gershon[1]; *[1]UC-Irvine, Irvine, CA; [2]PolyLC Inc., Columbia, MD*

WP 040 **Improving the Accuracy of Peptide Retention Time Prediction by Machine Learning Techniques;** Bob Xiong; Susan Deupree; Brian Nofsinger; Mike Allen; *Tandem Labs - RTP, Durham, NC*

WP 041 **Rapid Characterization, Annotation and Comparison of Peptide Maps;** Michael Kim[1]; Yong Kil[2]; Marshall Bern[2]; Chris Becker[2]; Richard Seipert[1]; *[1]Genentech, South San Francisco, CA; [2]Protein Metrics, San Carlos, CA*

WP 042 **Pattern Detection in Associated Artifact Peaks in Mass Spectra with Frequent Itemset Mining;** Trung Nghia Vu[1, 4]; Dirk Valkenborg[2, 3]; Evelyne Maes[2, 3]; Filip Lemière[1, 3]; Bart Goethals[1]; Kris Laukens[1, 4]; *[1]University of Antwerp, Antwerp, Belgium; [2]VITO, Mol, Belgium; [3]Centre for Proteomics, University of Antwerp, Antwerp, Belgium; [4]biomina, Antwerpen, Belgium*

WP 043 **Rule Based Peak Filtering of High Mass Accuracy MS/MS-spectra Improves Peptide Identification Rates;** Jakob Bunkenborg[1]; Per Hägglund[2]; Henrik Molina[3]; *[1]Copenhagen University Hospital, Hvidovre, Denmark; [2]Technical University of Denmark, Kgs. Lyngby, Denmark; [3]The Rockefeller University, New York, NY*

WP 044 **Removing Isobaric-Related Ions Significantly Improves the Peptide/Protein Identification Sensitivity of High Resolution MS/MS Data;** Quanhu Sheng[1]; Rongxia Li[2]; Jie Dai[3]; Qingrun Li[2]; Chen Li[2]; Zhiduan Su[2]; Yu Shyr[1]; Rong Zeng[2]; *[1]Vanderbilt University, Nashville, TN; [2]Shanghai Institutes for Biological Sciences, Shanghai, China; [3]University of Southern Denmark, Odense, Denmark*

WP 045 **Improving Protein and Peptide Identification in Tandem Mass Spectrometry by Peptide Search Space Reduction;** Avinash Shanmugam; Chih-Chiang Tsou; Dmitry Avtonomov; Anastasia Yocum; Alexey Nesvizhskii; *University of Michigan, Ann Arbor, MI*

WP 046 **A Fast Filtering Method for Peptide Identification by Blocked Pattern Matching;** Fei Deng[1]; Xiaowen Liu[2]; Lusheng Wang[1]; *[1]Dept. of Computer Science, City Univ. of Hong Kong, Hong Kong, China; [2]IUPUI, Indianapolis, IN*

WP 047 **A Chromatography Independent 2-Phase Algorithm for Increasing DDA Protein Identifications by up to 80% and Peptide Identifications by 200%;** David Scigocki[1]; Christian Claude[1]; Patrick Vayn[1]; Elie Abenmoha[1, 2]; John Lindsay[1, 3]; David Znaty[1]; John Asara[4, 5]; *[1]Physikron, Inc., Paris, FR; [2]Me Conseil, Paris, FR; [3]SciPartners, Inc., Westford, MA; [4]Beth Israel Deaconess Medical Center, Boston, MA; [5]Harvard Medical School, Boston, MA*

WP 048 **fishTones.js: Interactive Peptide MSMS Characterization in Non-Traditional Proteomic Workflows;** Alexandre Masselot; Victoria Pham; Lilian Phu; Tobias Maile; Wendy Sandoval; Donald Kirkpatrick; David Arnott; *Genentech, South San Francisco, CA*

WP 049 **PeptideAnalyzer: An Integrated Platform for Efficient In-Depth Characterization of Therapeutic Proteins;** Vincent Larraillet[1]; Georg Drabner[1]; Amy Hilderbrand[2]; Maximiliane Hilger[1]; Tobias Kailich[3]; Michael Kim[2]; Hans Koll[1]; Wilma Lau[1]; Ingo Lindner[3]; Michael Molhoj[1]; Richard Seipert[2]; X. Christopher Yu[2]; Hans Rainer Voelger[1]; *[1]Pharma Research, Roche Diagnostics GmbH, Penzberg, Germany; [2]Protein Analytical Chemistry, Genentech, South San Francisco, United States; [3]Pharma Biotech Development,Roche Diagnostics GmbH, Penzberg, Germany*

WP 050 **Software Tools to Accelerate Peptide Mapping and Related Analysis for Characterizing Biotherapeutics;** Joe Shambaugh[1]; Peter Haberl[2]; Alessio Ceroni[2]; Arnd Brandenburg[3]; Jens Hoefkens[1]; *[1]Genedata Inc., Lexington, MA; [2]Genedata GmbH, Martinsried, Germany; [3]Genedata AG, Basel, Switzerland*

WP 051 **Creation of a Tandem MS HCD Spectral Library for Identification of Peptides and Modifications of a Therapeutic Monoclonal Antibody;** Qian Dong; Xinjian Yan; Yuri Mirokhin; Yuexue Liang; Stephen Stein; *NIST, Gaithersburg, MD*

WP 052 **Scrambling and Enumeration Modules Developed for the Structure Elucidation of MS^n Data Utilizing the MASSPEC Algorithm;** Marshall M. Siegel; Gary Walker; *MS Mass Spec Consultants, Fair Lawn, NJ*

WP 053 **pParse 2.0: A Faster and More Sensitive Algorithm for Detection of Monoisotopic Peaks;** Long Wu[1]; Wen-Feng Zeng[1]; Zuo-Fei Yuan[1]; Kun Zhang[1]; Jia-Ming Meng[1]; Sheng-Bo Fan[1]; Chao Liu[1]; Hao Chi[1]; Lai-Yun Qing[2]; Rui-Xiang Sun[1]; Si-Min He[1]; *[1]Institute of Computing Technology, CAS, Beijing, China; [2]School of Computer and Control Engineering, UCAS, Beijing, China*

WP 054 **pFind: Fast and Comprehensive Analysis of High Resolution MS Data;** Hao Chi; Wen-Feng Zeng; Long Wu; Kun He; Chao Liu; Rui-Xiang Sun; Si-Min He; *Institute of Computing Technology, CAS, Beijing, China*

Intact Proteins: PTM Discovery, 055 - 059

WP 055 **LC-MS Analysis of Intact Enzymes using the Synapt G2 Mass Spectrometernter;** Ioana Barbu; Nicolas Abello; Jort Gerritsma; Marcel van Tilborg; Maurien Olsthoorn; *DSM Biotechnology Center, Analysis department, Delft, Netherlands*

WP 056 **Structural Determination of Different Protein Phosphoforms;** Matthias Vonderach[1]; Francesco Lanucara[1]; Ben Cossins[2]; Claire Eyers[1]; *[1]Institute of Integrative Biology, Liverpool, UK; [2]UCB, Slough, UK*

WP 057 **Comprehensive Characterization of Molecular Heterogeneities in α-actins from Cardiac Tissues by Top-Down Mass Spectrometry;** Serife Ayaz Guner[2]; Ying Peng[2]; Ivy Chen[2]; Ying Ge[1, 2]; *[1]Cell and Regenerative Biology, Madison, WI; [2]University of Wisconsin - Madison, Madison, WI*

WP 058 **Targeted Protein Enrichment by Intact Protein SRM and Fraction Collection to Enable PTM-Based Biomarker Discovery from CSF of Individual Patients;** Junmei Zhang; Daniel Plymire; John Corbett; Steven Patrie; *UT Southwestern, Dallas, TX*

WP 059 **Complete Post-Translational Modification Mapping of Pilins from Clinical Strains of Pathogenic *Neisseria meningitidis* Requires Top-Down Mass Spectrometry;** Joseph Gault[1]; Christian Malosse[1, 2]; Marie-Cécile Ploy[6];

Catherine E. Costello[3]; Guillaume Dumenil[4, 5]; Julia Chamot-Rooke[1, 2]; *[1]Institut Pasteur, Paris, France; [2]CNRS UMR3528, Paris, France; [3]Boston University School of Medicine, Boston, MA; [4]INSERM U970, Paris, France; [5]Université Paris Descartes, Paris, France; [6]INSERM UMR1092, Limoges University Hospital, Limoges, France*

Glycoproteins, 060 - 089

WP 060 **Analysis of Serum Haptoglobin Fucosylation in Hepatocellular Carcinoma and Liver Cirrhosis of Different Etiologies;** Jianhui Zhu[1]; Zhenxin Lin[1]; Jing Wu[1]; Haidi Yin[1]; Jianliang Dai[2]; Ziding Feng[2]; Jorge Marrero[3]; David M. Lubman [1]; *[1]University of Michigan Medical Center, Ann Arbor, MI; [2]University of Texas MD Anderson Cancer Center, Houston, TX; [3]UT Southwestern Medical Center, Dallas, TX*

WP 061 **Ultracentrifugation-based Glycoproteomic: Approach for Discovery of Plasma Glycoprotein Markers;** Esther Cheow; *NTU, Singapore, Singapore*

WP 062 **A Comparative Glycoproteome Study of Developing Endosperm in the Hexose-Deficient *miniature*1 Seed Mutant and Its Wild Type Mn1 in maize;** Cecilia Silva-Sanchez[1]; Jinxi Li [1]; Sixue Chen[1, 2]; Prem Chourey[3, 4]; *[1]ICBR-Proteomics UF, Gainesville, FL; [2]University of Florida, Gainesville, FL; [3]USDA-Agricultural Research Service, CMAVE,, Gainesville, FL; [4]Department of Agronomy, UF, Gainesville, FL*

WP 063 **Improved Glycopeptide Analysis using Acetonitrile Enriched Sheath Gas and Oxonium Ion Dependent ETD;** Kristina Marx; Andrea Kiehne; Markus Meyer; *Bruker Daltonik GmbH, Bremen, Germnay*

WP 064 **Identification of Complex Glycopeptides using Tandem Mass Spectra;** Yanlin Zhang[1]; Chuan-Yih Yu[2]; Shuaicheng Li[3]; Haixu Tang[2]; Xiaowen Liu[1]; *[1]IUPUI, Indianapolis, IN; [2]Indiana University, Bloomington, IN; [3]City University of Hong Kong, Hong Kong, China*

WP 065 **Comprehensive Analysis of Recombinant Human Erythropoietin Glycoforms by Capillary Electrophoresis and Nanoflow Liquid Chromatography Coupled with Middle-Down Mass Spectrometry;** Rosa Viner[1]; Anthonius A.M. Heemskerk[2]; David M Horn[1]; Julian Saba[1]; Marshall W. Bern[3]; David R Bush[4]; Marcia R Santos[5]; Hans Dewald[5]; Alexander R. Ivanov[4]; Barry L. Karger[4]; *[1]ThermoFisher Scientific, San Jose, CA; [2]Leiden University Medical Center, Leiden, Netherlands; [3]Protein Metrics, Palo Alto, CA; [4]Barnett Inst., Northeastern University, Boston, MA; [5]AB Sciex LLC, Brea, CA*

WP 066 **Online Enrichment and Decoupled LC Separation of Sialylated/Phosphorylated Glycans and Glycopeptides;** Serenus Hua[1]; Gregory Staples[2]; Youngsuk Seo[1]; Myung Jin Oh[1]; Rudolf Grimm[2]; Hyun Joo An[1]; *[1]AGRS, Chungnam National University, Daejeon, Korea; [2]Agilent Technologies, Santa Clara, CA*

WP 067 **Dynamics of Residue-Specific Chromatin O-GlcNAcylation *in vivo*;** Xiaoshi Wang; Benjamin A Garcia; *University of Pennsylvania, Philadelphia, PA*

WP 068 **A Seamless Workflow for Comprehensive Analysis of the Mucin-Type O-linked Glycoproteome;** Jun Zhu[1]; Kai Cheng[1]; Jin Wenhai[2]; Fangjun Wang[1]; Mingming Dong[1]; Mingliang Ye[1]; Christie Hunter[3]; Hanfa Zou[1]; *[1]Dalian Institute of Physical Chemistry, Dalian, China; [2]AB SCIEX China, Shanghai, China; [3]AB SCIEX, USA, Foster City, CA*

WP 069 **The Identification and Characterization of a General Protein O-glycosylation System within the Burkholderia cepacia Complex;** Nicholas Scott[1]; Julian Saba[2]; Helene Cardasis[3]; Leonard Foster[1]; Jon Dennis[4]; *[1]University of British Columbia, Vancouver, Canada; [2]Thermo Fisher Scientific, Montreal, QC; [3]Thermo Scientific, New York, NY; [4]University of Alberta, Edmonton, Canada*

WP 070 **A Data-Independent Acquisition Strategy on the Q Exactive for Monitoring GALNT2- mediated APOCIII Glycosylation in Cell Culture;** Iwao Yamada[1, 2]; Hideo Yoshida[1, 2]; Sasha A. Singh[1]; Masanori Aikawa[1]; *[1]Brigham and Women's Hospital, Boston, MA; [2]Kowa Company, Ltd., Tokyo, Japan*

WP 071 **Characterization of O-GlcNAc Modified Sites on the RUNX2 Osteogenic Transcription Factor;** Alexis Nagel; Lauren Ball; *MUSC, Charleston, SC*

WP 072 **A Multiple Reaction Monitoring Method to Specifically Characterize and Relatively Quantify the *O*-glycans of the Potential Biologic Lubricin;** Sarah Flowers[1]; Catherine Lane[2]; Liaqat Ali[1]; Tannin Schmidt[3]; Niclas Karlsson[1]; *[1]Gothenburg University, Gothenburg, Sweden; [2]AB Sciex, Warrington, UK; [3]University of Calgary, Calgary, Canada*

WP 073 **Characterization of O-glycosyltransferase Reactions at the Molecular Level using nanoLCMS;** Tyler Stewart[1]; Kazuo Takahashi[2]; Milan Raska[3]; Milada Stuchlova Horynova[3]; Jan Novak[1]; Matthew B. Renfrow[1]; *[1]University of Alabama at Birmingham, Birmingham, AL; [2]Fujita Health Univ., Toyoake, Japan; [3]Palacky University, Olomouc, Czech Republic*

WP 074 **Identification and Profiling of O-Glycans in Human Factor Xa by Advanced LC-MS/MS Techniques;** Jeremy Woods; Song Klapoetke; Michael Xie; *KBI Biopharma, Durham, NC - North Carolina*

WP 075 **Glycopeptide CID MS/MS Analysis for Elucidation of the Impact of a Single Nucleotide Polymorphism on O-Glycan Microheterogeneity in Glycoprotein ITIH4;** Kevin B Chandler[1]; Miloslav Sanda[2]; Zuzana Brnakova[2]; Nathan Edwards[3]; Radoslav Goldman[2]; *[1]Boston University, Boston, MA; [2]Georgetown University, Lombardi Cancer Center, Washington, DC; [3]Georgetown University, Department of Biochemistry, Washington, DC*

WP 076 **Applying improved ionization Procedures for *O*-glycopeptide Characterization of Arabinogalactan Protein 31 (AGP31) by Combined CID and ETD Fragmentation;** Kristina Marx[1]; Cecile Albenne[2]; Guillaume Tremintin[3]; Ulrike Schweiger-Hufnagel[1]; Pierre-Olivier Schmit[4]; *[1]Bruker Daltonik GmbH, Bremen, Germany; [2]Université de Toulouse, Castanet-Tolosan, France; [3]Bruker Daltonics, Fremont, CA; [4]Bruker Daltonique S.A, Wissembourg, France*

WP 077 **Comprehensive N-glycomic Analysis of Clear Cell Renal Cell Carcinoma Plasma using Lectin Affinity HPLC Fractionation and Porous Graphitized Carbon LC-ESI-MS/MS;** Francisca Gbormittah[1]; william hancock[1]; Othon Iliopoulos[2]; *[1]Northeastern University, Boston, MA; [2]Harvard Medical School, Boston, MA*

WP 078 **Sequential Ion Mobility Resolved Electron Transfer Dissociation and Collision Induced Dissociation of N-Glycopeptides;** Venkata Kolli[1]; Eric D. Dodds [2]; *[1]Univ of Nebraska Lincoln, Lincoln, NE; [2]University of Nebraska - Lincoln, Lincoln, NE*

WP 079 ***N*-glycome Characterization of Secreted *N*-glycoproteins from a Panel of Eight Breast Cell Lines using Porous Graphitized (PGC) Carbon LC-MS/MS Analysis;** Ling Y. Lee[1]; Morten Thaysen-Andersen[1]; Mark S. Baker[1]; Nicolle H. Packer[1]; William S. Hancock[1, 2]; Fanayan Susan[1]; *[1]Macquarie University, Sydney, Australia; [2]Northeastern University, Boston, MA*

WP 080 **Targeting the N-Linked Glycome;** Ron Orlando[1]; Shujuan Tao[1]; Yining Huang[1]; Alex Harvey[2]; Barry Boyes[3]; *[1]University of Georgia, Athens, GA; [2]GlycoScientific, LLC, Athens, Georgia; [3]Advanced Materials Technology Inc,, Wilmington, DE*

WP 081 **The Effect of Antibody N-Glycosylation on FcRn Binding;** Jake Pawlowski[1]; Tyler Carlage[2]; Adriana Bajardi-Taccioli[2]; Damian Houde[2]; Marina Feschenko[2]; Li Zang[2]; Yelena Lyubarskaya[2]; *[1]UMASS Amherst, Amherst, Massachusetts; [2]Biogen Idec, Cambridge, MA*

WP 082 **N-glycosylation Analysis in Human Scavenger Receptor CD36 by HCD Product Ion-Triggered ETD Mass Spectrometry;** Cleidiane G. Zampronio[1]; David J. Sanders[2]; Kenneth J. Linton[2]; Andrew J. Creese[1]; Helen J. Cooper[1]; *[1]School of Biosciences, University of Birmingham, Birmingham, UK; [2]Blizard Institute, Queen Mary University, London, UK*

WP 083 **High Speed HILIC HPLC for Glycan Analysis;** James Martosella[1]; Chris Rogers[2]; Oscar Potter[3]; Jia Liu[1]; *[1]Agilent Technologies, Wilmington, de; [2]Agilent Technologies, Shropshire, UK; [3]Agilent Technologies, Santa Clara, CA*

WP 084 **Displacement Phenomena in Serial Lectin Affinity Chromatography;** Wonryeon Cho; *Wonkwang University, Iksan, Republic of Korea*

WP 085 **Comparative Glycoproteomics Analysis of Influenza Virus Hemagglutinin using a Multidimensional LC-MS/MS Based Workflow;** Kshitij Khatri; Nancy Leymarie; Joseph Zaia; *Boston University, Boston, MA*

WP 086 **Comprehensive Site-Specific Characterization of Glycoproteins using Enzymes of Varying Cleavage Specificities;** Carlito Lebrilla; Evan Parker; Michael Xin Sun; Jincui Huang; Andres Guerrero; *UC Davis, Davis, CA*

WP 087 **Absolute Quantitation of Human Milk Proteins and Their Glycoforms using Multiple Reaction Monitoring (MRM);** Jincui Huang; Qiuting Hong; Rocchina Sabia; Carlito Lebrilla; *UC Davis, Davis, CA*

WP 088 **An Integrated Top-Down and Bottom-Up Approach for Intact Glycoprotein Analysis of Aspergillus niger Secretome;** Yi Qu[1]; Li Cao[2]; Ju Feng[1]; Zhaorui Zhang[1]; Erika Zink[1]; Rui Zhao[1]; Shuang Deng[1]; Yuxuan Jiang[1]; Nikola Tolic[1]; Da Meng[1]; Uma Aryal[3]; Ljiljana Paša-Tolić[1]; Weijun Qian[1]; Marshall W. Bern[4]; Qibin Zhang[1]; Mary Lipton[1]; Jian-Zhi Hu[1]; Scott Baker[1]; Si Wu[1]; *[1]PNNL, Richland, WA; [2]Morehouse school of medicine, Atlanta, GA; [3]Department of Biochemistry and Agronomy, West Lafayette, IN; [4]Protein Metrics, Palo Alto, CA*

WP 089 **Characterization of Hemopexin Glycosylation Associated with Liver Disease;** Miloslav Sanda; Julius Benicky; Radoslav Goldman; *Georgetown University, Lombardi Cancer Center, Washington, DC*

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WP 091 **Anion-Exchange Chromatography of Tryptic Acidic Peptides and Phosphopeptides: WAX vs. SAX and AEX vs. ERLIC;** Andrew J Alpert[1]; Nikolai Mischerikow[2]; Karl Mechtler[2]; *[1]PolyLC Inc., Columbia, MD; [2]IMP, Vienna, Austria*

WP 092 **Head-to-Head Comparison of Magnetic Beads for Phosphopeptide Enrichment;** Alex Campos; Laurence Brill; *Sanford-Burnham Medical Research Institute, La Jolla, CA*

WP 093 **In-depth Characterization and Optimization of High pH Reversed-Phase Off-Line Fractionation for Phosphoproteomics;** Tanveer Batth; Chiara Francavilla; Jesper V Olsen; *University of Copenhagen, Copenhagen, Denmark*

WP 094 ***In vitro* Evolution of DNA Aptamers Specific for the pTyr- and pSer-modified Polypeptides;** Yeva Mirzakhanyan; Jiri Misek; Andrej Luptak; Paul Gershon; *UC-Irvine, Irvine, CA*

WP 095 **Everything All the Time: Comprehensive and Reproducible Phosphopeptide Enrichment using Fe^{3+} - IMAC Columns;** Benjamin Ruprecht[1]; Heiner Koch[1]; Max Mundt[1]; Guillaume Medard[1]; Bernhard Kuster[1]; Simone Lemeer[1, 2]; *[1]Chair of Proteomics and Bioanalytics TUM, Freising, Germany; [2]Biomolecular Mass Spectrometry and Proteomics, Utrecht, Netherlands*

WP 096 **Characterization of Automated Sample Preparation Workflows Featuring Phosphopeptide Enrichment using TiO_2 Microchromatography Cartridges on a Precision Liquid Handler;** Jason Russell; Steve Murphy; *Agilent Technologies, Inc., Madison, WI*

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WP 098 **Development of a Multidimensional ERLIC/IMAC/TiO_2 Phosphoproteomic Method and Its Application to Kinase Pathway Analysis of PDGF-stimulated NIH 3T3 Cells;** Laura E. Edwards; Kevin Blackburn; Kyle G. Grant; Jason M. Haugh; Michael B. Goshe; *North Carolina State University, Raleigh, NC*

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WP 100 **Quantification of Linaclotide and its Bioactive Metabolite in Human Breast Milk using LC-MS/MS;** Qingguo Tian; Andreas Grill; Daksha Desai-Krieger; *Forest Laboratories, Inc., Farmingdale, NY*

WP 101 **Development of an LC-MS/MS Method for pharmacokinetic Studies of the Anticoagulant Peptide Variegin;** Norrapat Shih[1, 2]; R. Manjunatha Kini[1]; *[1]Dept. of Biological Sciences, National University of Singapore, Singapore; [2]NUS graduate school for Integrative Sciences and, Engineering (NGS), Singapore*

WP 102 **Simultaneous Quantification of Active and Inactive Intracellular and Secreted GLP-1 Peptides from Cultured Cells by Selected Reaction Monitoring;** Michiko Amao; Yoshiro Kitahara; Ayaka Tokunaga; Kazutaka Shimbo; Yuzuru Eto; Naoyuki Yamada; *Ajinomoto Co., Inc, Kawasaki-Shi, Japan*

WP 103 **A Sub-picogram (0.5 pg/ml) Level Quantification Method for Desmopressin in Human Plasma using Liquid Chromatography Electrospray Mass Spectrometry;** Rahul Baghla[1]; Swati Guttikar[2]; Dharmesh Patel[2]; Abhishek Gandhi[2]; Anoop Kumar[1]; Manoj Pillai[1]; *[1]AB SCIEX, Gurgaon, India; [2]Veeda Clinical Research, Ahmadabad, India*

WP 104 **Quantification of Polypeptide MB56142 in Pig Lithium Heparin Plasma Using API-4000 LC-MS/MS Systems;** Guangchun Zhou; Nicole Roenker; Yong-Xi Li; *Medpace, Cincinnati, OH*

WP 105 **LC/MS/MS Analysis of Active Ghrelin and the Inactive Isoform des-octanoyl–ghrelin;** David Broadwell; Derek Parks; Greg Waitt; Jon D. Williams; *GlaxoSmithKline, Research Triangle Park, NC*

WP 106 **A Rapid and Sensitive Method for the Quantification of Goserelin in Human Plasma Using HPLC-MS/MS;** Meng Fang; Yinghe Li; Yifan Shi; *Alliance Pharma, Inc, Malvern, PA*

WP 107 **Validation of a Quantitative LC/MS/MS Method to Measure SNAP 25 Cleavage by Botulinum A Toxin;** Kathleen Housman; Joshua Emory; Nizamettin Gul; Matthew Levit; Michael Adler; Jonathan Oyler; *USA Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD*

WP 108 **Quantification of Glargine and Its Metabolites in Human Plasma using a Hybrid Immunoaffinity Purification and LC-MS/MS Methodology;** Li Sun; Yang Xu; Melanie Anderson; Sheila Breidinger; Kevin Bateman; Eric Woolf; *PPDM, Merck Research Laboratories, West Point, PA*

WP 109 **Deciphering the Temporal Proteome Response to PARP Inhibitor Treatment by Quantitative Proteomics;** Sara Charlotte Larsen; Rita Martello; Stephanie Jungmichel; Michael Lund Nielsen; *NNF Center for Protein Research, Copenhagen N, Denmark*

WP 110 **Multiplexed LC-MS/MS Quantitation of Endogenous Allergens from Soybean Varieties;** Trent Oman; Ryan Hill; Barry Schafer; Guomin Shan; *Dow AgroSciences, Indianapolis, IN*

WP 111 **Towards the Development of Novel Mycobacterium Tuberculosis Treatments: Determining the Mechanism of Secretion System Esx-3;** Jessica R. Chapman[1]; Joann Tufariello[2]; Laura E. Cole[2]; Emir Tinaztepe[1]; Jennifer Philips[1]; William R. Jacobs[2, 3]; Beatrix Ueberheide[4]; *[1]NYULMC, New York, NY; [2]Albert Einstein College of Medicine, New York, NY; [3]Howard Hughes Medical Institute, Chevy Chase, MD; [4]New York University, New York, NY*

WP 112 **Metallomic Analysis of Metalloproteins within the Lyme Disease Pathogen *Borrelia burgdorferi*;** Matthew McIlvin[1]; J. Dafhne Aguirre[2]; Hillary Clark[2]; Valeria Culotta[2]; Mak Saito[1]; *[1]Woods Hole Oceanographic Inst., Woods Hole, MA; [2]Johns Hopkins University, Baltimore, MD*

WP 113 **Quantification of Lysine Malonylation in SIRT5 Knockout Animals using MS1 Filtering in Skyline;** Matthew Rardin[2]; Yuya Nishida[1]; Alexandria Sahu[2]; Eric Verdin[2]; Bradford W. Gibson[2]; *[1]Gladstone Institute of Virology and Immunology, San Francisco, CA; [2]Buck Institute for Research on Aging, Novato, CA*

WP 114 **Proteomic Analysis Defines p53 and c-myc Activities as Effective Determinants of Chronic Myeloid Leukaemia Primitive Cell Survival;** Andrew Williamson[1]; Andrew Pierce[1]; Lisa Hopcroft[2]; Sheela Abraham[2]; Mark Aspinall-O'Dea[1]; Emma Carrick[1]; Tessa Holyoake[2]; Anthony Whetton[1]; *[1]University of Manchester, Manchester, UK; [2]University of Glasgow, Glasgow, UK*

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WP 116 **Two-dimensional LC/MS Analysis of CXCL12 in Plasma and Spleens from Patients with Myelofibrosis;** Sool Yeon Cho; Xiaoli Wang; Ronald Hoffman; John Roboz; *Ichan School of Medicine at Mount Sinai, New York, NY*

WP 117 **Proteomic Analysis of Aged C. elegans Infected with P. aeruginosa;** Christina King[1]; Daljeet Singh[1]; Kyle Holden[2]; Annie Bea Govan[1]; Arjumand Ghazi[2]; Rena A.S. Robinson[1]; *[1]Department of Chemistry, University of Pittsburgh, Pittsburgh, PA; [2]Department of Pediatrics, Children's Hospital, Pittsburgh, PA*

WP 118 **Isolated Synaptosomes from Cortex and Striatum of Huntington Disease Mice Show Selective Loss of Synaptosome-Specific Proteins but No Bioenergetics Deficit;** Birgit Schilling; Ryan Ng; Jennifer Holcomb; Sung W. Choi; Anna Picca; Shana Katzman; Dylan J. Sorensen; Steven R. Danielson; Lisa M. Ellerby; Akos A. Gerencser; Martin D. Brand; Bradford W. Gibson; *Buck Institute for Research on Aging, Novato, CA*

WP 119 **Kinetic Evaluation of Trypsin Digests of Apolipoprotein-A1: Implications for Quantitative Mass Apectrometry;** Scott Walmsley[1]; Yuxue Liang[2]; Xinjian Yan[2]; Stephen Stein[2]; Alexey Nesvizhskii[1]; *[1]University of Michigan Department of Pathology, Ann Arbor, MI; [2]NIST, Gaithersburg, MD*

WP 120 **Method Development and Validation for Multiplexing Quantitation of Proteins in Soybean Tissues Using Tandem Mass Spectrometry (LC-MS/MS);** Ryan Hill; Trent Oman; Guomin Shan; Barry Schafer; *Dow AgroSciences, Indianapolis, IN*

WP 121 **Quantitative Peptide Assays for Mass Spectrometry Applications;** Sijian Hou; Erum Raja; Paul Haney; Chris Etienne; Ramesh Ganapathy; Nikki Jarrett; Kay Opperman; Sergei Snovida; Bhavin Patel; John C. Rogers; *Thermo Fisher Scientific, Rockford, IL*

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WP 123 **A High Sensitivity SPE LC/MS/MS Method for the Quantitation of Bradykinin in Human Plasma using Novel Integrated Microscale LC/MS Technology;** Mary Lame; Erin Chambers; Kenneth Fountain; *Waters Technologies Corporation, Milford, MA*

WP 124 **A Highly Robust SPE-LC-MS/MS Workflow for Quantitation of Endogenous Amyloid Beta in Human Cerebrospinal Fluid;** Lei Xiong; Sahana Mollah; Kelli Jonakin; John McNamara; *AB SCIEX, Redwood City, CA*

WP 125 **Novel Integrated Microfluidics Increase Sensitivity and Reduce Sample Volume in a Quantitative LC/MS Assay for rhPTH (Teriparatide) in Human Plasma;** Erin E. Chambers[1, 2]; Mary Lame[1]; Kenneth Fountain[1]; *[1]Waters Corporation, Milford, MA; [2]King's College London, London, England*

WP 126 **Performance Investigation of a Novel Integrated Microfluidics Platform in High-Throughput LC-MS MRM Disease Protein Marker Verification;** Chris Hughes; Johannes Pc Vissers; Lee A Gethings; James Langridge; *Waters Corporation, Manchester, UK*

WP 127 **The Evaluation of Micro Flow LC/MS/MS in Regulated Bioanalysis for the Quantitation of Peptide/Protein: Sensitivity, Precision, Accuracy and Ruggedness/ robustness;** Moucun Yuan[1]; Morse Faria[2]; Dongliang Zhan[1]; Diego Cortes[1]; William R. Mylott[1]; Bruce Hidy[1]; Rand Jenkins[1]; *[1]PPD, Richmond, VA; [2]Virginia Commonwealth University, Richmond, VA*

WP 128 **Ultra-Sensitive Quantitation of Exenatide with Micro-Flow LC Trap-and-Elute and High Resolution and Triple Quadrupole Mass Spectrometry Workflow;** Jinyuan Wang[1]; Daniel Warren[2]; Anthony Romanelli[2]; *[1]AB SCIEX, Redwood City, CA; [2]AB SCIEX, Framingham, MA*

WP 129 **Boosting the Limits of SRM by Asn_3;** An Staes[1, 2]; Bart Ruttens[1, 2]; Luminita Moruz[3]; Kris Gevaert[1, 2]; *[1]Department of Medical Protein Research, VIB, Gent, Belgium; [2]Department of Biochemistry, Ghent University, Gent, Belgium;*

[3]*Department of Biochemistry and Biophysics, Stockh, Stockholm, Sweden*

WP 130 **Development of a nanoLC-MRM-based Quantitative Platform for Multiple Enzymes Associated with the Central Metabolic Pathway by using Ultra-Fast Mass Spectrometry;** Fumio Matsuda[1]; Tairo Ogura[2]; Nobuyuki Okahashi[1]; Atsumi Tomita[1]; Ichiro Hirano[2]; Hiroshi Shimizu[1]; *[1]Osaka Univeristy, Suita, Japan; [2]Shimadzu Corporation, Kyoto, Japan*

WP 131 **Functionalized Edman-type Reagents: Applications to Absolute Protein Quantification;** Ryo Satoh[1]; Masamitsu Maekawa[2]; Takaaki Goto[1]; Seon Hwa Lee[1]; Tomoyuki Oe[1]; *[1]Tohoku University, Sendai, Japan; [2]Tohoku University Hospital, Sendai, Japan*

WP 132 **Strategies to Eliminate Anti-Drug Antibody (ADA) Interference due to Immunogenicity on Large Molecule Quantification by LC-MS/MS;** Daniel Villeneuve; Jean-Nicholas Mess; Fabio Garofolo; *Algorithme Pharma Inc., Laval, Canada*

WP 133 **Absolute Targeted Quantitation of Proteins and Therapeutic Biologics using Integrated LC-MS Workflow;** Xin Zhu[1]; Vadi Bhat[1]; Nalini Sadagopan[1]; Ning Tang[2]; *[1]Agilent Technologies, Wilmington, DE; [2]Agilent Technologies, Santa Clara, CA*

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WP 135 **Immobilized Monolithic Enzymatic Reactors for Online Digestion of Proteins Secreted by Developing Human Embryos;** Wei-Qiang Chen[1]; Philipp Obermayr[1]; Urh Černigoj[3]; Jana Vidič[3]; Miloš Barut[3]; Tanja Panić-Janković[1]; Mikhail Gorshkov[4]; Goran Mitulović[1, 2]; *[1]Medical University of Vienna, Vienna, Austria; [2]Proteomics Core Facility, Medical University of Vienna, Vienna, , Austria; [3]BIA Separations, Ajdovščina, Slovenia; [4]Institute for Energy Problems of Chemical Physics, Russian Academy of Sciences, Moscow, Russia*

WP 136 **Improving Prediction of IVF Success: Looking for Putative Biomarkers in IVF-Media upon Embryo Cultivation;** Tanja Panic-Jankovic[3]; Detlef Pietrowski[1]; Weiqiang Chen[3]; Rainer Schmid[3]; Mikhail V. Gorshkov[2]; Anna Lobas[2]; Goran Mitulovic[3]; *[1]Medizinische Universitaet Wien, Wien, Austria; [2]INEPCP RAS, Moscow, Russian Federation; [3]Medical University of Vienna, KIMCL, Vienna*

WP 137 **Impact of Human Blood Specimen Collection Processing, and Storage on Protein Integrity and Implications for Use in Clinical Research;** Geun-Cheol Gil; Bich Nguyen; Yiyong Zhou; Julie Lamontagne; Xiaolei Xie; Michael Schirm; Rene Allard; Daniel Chelsky; Sushmita Mimi Roy; *Caprion Proteomics US LLC, Menlo Park, CA*

WP 138 **A Comprehensive Proteomic Study on the Effect of General Anesthesia on Human Peripheral Blood Mononuclear Cells from Colon Cancer Patients;** Xiaolei Xie; Bich Nguyen; Geun-Cheol Gil; Aude Tartiere; Louiza Mahrouche; Yiyong Zhou; Rene Allard; Daniel Chelsky; Sushmita Mimi Roy; *Caprion Proteomics US LLC, Menlo Park, CA*

WP 139 **Integrated Approaches for Analyzing U1-70K Cleavage in Alzheimer's disease;** Bing Bai[1]; Junmin Peng[2]; *[1]Emory University, Atlanta, GA; [2]St.Jude Children's Research Hospital, Memphis, TN*

WP 140 **Identification and Validation of Platelet Low Biological Variation Proteins, Superior to GAPDH, Actin and Tubulin, as Tools in Clinical Proteomics;** Marianne Koch[1]; Ellen Umlauf[2]; Michael Veitinger[2]; Sheila Guterres[2]; Eduard Rappold[4]; Rita Babeluk[2]; Goran Mitulovic[1]; Rudolf Oehler[3]; Maria Zellner[2]; Roland Baumgartner[2]; *[1]Medical University of Vienna, KIMCL, Vienna, Austria; [2]Med. Univ. Wien. Inst. of Physiology, Vienna, Austria; [3]Med. Univ. Wien, Surgical Res. Laboratories, Vienna, Austria; [4]Gerontology-2. Department, Otto Wagner Spital, Vienna, Austria*

WP 141 **Development and Clinical Validation of a Quantitative Mass Spectrometric Assay for PD-L1 Protein in FFPE NSCLC Samples;** Eunkyung An[1]; Wei-Li Liao[1]; Sheeno Thyparambil[1]; Adele Blackler[1]; Jaime Rodriquez[2]; Ravi Salgia[3]; Ignacio Wistuba[2]; Jon Burrows[1]; Todd Hembrough[1]; *[1]OncoPlex Diagnostics, Rockville, MD; [2]MD Anderson Cancer Center, Houston, TX; [3]The University of Chicago, Chicago, IL*

WP 142 **Validation of Putative Proteomic Biomarkers of Clinically Significant Ureteropelvic Junction Obstruction (UPJO) via Mass Spectrometry;** John Froehlich; Richard Lee; *Children's Hospital Boston, Boston, MA*

WP 143 **Proteomic Analysis of Biopsy Specimen Revealed the Profiles of Adenoma–Carcinoma Sequence of Colorectal Cancer;** Masaya Ono[1]; Masahiro Kamita[1]; Kumiko Kawasaki[3]; Masahiro Gomi[3]; Tomohiro Sakuma[3]; Yosuke Otake[2]; Taku Sakamoto[2]; Takeshi Nakajima[2]; Takahisa Matsuda[2]; Yutaka Saito[2]; Tesshi Yamada[1]; *[1]Natl Cancer Ctr Research Institute, Tokyo, Japan; [2]Natl Cancer Ctr Hospital, Tokyo, Japan; [3]Mitsui Knowledge Industry Co.,Ltd., Tokyo, Japan*

WP 144 **Designing Targeted Quantitation Methods on a Nano HPLC Q Exactive System for Proteomic Analysis of Human Pancreatic Juice;** Jenny Chen[1]; Lewis Pannell[2]; Lindsay Schambeau[2]; Jana Rocker[2]; Gerald Koncar[1]; Reiko Kiyonami[1]; Keith Waddell[1]; *[1]Thermo Scientific, San Jose, CA; [2]Mitchell Cancer Institute, Mobile , AL*

WP 145 **Proteomics Analysis of Urinary Exosomes for Sensitive Detection of Tubular Injury Markers in Cystinuria;** Ida Chiara Guerrera[1]; Matthieu Bourderioux[1]; Cerina Chhuon[1]; Thao Nguyen-khoa[2]; Bertrand Knebelmann[2]; Estelle Escudier[3]; Bernard Escudier[4]; Aleksander Edelman[1]; *[1]INSERM, Paris, France; [2]APHP Necker, Paris, FR; [3]APHP Trousseau, Paris, FR; [4]Institut Gustave Roussy, Paris, FR*

WP 146 **Expression Analysis and Mass Spectrometric Structure Characterization Reveals Unknown Ezrin Truncations in Lymph Node Metastases of Breast Cancer Patients;** Claudia Röwer[1]; Christian George[2]; Toralf Reimer[2]; Bernd Gerber[2]; Michael O. Glocker[1]; *[1]Proteome Center Rostock, Rostock, Germany; [2]Department of Obstetrics and Gynecology, Rostock, Germany*

WP 147 **iTRAQ-based Profiling and Label-Free Quantification Revealed a Panel of Regulated Proteins in Cervical Intraepithelial Neoplasia and Cervical Cancer Serum;** Alexander Boychenko[1]; Natalia Govorukhina[1]; Ate van der Zee[2]; Rainer Bischoff[1]; *[1]Analytical Biochemistry, University of Groningen, Groningen, The Netherlands; [2]University Medical Centre, Groningen, The Netherlands*

WP 148 **Molecular Mechanisms of Synaptic Dysfunction in a Female Monkey Model of Depression;** Stephanie L. Willard[1]; Karin E. Borgmann-Winter[1, 2]; Hoau-Yan Wang[3]; Matthew L. MacDonald[4]; Carol A. Shively[5]; Chang-Gyu Hahn[1]; *[1]University of Pennsylvania Dept of Psychiatry, Philadelphia, PA; [2]Children's Hospital of Philadelphia, Philadelphia, PA; [3]CUNY Medical School, Pharmacology & Neuroscience, New York, NY; [4]University of Pittsburgh,*

Dept of Psychiatry, Pittsburgh, PA; [5]Wake Forest School of Med, Dept of Comparative Med, Winston-Salem, NC

WP 149 **Proteomic Analysis Reveals Defects in Energy Metabolism in Asthenozoospermia;** Guo Yueshuai; Xin Niu; Tao Zhou; Zuomin Zhou; Xuejiang Guo; Jiahao Sha; *Nanjing Medical University, Nanjing, China*

WP 150 **N-terminal Proteomics using TAILS on B-lymphocytes of a Patient with Combined Immunodeficiency;** Theo Klein[1]; Shan-Yu Fung[1,2]; Michael A. Blank[3]; Rosa Viner[3]; Stuart Turvey[1,2]; Christopher M. Overall[1]; *[1]UBC, Vancouver, Canada; [2]Children and Family Research Institute, Vancouver, Canada; [3]Thermo Fisher Scientific, San Jose, CA*

WP 151 **A Novel LC-MS Method for the Detection of Mutations Related to Antibiotic Resistance in Gyrase of Salmonella Isolates;** Lennard Dekker; Robbert-Jan Hassing; Lona Zeneyedpour; Theo Luider; Wil Goessens; *Erasmus Medical Center, Rotterdam, The Netherlands*

WP 152 **Integration of SWATH and MRM for Biomarker Discovery of Esophageal Squamous Cell Carcinoma;** Guixue Hou[1,2]; Liang Lin[2]; Xiaomin Lou[1]; Jin Zi[2]; Quanhui Wang[1,2]; Yulin Sun[3]; Xiaohang Zhao[3]; Siqi Liu[1,2]; *[1]Beijing Institute of Genomics, CAS, Beijing, China; [2]BGI-Shenzhen, Shenzhen, China; [3]Cancer Institute, CAMS, Beijing, China*

WP 153 **Analysis of Surface Charge Influences in Interactions of Nanoparticles with Human-Bronchoalveolar-Lavage-Fluid using HPLC - MS/MS;** Theresa Kristl[1]; Matthew Boyles[1]; Martin Himly[1]; Romana Mikes[2]; Michael Studnicka[2]; Albert Duschl[1]; Christian Huber[1]; *[1]University of Salzburg, Salzburg, Austria; [2]Paracelsus Medical University, Salzburg, Austria*

WP 154 **Evaluation of Targeted Proteomics Approaches for Optimal Quantification Strategies Applied to Drug Toxicity Profiling in 3D Tissue Models;** Asa Wahlander[1]; Nathalie Selevsek[1]; Jonas Grossmann[1]; Christian Panse[1]; Patrina Gunness[2]; Jens Kelm[2]; Ralph Schlapbach[1]; *[1]Functional Genomics Center Zurich (FGCZ), Zurich, Switzerland; [2]InSphero AG, Schlieren, Switzerland*

WP 155 **A Rapid, Data Independent Acquisition Method for Population-Scale Proteome Barcoding using PCT-SWATH;** Tiannan Guo; Ruedi Aebersold; *ETH Zurich, Zurich, Switzerland*

WP 156 **Automated Top-Down Mass Spectrometry of Hemoglobin for a Clinical Application;** Didia Coelho Graça[1]; Adelina E Acosta-Martin[1,2]; Wolfgang Jabs[3]; Ralf Hartmer[3]; Lorella Clerici[2]; Markus Meyer[3]; Kaveh Samii[4]; Yury O Tsybin[5]; Denis Hochstrasser[1,2]; Pierre Lescuyer[1,2]; Alexander Scherl[1,2]; *[1]DHPS, Faculty of Medicine, Geneva University, Geneva , Switzerland; [2]DGLM,Geneva University Hospitals, Geneva, Switzerland; [3]Bruker Daltonics, Bremen, Germany; [4]Division of Hematology, Geneva University Hospital, Geneva, Switzerland; [5]BMSL, Ecole Polytechnique Fédérale de Lausanne, Laussanne, Switzerland*

WP 157 **Label-Free Quantitation of Proteoforms by High-Throughput Top Down Proteomics for Biomarker Discovery;** Ioanna Ntai[1]; Kyung-Kon Kim[1]; Ryan Fellers[1]; Owen Skinner[1]; Bryan Early[1]; Richard Leduc[2]; Paul Thomas[1]; Neil L. Kelleher[1]; *[1]Northwestern University, Evanston, IL; [2]Indiana University, Bloomington, IN*

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WP 158 **Description of a Novel Multi-Column / Multi-Dimensional nanoLC-MS/MS Platform for Automated Proteomic Analysis;** Steven Mullett[1]; Gary Valaskovic[2]; Mike Lee[3]; Nathan Yates[1]; *[1]University of Pittsburgh, Pittsburgh, PA; [2]New Objective, Inc., Woburn, MA; [3]Milestone Development Services, Newtown, PA*

WP 159 **The Integration of Nano Scale Separation and Ionization for the Analysis of Complex Proteomes;** Peter Wang[1]; Zhou Hu[2]; Yang Yi-Ming[2]; Amanda Berg[3]; Gary A. Valaskovic[3]; *[1]New Objective, Inc., Shanghai, China; [2]Shanghai Institute of Materia Medica, CAS, Shanghai, China; [3]New Objective, Inc., Woburn, MA*

WP 160 **Comparison of Shotgun Proteomic Methods For Small Scale Analysis of Complex Proteomes;** Lu Yu; Jyoti Choudhary; *Wellcome Trust Sanger Institute, Cambridge, UK*

WP 161 **Online Affinity and Digestion: A Flexible and Robust Tool for the Characterization and Quantification of Proteins;** David Colquhoun[1]; Mohamed Nazim Boutaghou[1]; Rachel Lieberman[1]; Brian Feild[1]; Kevin W. Meyer[2]; Scott Kuzdzal[1]; *[1]Shimadzu Scientific Instruments, Columbia, MD; [2]Perfinity Biosciences, West Lafayette, IN*

WP 162 **Investigation of Fractionation Strategies for Intact Proteins Compatible with Top-down Mass Spectrometry;** Santosh G. Valeja[1]; Lichen Xiu[2]; Andrew J. Alpert[3]; Song Jin[2]; Ying Ge[1,2]; *[1]Dept. of Cell & Regenerative Biology, UW-Madison, Madison, WI; [2]Department of Chemistry, UW-Madison, Madison, WI; [3]PolyLC Inc., Columbia, MD*

WP 163 **Fluorescence Complementation - Mass Spectrometry (FC-MS) for Identifying Direct Upstream Kinases;** Lingfei Zeng[1]; Chang-Deng Hu[1]; Weiguo Tao[2]; *[1]Department of MCMP, Purdue University, West Lafayette, IN; [2]Department of Biochemistry, Purdue University, West Lafayette, IN*

WP 164 **Applicability of Partial Edman Degradation for MS/MS-free Protein Identifications in Shotgun Proteomics;** Anna A. Lobas[1]; Mark V. Ivanov[1]; Lev I. Levitsky[1]; Marina L. Pridatchenko[1]; Irina A. Tarasova[1]; Alexander V. Gorshkov[2]; Anatoly N. Verenchikov[3]; Mikhail V. Gorshkov[1]; *[1]Institute for Energy Problems of Chemical Physics, Moscow, Russia; [2]N.N. Semenov's Institute of Chemical Physics, Moscow, Russia; [3]Mass Spectrometry Consulting Ltd., Bar, Montenegro*

WP 165 **Isolation of N-terminal Fragments from Cyanogen Bromide Cleaved Proteins after Combined Micro Liquid- and Solid Phase Derivatization;** Heinz Nika[1]; David Hawke[2]; Ruth Hogue Angeletti[1]; *[1]Albert Einstein College of Medicine, Bronx, NY; [2]UT- M.D. Anderson Cancer Center, Houston, TX*

WP 166 **Dual Matrix-Based Immobilized Trypsin Combined magnetic Separation for Fast Proteolytic Digestion and In-depth Proteomics Analysis;** Wanjun Zhang; Chao Fan; Duan Feng; Weijie Qin; Xiaohong Qian; *Beijing Proteome Reserach Center, Beijing, China*

WP 167 **A New Protease for Bottom Up and Middle-Down Proteomics;** Martial Rey[1]; Hynek Mrazek[2]; Petr Halada[2]; Petr Man[2]; David Schriemer[1]; *[1]University of Calgary, Calgary, Canada; [2]Institute of Microbiology, Prague, Czech Republic*

WP 168 **Amino Acid Labeling With Tryptic Digestion: An Approach for Middle-Down Proteomics;** Nathanael F Zinnel; William K. Russell; David H. Russell; *Texas A&M University, College Station, TX*

WP 169 **Introducing a Highly Selective Cleavage into Proteins in a Pseudo-Top Down Proteomics Approach to Produce Simplified and Predictable Fragmentation Spectra;** William Mcgee[1]; Zhen Wu[1]; Victoria Hedrick[2]; Lake Paul[2]; Mary Wirth[1]; Scott McLuckey[1]; *[1]Purdue University, West Lafayette, IN; [2]Purdue Proteomics Facility, West Lafayette, IN*

WP 170 **A Thermostable, N-terminal Arginine *and* Lysine Specific Protease for ≤ 1 hr Digestion, Simplified Peptide Fragmentation and Increased MS/MS Sensitivity;** John P. Wilson[1]; Jonathan J. Ipsaro[1]; Samantha N. Peacock[1]; Keith D. Rivera[1]; Katharine H. Dusenbury[2]; Darryl J.C. Pappin[1]; *[1]Cold Spring Harbor Laboratory, Cold Spring Harbor, NY; [2]Dana Farber Cancer Institute, Boston, MA*

WP 171 **Chemical Cleavage for Middle-Down Analysis by Electron Transfer Dissociation;** Jan Fish; Jasparl Cheema; Elzbieta Piatkowska; Sarah R Hart; *Keele University, Newcastle-Under-Lyme, UK*

WP 172 **Chemical Hydrolysis-Based Middle-Down Proteomics;** Kristina Srzentić[1]; Grigory Karateev[1]; Luca Fornelli[1]; Lev I. Levitsky[2]; Anna A. Lobas[2]; Elena Dubikovskaya[1]; Mikhail V. Gorskhov[2]; Unige A. Laskay[1]; Daniel Ayoub[1]; Yury O. Tsybin [1]; *[1]Ecole Polytechnique Federale de Lausanne, Lausanne, Switzerland; [2]Institute for Energy Problems of Chemical Physics, Moscow, Russia*

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WP 174 **Automated Protein Digestion Workflows for MS-based Proteomics Applications;** Gunnar Dittmar[1]; Oliver Popp[1]; Guenter Boehm[2]; Andreas Bruchmann[3]; *[1]MDC, Berlin, Germany; [2]CTC Analytics, Zwingen, Switzerland; [3]Axel Semrau GmbH, Sprockhovel, Germany*

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WP 176 **Higher Confidence Analysis of E. coli Lysate by Reducing Spectral Complexity Using 351 nm UVPD;** Scott Robotham; Joe Cannon; Jennifer Brodbelt; *University of Texas at Austin, Austin, TX*

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WP 180 **Impact of Oxidative Modifications on the Quantification of Intact Therapeutic Proteins by High Resolution Mass Spectrometry;** Louis-Philippe Morin; Fabio Garofolo; *Algorithme Pharma Inc., Laval, Canada*

WP 181 **Quantification of Growth Hormone Receptor Antagonist Pegvisomant by LC-MS/MS in Rat Plasma: Method Development Considerations for PEGylated Proteins;** Jonathan R. St-Germain; Jean-Nicholas Mess; Fabio Garofolo; *Algorithme Pharma Inc., Laval, Canada*

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WP 183 **A Versatile Method using Immunoaffinity LC-MS/MS to Quantify Antigen Protein in Animal Studies of Monoclonal Antibody Therapeutics;** Ichio Onami; Miho Ayabe; Naoaki Murao; Masaki Ishigai; *Chugai Pharmaceutical Company, Ltd., Gotemba, Japan*

WP 184 **LC-MS Method Development for Therapeutic Antibody Quantitation in Animal Plasma;** Qian Zhang[1]; Zhenlian Ke[1]; Daniel Spellman[1]; Nathan Hatcher[1]; Daniela Tomazela[2]; Maribel Beaumont[2]; Bernard Choi[3]; Jane Harrelson[1]; Kevin Bateman[1]; *[1]Merck & Co., Inc., West Point, PA; [2]Merck & Co., Inc., Palo Alto, CA; [3]Merck & Co., Inc., Rahway, NJ*

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WP 189 **Relative Quantification of MABS Glycosilation Changes during Stability and Accelerated Degradation Studies using Stable-Isotope Labeling and UPLC-ESI-QTOF;** Silvia Millan Martin[1]; Cedric Delporte[1]; Natalia Navas[2]; Niaobh McLoughlin[1]; Jonathan Bones[1]; *[1]NIBRT, Dublin, Ireland; [2]UGR (University of Granada), Granada, Spain*

WP 190 **Development of a High Resolution LC-MS Method for Absolute Quantitation of Hemagglutinin and Neuraminidase Proteins in Influenza Virus-Like Particle Vaccines;** Jingzhong (Tim) Guo; Yali Lu; Jingning Li; Ziping Wei; Erica Shane; Oleg Borisov; *NovaVax, Rockville, Md*

WP 191 **A Streamlined Workflow for Characterizing Low Abundance Glycans on Therapeutic Proteins;** Michael Kimzey; Shiva Pourkaveh; Samnang Tep; Sybil Lockhart; Justin Hyche; Ted Haxo; Jo Wegstein; *ProZyme, Hayward, CA*

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WP 193 **Surfactant-aided Precipitation/On-Pellet-Digestion (SOD) for Straightforward, Efficient and Reproducible Sample Preparation for Targeted Quantification of mAb in Plasma and Tissues;** Bo An[1, 2]; Ming Zhang[1, 2]; Jun Qu[1, 2]; *[1]SUNY at Buffalo, Buffalo, NY; [2]New York State Center of Excellence, Buffalo, NY, Buffalo, NY*

WP 194 **Direct Analysis of Cell Culture Media using Targeted Peptide Mapping to Analyze the Post-Translational Modifications of Recombinant Proteins;** Chris Barton; Jeong Lee; Xiaojun Lu; David Spencer; Mark Schenerman; Jihong Wang; *MedImmune, Gaithersburg, MD*

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WP 197 **Release Testing of Biotherapeutics by Mass Spectrometry with Automated Detection of Unexpected Features;** Richard Rogers[1]; Nancy Nightlinger[1]; Jennifer Sutton[2]; Sabrina Benchaar[3]; Alain Balland[1]; Robert Bailey[1]; *[1]Amgen, Seattle, WA; [2]Thermo Fisher Scientific, San Jose, CA; [3]Amgen, Thousand Oaks, CA*

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WP 199 **Evaluation of Label-free MS-based Relative Quantitation of Post-translational Modifications of Therapeutic proteins;** Hongji Liu; Qing Paula Lei; Michael Washabaugh; *MedImmune, Gaithersburg, MD*

WP 200 **High Throughput Screening of Deubiquitylase Activity, Specificity and Inhibition by MALDI-TOF Mass Spectrometry;** Maria Stella Ritorto[1]; Richard Ewan[1]; Ana Perez-Oliva[1]; Axel Knebel[1]; Nicholas Morrice[2]; Dario Alessi[1]; Matthias Trost[1]; *[1]MRC Protein Phosphorylation and Ubiquitylation Uni, Dundee, UK; [2]The Beatson Institute for Cancer Research, Glasgow, UK*

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WP 202 **Comprehensive Sequence and Post-translational Modifications Analysis of Monoclonal Antibody by Flash Digest and LC-High Resolution MS;** Hongxia (Jessica) Wang[1]; John O'Grady[2]; David Horn[1]; Zhiqi Hao[1]; Kevin Meyer[2]; *[1]Thermo Fisher Scientific, San Jose, CA; [2]Perfinity Biosciences, Inc, West Lafayette, IN*

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WP 206 **Variant Identification from Human Recombinant Erythropoietin by LC-MS/MS;** Jung-Keun Suh[1]; Hyong-Ha Kim[2]; *[1]Korean German Institute of Technology, Seoul, South Korea; [2]Korea Research Institute of Standards and Science, Daejeon, Korea*

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WP 218 **The Combination of Molecular Dynamics, Amide Hydrogen Exchange, and Mass Spectrometry to Understand mAb Conformational Dynamics;** Benjamin Walters[1]; Thomas Patapoff[2]; Jennifer Zhang[1]; *[1]Protein Analytical Chemistry, Genentech Inc., South San Francisco, CA; [2]Early Stage Pharmaceutical Dev., Genentech Inc., South San Francisco, CA*

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Alexandra Tsirigotaki[2,4]; Spyridoula Karamanou[1,4]; Thomas J.D. Jorgensen[3]; Anastassios Economou[2,4]; *[1]IMBB, FoRTH, Iraklio, Crete, Greece; [2]IMBB, FoRTH, Dpt of Biology, UoC, Iraklio, Crete, Greece; [3]Dpt of Biochemistry & Molecular Biology, USD, Odense, Denmark; [4]Dpt of Microbiology and Immunology, KU Leuven, Leuven, Belgium*

WP 220 **Dynamics of the SH3 Domains of Tec Family Tyrosine Kinases by Hydrogen Exchange Mass Spectrometry;** Justin Roberts[1]; Sreya Tarafdar[2]; Thomas Wales[1]; Thomas Smithgall[2]; John Engen [1]; *[1]Northeastern University, Boston, MA; [2]University of Pittsburgh, Pittsburgh, PA*

WP 221 **Probing Regulatory Domain Interactions in the Tec-family Tyrosine Kinase Btk using HXMS;** Thomas E. Wales[1]; Raji E. Joseph[2]; Amy H. Andreotti[2]; John R. Engen[1]; *[1]Northeastern University, Boston, MA; [2]Iowa State University, Ames, IA*

WP 222 **Effects of 9cUAB30 Methyl Derivatives and Coactivator on the Structure of RXR by Hydrogen Deuterium Exchange Mass Spectrometry;** Emily Cowart; *University of Alabama at Birmingham, Birmingham, Alabama*

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WP 225 **Structural and Functional Insights of Small Molecule Disruptors of the Glucokinase-Glucokinase Regulatory Protein Interaction by Hydrogen/Deuterium Exchange Mass Spectrometry;** Min Shen; Klaus Michelsen; Paul Schnier; *Amgen Inc., Thousand Oaks, CA*

WP 226 **Probing the Conformational Dynamics of a Novel Kinase Induced by ATP and Substrate Binding by HDX-MS;** Jianzhong Wen[1]; Sheng Li[2]; Jeffrey Esko[1]; Jack E. Dixon[1]; *[1]UC San Diego, San Diego, CA; [2]UCSD, La Jolla, CA*

WP 227 **Congo Red Induced Unfolding of Human Insulin by Pulsed Labeling Hydrogen-Deuterium Exchange Coupled with ESI and Mass Spectrometry;** Teerapat Rojsajjakul; Fred King; *Department of Chemistry, West Virginia University, Morgantown, WV*

WP 228 **Structural Characterization of Hsp70 Protein Complexes using Hydrogen Deuterium Exchange Mass Spectrometry;** Victoria A. Assimon[1]; Jennifer N. Rauch[1]; Terry Zhang[2]; Shenheng Guan[1]; Jason E. Gestwicki[1]; *[1]Institute for Neurodegenerative Diseases, San Francisco, CA; [2]Thermo Fisher Scientific, San Jose, CA*

WP 229 **The Non-Native Code of Secreted Preproteins Investigated by HDX-MS and Native IM/MS;** Alexandra Tsirigotaki[1,2]; M. Papanastasiou[3]; A. Konijnenberg[4]; K. Chatzi[1]; M.B. Trelle[5]; T.J.D. Jørgensen[5]; F. Sobott[4]; S. Karamanou[1,3]; A. Economou[1,2]; *[1]Dpt of Microbiology and Immunology, KULeuven, Leuven, Belgium; [2]IMBB, FoRTH, Dpt of Biology, UoC, Iraklio, Crete, Greece; [3]IMBB, Forth, Iraklio, Crete, Greece; [4]Chemistry Department, U. Antwerpen, Antwerp, Belgium; [5]Dpt of Biochemistry and Molecular Biology, SDU, Odense, Denmark*

WP 230 **Allosteric Conformational Destabilization of CFTR Nucleotide Binding Domain 1 (NBD1) by the Cystic Fibrosis Mutation ΔF508;** Naoto Soya[1,2]; Ariel Roldan[1]; Miklos Bagdany[1]; Gergely Lukacs[1,2]; *[1]Department of Physiology, McGill University, Montreal, Canada; [2]GRASP, McGill University, Montreal, Canada*

WP 231 **HDX and MS Reveals pH-dependent Conformational Changes of Monomeric and Dimeric Diphtheria Toxin T Domain;** Jing Li[1]; Mykola Rodnin[2]; Alexey Ladokhin[2]; Michael Gross[1]; *[1]Washington University in St. Louis, St. Louis, MO; [2]University of Kansas Medical Center, Kansas City, KS*

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WP 233 **Quantitative Proteomics of Estrogenic Effects in the Rat Uterus *in vivo*;** Fatima Sahyouni; Szabolcs Szarka; Vien Nguyen; Katalin Prokai-Tatrai; Laszlo Prokai; *University of North Texas Health Science Center, Fort Worth, TX*

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WP 235 **Quantitative Proteomic Analysis of Various Grades of Glioma Tissues Across Indian Patient Population;** Kishore Gollapalli[2]; Ravi Kumar Krovvidi[1]; Leo Bonilla[1]; sanjeeva Srivastava[2]; *[1]Agilent Tech, Richland, WA; [2]Dept of Biosciences and Bioengineering, Mumbai, India*

WP 236 **High Pressure-Assisted Extraction for the Improved Proteomic Analysis of FFPE Tissue;** Carol B. Fowler[1]; Timothy J. Waybright[2]; Timothy D. Veenstra[2]; Timothy J. O'Leary[3]; Jeffrey T. Mason[1]; *[1]Baltimore VA Medical Center, Baltimore, MD; [2]National Cancer Institute, Frederick, MD; [3]BLR&D Service, Veterans Health Administration, Washington, DC*

WP 237 **Evaluating the Effect of Formalin Fixation on Mass Spectrometry Based Proteomic Profiling;** Drexel Neumann[1]; Eric Dammer[2]; Duc Duong[2]; Nicholas Seyfried[2]; James A Atwood[1]; *[1]Omni International, Inc., Kennesaw, GA; [2]Emory University, Atlanta, GA*

WP 238 **A Novel Approach for the Analysis of Membrane Proteins Applied to Glioma Stem Cell Xenografts;** Norelle Wildburger[1]; Cheryl Lichti[1]; Ekaterina Mostovenko[1]; Frederick Lang[2]; Joy Gumin[2]; Carol Nilsson[1]; *[1]UTMB, Galveston, TX; [2]MD Anderson Cancer Center, Houston, TX*

WP 239 **Proteomics Analysis of Decellularized Biological Scaffolds for Tissue Engineering;** Qiyao Li[1]; Changying Ling[2]; Sinan Ozer[3,4]; Brian Frey[1]; Zhen Chang[2]; Basak Uygun[3,4]; Nathan Welham[2]; Lloyd Smith[1]; *[1]Dept. of Chemistry, UW-Madison, Madison, WI; [2]Dept. of Surgery, UW-Madison, Madison, WI; [3]Center for Engineering in Medicine, Boston, MA; [4]Massachusetts General Hospital, Boston, MA*

WP 240 **A Proteomic Profiling Strategy for the Non-Human Primate Animal Model, Rhesus Monkey;** Jin-Gyun Lee[1]; Kimberly McKinney[1]; Yong-Yook Lee[1]; Haena Chung[1]; Antonis Pavlopoulos[1]; Kook Jung[1]; Woong-Ki Kim[2]; Marcelo Kuroda[3]; Sunil Hwang[1]; *[1]Carolinas Healthcare System, Charlotte, NC; [2]Eastern Virginia Medical School, Norfolk, VA; [3]Tulane University, Covington, LA*

WP 241 **Large Scale Kinome Analysis of Human Skeletal Muscle using ATP Probes and HPLC-ESI-MS/MS;** Yue Qi; Danjun Ma; Michael Caruso; Monique Lewis; Xiangmin Zhang; Wissam Al-Janabi; Divyasri Damacharla; Zhao Yang;

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WP 242 **Absolute Protein Quantitation of Bacterial Proteome using Super-SILAC and iBAQ Approaches;** Boumediene Soufi; Andreas Harst; Karsten Krug; Boris Macek; *Proteome Center Tuebingen, Tuebingen, Germany*

WP 243 **Quantitative Proteomic and Systems Analysis of Cells in Response to External Stimuli;** Allison Galassie[1]; Parimal Samir[2]; Kristen Hoek[2]; Xinnan Niu[2]; Andrew Link[2]; *[1]Vanderbilt University, Nashville, TN; [2]Vanderbilt University School of Medicine, Nashville, TN*

WP 244 **Tracking the Impact of Viral Infection on Cellular Organelle Remodeling using Quantitative Organelle Proteomics;** Pierre Jean Beltran; Rommel Mathias; Todd M. Greco; Ileana M. Cristea; *Princeton University, Princeton, NJ*

WP 245 **Uncovering Cytomegalovirus-Targeted Host Cellular Processes by Quantifying Changes in the Nuclear Proteome;** Dominique Carter[1, 2]; Justin Reitsma[1, 2]; Kathleen Noon[1, 3]; Scott Terhune[1, 2]; *[1]Medical College of Wisconsin, Milwaukee, Wisconsin; [2]Microbiology & Molecular Genetics, Milwaukee, WI [3]Biotechnology & Bioengineering Center, Milwaukee, WI*

WP 246 **Quantitative Proteomics of MAOA-knockdown Prostate Cancer Cells;** Sheng-Ta Tsai[1]; Shok-Li Ng[1]; Kai-Yun Chen[1]; Ting-Jen Cheng[1]; Jason Boyang Wu[2]; Jean Chen Shih[3]; Chung-Hsuan Chen[1]; *[1]Genomics Research Center, Taipei, Taiwan; [2]Cedars-Sinai Medical Center, Los Angeles, CA; [3]University of Southern California, Los Angeles, CA*

WP 247 **Quantitative Profiling of Differentially Regulated Proteins in Niemann-Pick Type C Disease;** Navin Rauniyar; Kanagaraj Subramanian; John R. Yates; *The Scripps Research Institute, La Jolla, CA*

WP 248 **Skin Aging – Identification of Proteins Related to *in situ* Aging of Human Dermal Fibroblasts using a Quantitative Proteomic Approach;** Daniel M. Waldera-Lupa[1]; Faiza Khalfallah[2]; Fritz Boege[2]; Kai Stühler[1]; *[1]Molecular Proteomics Laboratory, Düsseldorf, Germany; [2]Zentralinstitut für Klinische Chemie, Düsseldorf, Germany*

WP 249 **Proteomic Analysis of Adipocytes in Response to Fructose and Glucose Treatment;** Yuan Gao; Vijayalakshmi Varma; Greg T. Nolen; Zhijun Cao; Li-Rong Yu; *National Center for Toxicological Research, FDA, Jefferson, AR*

WP 250 **Elucidating Global Proteomic Changes Induced by the Epstein-Barr Virus Oncoproteins LMP1 and LMP2A;** Robert M. DeKroon[1]; Harsha P. Gunawardena[2]; Nancy Raab-Traub[1]; *[1]Lineberger Comprehensive Cancer Center, UNC-Chapel Hill, NC; [2]Program in Molecular Biology & Biotechnology,, UNC-Chapel Hill, NC*

WP 251 **Insights into Kinome Perturbation during NLRP3 Inflammasome Activation using an Isotope-Coded ATP-affinity Probe and Targeted Mass Spectrometry;** Preston Williams; Lei Guo; Yinsheng Wang; *University of California - Riverside, Riverside, CA*

WP 252 **Label-free Quantitative Proteomics Study of the Synergistic Effect of Oxacillin and a Novel Erythromycin Derivative against Methicillin-Resistant *Staphylococcus aureus*;** Xiaofen Liu[1]; Pei-Jing Pai[1]; Yingwei Hu[1]; Daijie Chen[2]; Henry Lam[1]; *[1]Hong Kong University of Science and Technology, Hong Kong, China; [2]China State Instititue of Pharmaceutical Industry, Shanghai, China*

WP 253 **Interactome of a Jumping Gene;** Martin S. Taylor[1]; John LaCava[2]; Paolo Mita[1]; Kelly R. Molloy[2]; Donghui Li[1]; Emily M. Adney[1]; Hua Jiang[2]; Brian T. Chait[2]; Michael P. Rout[2]; Jef D. Boeke[3]; Lixin Dai[1]; *[1]Johns Hopkins University School of Medicine, Baltimore, MD; [2]The Rockefeller University, New York, NY; [3]NYU Langone University School of Medicine, New York, NY*

WP 254 **Proteomics Methods for Chinese Hamster Ovary (CHO) Cell Culture Optimization;** Gang Xiao; Sohye Kang; Pavel Bondarenko; Da Ren; *Amgen Inc., Thousand Oaks, CA*

WP 255 **Proteomic Investigation of the Osmoregulatory Protein Interactome using the Mass Spectrometry-Cleavable Chemical Crosslinker DC4;** Kevin R. Ramkissoon[1]; Jenna F. Dumond[1]; Guanghui Wang[2]; Marjan Gucek[2]; Maurice B. Burg[1]; Joan D. Ferraris[1]; *[1]Systems Biology Center, NHLBI, NIH, Bethesda, MD; [2]Proteomics Core, NHLBI, NIH, Bethesda, MD*

WP 256 **Proteomic Profiling of the Secretome upon Toll-like Receptor Stimulation;** Marijke Koppenol-Raab; Virginie Sjoelund; Aleksandra Nita-Lazar; *NIH/NIAID/LSB, Bethesda, MD*

WP 257 **In-depth and Time-Resolved Dissection of Early Phosphoproteome and Ensuing Proteome Changes in Response to TGF-β;** Kirti Sharma[1]; Rochelle CJ D'souza[1]; Anna Korhonen[2, 4]; Nagarjuna Nagaraj[1]; Chunaram Choudhary[3]; Peter ten Dijke[2]; Matthias Mann[1, 3]; *[1]Max Planck Institute for Biochemistry, Martinsried (Near Munich), Germany; [2]Leiden University Medical Center, Leiden, The Netherlands; [3]University of Copenhagen, Copenhagen, Denmark; [4]University of Turku, Turku, Finland*

WP 258 **Filamentous Growth Response of Yeast by Quantitative Phosphoproteomics;** Hye Kyong Kweon; Christian Shively; Anuj Kumar; Philip Andrews; *The University of Michigan, Ann Arbor, MI*

WP 259 **Quantitative Analysis of HDAC6-regulated Proteome and Lys Acetylome;** Yue Chen[1]; Zhongyi Cheng[1]; Rui Hao[2]; Sangkyu Lee[1]; Tso-Pang Yao[2]; Yingming Zhao[1]; *[1]University of Chicago, Chicago, IL; [2]Duke University, Durham, NC*

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WP 260 **Simultaneous Verification of Correct and Alternative Disulfide Connectivity in IgG3 Monoclonal Antibody using Extracted Ion Chromatograms of ETD Spectra;** Jude Lakbub; Daniel Clark; Zhikai Zhu; Eden Go; Heather Desaire; *University of Kansas, Lawrence, KS*

WP 261 **Characterization of Monoclonal Antibodies by Middle-Down 193 nm Ultraviolet Photodissociation;** Victoria C. Cotham; Jennifer S. Brodbelt; *University of Texas at Austin, Austin, TX*

WP 262 **Analysis of Monoclonal Antibodies, Aggregates, and their Fragments by Size Exclusion Chromatography Coupled with an Orbitrap Mass Spectrometer;** Shanhua Lin; Hongxia Wang; Zhiqi Hao; David Horn; Mark Tracy; Xiaodong Liu; *Thermo Fisher Scientific, Sunnyvale, CA*

WP 263 **Structure Characterization of Intact Monoclonal Antibody using Orbitrap Tribrid Mass Spectrometer;** Terry Zhang; David Horn; Jenny Chen; Zhiqi Hao; *ThermoFisher, San Jose, CA*

WP 264 **Middle-down Analysis of Monoclonal Antibody using Nano-flow Liquid Chromatography and a Novel Tribrid Orbitrap Mass Spectrometer;** Jie Qian[1]; Keith A. Waddell[2]; Zhiqi Hao[2]; *[1]Thermo Fisher Scientific, Somerset, NJ; [2]Thermo Fisher Scientific, San Jose, CA*

WP 265 **Monoclonal Antibody and Related Product Characterization under Native Conditions using a Benchtop Exactive Plus EMR Mass Spectrometer;** Yue Xuan[1]; Francois Debaene[2]; Johann Stojko[2]; Alain Beck[3]; Alain Van Dorsselaer[2]; Sarah Cianferani[2]; Maciej Bromirski[1]; *[1]Thermo Fisher Scientific GmbH, Bremen, Germany; [2]University of Strasbourg, Strasbourg, France; [3]Pierr-Fabre, Strasbourg, France*

WP 266 **Highly Sensitive and Robust LC-MS Method for Therapeutic Monoclonal Antibody Analysis from Complex Matrices;** Joshua Nicklay[1]; Eric Niederkofler[2]; Urban Kiernan[2]; Kemmons Tubbs[2]; Scott Peterman[3]; *[1]Thermo Fisher Scientific, Somerset, NJ; [2]Thermo Fisher Scientific, Tempe, AZ; [3]Thermo Fisher Scientific BRIMS, Cambridge, MA*

WP 267 **Application and Advantages of HRMS in the Quantification of Therapeutic Monoclonal Antibodies: "The Rituximab Case Study";** Kevork Mekhssian; Jean-Nicholas Mess; Fabio Garofolo; *Algorithme Pharma Inc., Laval, Canada*

WP 268 **Liquid Chromatography-High Resolution Mass Spectrometry Bioanalytical Approach for the Quantification of Total Antibody-Drug Conjugate (ADC, DAR≥0) in Rat Plasma;** Jean-Nicholas Mess[1]; Suma Ramagiri[2]; Gary Impey[2]; Fabio Garofolo[1]; *[1]Algorithme Pharma Inc., Laval, Quebec, Canada; [2]AB Sciex, Concord, Ontario, Canada*

WP 269 **Intact Protein Separation by CE-UV/MALDI-MS for Top-Down Proteomics;** Michael Biacchi[1]; Alain Beck[2]; Yannis Francois[1]; Emmanuelle Leize-Wagner[1]; *[1]LSMIS UMR-CNRS7140, University of Strasbourg, Strasbourg, France; [2]Centre d'immunologie Pierre Fabre, Saint-Julien en Genevois, Francois*

WP 270 **Accurate Identification of Drug Conjugation Sites on Antibody-Drug Conjugates using MS/MS;** Kelli Jonakin; Eric Johansen; St John Skilton; Justin Blethrow; *AB SCIEX, Redwood Shores, CA*

WP 271 **Optimizing Chromatography and High Resolution Time-of-Flight Mass Spectrometry for Antibody-Drug Conjugate DAR Characterization;** Katherine Wright[1]; Shakey Quazi[1]; Brigitte Simons[2]; Dawn Dufield[1]; *[1]Pfizer, Andover, MA; [2]AB SCIEX, Concord, ON*

WP 272 **Direct Measurement of Conjugated Drug on ADC with Cleavable Linker via Enzymatic Cleavage and LC/MS Analysis;** Brian Rago[1]; Sean Han[1]; Frank Barletta[2]; *[1]Pfizer, Groton, CT; [2]Pfizer, Pearl River, NY*

WP 273 **Overcoming Challenges in Heightened Characterization for Antibody Drug Conjugates with Unique Approaches, New Methodologies and Ultrahigh-Resolution Mass Spectrometry;** Olga Friese[1]; Jacquelynn Smith[1]; James Carroll[1]; Jason Rouse[2]; *[1]Pfizer, Inc., St. Louis, MO; [2]Pfizer, Inc, Andover, MA*

WP 274 **Characterization of Isoforms of Cysteine-Conjugated Antibody Drug Conjugates (ADCs) using On-line 2D-LC/MS;** Frank Kotch[1]; Robert Birdsall[2]; Henry Shion[2]; April Xu[1]; Thomas Porter[3]; Weibin Chen[2]; *[1]Pfizer, Pearl River, NY; [2]Waters Corporation, Milford, MA; [3]Pfizer, Andover, MA*

WP 275 **Rapid Mass Analysis of the Minor Variants in IgG1 Antibodies by 2D-LC/Q Exactive System;** Jin Li; *Genentech, South San Francisco, CA*

WP 276 **Rapidly Quantify Tryptophan Oxidation of an IgG1 Antibody Fragment by Parallel-Reaction-Monitoring Based HR/AM Approach on an UHPLC/Q Exactive System;** Weitao Jia; Jennifer Zhang; *Genentech Inc., South San Francisco, CA*

WP 277 **Understanding of Stability and Structural Changes of Antibody-Drug-Conjugates (ADCs) *in vivo* by Affinity Capture LC-MS;** Dian Su; Carl Ng; Surinder Kaur; Keyang Xu; *Genentech Inc, South San Francisco, CA*

WP 278 **Mass Spectrometric Characterization of Transglutaminase Based Site-Specific Antibody-Drug Conjugates;** Santiago Farias; Pavel Strop; Kathy Delaria; Magdalena Dorywalska Dorywalska; Meritxell Galindo Casas; David Shelton Shelton; Jaume Pons; Arvind Rajpal Rajpal; *Pfizer Rinat, San Francisco, CA*

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WP 280 **Analysis of Lipids in Serum Using Continuous Tandem Spectra Acquisition and Customized Instrument Control Software;** Joseph A. Hankin[1]; Robert M. Barkley[1]; Jeff Brown[2]; Mike Morris[2]; Emmy Hoyes[2]; Richard Chapman[2]; Robert Murphy[1]; *[1]University of Colorado Denver, Aurora, CO; [2]Waters Corporation, Manchester, UK*

WP 281 **Plasma Lipid Profiling using high Resolution Mass Spectrometry and Complementary Fragmentation Strategies;** Claire Dauly[1]; Alexandre Seyer[2]; Samia Boudah[3]; Simon Broudin[2]; Christophe Junot[3]; Benoit Colsch[3]; *[1]Thermo Fisher Scientific, Courtaboeuf, France; [2]Profilomic SA, Boulogne-Billancourt, France; [3]CEA-Centre d'Etude de Saclay, Laboratoire d'étud, Gif-sur-Yvette, France*

WP 282 **Systematic Characterization of Experimental Conditions for High-Throughput Yeast Lipid Profiling by MALDI-MS;** Junya Nakamura[1]; Daichi Yukihira[1]; Hiroyuki Wariishi[2,3]; Yoshinori Fujimura[2]; Daisuke Miura[2]; *[1]Grad. Sch. Biores. Bioenviron. Sci., Kyushu Univ., Fukuoka, Japan; [2]ICMRN, Kyushu Univ., Fukuoka, Japan; [3]Fac. Arts and Sci., Kyushu Univ., Fukuoka, Japan*

WP 283 **Profiling of Regioisomeric Triacylglycerols in Edible Oils by Supercritical Fluid Chromatography/Tandem Mass Spectrometry;** Takeshi Bamba[1]; Jae Won Lee[1]; Toshiharu Nagai[2]; Naohiro Gotoh[3]; Eiichiro Fukusaki[1]; *[1]Dept.Biotech., Grad. Sch. Eng., Osaka Univ., Suita, Japan; [2]Tsukishima Foods Industry Co., Ltd, Tokyo, Japan; [3]Dept. Food Sci. Tech., Tokyo University of Marine, Tokyo, Japan*

WP 284 **Influence of the Silica Gel Layer Thickness on the Quality of TLC / MALDI Mass Spectra of Lipids;** Egidijus Machtejevas[1]; Michael Schulz[1]; Katerina Matheis[2]; Juergen Schiller[3]; *[1]Merck Millipore, Merck KGaA, Darmstadt, Germany; [2]Merck KGaA, Department of Bioanalytical Chemistry, Darmstadt, Germany; [3]University of Leipzig, Faculty of Medicine, Leipzig, Germany*

WP 285 **Chromatography Couples through On-Line Liquid-Liquid Extraction with Electrospray Mass Spectrometry (CLL-MS) and Its Application to Lipoprotein Analysis;** Albert Koulman; Michael Osei; Julian L. Griffin; *Medical Research Council, Cambridge, UK*

WP 286 **Pitfalls in Long-Term and Large-Scale LC–MS-based Lipidomics Studies of Human Plasma;** Tomas Cajka[1]; Brian DeFelice[1]; Carlos Leon[1]; William Wikoff[1]; Stanley Hazen[2]; Oliver Fiehn[1]; *[1]UC Davis Genome Center, Davis, CA; [2]Cleveland Clinic Lerner Research Institute, Cleveland, OH*

WP 287 **Higher Resolution LC-MS and MS-MS Analysis of Lipid Extracts using Benchtop Orbitrap-based Mass Spectrometers and LipidSearch Software;** David Peake[1]; Junhua Wang[1]; Yasuto Yokoi[2]; Yingying Huang[1]; *[1]Thermo Fisher Scientific, San Jose, CA; [2]MKI, Tokyo, Japan*

WP 288 **Characterization of Lipopolysaccharide Modifications in Select Antibiotic-Resistant Gram-negative Bacteria using Surface Acoustic Wave Nebulization Mass Spectrometry;** Lisa M. Leung; David R. Goodlett; Robert K. Ernst; *University of Maryland, Baltimore, Maryland*

WP 289 **Comprehensive Analysis of Gangliosides by MALDI MS;** Sangwon Cha; Dongkun Lee; *HUFS, Yongin, South Korea*

WP 290 **A Data-Independent LC-MS/MS Workflow for Eicosanoid Identification and Quantification;** Mark J. Sartain[1]; Anne E. Blackwell[2]; Yanan Yang[1]; *[1]Agilent Technologies, Inc, Santa Clara, CA; [2]Agilent Technologies, Wilmington, DE*

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WP 292 **Direct Analysis in Real Time Mass Spectrometric Analysis of the "Legal" Drug Alternative Kratom (*Mitragyna speciosa*);** Ashton Lesiak[1]; Robert Cody[2]; John Dane[2]; Rabi Musah[1]; *[1]University at Albany, Albany, New York; [2]JEOL USA, Inc., Peabody, MA*

WP 293 **Sample Preparation in Coated 96 Deep Well Plates for Clinical and Forensic Applications;** Susanne Nussbaumer[1]; Wolfgang Weinmann[1]; Michal Svoboda[2]; Roland Geyer[2]; Stefan König[1]; *[1]Institut für Rechtsmedizin, Universität Bern, Bern, Switzerland; [2]Tecan Schweiz AG, Männedorf, Switzerland*

WP 294 **Species Identification from Hair by Means of Spectral Library Searches;** Katleen Van Steendam; Ellen Scheerlinck; Maarten Dhaenens; Dieter Deforce; *Laboratory of Pharmaceutical Biotechnology, University Ghent, Belgium*

WP 295 **Impact of Novel MS/MS^{ALL} Acquisition and Processing Techniques on Forensic Toxicological Screening with a Q-TOF Tandem Mass Spectrometer;** David Cox; Michael J. Y. Jarvis; Evelyn Mcclure; Adrian Taylor; *AB SCIEX, Concord, Canada*

WP 296 **Ultra-fast LDTD-APCI-MS/MS Analysis of Gamma-Hydroxybutyric Acid and Its Precursors in Beverages and Biological Samples;** Paul Fayad[1]; Sung Vo Duy[1]; André Lajeunesse[2]; Sébastien Sauvé[1]; *[1]Université de Montréal, Montreal, QC, Canada; [2]Université du Québec à Trois-Rivière, Trois-Rivières, QC, Canada*

WP 297 **Identifying Common Spices in Concentrated Hydrogen Peroxide (CHP) Explosive Mixtures with GC/MS;** Lisa Lang; *ATF, Ammendale, U.S.A.*

WP 298 **Automatic Screening of Major Impurities in Methamphetamine Samples Synthesized by Emde Method Using Accurate Mass Spectrometry;** Zhendong Hua[1]; Wei Jia[1]; Fengyun Pan[2]; *[1]Drug Intelligence and Forensic Center, Beijing, China; [2]AB SCIEX, Beijing, China*

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WP 300 **Dating of Fingerprints by GC-MS;** Stefanie Pleik[1, 2]; Bernhard Spengler[2]; Steven Luhn[1]; Dieter Urbach[1]; Dieter Kirsch[1]; *[1]Bundeskriminalamt, Wiesbaden, Germany; [2]Justus Liebig University, Giessen, Germany*

WP 301 **Issues of Sports Drug Testing - New Substances and Fake Doping Agents Characterized by Mass Spectrometry;** Mario Thevis[1]; Katja Walpurgis[1]; Andreas Thomas[1]; Andreas Lagojda[2]; Catharina Crone[3]; Martin Zeller[3]; Markus Kellmann[3]; Wilhelm Schänzer[1]; *[1]German Sport University, Cologne, Germany; [2]Bayer CropScience, Monheim, DE; [3]Thermo Fisher, Bremen, DE*

WP 302 **Comparison of Mass Spectral Imaging Techniques for the Analysis of Latent Fingerprints;** Edward Sisco[1]; Thomas Forbes[2]; Shin Muramoto[2]; Greg Gillen[2]; *[1]University of Maryland, College Park, MD; [2]National Institute of Standards and Technology, Gaithersburg, MD*

WP 303 **Proteomics Applications in Forensic Science;** Heyi Yang[1]; Kaylee Hershfeld[2]; Matthew Goldstein[3]; Bo Zhou[1]; Donald Siegel[1]; *[1]Office of Chief Med Exam, New York, NY; [2]Towson University, Towson, MD; [3]Virginia Commonwealth University, Richmond, VA*

WP 304 **Is Synchrotron X-ray Analysis Really Non-destructive?;** Christopher Rollman[1]; Mehdi Moini[2]; *[1]Towson University, Baltimor, MD; [2]George Washington University, Washington, DC*

WP 305 **Identification of Artificial Aging and Possible Forgery in Archaeological Silk;** Mehdi Moini[1]; Christopher Rollman[2]; Esther Methe[3]; Sumru Belger Krody[3]; *[1]George Washington University, Washington, DC; [2]Towson University, Baltimore, MD; [3]Textile Museum, Washington, DC*

WP 306 **Analysis of Sulfonated Anthraquinone Dyes by ESI QTOF Tandem Mass Spectrometry;** Min Li; Nelson Vinueza; David Hinks; *North Carolina State University, Raleigh, North Carolina*

WP 307 **Characterization of Complex Forensic Samples by Gas Chromatography – High Resolution Time-of-Flight Mass Spectrometry;** John Rorabeck[2]; David Alonso[1]; Joe Binkley[1]; *[1]Leco Corporation, St. Joseph, MI; [2]Berrien County Forensic Laboratory, Berrien Springs, MI*

WP 308 **Sheathless Capillary Electrophoresis-Mass Spectrometry for the Forensic Analysis of Cathinone Drugs and Metabolites;** Adrian Taylor[1]; Michael J. Y. Jarvis[1]; John Hudson[2]; *[1]AB SCIEX, Concord, Canada; [2]SCIEX Separations, Brea, CA*

WP 309 **Towards Fieldable Technologies for Comprehensive Forensic Analysis: Laser Ablation-Microwave Plasma Torch and Multimode Ambient Ionization Mass Spectrometry;** Kenyon Evans-Nguyen[1]; Hilary Brown[1]; Jennifer Speer[1]; John Gerling[2]; *[1]University of Tampa, Tampa, FL; [2]Gerling Applied Engineering, Modesto, CA*

WP 310 **Portable MS Systems for Rapid Screening of Forensic Evidence at Clandestine Drug Operations;** Christopher Mulligan; Adam O'Leary; Seth Hall; Jamie Wieland; Michael Gizzi; *Illinois State University, Normal, IL*

WP 311 **Calculation of Biogeographic Background and Identity Measurements Based on Identification of Non-Synonymous Single Nucleotide Polymorphism-Bearing Peptides in Archaeological Hair Samples;** Jonathan Hilmer[1]; Katherine Giddings[1]; Andrew Wilson[2]; Brian Bothner[1]; Glendon Parker[3]; *[1]Montana State University, Bozeman, MT; [2]University of Bradford, Bradford, England; [3]Utah Valley University, Orem, UT*

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WP 319 **Metabolite Fingerprinting and Profiling of an Endophyte *Bartalinia pondoensis* Marinc of *Citrus aurantum* L. by using LC-MS;** Ahmed M. Zaher[1]; Makboul A. Makboul[2]; Ahmad M. Moharrum[3]; Angela I. Calderón[1]; *[1]Department of Pharmacal Science, Auburn University, Auburn, Alabama; [2]Department of Pharmacognosy, Assiut University, Assiut, Egypt; [3]Mycology Center, Assiut University, Assiut, Egypt*

WP 320 **Mass Spectrometric Method for Rapid Dereplication of Natural Product Platensimycin and Its Congeners in Producer Extracts ;** Kithsiri Herath[1]; Stephen Previs[1]; Thomas Roddy[1]; Athula Attygalle[2]; Sheo Singh[1]; *[1]Merck & Co., Kenilworth, NJ; [2]Stevens Institute of Technology, Hoboken, NJ*

WP 321 **Techniques for DESI-MS Imaging of Fungal Cultures to Explore Chemical Interactions *in situ*;** Vincent Sica; Huzefa Raja; Tamam El-Elimat; Nicholas Oberlies; *UNCG, Greensboro, NC*

WP 322 **ESI Mass Spectral Study of (−) Δ^9-tetrahydrocannabinol (THC) and Cannabindiol (CBD) Photochemical Reactions Initiated During On-Line Diode Array UV Measurements;** David Hasman[1, 2]; Richard Smith[3]; *[1]British Columbia Institute of Technology, Burnaby, British Columbia, Canada; [2]Procyon Research, Vancouver, British Columbia, Canada; [3]University of Waterloo, Waterloo, Ontario, Canada*

WP 323 **Characterization of Condensed Tannin Oligomers using MALDI-TOF MS and MALDI-TOF-TOF MS;** Patricia M. Peacock; *E. I. DuPont de Nemours & Co., Wilmington, DE*

WP 324 **Evaluation of the Inhibitory Activity of Marine Natural Compounds against *Mycobacterium tuberculosis* Shikimate Kinase (*Mt*SK) by LC-MS;** Johayra Simithy[1]; Douglas Goodwin[1]; Mark T. Hamann[2]; Angela I. Calderón[1]; *[1]Auburn University, Auburn, AL; [2]The University of Mississippi, University, MS*

WP 325 **Further Characterization of the Nitrogenous Metabolome of Black Cohosh (Actaea racemosa);** Dejan Nikolic; Tamara Cisowska; David C. Lankin; Shao-Nong Chen; Guido F. Pauli; Richard B. van Breemen; *University of Illinois College of Pharmacy, Chicago, IL*

WP 326 **Determination of Betulin Purity and Impurity Profiling of Birch Bark Extracts;** Mikael Fridén; *Uppsala University, Uppsala, Sweden*

WP 327 **Analysis of Nutraceuticals for Pesticides by Time of Flight Mass Spectrometry with Fragment Ion Confirmation;** Sue Dantonio[1]; Dawn Stickle[2]; *[1]Agilent Technologies, Flatonia, TX; [2]Agilent Technologies, Wilmington, DE*

WP 328 **Tandem Mass Spectrometry Enables Characterization of the Major Phytoconstituents of "Sivakaranthai" – *Sphaeranthus Amaranthoides* – An Indian Rejuvenator Herb;** S Suhitha[1]; Mohan Kasi[2]; Rampriya Uthayakumar[2]; Venkat Manohar[2]; Kesavan Muthu[1]; K Rangasamy Siddhar[3]; Devadasan Velmurugan[1]; *[1]CAS in Crystallography & Biophysics, University of Madras, Guindy campus, Chennai, India; [2]IICMS, Chennai, India; [3]Konganar Herbal Vedic Academy, Palani, Tamil Nadu, India*

WP 329 **Improving Molecular Structural Determination of a Pantetheine Analogue by Combining the Results of Alkali Metal Adduction Assisted EID & CAD;** Samantha L. Benson[1]; David P. A. Kilgour[2]; Juan Wei[1]; Mark Barrow[1]; Manuela Tosin[1]; Peter B. O'Connor[1]; *[1]University of Warwick, Coventry, UK; [2]University of Maryland, Baltimore, Baltimore, MD*

WP 330 **Investigation of an Unprecedented Natural Non-Enzymatic Reaction with Laser Ablation Electrospray Ionization (LAESI) Mass Spectrometry Technology;** Lin Du[1]; Haddon Goodman[2]; Robert Cichewicz[1]; *[1]University of Okalahoma, Norman, OK; [2]Protea Biosciences, Inc., Morgantown, WV*

WP 331 **Development of a High-Throughput Ultrafiltration MS-based Assay for Ligands to Retinoid X Receptor;** Elisabeth Hersman; Michael Rush; Dejan Nikolic; Richard B. van Breemen; *University of Illinois College of Pharmacy, Chicago, IL*

WP 332 **High Throughput Screening for 15-Lipoxygenase Ligands Utilizing Pulsed Ultrafiltration and UHPLC-MS/MS;** Michael Rush; Elizabeth Hersman; Dejan Nikolic; Richard van Breemen; *UIC Dept of Medicinal Chemistry and Pharmacognosy, Chicago, IL*

WP 333 **Characterization of Biologically Active Compounds Produced by Isolated Strains of *Paenibacillus* with Multiple MS Platforms;** Ann M. Knolhoff; Jie Zheng; Melinda A. Mcfarland; John H. Callahan; Eric W. Brown; Timothy R. Croley; *FDA/CFSAN, College Park, MD*

WP 334 **Multi-detector Approach for Comparison and Differentiation of Similar Botanicals. UHPLC/UV/CAD/HRMS Analysis of *Ginkgo biloba* Extracts;** Kady Krivos; *Procter & Gamble, Cincinnati, OH*

WP 335 **Improved LC/FT-ICR MS for Interrogation of Natural Product Biosynthetic Enzymes "In Action";** Wendi Hale; Doug A. Hansen; Alison R. Narayan; David H. Sherman; Kristina Hakansson; *University of Michigan, Ann Arbor, MI*

WP 336 **Identification and Differentiation of *Datura* Seed Species by Direct Analysis in Real Time Mass Spectrometry;** Rabi Musah[1]; Ashton Lesiak[1]; Robert B. Cody[2]; A. John Dane[2]; *[1]University at Albany-SUNY, Albany, NY; [2]JEOL USA, Inc., Peabody, MA*

WP 337 **Characterization of Anthocyanins and Non-anthocyanin Polyphenols Using the Mass Spectrometric Behaviors of Anthocyanins in Negative Ionization Mode;** Jianghao Sun; Longze Lin; Pei Chen; *USDA-ARS FCMDL, Beltsville, US*

WP 338 **Flow Injection Mass Spectrometric Fingerprinting (FIMS) Analysis for Differentiation of Three Black Cohosh Species;** Pei Chen[1]; Huilian Huang[1]; Jianghao Sun[1]; Joe-Ann McCoy[2]; James Harnly[1]; *[1]USDA-ARS, Beltsville, MD; [2]3The NC Arboretum Germplasm Repository, Asheville, NC*

WP 339 **Characterizing Compositional Differences in Isolated Populations of Little-Devil Frog Using LC-MS and GC-MS Analysis of Alkaloids;** Gary Byrd[1]; Lauren O'Connell[2]; Sunia Trauger[1]; Luis Coloma[3]; *[1]FAS Small Molecule MS Core Facility, Harvard Univ., Cambridge, MA; [2]FAS Center for Systems Biology, Harvard University, Cambridge, MA; [3]Centro Jambatu de Investigación y Con. de Anfibios, Quito, Ecuador*

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WP 340 **An Element-Specific Examination of the Presence, Formation, and Transformation of Volatile Halogenated Organic Species in Wastewater Extracts using GC-ICPMS;** Armando Durazo; Shane A. Snyder; *University of Arizona, Tucson, AZ*

WP 341 **Simultaneous Analysis of Trace Elements in Carious Teeth by Laser Ablation Inductively Coupled Plasma Mass Spectrometry: Implications for Tooth Decay;** Khalid A. Al-Saad[1]; Mohamed A. Amr[1]; Elham Fawzi[2]; Saeed Almeer[1]; *[1]Qatar University, Doha, Qatar; [2]Queen Medical Center, Doha, Qatar*

WP 342 **Speciation without Chromatography Using Hydride Generation for the Selective Determination of Inorganic Arsenic;** Ásta Pétursdóttir[1, 3]; Stanislav Musil[1, 2]; Nils Friedrich[1]; Andrea Raab[1]; Helga Gunnlaugsdóttir[3]; Eva Krupp[1]; Jorg Feldmann[1]; Jenny Nelson[4]; *[1]TESLA-Trace Element Speciation Laboratory, Aberdeen, UK; [2]Institute of Analytical Chemistry of the ASCR, Brno, Czech Republic; [3]Matis, Environment and Genetics Department, Reykjavik, Iceland; [4]Agilent, Berkley, CA*

WP 343 **Differentiating Rice Varieties by Inductively Coupled Plasma/Mass Spectrometry Chemical Profiling;** Xinyi Wang; Peter B. Harrington; *Ohio University, Athens, OH*

WP 345 **Digital Ion Trap Mass Spectrometry for Radiological Debris Analysis;** Theresa Evans-Nguyen[1]; Di Wang[2]; Friso H.W. Van Amerom[3]; *[1]Draper Laboratory, Tampa, FL; [2]Johns Hopkins School of Medicine, Baltimore, MD; [3]Mini-Mass Consulting, Inc., St. Pete Beach, FL*

WP 346 **Use of Azo Dyes as Matrices and Chelators for the Detection of Metal Chelation Complexes using Matrix-Assisted Time-Of-Flight Mass Spectrometry;** Christopher Shiea[1]; Yi-Lun Chen[2]; Min Zong Huang[2]; Yeou-Lih Huang[1]; *[1]Dept. of Medical Lab Sci. & Biotech., KMU, Kaohsiung, Taiwan; [2]Dep. of Chemistry National Sun Yat-Sen University, Kaohsiung, Taiwan*

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WP 347 **Rapid Detection of Pesticide Residues in Okra using Ultra Performance Liquid Chromatography and Tandem Mass Spectrometry;** Dimple Shah[1]; Mark Benvenuti[1]; Kendon Graham[1]; PMN Rajesh[2]; Antionietta Gledhill[3]; Jennifer Burgess[1]; *[1]Waters Corporation, Milford, MA; [2]Waters India, Bangalore, India; [3]Waters Corporation, Manchester, UK*

WP 348 **Quantitative Analysis of Pesticides in QuEChERs Extracts using APGC/MS/MS;** Douglas Stevens[1]; Dominic P T Roberts[2]; Ramesh Rao[2]; *[1]Waters Corporation, Milford, MA; [2]Waters Corporation, Wimslow, UK*

WP 349 **Pesticide Screening of Food Samples using a Prototype Microfluidic Device;** Gregory Roman; Lauren Mullin; Gareth Cleland; Dimple Shah; Jennifer Burgess; *Waters Corporation, Milford, MA*

WP 350 **Multiresidue Pesticide Analysis from Dried Chilli Powder using LC/MS/MS;** Deepti Bhandarkar; Shruti Raju; Rashi Kochhar; Shailesh Damale; Shailendra Rane; Ajit Datar; Pratap Rasam; Jitendra Kelkar; *Shimadzu Analytical (India) Pvt. Ltd., Andheri (E), Mumbai, Maharashtra, India*

WP 351 **Highly Polar Pesticide Analysis in Food Samples by LC- MS/MS;** David Baker[1]; Mikaël Levi[2]; Eric Capodanno[3]; *[1]Shimadzu, Manchester, UK; [2]Shimadzu Corporation, Marnes-La-Vallée, France; [3]Phytocontrol, Nimes, France*

WP 352 **Design of a Software Prototype for High Resolution MS Screening of Food Products;** Hongliang (Leo) Xu; Ming Gu; Yongdong Wang; *Cerno Bioscience, Norwalk, CT*

WP 353 **An Ultra-High Performance LC-QToF workflow for Multi-Residue Pesticide Screening Using Enhanced Confirmation Criteria;** Tony Drury; *Bruker Daltonics, Coventry, UK*

WP 354 **New High-Throughput GC/MS Unknowns Analysis Workflow for Pesticide Screening in Food;** Lei Tao; Vadim Kalmeyer; Yoshimasa Tsunoi; Marc Tischler; Harry Prest; *Agilent Technologies, Santa Clara, CA*

WP 355 **Eliminating Matrix Effects during multi-Residue Pesticide Analysis by Extensive Dilution using a New Triple Quadrupole MS with Enhanced Sensitivity;** Thomas Glauner[2]; Dorothy Yang[1]; Bernhard Wuest[3]; Anabel Fandino[1]; Na Pi[1]; *[1]Agilent Technologies, Santa Clara, CA; [2]Agilent TechnologiesGmbH, Waldbronn, N/A; [3]Agilent Technologies GmBH, Waldbronn, Germany*

WP 356 **Development of a Multi-Targets for Pesticides in Tea Extracts using Liquid Chromatography-Tandem Mass Spectrometry with Dynamic MRM and Triggered MRM;** Man-Yu Zhang[1]; Yue Song[1]; Jin-Lan Sun[1]; Shao-Zhen Wang[1]; Wen-Yen Lee[2]; Shan-An Chan[2]; *[1]Agilent, Shanghai, China; [2]Agilent, Taipei, Taiwan*

WP 357 **Screening for Known and Unknown Food Residues and Contaminants using Accurate Mass LC-MS/MS and Automatic data Processing;** Andre Schreiber[1]; David Cox[1]; Nick Zhu[2]; Cheng Yuan Cai[2]; *[1]AB SCIEX, Concord, Canada; [2]AB SCIEX, Shanghai, China*

WP 358 **Simultaneous Analysis of Mycotoxins and Pesticides in Crude Extracts of Fruits and Grains by Micro Flow LC-MS/MS;** Takeo Sakuma; Matthew Noestheden; Andre Schreiber; *AB SCIEX, Concord, ON*

WP 359 **Using GC Triple Quadrupole MS for High Sensitivity, High Capacity and Selective Multi-Residue Pesticide Methods;** Paul Silcock[1]; Dwain Cardona[2]; Cristian Cojocariu[2]; Jason Cole[2]; Alexander Semyonov[2]; *[1]Thermo Fisher Scientific, Runcorn, UK; [2]Thermo Fisher Scientific, Austin, TX*

WP 360 **Development of Retention Time Locked Accurate Mass EI Mass Spectral Database and Workflow for Pesticide Residue Screening Using GC/Q-TOF;** Samanta Uclés Duque[1]; Noelia Belmonte Valles[1]; Milagros Mezcua Peral[1]; Amadeo Fernández-Alba [1]; Klaus Wilmers[2]; Peter Fuerst[2]; Sofia Aronova[3]; Kai Meng[3]; Hong Chen[3]; Jennifer Gushue[3]; Maithilee Samant[3]; *[1]University of Almeria, Almeria, Spain; [2]Chemical and Veterinary Analytical Institute, Muenster, Germany; [3]Agilent Technologies, Inc., Santa Clara, CA*

WP 361 **High-Throughput Determination of 5 Neonicotinoids in Honey using Differential Ion Mobility and LDTD-MS/MS;** Sylvain Letarte; Gregory Blachon; Alex Birsan; Pierre Picard; Serge Auger; *Phytronix Technologies Inc., Quebec, QC*

WP 362 **Evaluation of Different HILIC and Normal-Phase Approaches for the Liquid Chromatography/Mass Spectrometry-based Determination of Challenging Highly Polar Pesticides;** Juan F Garcia-Reyes[1]; Andrea Vass[2]; Patricia Pérez-Ortega[1]; Mihaly Dernovics[2]; Antonio Molina-Díaz[1]; *[1]University of Jaen, Jaen, Spain; [2]Corvinus University of Budapest, Budapest, Hungary*

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WP 364 **Improving Mass Spectral Analysis of Oligoribonucleotides Obtained from Ribonuclease U2 Digests;** Whitney Houser; Patrick Limbach; *University of Cincinnati, Cincinnati, Ohio*

WP 365 **Improving the Detection of Thionucleosides by Derivatization With Benzylhalogenides;** Jef Rozenski; *Rega Institute, Leuven, Belgium*

WP 366 **Identification and Quantification of Oxidatively Generated α-2'-deoxynucleosides by Liquid Chromatography-Tandem Mass Spectrometry Coupled with the Stable Isotope-Dilution Method;** Nicholas J. Amato; Candace R. Guerrero; Yinsheng Wang; *University of California, Riverside, CA*

WP 367 **LC-MS/MS Detection of Oxidatively Induced 5-Methyl-2'-eoxycytidine Derivatives in Isolated DNA;** Candace Guerrero; Yinsheng Wang; *UC Riverside, Riverside, CA*

WP 368 **Characterization of DNA Adducts using Ultraviolet Photodissociation;** Julia Aponte; Jennifer Brodbelt; *University of Texas Austin, Austin, TX*

WP 369 **Gas-Phase Structural Characterization of Anionic RNA Oligonucleotides;** Kevin Ileka; Jessica Rabuck; Brandon Ruotolo; Kristina Hakansson; *University of Michigan, Ann Arbor, MI*

WP 370 **Assessing Accuracy and Precision of DNA Composition Determination Based on Digestion to Deoxynucleotide Monophosphates and Mass Spectrometry Analysis;** John-Emmett Mahon; Deepali Rathore; Eric D. Dodds; *University of Nebraska, Lincoln, NE*

WP 371 **Determination of Antisense Oligonucleotide Purity after Correction LC-MS Analysis;** Jiongwei Pan; *PPD, Middleton, WI*

WP 372 **Comprehensive Mass Spectrometry-Based Structural Determination of Small Subunit Ribosomal RNA: Characterization of N^4-acetylcytidine and Identification of the Responsible Enzyme;** Masato Taoka[1]; Daisuke Ishikawa[1]; Yuko Nobe[1]; Hideaki Ishikawa[2]; Hiroshi Nakayama[3, 4]; Yoshio Yamauchi[1]; Nobuhiro Takahashi[2, 4]; Toshiaki Isobe[1, 4]; *[1]Department of Chemistry, Tokyo Metropolitan Univ., Tokyo, Japan; [2]Department of Applied Biological Science, Tokyo Un, Tokyo, Japan; [3]RIKEN, Wako, Japan; [4]CREST, JST, Tokyo, Japan*

WP 373 **Steps toward Understanding the Molecular Basis of Bladder Carcinogenesis. Validation of a nanoLC-ESI-MS/MS platform and Application to 4-aminobiphenyl Dosing Studies;** Joshua Klaene[1]; Arup Bhattacharya[2]; Yuesheng Zhang[2]; James Glick[1]; Paul Vouros[1]; *[1]Northeastern University, Boston, MA; [2]Roswell Park Cancer Institute, Buffalo, NY*

WP 374 **Comprehensive Ribonucleotide Modification Maps as Possible Tracking Tools for the Multistage Processes Involved in Cell Transformation from Normalcy to Malignancy;** Rebecca E. Rose; Jennifer Giza; D. Fabris; *The RNA Institute, University at Albany, Albany, NY*

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WP 375 **Molecular Motion in Porous Substrates under Electrospray Ionization Conditions;** Bin Hu; Zhongping Yao; *Department of Applied Biology and Chemical Technol, The Hong Kong Polytechnic University, Hong Kong, P. R. China*

WP 376 **A Comparative Study of Ionization Efficiency of Solvent Assisted Inlet Ionization (SAII) versus Electrospray Ionization (ESI);** Madeline Fenner; Charles McEwen; *University of the Sciences, Philadelphia, PA*

WP 377 **Ionization Mechanism of Positive-Ion Nitrogen Direct Analysis in Real Time;** Liguo Song; Zhenqian Zhu; John Bartmess; *Department of Chemistry, University of Tennessee, Knoxville, Tennessee*

WP 378 **Comparison of desorption Atmospheric Pressure Photoionization and Direct Analysis in Real Time;** Riikka Räsänen[1]; Prabha Dwivedi[2, 3]; Facundo M. Fernández[2, 3]; Tiina J. Kauppila[1]; *[1]University of Helsinki, Helsinki, Finland; [2]Georgia Inst. of Technology, Atlanta, GA; [3]Center for Chemical Evolution, Atlanta, GA*

WP 379 **Investigation of the Chemical Interactions of the Triad: Sample, Solvent and Surface and Their Effects in DESI-MS Imaging Analysis;** Elaine Cristina Cabral; Wagner Polcelli; Demian Ifa; *York University, Toronto, Canada*

WP 380 **Characterization of Ion Transport in Desorption Electrospray Ionization using Time-of-Flight Secondary Ion Mass Spectrometry;** Shin Muramoto; Thomas Forbes; Matthew Staymates; Greg Gillen; *National Institute of Standards and Technology, Gaithersburg, MD*

WP 381 **Development of Solid Probe Assisted Electrospray Ionization Mass Spectrometry;** Mridul Kanti Mandal[1]; Kenzo Hiraoka[2]; *[1]University of Notre Dame, Notre Dame, IN; [2]University of Yamanashi, Kofu, Yamanashi, Japan*

WP 382 **Relative Humidity Control for Reproducible Atmospheric Pressure Chemical Ionization Mass Spectrometry;** G. Asher Newsome[1]; Kevin J. Johnson[2]; *[1]Nova Research, Alexandria, VA; [2]U.S. Naval Research Laboratory, Washington, DC*

WP 383 **Controlled *in situ* Formation of Molecular Ions, or Protonated Molecules, under Atmospheric Pressure Helium Plasma Ionization Mass Spectrometry (HePI-MS);** Athula B. Attygalle; Rekha Gangam; Julius Pavlov Julius Pavlov; Freneil Jariwala; *Stevens Institute of Technology, Hoboken, NJ*

WP 384 **The Importance of Sample form and Surface Temperature in Plasma Assisted Desorption Ionisation Mass Spectrometry (PADI-MS);** Tara La Roche Salter; Ian Gilmore; Josephine Bunch; *National Physical Laboratory, Teddington, UK*

WP 385 **First-Principle Transport Modeling of Protonated Peptides and Water Clusters in Ion Funnels and Nozzle-Skimmer Interfaces;** Sergey Gimelshein[1]; Natalia Gimelshein[2]; Taylor Lilly[3]; Rebecca Webb[3]; Eugene Moskovets[4]; *[1]University of Southern California, Los Angeles, CA; [2]Gimel Inc., Montrose, CA; [3]University of Colorado Colorado Springs, Colorado Springs, CO; [4]MassTech Inc., Columbia, MD*

WP 386 **A VAMAS Interlaboratory Study for Desorption Electrospray Ionisation (DESI) Intensity Repeatability and Constancy;** Elzbieta Gurdak; Felicia M. Green; Martin P. Seah; Paulina D. Rakowska; Tara La Roche Salter; Ian S. Gilmore; Josephine Bunch; *National Physical Laboratory, Teddington, UK*

WP 387 **Improved Analyte Sensitivity using Additives with Matrix-Assisted Inlet Ionization Mass Spectrometry;** Nicholas Chubatyi; Charles McEwen; *University of the Sciences, Philadelphia, PA*

WP 388 **Direct Profiling of Unsaturated Lipids in Tissue Using Extraction Spray Mass Spectrometry with Paternò-Büchi Reaction;** Yuan Su; Xiaoxiao Ma; Yu Xia; Zheng Ouyang; *Purdue University, West Lafayette, IN*

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WP 389 **Evaluation of ASAP- and DART-MS for the Analysis of Sulfur-Containing Coal-Related Model Compounds;** Xing Fan[1]; Ai-Li Zheng[1]; Hao Li[2]; Xian-Yong Wei[1]; Zhong-Hai Ni[1]; Shou-Ze Wang[1]; Yun-Peng Zhao[1]; Zhi-Min Zong[1]; *[1]China University of Mining & Technology, Xuzhou, China; [2]Los Alamos National Laboratory, Los Alamos, NM*

WP 390 **Paper Spray Mass Spectrometry (PS-MS) for the Quantification of Small Molecules Drugs in Plasma;** John Takyi-Williams[1]; Haiqing Gong[1]; Yang Wang[2]; Wenying Jian[2]; Kai Tang[1]; *[1]Nanyang Technological University, Singapore, Singapore; [2]Janssen, a division of Johnson & Johnson, Shanghai, China*

WP 391 **Forensic Application of Solvent Assisted Ionization Inlet Mass Spectrometry (SAII-MS);** Lyla Hassan; *USciences, Philadelphia, PA*

WP 392 **The Analysis of Omega-3 Fatty Acid Oxidation by DESI and ESI-MS;** Raymond West[1]; Rachel Marvin[1]; Dragan Isailovic[1]; Kenneth Hensley[2]; *[1]University of Toledo, Toledo, OH; [2]University of Toledo Medical Center, Toledo, OH*

WP 393 **Applications of Desorption Corona Beam Ionization-Mass Spectrometry;** Yuki Hashi[1]; Shin-ichi Kawano[1]; Changkun Li[1]; Qian Sun[1]; Taohong Huang[1]; Tomoomi Hoshi[2]; Wenjian Sun[3]; *[1]Shimadzu (China) Co., Ltd., Shanghai, China; [2]Shimadzu Corporation, Kyoto, Japan; [3]Shimadzu Research Laboratory (Shanghai) Co., Ltd., Shanghai, China*

WP 394 **Rapid Detection and Quantification with Novel Sorbent-Coated Mesh Substrate Using DART Mass Spectrometry;** Douglas B. Henderson; Johnny K. Ho; Yvette R. Hudson; William A. Harris; Danielle N. Dickinson; *Northrop Grumman, Linthicum Heights, MD*

WP 395 **Single-probe Ionization Device: Development and Application to the Detection of Sulfated Post-Translationally Modified Proteins;** Rachel Vowcicefski; Ning Pan; Zhibo Yang; *University of Oklahoma, Norman, OK*

WP 396 **Quantitative Analysis of Phosphoric Acid Esters in Aqueous Samples by Stir Bar Sorptive Extraction Combined with Isotope Dilution DART-HRMS;** Maxime Bridoux; Françoise Leprince; Frédéric Progent; Xavier Machuron-Mandard; *CEA, DAM, DIF, Arpajon, France*

WP 397 **Exploration of Ambient Ionization Methods for Identification and Characterization of Biomarkers for Melanoma;** Michael T. Costanzo[1]; Candice Ulmer[1]; Shekher Mohan[2]; Nikolaus Gravenstein[3]; Richard A. Yost[1]; *[1]Dept. of Chemistry, University of Florida, Gainesville, FL; [2]CTRND, College of Medicine, University of Florida, Gainesville, FL; [3]Dept of Anesthesiology, University of Florida, Gainesville, FL*

WP 398 **Characterizing High-Valent Iron Porphyrin C-H Hydroxylation Reactions by Reactive Transmission Mode Desorption Electrospray Ionization Mass Spectrometry;** Kevin Peters; Kevin Parker; Richard Perry; *University of Illinois, Champaign, Illinois*

WP 399 **Lipidomic Classification of Human Mammary Cancer Cells According to Metastatic Potential and Oncogene Expression by Desorption Electrospray Ionization Mass Spectrometry;** Heather Robison; Troy Comi; Seung Ryu; Richard Perry; *University of Illinois at Urbana-Champaign, Champaign, IL*

WP 400 **Comparison of Paper Spray -MS/MS and Current Techniques for Screening Drugs of Abuse in Urine;** Joseph H Kennedy[1]; Justin Wiseman[1]; Brian C. Laughlin[1]; Greg Lyons[1]; Nicholas E Manicke[2]; Dianne Rampersaud[3]; Howard Lee[3]; *[1]Prosolia, Inc., Indianapolis, IN; [2]IUPUI, Indianapolis, IN; [3]Clinitox Diagnostix, Mississauga, Ontario*

WP 401 **Characterization of Ammonium Nitrate Vapor with Flowing Atmospheric-Pressure Afterglow Mass Spectrometry;** G. Asher Newsome[1]; F. Lucus Steinkamp[2]; Braden C. Giordano[3]; *[1]Nova Research, Alexandria, VA; [2]National Research Council, Washington, DC; [3]U.S. Naval Research Laboratory, Washington, DC*

WP 402 **Applications of Confined DART (Direct Analysis in Real Time) Ion Source for Online *in vivo* Analysis of Human Breath;** Yue Li; *The University of Maryland, College Park, MD*

WP 403 **Effective Use of Direct Ionization Mass Spectrometry for Screening Food, Packaging & Cosmetics;** Luke Ackerman[1]; Karim Bentayeb[2]; Timothy Begley[1]; *[1]FDA Center for Food Safety, College Park, MD; [2]Analytical Chem., Univ. Zaragoza, Zaragoza, Spain*

WP 404 **Rapid Determination of Clenbuterol in Pig's Urine by Direct Analysis in Real Time Tandem Mass Spectrometry;** Zong Yang[1]; Xiaokun Duan[1]; Charles C. Liu[1]; Qinghe Zhang[2]; Xiuqin Li[2]; Dazhou Chen[2]; *[1]ASPEC Technologies Limited, Beijing, China; [2]National Institute of Metrology, Beijing, China*

WP 405 **Mass Spectrometry Imaging of Skin Wound Healing Biomarkers Using Laser Ablation Electrospray Ionization Mass Spectrometry (LAESI-MS);** Pamela Cantrell[1]; Callee Walsh[1]; Greg Kilby[1]; Tanya Shaw[2]; *[1]Protea Biosciences Group, Inc., Morgantown, WV; [2]St. George's, University of London, London , UK*

WP 406 **Fingerprint of Anthocyanins from Two Varieties of Beans using ESI-MS and Direct Infusion;** Carlos Fidelis[1]; Renata Sancho[2]; Marcos N Eberlin[1]; Glaucia Pastore[2]; *[1]Institute of Chemistry - University of Campinas, Campinas, Brazil; [2]Faculty of Food Eng. University of Campinas, Campinas, Brazil*

WP 407 **Rapid Determination and Semi-Quantitative Analysis of Dicyandiamide in Milk by Direct Analysis in Real Time (DART) Time-Of-Flight Mass Spectrometry;** Liya Zhang[1]; Wei Yong[2]; Xiaogang Chu[2]; Tianyang Guo[1]; Yiyang Dong*[1]; Xiaokun Duan[3]; Zong Yang[3]; Charles C. Liu[3]; *[1]Beijing University of Chemical Technology, Beijing, China; [2]Chinese Academy of Inspection and Quarantine, Beijing, China; [3]ASPEC Technologies Limited, Beijing, China*

WP 408 **Rapid Screening of the SAMHSA (NIDA) Panel in Urine using DSA/TOF;** Avinash Dalmia[1]; Leslie Sullivan[1]; George Perkins[1]; Craig M. Whitehouse[2]; *[1]Perkinelmer, Shelton, CT; [2]PerkinElmer, Branford, CT*

WP 409 ***In situ* Detection of Pnicogen Elements in Minerals by Ambient-Pressure Helium Plasma Ionization Mass Spectrometry;** Julius Pavlov; Athula Attygalle; *Stevens Institute of Tech, Hoboken, NJ*

WP 410 **Detection and Quantification of Naturally Occurring Ions in Ethylene Flames and the Effect of Ethanol Addition on Polyaromatic Hydrocarbon Formation;** Thomas Bierkandt[1]; Denis A. Knyazkov[2]; Erdal Akyildiz[1]; Tina Kasper[1]; *[1]University of Duisburg-Essen, Duisburg, Germany; [2]Institute of Chemical Kinetics and Combustion, Novosibirsk, Russia*

WP 411 **Quantitative Assessment of Amino Acid Profiles in Foodstuffs with Microwave Hydrolysis and Desorption Electrospray Ionization Mass Spectrometry;** Jonathan Person; Christopher Mulligan; *Illinois State University, Normal, IL*

WP 412 **Molecular Ionization from Carbon Nanotube Paper;** Rahul Narayanan[1]; Depanjan Sarkar[1]; R. Graham Cooks[2]; Pradeep T. [1]; *[1]IIT Madras, Chennai, India; [2]Purdue University, West Lafayette, IN*

WP 413 **A Novel Approach to Determine Tyrosine, 3-Chlorotyrosine and 3-Nitrotyrosine in Human Plasma by DART-MS/MS;** Yu-Qiao Song[1]; Jie Liao[1]; Cheng Zha[1]; Bin Wang[1]; Zong Yang[2]; Charles C. Liu[2]; *[1]Medical Exp & Anal Ctr PLA General Hospital, Beijing, China; [2]ASPEC Technologies Limited, Beijing, China*

WP 414 **A Rapid Procedure Using Direct Analysis in Real Time-Mass Spectrometry to Screen for Adulterants in Herbal Dietary Supplements;** Xiaokun Duan[1]; Yu Zhao[2]; Lihui Yin[2]; Changqin Hu[2]; Zong Yang[1]; Charles C. Liu[1]; *[1]ASPEC Technologies Limited, Beijing, China; [2]National Institutes for Food and Drug Control, Beijing, China*

WP 415 **Rapid Quantification of Drugs in Blood Using Solid Phase Microextraction Coupled to Thermal Desorption Electrospray Ionization Mass Spectrometry;** Chin-Hsiung Wang[1]; Min Zong Huang[2]; Jo-Han Chou[2]; Jentaie Shiea[2]; *[1]Protech Pharmaservices Co., Taipei, Taiwan; [2]National Sun Yat-Sen Univ., Kaohsiung, Taiwan*

WP 416 **Authenticity Assessment of Imported Olive Oil using Direct Analysis in Real Time Mass Spectrometry;** Fengqi Wu[1]; Zhenfeng Yue*[1]; Xiaokun Duan[2]; Zong Yang[2]; Honghui Hua[1]; Weidong Wu[1]; Charles C. Liu[2]; *[1]Entry-Exit Inspection and Quarantine Bureau, Shenzhen, China; [2]ASPEC Technologies Limited, Beijing, China*

WP 418 **Atmospheric Pressure Photoionization: Establishing the Ionization Limits for Synthetic Organic and Organometallic Complexes;** Konstantin O. Zhurov; Laure Menin; Yury O. Tsybin; *Ecole Polytechnique Federale de Lausanne, Lausanne, Switzerland*

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WP 421 **Targeted Exposomics: Profiling Urinary Organic Acids;** Anthony Macherone[1,2]; Timothy Conjelko[1]; *[1]Agilent Technologies, Wilmington, DE; [2]Johns Hopkins University, Baltimore, MD*

WP 422 **Using Fine Needle Aspiration Combined with Matrix-Assisted Laser Desorption Ionization/Time-of-Flight Mass Spectrometry to Diagnose Breast Cancer;** Hung Su[1]; Ya-Fei Bao[1]; Yi-Tzu Cho[2]; Jentaie Shiea[1]; Pei-Yung Nien[3]; Ya-Hui Chang[3]; Ming-Feng Hou[3]; *[1]National Sun Yat-Sen Univ., Kaohsiung, Taiwan; [2]Yuh-Ing Junior College of Health Care & Management, Kaohsiung, Taiwan; [3]Cancer Research Center, Kaohsiung Medical Univ., Kaohsiung, Taiwan*

WP 423 **A Validated LC–MS/MS Method for Rapid Methotrexate Determination in Human Saliva and Its Application to an Excretion Evaluation Study;** Igor Rodin; Arkady Braun; Andrey Stavrianidi; Irina Ananieva; Oleg Shpigun; *MSU, Moscow, RU*

WP 424 **Detecting Lymph Node Metastases *in*-vivo with Rapid Evaporative Ionization Mass Spectrometry;** Julia Balog[1, 2]; Attila Enyedi[3]; Orsolya Nagyhazi[3]; Laszlo Toth[3]; Peter Varga[2]; Zoltan Takats[1]; *[1]Imperial College London, London, UK; [2]Medimass ltd, Budapest, Hungary; [3]Debrecen University, Debrecen, Hungary*

WP 425 **Using MRM³ for Removing Interferences in Plasma Metanephrines Analysis: The Quest for an Improved Clinical Service;** Michael Wright[1]; Rebecca Thomas[1]; Chris Hodgkins[2]; *[1]SEALS, Prince of Wales Health Pathology, Sydney, Australia; [2]ABSciex, Sydney, Australia*

WP 426 **A HILIC-ESI-MS/MS Method for the Quantification of Free and Total Carnitine for Patient Care;** Tiffany Thomas; Jorge Sepulveda; Michael Pesce; *Columbia University Medical Center, New York, NY*

WP 427 **An Improved Internal Standard Ratio Quantitation Technique for Clinical Diagnostics;** Brian Rappold; *Essential Testing, Collinsville, IL*

WP 428 **Burden of Proof: Providing Clinical Confidence in the Face of Analytical Fallacies;** Martin Green; Christopher Shuford; Patricia Holland; Russell Grant; *Laboratory Corporation of America, Burlington, nc*

WP 429 **Measurement of Low Level Endogenous Biomarkers for Use in Clinical Diagnostics;** Stacy Dee; Christopher Shuford; Matthew Crawford; Patricia Holland; Yvonne Wright; Martin Green; Russell Grant; *LabCorp, Burlington, NC*

WP 430 **A Novel Approach for the Diagnosis of Gaucher Disease using Flow Injection Tandem Mass Spectrometry;** Jie Chen[1]; Michael Bennett[1, 2]; *[1]Children's Hospital of Philadelphia, Philadelphia, PA; [2]University of Pennsylvania, Philadelphia, PA*

WP 431 **An LC-ESI-MS/MS Method for Plasma Oxysterols Derivatized as Dimethylaminobutyrate Esters;** David W. Johnson[1]; Sara Boenzi[2]; *[1]SA Pathology/Women's and Children's Hospital, North Adelaide , Australia; [2]Ospedale Pediatrico Bambino Gesu, Rome, Italy*

WP 432 **Simultaneous Measurement of 6α- Hydroxy-Melatonin Sulfate and Cortisol in Human Urine by LC/MS/MS;** Bhasin Shalender; Xiaohong Chen; Gordon Harold Williams; Liming Peng; *Brigham and Women's Hospital, Boston, Massachusetts*

WP 433 **A Fast and Effective Approach for the Analysis of Urinary Cortisol, Cortisone, Prednisolone and Prednisone using SPE and LC-MS/MS;** Xianrong (Jenny) Wei; Sean Orlowicz; *Torrance, ca*

WP 434 **Development of a Sensitive Ultrapressure Liquid Chromatography Tandem Mass Spectrometry Method for Quantification of Dihydrotestosterone in Human Serum;** Karina Helena Morais Cardozo; Jessica Silva Salgueiro; Valdemir Melechco Carvalho; *Fleury Group, São Paulo, Brazil*

WP 435 **Enhanced Application Stability utilizing SPLC-MS/MS;** Christopher L. Esposito[1]; Francois A. Espourteille[2]; *[1]Thermo Scientific, Franklin, MA; [2]Thermo Fisher Scientific, Franklin, MA*

WP 436 **Quantitation of Reduced and Oxidized Glutathione and Cysteine in Acid-Preserved Samples by Hydrophilic Interaction Liquid Chromatography-Mass Spectrometry;** Alan W. Taylor; Deborah Hobbs; Debbie J. Mustacich; Balz Frei; *Oregon State University, Corvallis, OR*

WP 437 **Ultrafast Antiretroviral Drug Analysis in Human Serum;** Kari Schlicht; Vaughn Miller; William A. Lamarr; *Agilent Technologies, Wakefield, MA*

WP 438 **Plasma Citric Acid Cycle Intermediates Levels by LC-MS/MS - A Prospective Application in Diagnosis of Mitochiondrial Disorders;** Yana Sandlers[1, 2]; Richard Kelley[1, 2]; *[1]Kennedy Krieger Institute, Division of Metabolism, Baltimore, MD; [2]Johns Hopkins University, Department of Pediatrics, Baltimore, MD*

WP 439 **Direct Measurement of Pancreatic Polypeptide in Human Serum and plasma by Immunocapture-Liquid-Chromatography-Tandem Mass Spectrometry;** Hernando Escobar; Mark M. Kushnir; Alan L. Rockwood; A. Wayne Meikle; *ARUP Laboratories-University of Utah, Salt Lake City, UT*

WP 440 **Fast and Robust LC-MS/MS Method for Determination of the Alcohol Biomarker Phosphatidylethanol (PEth) in Whole Blood using Automated Extraction;** Anders Blomgren; *Clinical Chemistry, Lund, Sweden*

WP 441 **UPLC-MS/MS Multiplex Analysis for Mass or High-Risk Screening of Creatine Synthesis and Transport Disorders, Triple H Syndrome and OTC Deficiency;** Pamela Lavoie; Bruno Maranda; Christiane Auray-Blais; *Université de Sherbrooke/CRC-CHUS, Sherbrooke, Canada*

WP 442 **Mass Spectrometry-Based Elemental Bioimaging and Speciation Analysis as Diagnostic Tools for Nephrogenic Systemic Fibrosis;** Uwe Karst; Kristina Wentker; Marvin Birka; Christoph Wehe; Michael Holtkamp; Michael Sperling; *University of Münster, Münster, Germany*

WP 443 **Multiplex Newborn Screening of Lysosomal Storage Disorders using Flow Injection Tandem Mass Spectrometry;** Mariana Barcenas[1]; Martin Sadilek[1]; C. Ronald Scott[3]; Frantisek Turecek[1]; Michael Gelb[1, 2]; *[1]University of Washington, Department of Chemistry, Seattle, WA; [2]University of Washington, Dept. of Biochemistry, Seattle, WA; [3]University of Washington, Dept. of Pediatrics, Seattle, WA*

WP 444 **Clinical Screening of Hemoglobinopathies using Top Down Mass Spectrometry;** James Scrivens[1]; Smith Julia[3]; Sarah Nicolle[4]; Jane Newbold[4]; Krisztina Radi[2]; *[1]Univ of Warwick, Coventry, UK; [2]University of Warwick - Life Sciences, Coventry, UK; [3]Bruker, Coventry, UK; [4]Coventry and Warwickshire Hospital, Coventry, UK*

WP 445 **Top-down MS/MS Hemoglobinopathy Screening of Neonatal Samples;** Roger Theberge[1]; Carolyn Hoppe[2]; Christian Heckendorf[1]; David H. K. Chui[1]; Catherine E. Costello[1]; Mark E. Mccomb[1]; *[1]Boston University School of Medicine, Boston, MA; [2]Children's Hospital & Research Center Oakland, Oakland, CA*

WP 446 **Towards the Development of Saliva-Based Malaria Diagnostics: Mass Spectrometry Based Identification of Gametocyte Proteins in Human Saliva;** Dingyin Tao[1]; Isabelle Morlais[2]; Tamaki Kobayashi[1]; William John Moss[1]; Rhoel R Dinglasan[1]; *[1]Johns Hopkins Bloomberg School of Public Health, Baltimore, MD; [2]Laboratoire de Recherche sur le Paludisme, Yaoundé, Cameroun*

WP 447 **Apolipoprotein E ε2, ε3 and ε4 Isoform Specific Quantification in Human Sera using LC-MRM;** Christophe Hirtz[1]; Jérôme Vialaret[1]; Susanna Schraen[2]; Benlian Pascale[3]; Sandrine Mary[3]; Laurent Tiers[1]; Baptiste Gor[1]; Pauline Bros[1]; Constance Delaby[1]; Audrey Gabelle[1, 4]; Sylvain Lehmann[1]; *[1]CHU de Montpellier and UM1, Montpellier, France; [2]Inserm U837, Lille, France; [3]U4M, Lille, France; [4]Centre Mémoire Ressources Recherche LR, Montpellier, France*

WP 448 **Sample Treatment and Stability of Urine Samples from Patients with APRT Deficiency Used in Mass Spectrometry Based Clinical Diagnostics;** Margret Thorsteinsdottir[1, 2]; Finnur F Eiriksson[1, 2]; Hrafnhildur L Runolfsdottir[1]; Vidar O Edvardsson[3]; Runolfur Palsson[1, 3]; *[1]University of Iceland, Reykjavik, Iceland; [2]ArcticMass, Reykjavik, Iceland; [3]Landspitali – The National University Hospital, Reykjavik, Iceland*

WP 449 **Development and Validation of 2D-LC/MS/MS Method for Quantitative Analysis of 1α,25-Dihydroxylvitamin D3 in Human Serum;** Daryl Kim Hor Hee[1]; Lawrence Soon-U Lee[1]; Edwin Zhi Wei Ting[2]; Jie Xing[2]; Sandhya Nargund[2]; Miho Kawashima[3]; Zhaoqi Zhan[2]; *[1]Department of Medicine Research Laboratories,, National University of Singapore, 6 Science Drive , 2, Singapore 117546; [2]Customer Support Centre, Shimadzu (Asia Pacific), Pte Ltd, 79 Science Park Drive, #02-01/08,, Singapore 118264; [3]Global Application Development Centre, Shimadzu, Corporation, 1-3 Kanda Nishihiki-cho, Chiyoda-ku,, Tokyo 101-8448, Japan*

WP 450 **The Analysis of Vitamin D Metabolites in Serum by LC-MS/MS;** Shun-Hsin Liang; Sharon Lupo; *Restek, Bellefonte, PA*

WP 451 **Stability of 25-Hydroxyvitamin D Metabolites in Calibration Solutions used for LC-MS Assays;** Mary Bedner; Katrice Lippa; *NIST, Gaithersburg, MD*

WP 452 **Systematic Investigation of Isobaric Interferences in Vitamin D Analysis by Differential Ion Mobility Spectrometry and FTICR Mass Spectrometry;** Florian Meier[1]; Timon Geib[1]; Pascal Schorr[1]; Yulin Qi[1]; Mark Bokhart[2]; Elias Rosen[2]; David Muddiman[2]; Dietrich Volmer[1]; *[1]Saarland University, Saarbrücken, Germany; [2]North Carolina State University, Raleigh, NC*

WP 453 **Value Assignment of Vitamin D Metabolites in Vitamin D Standardization Program (VDSP) Serum Samples;** Karen Phinney[1]; Johanna Camara[2]; Susan Tai[2]; Linda Thienpont[3]; Blaza Toman[2]; Antonio Possolo[2]; Christopher Sempos[4]; *[1]National Institute of Standards and Technology, Gaithersburg, MD; [2]NIST, Gaithersburg, MD; [3]Ghent University, Ghent, Belgium; [4]NIH Office of Dietary Supplements, Bethesda, MD*

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WP 454 **Shotgun Proteomics of Human Sputum Identifies Potential Cancer and Metabolic Biomarkers from Exposures to Diesel and Biodiesel Exhaust;** Aaron Mehus[1, 2]; Sally Littau[2]; Eric Lutz[2]; Jefferey Burgess[2]; *[1]University of Arizona College of Medicine, Tucson, AZ; [2]University of Arizona College of Public Health, Tucson , AZ*

WP 455 **Deconvolution of Chemical Signals from Endangered African Wild Dogs;** Peter Apps[1]; John Moncur[2]; *[1]Botswana Predator Conservation Trust, Maun, Botswana; [2]SpectralWorks Ltd, Runcorn, UK*

WP 456 **An LC/MS/MS Screening Approach to Discover Unknown Hemoglobin Adducts;** Henrik Carlsson; Hans von Stedingk; Ulrika Nilsson; Margareta Törnqvist; *Stockholm University, Stockholm, Sweden*

WP 457 **Proteomic Investigation of Sera and Saliva Samples from Children with Autism Spectrum Disorder (ASD) and Matched Controls;** Kelly Wormwood[1]; Armand G. Ngounou Wetie[1]; Izabela Sokolowska[1]; Katherine Beglinger[1]; Jeanne Ryan[2]; Alisa Woods[1]; Costel Darie[1]; *[1]Clarkson University, Potsdam, NY; [2]SUNY Plattsburgh, Plattsburgh, NY*

WP 458 **Mass Selected Site-Specific Core-Fucosylation of Ceruloplasmin in Alcohol-Related Hepatocellular Carcinoma;** Haidi Yin[1]; Zhenxin Lin[1]; Song Nie[1]; Jing Wu[1]; Zhijing Tan[1]; Jianhui Zhu[1]; Jianliang Dai[2]; Ziding Feng[2]; Jorge Marrero[3]; David Lubman[1]; *[1]University of Michigan Medical Center, Ann Arbor, MI; [2]University of Texas MD Anderson Cancer Center, Houston, TX; [3]University of Texas Southwestern Medical Center, Dallas, TX*

WP 459 **Mass Spectrometric Investigation of Potential Biomarkers of Cold Stress in Saliva;** Rachel Marvin; Brooke Saepoo; Jonathan Tomko; Dr. Kenneth Hensley; Dr. David Giovannucci; Dr. Dragan Isailovic; *University of Toledo, Toledo, Ohio*

WP 460 **Discovery-to-Targeted Biomarkers and Therapeutic Targeted Pipeline;** Rebeca Kawahara[1]; Gabriela Meirelles[1]; Henry Herbele[2]; Daniela Granato[1]; Sami Yokoo[1]; Rafael Canevarolo[4]; Romênia Domingues[1]; Flavia Winck[1]; Ana Carolina Prado[8]; Paulo Filgueiras[5]; Karen Cruz[9]; Alexandre Barbuto[9]; Ronei Poppi[5]; Rosane Minghim[2]; Guilherme Telles[7]; Felipe Paiva[3]; Jay Fox[6]; Alan Santos-Silva[3]; Ricardo Coletta[3]; Nicholas Sherman[6]; Adriana Paes Leme[1]; *[1]Laboratório Nacional de Biociências, Campinas, Brazil; [2]Instituto de Ciências Matemáticas e de Computação, São Carlos, SP; [3]Faculdade de Odontologia de Piracicaba, UNICAMP, Piracicaba, SP; [4]Centro Infantil Boldrini, Campinas, SP; [5]Instituto de Química, UNICAMP, Campinas, SP; [6]W. M. Keck Biomedical Mass Spectrometry Lab, Charlottesville, VA; [7]Instituto de Computação, UNICAMP, Campinas, SP; [8]Instituto do Câncer do Estado de São Paulo, São Paulo, SP; [9]Instituto de Ciências Biomédicas, USP, São Paulo, SP*

WP 461 **Use of Mass Spectrometry for Identification of Biomarkers of Exposure to Flame Retardants;** Manori Silva[1]; Donald Hilton[1]; Jonathan Furr[2]; L Earl Gray[2]; James Preau[1]; Antonia Calafat[1]; Xiaoyun Ye[1]; *[1]CDC, Atlanta, GA; [2]FDA, Research Triangle Park, NC*

WP 462 **Mass Spectrometry in Clinical Diagnosis: A Preliminary Application in Tumor Cellular Proteomics for Biomarker Discovery;** Ming-Hui Yang[1]; Yung-Yu Chang[2]; Tsung-Min Wang[2]; Yu-Chang Tyan[2]; *[1]National Applied Research Laboratories, Hsinchu, Taiwan; [2]Kaohsiung Medical University, Kaohsiung, Taiwan*

WP 463 **Comparative Label-Free Proteomics of Pericytes, Circulatory Fibrocytes, in contact with Vascular Endothelium (huVEC);** Harsha P. Gunawardena[2]; Jinqing Li[1]; *[1]Department of Surgery, School of Medicine, UNC-Chapel Hill, NC; [2]Program in Molecular Biology & Biotechnology, UNC-Chapel Hill, NC*

WP 464 **Lipids Regulators in B-cell Chronic Lymphocytic Leukemia;** Huan Kang; David Bearss; John Prince; *Brigham Young University, Provo, Utah*

WP 465 **Identification of New Toxicity Biomarkers for Microbicides;** Benben Song[1]; Scott Fields[2]; Bareza Rasoul[1]; Carsten Alt[2]; Mary J. Tanga[2]; Jon Mirsalis[2]; Annalisa D'Andrea[2]; *[1]SRI International, Harrisonburg, VA; [2]SRI International, Menlo Park, CA*

WP 466 **Correction of Precursor and Product Ion Abundances in Order to Standardize CID Spectra and Improve Ecom50 Accuracy for Non-Targeted Metabolomics;** Ritvik Dubey[1]; David Grant[1]; Dennis Hill[1]; Steven Lai[2]; Chen

Ming Hui[3]; [1]*University of Connecticut School of Pharmacy, Storrs, CT;* [2]*Waters Corporation, Boston, MA;* [3]*University of Connecticut, Dept. of Statistics, Storrs, CT*

WP 467 **Proteome Analysis of Extracellular Vesicles from Patients with Systemic Sclerosis;** Ole Østergaard[1]; Line V. Iversen[2]; Søren Jacobsen[3]; Niels HH Heegaard[1]; [1]*Statens Serum Institut, Copenhagen, Denmark;* [2]*Department of Dermatology, Bispebjerg Hospital, Copenhagen, Denmark;* [3]*Department of Rheumatology, Rigshospitalet, Copenhagen, Denmark*

WP 468 **Proteomic and Informatic Approaches in the U-BIOPRED Severe Asthma Project: Large-Scale MS^E, Data Mining, Machine Learning, and Topological Data Analysis;** Dominic Burg[1, 2]; Doroteya Staykova[1]; Xian Yang[3]; Yike Guo[3]; Ratko Djukanović[2]; Paul Skipp[1]; U-BIOPRED Consortium[4, 5]; [1]*Centre for Proteomic Research, Uni of Southampton, Southampton, UK;* [2]*NIHR Respiratory Biomedical Research Unit, Southampton General Hospital, UK;* [3]*Imperial College, London, UK;* [4]*European Lung Foundation, Sheffield, UK;* [5]*Innovative Medicines Initiative, Bruxelles, Belgium*

WP 469 **A Quantitative Proteomic Approach to Study the Interplay between Colorectal Cancer and the Immune System;** Evelyne Maes[1, 2]; Geert Baggerman[2, 3]; Dirk Valkenborg[2, 3]; Bart Landuyt[1]; Liliane Schoofs[1]; Hans Prenen[4]; Inge Mertens[2, 3]; [1]*KU Leuven, Functional Genomics and Proteomics lab, Leuven, Belgium;* [2]*Flemish Institute for Technological Research(VITO), Mol, Belgium;* [3]*Center for Proteomics, Antwerp, Belgium;* [4]*Digestive oncology unit, UZ Leuven, Leuven, Belgium*

WP 470 **Proteomic Analysis of Doxorubicin-induced Cardiotoxicity in Mice;** Zhijun Cao; Yuan Gao; Varsha G. Desai; James C. Fuscoe; Li-Rong Yu; *National Center for Toxicological Research, FDA, Jefferson, AR*

WP 471 **Targeted and Untargeted Mass Spectrometry for Identification of Metabolomic Changes in a Human Epigenetic Model of Chronic Stress;** Constance Sobsey[1]; Jun Han[1]; Clemens Kirschbaum[2]; Karl Radtke[3]; Thomas Elbert[3]; Christoph Borchers[1, 4]; [1]*University of Victoria-Genome BC Proteomics Centre, Victoria, Canada;* [2]*Dresden University of Technology, Psychology Dept, Dresden, Germany;* [3]*Universität Konstanz, Clinical Psychol.& Neurol., Konstanz, Germany;* [4]*UVic Dept of Biochemistry and Microbiology, Victoria, Canada*

WP 472 **Mass Spectrometric Identification of Lipids Associated with Pulmonary *Aspergillus* Infections;** Rita Semis; Gabriel B. Gugiu; Teresa B. Hong; Markus Kalkum; *City of Hope, Duarte, CA*

WP 473 **High Sensitivity Enrichment of Glycopeptides from Complex Biological Samples using Metal Organic Frameworks;** Hongqiang Qin[1]; Chunli Fang[1]; Zhichao Xiong[1]; Guang Huang[1]; Junfeng Huang[1]; Xiuping Yan[2]; Shun Feng[1]; Mingliang Ye[1]; Hanfa Zou[1]; [1]*Key Laboratory of Separation Science for Analytica, Dalian, China;* [2]*Nankai University, Tianjin, China*

WP 474 **Proteome and Glycoproteome Analyses for Breast Cancer Biomarker Discovery with Nipple Discharge Using Two-Dimensional Nano LC/Nano-ESI-MS;** Sadamu Kurono[1, 2]; Norifumi Kobayashi[1, 2]; Tomoyuki Nakajima[3]; Shuji Matsuura[1]; Nariaki Matsuura[1]; Haruki Oishi[1]; [1]*Osaka University Graduate School of Medicine, Suita, Osaka, Japan;* [2]*Wako Pure Chemical Industries, Ltd., Osaka, Osaka, Japan;* [3]*Shinshu University Hospital, Matsumoto, Nagano, Japan*

WP 475 **Laser Capture Microdissection for Advanced LC-MS Discovery of Specific Cell Populations within Tissue Samples;** Lisa Staunton[1]; Marie Reidy[2]; Rosina Lis[3]; Kieran Wynne[1]; Belinda Hernandez[1]; Steve Finn[2]; William Watson[1]; Massimo Loda[3]; Michaela Bowden[3]; Stephen Pennington[1]; [1]*Conway Institute, Dublin 4, Ireland;* [2]*St. James' Hospital, Dublin, Ireland;* [3]*Dana Faber Cancer Institute, Boston, MA*

WP 476 **Identification of New Quorum Sensing Molecules in Complex Media using High resolution Mass Spectrometry and MS-MS Fragmentation;** Daniel Todd[1]; David Zich[1]; Keivan Ettefagh[1]; Alexander Horswill[2]; Nadja Cech[1]; [1]*Univ. of N.Carolina Greensboro, Greensboro, NC;* [2]*University of Iowa, Iowa City, IA*

WP 477 **Profiling of Proteins and Polar Metabolites in Rat Tears by High Resolution Mass Spectrometryntery;** Toshiyuki Mikami; Takafumi Matsumoto; Tsuyoshi Noguchi; *Dainippon Sumitomo Pharma, Osaka, Japan*

WP 478 **Human Eye Peptidomics for More Efficient Screening of Donor Corneal Tissue;** Bharath Kumar Raghuraman[1]; Martijn Pinkse[1]; Mervin Pieterse[1]; Valerie Bentivegna[1]; Marieke Bruinsma[2]; Hans Frank[2]; Gerrit Melles[2]; Peter D. Verhaert[1]; [1]*Delft University of Technology, Delft, Netherlands;* [2]*NIIOS, Rotterdam, Netherlands*

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WP 479 **Ultra-Sensitive Stable Isotope Dilution Liquid Chromatography-Tandem Mass Spectrometry Method for Quantification of Estrogens and Estrogen Metabolites in Human Serum;** Qingqing Wang[1, 2]; Clementina Mesaros[1]; Lisa Bottalico[1]; Kannan Rangiah[3]; Ian A. Blair[1]; [1]*University of Pennsylvania, Philadelphia, PA;* [2]*Beijing Institute of Radiation Medicine, Beijing, China;* [3]*Center for Cellular and Molecular Platforms, Bangalore, India*

WP 480 **Development and Validation of LC-MS/MS Methods for Quantitative Determination of Key Kynurenine Pathway Metabolites in Human Plasma and Cerebrospinal Fluid;** Mike Allen[1]; Ben Begley[1]; Kelvin Chan[2]; David Delinsky[1]; Roger Demers[3]; Valerie Kempf[1]; Kathryn Lyons[4]; Brian Nofsinger[1]; Kendall Powell[1]; Daren Stephens[1]; Weslyn Ward[1]; Daria Wentzel[3]; Patricia Wheelan[1]; Ignacio Munoz[2]; Ladislav Mrzljak[2]; Leticia Toledo-Sherman[2]; Celia Dominguez[2]; [1]*Tandem Labs, Durham, NC;* [2]*CHDI Foundation, Princeton, NJ;* [3]*Tandem Labs, West Trenton, NJ;* [4]*PK Consultant, Holland, NY*

WP 481 **Profiling EGFR Kinase Inhibitor Resistance Pathways in Non-Small Lung Cancer Cells;** Ryan Bomgarden[1]; Gregory Botting[2]; Ryan Jacobs[2]; Rosa Viner[3]; Neelu Puri[2]; John C. Rogers[1]; [1]*Thermo Fisher Scientific, Rockford, IL;* [2]*University of Illinois at Chicago, Rockford, IL;* [3]*ThermoFisher Scientific, San Jose, CA*

WP 482 **Determining the Functional Role of Keratin Filament in Apoptosis via the PI3K/Akt Signaling Pathway using LTQ Orbitrap MS/MS Analysis;** Nancy Fernandes; Nicole Morin Jaskiewicz; Feixia Chu; Dave Townson; *University of New Hampshire, Durham, NH*

WP 483 **Development and Qualification of a Method for Quantitative Determination of Multiple Bile Acids with microLC/MS/MS;** Michael Johnson; *Takeda Pharmacueticals, Cambridge, MA*

WP 484 **Quantitative Analysis of the Biomarkers Dopamine, DOPAC (3,4-Dihydroxyphenylacetic Acid), and HVA (Homovanillic Acid) in Rat Brain Tissue Homogenate;** Angela Qi Shen; Wenlin Yuan; Ritika Kurian; Steven Wiltshire; *Agilux Laboratories, Worcester, MA*

WP 485 **Measuring the Cooked Meat Carcinogen 2-Amino-1-methyl-6-phenylimidazo[4,5-b]pyridine (PhIP) in Dyed Hair;** Jingshu Guo[1]; Kim Yonemori[2]; Kami K. White[2]; Lynne R. Wilkens[2]; Loic Le Marchand[2]; Robert Turesky[1]; [1]*University of Minnesota, Minneapolis, MN;* [2]*University of Hawaii, Honolulu, HI*

WP 486 **γ-Aminobutyric Acid and Glutamic Acid as Biomarkers of Neuropathic Pain Caused by Palictaxel;** Pei Li; Benjamin Albrecht; Hanrong Weng; Michael Bartlett; *University of Georgia, Athens, GA*

WP 487 **Analyte Stability, Selectivity, and Importance of Sample Preparation for the Accurate Determination of LPA, a Potential Stratification Biomarker, in Biofluids;** Joelle Onorato; Petia Shipkova; Anne Minnich; Anne Aubry; John Easter; Adrienne Tymiak; *Bristol-Myers Squibb, Princeton, NJ*

WP 488 **A Novel LC-MS/MS Method for Quantitation of Three Free Form Fatty Acids in Human Plasma;** Dawei Zhou[1]; Du-Shieng Chien[2]; Xinping Fang[1]; Xingye Yang[1]; Jinn Wu[1]; *[1]XenoBiotic Laboratories, Inc., Plainsboro, NJ; [2]Efficient Pharma Management Corporation, Taipei, Taiwan*

WP 489 **Membrane Protein Enrichment Strategy to Identify Biomarker Candidates in Alzheimer's Disease using Quantitative Mass Spectrometry;** Sravani Musunuri; Kim Kultima; Martin Ingelsson; Lars Lannfelt; Jonas Bergquist; Ganna Shevchenko; *Uppsala University, Uppsala, Sweden*

WP 490 **Biomonitoring of Methylene Diphenyl Diisocyanate Adducted to Lysine Amino Acids (K-MDA) in Rat Urine;** Leah Luna; Michael Bartels; Dan Markham; Kathy Brzak; *The Dow Chemical Company, Midland, MI*

WP 491 **Multiple Biomarker Analysis of Breast Cancer Clinical Biopsies using MRM MS;** Chris Sutton[1]; Sadr-ul Shaheed[1]; Andreas Hadjisavvas[2]; Kyriacos Kyriacou[2]; Paul Loadman[1]; *[1]Institute of Cancer Therapeutics, Bradford, UK; [2]Cyprus Institute of Neurology and Genetics, Nicosia, Cyprus*

WP 492 **Nanoprobe-Based Affinity Multiple Reaction Monitoring (MRM) Approach for Verification of Hepatocellular Carcinoma (HCC) Biomarkers;** Mira Anne C. Dela Rosa[1, 2]; Kai-Yi Wang[1, 2]; Rofeamor P. Obena[3]; Rey Y. Capangpangan[2, 3]; Pei-Yi Lin[3]; Yu-Ju Chen[3]; *[1]Department of Chemistry,National Taiwan University, Taipei, Taiwan; [2]Taiwan International Graduate Program, Taipei, Taiwan; [3]Institute of Chemistry, Academia Sinica, Taipei, Taiwan*

WP 493 **A Strategy for MRM-based Verification of Bladder Cancer Protein Biomarkers;** Cheng-Han Tsai[1]; Ting Chung[1]; Chien-Lun Chen[2]; Jau-Song Yu[1]; Yi-Ting Chen[1]; *[1]Chang Gung University, Tao-Yuan, Taiwan; [2]Chang Gung Memorial Hospital, Tao-Yuan, Taiwan*

WP 494 **Development of MRM Methods for Clinical Analysis of Urinary Myoglobin;** James Hribar[1]; Jon Klein[1, 2]; Daniel Wilkey[1]; Kenneth McLeish[1, 2]; Michael Merchant[1]; *[1]Department of Medicine-Nephrology, Louisville, KY; [2]Veterans Administration Medical Center, Louisville , KY*

WP 495 **SRM-based Kinetic Measurements of Biomarkers for Cardiovascular Disease, Utilizing Isotope Enrichment Studies in Non-Human Primates and Human Subjects;** Fang Xie; Brooke Rock; Maurice Emery; Dan Rock; *Amgen, Seattle, WA*

WP 496 **Method Development for the Quantitation of a Urine Biomarker for Acute Kidney Injury using a QTRAP® Mass Spectrometer;** Dietrich Merkel; Christian Baumann; Jörg Dojahn; *AB SCIEX, Darmstadt, Germany*

WP 497 **An Integrated High-Throughput Protein Quantification Workflow by Robotic Sample Preparation and Selected Reaction Monitoring in Large-Scale Biomarker Study;** Xiaoqian Liu[1, 2]; Qin Fu[1, 2]; Michael P Kowalski[3]; Graham J Threadgill[4]; Christie Hunter[5]; Weihua Ji[6]; Joan M Bathon[7]; Jennifer E Van Eyk[1, 2]; *[1]Johns Hopkins University, Baltimore, MD; [2]Cedars Sinai Medical Systems, Los Angeles, CA; [3]Beckman Coulter Life Science, Indianapolis, IN; [4]Beckman Coulter, Brea, CA; [5]AB SCIEX, Foster City, CA; [6]National Institute of Standards and Technology, Gaithersburg, MD; [7]Columbia University, New York, NY*

WP 498 **Secretome Analysis using Label-Free Quantitative Proteomics to Discover Potential Cancer Biomarkers of Benzo(a)Pyrene Exposure;** Marianne Ibrahim[1]; Lauriane Kuhn[2]; Zeina Dagher[3]; Johana Chicher[2]; Ramez Chahine[4]; Philippe Hammann[2]; Emmanuelle Leize-Wagner[1]; *[1]LSMIS, CNRS-UMR 7140, University of Strasbourg, Strasbourg, France; [2]Plateforme Protéomique Strasbourg Esplanade (IBMC), Strasbourg, France; [3]Equipe Molécules Bioactives, Lebanese University, Beirut, Lebanon; [4]Laboratoire Stress Oxydatif, Lebanese University, Beirut, Lebanon*

WP 499 **Validation Studies for Serum Biomarkers of Pancreatic Cancer;** Clementina Mesaros[1, 2]; Nathaniel Snyder[1, 2]; Kenneth Yu[1, 3]; Ian A. Blair[1, 2]; *[1]University of Pennsylvania, Philadelphia, PA; [2]Center for Excellence in Environmental Toxicology, Philadelphia, PA; [3]Memorial Sloan-Kettering Cancer Center, New York, NY*

WP 500 **iTRAQ-Based Quantitative Proteomic Analysis of Core-Fucosylated Glycopeptides in Serum of Pancreatic Cancer;** Zhijing Tan; Zhenxin Lin; Song Nie; Haidi Yin; David M. Lubman; *University of Michiagan, Ann Arbor, U.S.A*

WP 501 **High-throughput Analysis of Glycan Variation on Glycoproteins from Serum by the Reverse Lectin-based ELISA Assay and MRM Analysis;** Jing Wu; Jianhui Zhu; Haidi Yin; Ronald Buckanovich; David M. Lubman; *University of Michigan, Ann Arbor, MI*

WP 502 **Mass Spectrometry Quantitation of sPLA2 Alteration in Human Serum Samples to Investigate Its Proinflammatory Activity;** Vahid Farrokhi[1]; Reza Nemati[1]; Emily Anstadt[2]; Frank C. Nichols[3]; Robert B. Clark[2]; Xudong Yao[1]; *[1]University of Connecticut, Storrs, CT; [2]University of Connecticut School of Medicine, Farmington, CT; [3]University of Connecticut School Dental Medicine, Farmington, CT*

WP 503 **Western Blotting for Post Translational Modifications vs. Quantitative Mass Spectrometry: Study of 3-Nitrotyrosine;** Nadya Galeva; Elena Dremina; Maria Feeney; Christian Schöneich; *University of Kansas, Lawrence, KS*

WP 504 **Mass Spectrometry (MS) Based Serum Protein Profiling of Depleted and Undepleted Serum;** Santosh Bhosale[1]; Robert Moulder[1]; Olli Raitakari[3]; David Goodlett[2]; Riitta Lahesmaa[1]; *[1]University of turku, Turku, Finland; [2]University of Maryland, Baltimore, MD; [3]Department of Clinical Physiology and Nuclear Medi, Turku, Finland*

WP 505 **Rapid Quantitation of Substance P in Plasma using Differential Mobility Spectrometry and Microflow Chromatography;** Daniel Warren; Sushmit Maitra; *AB SCIEX, Framingham, MA*

WP 506 **Comparison of Different Methods and Informatics Tools for Protein Quantification;** Martha Stapels; Petra Olivova; Monica Lane; Kate Zhang; *Genzyme Corporation, Framingham, MA*

WP 507 **Quantitative Analysis of Creatinine in Rodent Plasma by Laser Diode Thermal Desorption Coupled to Tandem Mass Spectrometry;** Kristina Gueneva-Boucheva[1]; Roger Dinallo[1]; Pierre Picard[2]; *[1]Boehringer Ingelheim, Ridgefield, CT; [2]Phytronix Technologies Inc., Quebec, Canada*

WP 508 **Enhanced Laser Ionization Methodology for the Quantitative Analysis of a Biomedically Relevant Analyte;** Logan Miller[1]; Steve Shuttleworth[2]; Matt Pamukcu[3]; H.M "Skip" Kingston[1]; *[1]Duquesne University, Pittsburgh, PA; [2]Photon Machines Inc., Bozeman, MT; [3]Applied Isotope Technologies, Pittsburgh, PA*

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WP 509 **LC-MS/MS: A Tool to Mitigate Interferences in Complex Matrices;** Carolyn Burdette; Benjamin Place; Johanna Camara; *NIST, Gaithersburg, MD*

WP 510 **Liver Mitochondria Proteomics: Protein and PTM Quantitation;** Jenny T.C. Ho[1]; Loïc Dayon[2]; John Corthesy[2]; Umberto De Marchi[2]; Antonio Nunez[2]; Rosa Viner[3]; Michael Blank[3]; Steven Danielson[3]; Madalina Oppermann[1]; Martin Hornshaw[1]; Andreas Wiederkehr[2, 4]; Martin Kussmann[2, 5]; *[1]Thermo Fisher Scientific, Hemel Hempstead, UK; [2]NIHS, Lausanne, Switzerland; [3]Thermo Fisher Scientific, San Jose, CA; [4]Ecole Polytechnique Federale Lausanne, Lausanne, Switzerland; [5]Aarhus University, Aarhus, Denmark*

WP 511 **Targeted Quantitative Proteomics of Protein Biomarkers for Plasma Nutrient Status using Heavy Stable Isotope Labeled Recombinant Proteins;** Raghothama Chaerkady[1]; Robert O'Meally[1]; Lauren Devine[1]; Hee-Sool Rho[1]; Jamie L Johnson[2]; Kerry Schulze[2]; John D Groopman[2]; Keith P West[2]; Robert N Cole[1]; *[1]Johns Hopkins School of Medicine, Baltimore, MD; [2]Johns Hopkins School of Public Health, Baltimore, MD*

WP 512 **Targeted Proteomics to monitor Pharmacological Induction of Embryonic Beta Globins in Adult Mice;** Michelle Salemi[1]; Hugh Rienhoff[2]; Brett Phinney[1]; *[1]UC Davis, Davis, CA; [2]Children s Hospital of Oakland, Oakland, CA*

WP 513 **Exploring the Detection Limits of ERG Oncoprotein in Prostate Cancer using Different Sample Types Simulating Clinical Specimens;** Jintang He[1]; Tujin Shi[1]; Athena A. Schepmoes[1]; Thomas L. Fillmore[1]; Chaochao Wu[1]; Albert Dobi[2]; Shiv Srivastava[2]; Shyh-Han Tan[2]; Ahmed A. Mohamed[2]; Anshu Rastogi[2]; Jacob Kagan[3]; Sudhir Srivastava[3]; Wei-Jun Qian[1]; Richard D. Smith[1]; Karin D. Rodland[1]; Tao Liu[1]; David G. Camp[1]; *[1]Pacific Northwest National Laboratory, Richland, WA; [2]Center for Prostate Disease Research, Rockville, MD; [3]National Cancer Institute, Rockville, MD*

WP 514 **Enrichment of EGFR/PI3K/AKT/PTEN Proteins using Immunoprecipitation and Analysis with Mass Spectrometry-based Proteomics;** Bhavin Patel; Scott Meier; Kay Opperman; Paul Haney; Barb Kaboord; John C. Rogers; *Thermo Fisher Scientific, Rockford, IL*

WP 515 **Real-Time Qualitative and Quantitative Analysis of Differentially Expressed Proteins Using a Modified DIA Method;** Tara Schroeder[1]; Scott Peterman[2]; Amol Prakash[2]; Shadab Ahmad[2]; Barbara Frewen[2]; Mary Lopez[2]; *[1]Thermo Fisher Scientific, Somerset, NJ; [2]Thermo Fisher Scientific, Cambridge, MA*

WP 516 **A High-Throughput, Semi-Automated, Sample Handling Platform for Quantitative Proteomics: A Test-Case Study of Gene Regulation in Mouse Hippocampus;** Paul Piehowski[1]; Vladislav Petyuk[1]; Arshad Khan[2]; Anil Shukla[1]; Desmond Smith[2]; Richard D. Smith[1]; *[1]Pacific Northwest National Lab, Richland, WA; [2]UCLA Molecular and Medical Pharmacology Department, Los Angeles, CA*

WP 517 **A SISCAPA Immuno-Mass Spectrometric Assay for Quantificaion of Soluble Transferrin Receptor (sTfR) in Human Serum;** Oliver Drews[1]; Rainer Paape[1]; Waltraud Evers[1]; Morteza Razavi[2]; Matt Pope[2]; Leigh Anderson[2]; Detlev Suckau[1]; *[1]Bruker Daltonics, Bremen, Germany; [2]SISCAPA Assay Technologies, Victoria, Canada*

WP 518 **Development of a SISCAPA-MALDI Assay for Multiplexed Analysis of Apolipoprotein A1, Apolipoprotein B and Apolipoprotein E in Human Serum;** Morteza Razavi[1]; Irene van den Broek[3]; Jan Nouta[3]; Oliver Drews[4]; Detlev Suckau[4]; Rainer Paape[4]; Yuri E.M. van der Burgt[3]; Christa M. Cobbaert[3]; N. Leigh Anderson[1]; Terry W. Pearson[1, 2]; *[1]SISCAPA Assay Technologies, Washington, DC; [2]University of Victoria, Victoria, BC; [3]Leiden University Medical Center (LUMC), Leiden, The Netherlands; [4]Bruker Daltonik GmbH, Bremen, Germany*

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WP 519 **Development of a Fast, Sensitive chiral-LC/MS/MS Method for Quantitation of Empagliflozin, a SGLT-2 Inhibitor, and Its Epimer in Human Plasma;** Lin-Zhi Chen[1]; Shirin Pagels[1]; Steffen Penk[2]; Michael Wedel[2]; *[1]Boehringer Ingelheim Pharmaceuticals, Inc., Ridgefield, CT; [2]Boehringer Ingelheim Pharma GmbH & Co. KG, Biberach, Germany*

WP 520 **A Robust and Sensitive Liquid Chromatography-Tandem Mass Spectrometry Method for Quantification of 24(S)-Hydroxycholesterol in Human Plasma and Cerebrospinal Fluid;** Xuntian Jiang; Rohini Sidhu; Hui Jiang; Jean E. Schaffer; Daniel S. Ory; *Diabetic Cardiovascular Disease Center, Washington, St. Louis, MO*

WP 521 **Comparison of Gas Chromatography and Ultra-performance Liquid Chromatography Coupled with Tandem Mass Spectrometry for Determining Perfluorinated Chemicals;** Yi-Chieh Lai; Chia-Yang Chen; *National Taiwan University, Taipei, Taiwan*

WP 522 **Troubleshooting and Real Time Monitoring of Matrix Effect Generated by Consumable Labware during Ivermectin Quantification by LC-MS/MS;** Mathieu Lahaie; Kevork Mekhssian; Romain Beauvois; Georges Koudssi; Milton Furtado; Fabio Garofolo; *Algorithme Pharma Inc., Laval, Canada*

WP 523 **Post-Column Addition of High pH Solution to Improve Analyte Sensitivity and Avoid On-Column Degradation of Unstable Metabolites in LC-MS/MS;** Julien Nantel; Laurence Mayrand-Provencher; Milton Furtado; Fabio Garofolo; *Algorithme Pharma Inc., Laval, Canada*

WP 524 **Bioanalytical Method for Quantification of Total Apomorphine in Human Plasma by LC-MS/MS;** Melvin Tan; Francesca Ekpo; Erica Hutton; Venetra DeLeon; Edward Wells; Steve Unger; *Worldwide Clinical Trials, Austin, TX*

WP 525 **In Depth Bioanalytical Investigation and Root Cause Analysis of Lamotrigine Severe Degradation in Hemolyzed Plasma Samples by LC-MS/MS;** Nicolaos Soilis; Richard Lavallée; Milton Furtado; Josée Michon; Fabio Garofolo; *Algorithme Pharma Inc., Laval, Canada*

WP 526 **Evaluation of Stability of Acyl Glucuronides using LC-MS/MS;** Qingguo Tian; Andreas Grill; Daksha Desai-Krieger; *Forest Laboratories, Inc., Farmingdale, NY*

WP 527 **PPM Level Quantitative Analysis of Genotoxic Impurities in a Pharmaceutical Starting Material;** Meng Xu[1]; Catherine Brookes[2]; Alison Bretnall[2]; Hongfei Yue [1]; John Castoro[1]; *[1]Bristol-Myers Squibb, New Brunswick, NJ; [2]Bristol-Myers Squibb Company, moreton, UK*

WP 528 **LC-MS/MS Bioanalysis of Loratadine in DBS Samples Collected by Subjects in a Clinical Study for Assessment of Remote PK Sampling;** Wenkui Li; John Doherty; Jimmy Flarakos; Francis Tse; *Novartis Institutes for Biomedical Research, East Hanover, NJ*

WP 529 **An Extremely Sensitive LC-MS/MS Method for Quantitation of Fluticasone Propionate (0.4 pg/mL) in Human Plasma;** Xinping Fang; Dawei Zhou; Jinn Wu; *XenoBiotic Laboratories, Inc., Plainsboro, NJ*

WP 530 **Determination of Gangliosides in Human Plasma by a Novel UHPLC/MS/MS Assay;** Qianyang Huang[1]; Xiang Zhou[1]; Danting Liu[1]; Baozhong Xin[2]; Karen Cechner[2]; Heng Wang[2]; Aimin Zhou[1]; *[1]Cleveland State University, Cleveland, Ohio; [2]DDC Clinic, Middlefield, OH*

WP 531 **A Sensitive LC-MS/MS Method for the Quantification of Ethinyl Estradiol and Drospirenone in Human Plasma;** Siddhartha Khurana[1]; Naveen Dubey[1]; Dhananjay Sharma[1]; Sandeep Sharma[1]; Anoop Kumar[2]; Manoj Pillai[2]; *[1]Jubilant Clinsys, Noida, India; [2]AB SCIEX DHR holdings India, Gurgaon, India*

WP 532 **In Depth Evaluation of a Novel On-line HybridSPE Technology for Removal of Phospholipids from Protein Precipitation Plasma Samples by LC-MS/MS;** Laurence Mayrand-Provencher[1]; Richard Lavallée[1]; Milton Furtado[1]; David Bell[2]; Fabio Garofolo[1]; *[1]Algorithme Pharma Inc., Laval, Canada; [2]Sigma-Aldrich, Bellefonte, PA*

WP 533 **Development and Validation of of an Ultra Sensitive UPLC-MS/MS Method for the Determination of Naloxone in Human Plasma;** Xiaohan Cai; Lina Tang; Lan Li; Yuan-Shek Chen; Luca Matassa; *QPS, LLC, Newark, DE*

WP 534 **Selecting the Right Weighting Factors for Linear and Quadratic Calibration Curves in Bioanalytical LC-MS/MS Assays;** Huidong Gu; Guowen Liu; Jian Wang; Anne Aubry; Mark Arnold; *Bristol-Myers Squibb, Princeton, NJ*

WP 535 **Impact of Plasma Hemolysis on the Recovery of Phenprocoumon LC-MS/MS Chiral Assay;** Nikolay Youhnovski; Romain Beauvois; Mathieu Lahaie; Milton Furtado; Fabio Garofolo; *Algorithme Pharma Inc., Laval, Canada*

WP 536 **Oral Fluid Testing for Buprenorphine and THC by "Dilute and Shoot" LC-MS/MS;** Jeffrey Enders; Ayodele Morris; Gregory Mcintire; *Ameritox, Ltd, Greensboro, NC*

WP 537 **Development and Qualification of an UPLC-MS/MS Method for Simultaneous Determination of Five Isomeric Analytes (potential metabolites) in Human Plasma;** Yu-Luan Chen[1]; Shoko Ochiai[2]; Estela Skende[1]; Julie Tollefson[3]; Amber LaFayette[3]; *[1]Sunovion, Inc., Marlborough, MA; [2]Dainippon Sumitomo Pharma, Osaka, Japan; [3]Covance, Madison, WI*

WP 538 **Parallelism Comparison between Surrogate and Biological Matrix for the Quantification of Endogenous Levels using Surrogate Matrix Calibration Curve by LC-MS/MS;** Richard Lavallée; Milton Furtado; Fabio Garofolo; *Algorithme Pharma Inc., Laval, Canada*

WP 539 **A Fast and Simple LCMSMS Derivatization Approach towards Quantification of Low Molecular Weight Compounds of Molecular Weight Less than 100Da;** Mohan Kasi[1]; Arvind Thyagarajan[2]; Saravanan Subramaniyan[2]; Rampriya Uthayakumar[2]; Raman Palvannanathan[2]; Govindarajan Chandramohan[2]; Venkat Manohar[2]; Devadasan Velmurugan[1]; *[1]Dept. of CAS in Crystallography & Biophysics,, University of Madras, Chennai,, India; [2]IICMS, Chennai, India*

WP 540 **Simultaneous Quantitation of Nebivolol and Valsartan in Human Plasma;** Mei Li; Hongzhi Liu; Helen Deng; Anita Dalko; Surya Kandukuri; Nicola Hughes; *Bioanalytical Laboratory Services (LifeLabs), Toronto, Canada*

WP 541 **Quantitative Measurement of Ultra-low Level of Tiotropium Bromide in Human Plasma using Two-Dimensional Liquid Chromatography (2D-LC) and Tandem Mass Spectrometry;** Jingduan Chi; Melissa Meyer; Fumin Li; *PPD Inc, Madison, WI*

WP 542 **A Study of the Electrospray/Mass Spectral Characteristics of De-Protonated Molecular and Chloride Adduct Ions of Phenicols: Implications in Quantitative Analysis;** Kwenga Sichilongo; *University of Botswana, Gaborone, Botswana*

WP 543 **The Bioanalysis of Propylparaben, a Suspected Environmental Estrogenic Agent, by LC-MS/MS;** Yue Zhao; Guowen Liu; Hongwu Shen; lakshmi Sivaraman; Anne-Francoise Aubry; Mark Arnold; Jim Shen; *Bristol-Myers Squibb Co., Princeton, NJ*

WP 544 **Evaluation of the Budesonide 22R and 22S Epimers Fragmentation in LC-MS/MS and its Impact in Quantitative Bioanalysis;** Eugénie-Raphaëlle Bérubé; Sylvain Latour; Milton Furtado; Fabio Garofolo; *Algorithme Pharma Inc., Laval, Canada*

WP 545 **How to Prevent Changes in Plasma Integrity and its Impact on LC-MS/MS Bioanalysis Due to Organic Solvent and Storage Conditions;** Romain Beauvois[1]; Silvana Olivieri[2]; Milton Furtado[1]; Fabio Garofolo[1]; *[1]Algorithme Pharma Inc., Laval, Canada; [2]ACRAF – Angelini Research Center, S. Palomba, Pomezia, Rome, , Italy*

WP 546 **Quantitation of Budesonide in Human Plasma: Improved Sensitivity Using Acetate Adduct Ion;** HongZhi Liu; Mei Li; Rizwan Muhammad; Jenny Shen; Surya Kandukuri; Anita Dalko; Nicola Hughes; *Bioanalysis Laboratory Services (LifeLabs), Toronto, Canada*

WP 547 **Challenges in Developing a Ten Analyte Statin HPLC-MS/MS Assay in Multiple Rat Matrices;** Ryan Lutz; Cynthia M. Chavez-Eng; Dina Goykhman; Kevin Bateman; *Merck & Co., West Point, PA*

WP 548 **A Highly Specific Pre-Charged Triphenylphosphine-Based Derivatization Agent for Trace-Level Detection of Ethinylestradiol;** Lucie Loukotkova[1]; Priyanka Chitranshi[1]; Gordon Surratt[2]; Goncalo Gamboa da Costa[1]; *[1]FDA/NCTR, Jefferson, AR; [2]Waters Corp., Milford, MA*

WP 549 **Large-Scale Retrospective Evaluation of Regulated LC-MS Bioanalysis Projects Using Different Total Error Approaches;** Aimin Tan[1]; Taoufiq Saffaj[2]; Adrien Musuku[3]; Kayode Awaiye[1]; Bouchaib Ihssane[2]; Fayçal. Jhilal[2]; Saad. Alaoui Sosse[2]; Fethi Trabelsi[1]; *[1]BioPharma Services Inc., Toronto, Canada; [2]Université Sidi Mohamed Ben Abdallah, Fès, Morocco; [3]Pharmascience Inc., Montreal, Canada*

WP 550 **A Novel Microflow UPLC-MS/MS Multiplexed Assay for the Absolute Quantitation of Thyroid Hormones in Serum;** Hend Ibrahim; Lisa Wolfe; Corey Broeckling; Jessica Prenni; Jessica Prenni; *Colorado State University, Fort Collins, CO*

WP 551 **Evaluation of Integrated Microfluidic Device device for targeted small molecule bioanalysis;** Aaron Ledvina; *Covance Laboratories Inc., Madison, WI*

WP 552 **Quantitation of Aminoglycosides in Pharmaceutical Preparations by ESI-MS without the Need of Chromatographic Separation or Derivatization;** Freneil B. Jariwala; John A. Hibbs; Iryna Zhuk; Svetlana A. Sukhishvili; Athula B. Attygalle; *Stevens Institute of Technology, Hoboken, NJ*

WP 553 **Using HPLC-MS to Assess Host-Mediated Conversion of Pyrazinamide to Pyrazinoic Acid Across Species;** Matthew Zimmerman; Xiaohua Li; Brendan Prideaux; Jansy Sarathy; Veronique Dartois; *Public Health Research Institute, Rutgers, Newark, NJ*

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WP 554 **Study of Cyanobacterial Microcystins using High Performance Tandem Mass Spectrometry;** Yulin Qi; Stella Bortoli; Dietrich Volmer; *Saarland University, Saarbrücken, Germany*

WP 555 **Stercobilin Detection and Quantification in Public Swimming Facilities: Method Development for Low and High Resolution Mass Spectrometry;** Heather L. Rudolph; Troy Wood; *SUNY University at Buffalo, Buffalo, NY*

WP 556 **Screening of Polymer Additives in Drinking Water Stored in PET Bottles by UHPLC-ESI-IT-TOF MS;** Mustafa Yilmaz; Hamdi TEMEL; *DUBTAM, Dicle University, Diyarbakir, Turkey*

WP 557 **Environmental Forensic Investigation of PAHs: Determination and Apportionment of Possible Sources;** Ashley Gates[1]; Jack Cochran[2]; Melinda Pham[1]; Frank Dorman[1]; *[1]Penn State University, State College, PA; [2]Restek, Bellefonte, PA*

WP 558 **Sensitive and Accurate LC-MS/MS Assay of Perfluorinated Compounds in Water;** Hui Qiao; Joshua Sha Ye; Changtong Hao; *IONICS Mass Spectrometry Group Inc, Bolton, Canada*

WP 559 **Non-targeted Analysis Phase II Metabolites in Surface water using Full Scan Tandem Quadrupole Mass Spectrometry;** Matthew Reichert; Piotr Krolikowski; M. Paul Chiarelli; *Loyola University, Chicago, IL*

WP 560 **Determination of Endocrine Disrupting Chemicals in Drinking Water at Sub ng/L Levels Using Direct Injection and Triple Quadrupole Mass Spectrometry;** Dorothy Yang[1]; László Tölgyesi[2]; Bernhard Wuest[3]; Anabel Fandino[4]; *[1], Santa Clara, CA; [2]Agilent Technologies Sales & Services GmbH & Co. K, Waldbronn, Germany; [3]Agilent Technologies GmBH, Waldbronn, Germany; [4]Agilent Technologies, Santa Clara, CA*

WP 561 **Direct Injection LC-MS/MS Determination of Acesulfame and Sucralose for Monitoring of Water Quality;** Minghuo Wu; Yichao Qian; Xing-Fang Li; *University of Alberta, Edmonton, Canada*

WP 562 **Occurrence and Toxicity of Haloacetaldehydes in Drinking Waters: Discovery of Iodo-Acetaldehyde as a Drinking Water Disinfection By-Product;** Susan Richardson[1]; Cristina Postigo[2, 4]; Clara Jeong[3]; Elizabeth Wagner[3]; Jane Ellen Simmons[2]; Michael Plewa[3]; Damia Barcelo[4]; *[1]University of South Carolina, Columbia, SC; [2]U.S. EPA, NHEERL, RTP, NC; [3]University of Illinois, Urbana, IL; [4]Spanish National Research Council, Barcelona, Spain*

WP 563 **Determination of Unknown Chlorinated Water Pollutants in the Chicago River;** Qian Wang[1]; Kathryn M. Renyer[2]; M. Paul Chiarelli[1]; *[1]Loyola University, Chicago, IL; [2]Morehead St. University, Morehead, KY*

WP 564 **High Resolution/Accurate Mass (HR/AM) Detection of Anatoxin-a in Lake Water Using LDTD-APCI Coupled to a Q-Exactive Mass Spectrometer;** Audrey Roy-Lachapelle[1]; Morgan Solliec[1]; Christian Deblois[2]; Marc Sinotte[3]; *[1]Université de Montréal, Montréal, Canada; [2]MDDEFP, CEAEQ, Québec, Canada; [3]MDDEFP, DSEE, Québec, Canada*

WP 565 **Ultra-fast LDTD-APCI-MS/MS Analysis of Estrogens in Chlorinated Drinking Water and the Impact of Bromide on the Oxidation Kinetics;** Sung Vo Duy[1]; Paul Fayad[1]; Michèle Prévost[2]; Sébastien Sauvé[1]; *[1]Université de Montréal, Montreal, QC, Canada; [2]École Polytechnique de Montréal, Montreal, QC, Canada*

WP 566 **The Use of Chemometrics and High Resolution Accurate Mass GC/Q-TOF in the Identification of Environmental Pollutants in Wastewater Effluents;** Anthony Gravell[1]; Praveen Kutty[1]; Sofia Aronova[2]; Jennifer Gushue [2]; Terry Sheehan[2]; *[1]Natural Resources Wales, Wales, UK; [2]Agilent Technologies, Inc., Santa Clara, CA*

WP 567 **HPLC-MS/MS Investigation of Halo-hydroxyl-benzoquinones as Stable Haloquinone Disinfection By-Products in Treated Water;** Wei Wang; Yichao Qian; Steve Hrudey; Xing-Fang Li; *University of Alberta, Edmonton, Canada*

WP 568 **Investigation of Suspected and Unknown Micropollutants and Transformation Products from a Waste Water Treatment Plant with Full Scale Ozonation;** Christoph Portner[1]; Olaf Scheibner[2]; Sebastian Westrup[3]; Jochen Tuerk[1]; *[1]Institute of Energy and Environmental Technology, Duisburg, Germany; [2]Thermo Fisher Scientific, Bremen, Germany; [3]Thermo Scientific, Dreieich, Germany*

WP 569 **Determination and Removal of N-Nitrosamine Precursors in Drinking Water System;** Honglan Shi[1]; Qihua Wu[1]; Yinfa Ma[1]; Craig Adams[2]; Hua Jiang[3]; *[1]Missouri S&T, Rolla, MO; [2]Utah State University, Logan, UT; [3]City of Tulsa Water and Sewer Department, Tulsa, OK*

WP 570 **Environmental Forensics of Wastewater Samples for Determination of Emerging Contaminants;** Adrienne Brockman[1]; Dr. Frank Dorman[1]; Jack Cochran[2]; Michelle Misselwitz[2]; *[1], University Park, PA; [2]Restek, Bellefonte, PA*

WP 571 **Dioxin in Drinking Water by One-Step Solid Phase Extraction;** Hamid Shirkhan; Tom Hall; *Fluid Management Systems, Watertown, MA*

WP 572 **EPA 625: Base, Neutral, Acid Semi-Volatiles in Municipal and Industrial Waste Water by SPE;** Philip Germansderfer; Lawrence Kramer; *Fluid Management Systems, Watertown, MA*

WP 573 **Automated Low Background Solid Phase Extraction System for Perfluorinated Compounds from Water;** Phil Bassignani; *Fluid Management Systems, Inc., Watertown, MA*

WP 574 **Organic Extract Analysis by in-Line Dilution Reversed-Phase LC-MS/MS;** Brent Mckay Allred[1]; Mathew Perkins[1]; Johnsie Lang[2]; Morton Barlaz[2]; Jennifer Field[1]; *[1]Oregon State University, Corvallis, Oregon; [2]North Carolina State University, Raliegh, NC*

WP 575 **Strategies and Techniques for Identifying Unknown Compounds in Environmental Samples;** Eric J. Reiner[1]; Karl J. Jobst[1]; Miren Pena-Abaurrea[2]; Anne L. Myers[2]; Li Shen[1]; Alina Muscalu[1]; Ralph Ruffolo[1]; Vince Y. Taguchi[1]; Paul A. Helm[1]; *[1]Ontario Ministry of the Environment, Toronto, Canada; [2]University of Toronto, Toronto, Canada*

WP 576 **Analysis of Electronics Waste by 2D-GC Combined with High-Resolution Mass Spectrometry: Using Exact Mass Information to Explore the Data;** Masaaki Ubukata[1]; Karl J. Jobst[2]; Eric J. Reiner[2]; Stephen Reichenbach[3]; Qingping Tao[4]; Jiliang Hang[4]; Zhanpin Wu[5]; A. John Dane[1]; Robert B. Cody[1]; *[1]JEOL USA, INC., Peabody, MA; [2]Ontario Ministry of the Environment, Toronto, Canada; [3]University of Nebraska-Lincoln, Lincoln, NE; [4]GC Image LLC, Lincoln, NE; [5]Zoex Corporation, Houston, TX*

WP 577 **Non-Targeted Analysis of Environmental Contaminants in Northern Fur Seals Using Comprehensive Two-Dimensional Gas Chromatography Time-of-Flight Mass Spectrometry;** Jacolin Murray[1]; Benjamin Place[1]; Natalie Rosenfelder[2]; *[1]National Institute of Standards and Technology, Gaithersburg, MD; [2]Chemical and Veterinary Investigations Office, Stuttgart, Germany*

WP 578 **Persistent Organic Pollutants in Serum using Pressurized Liquid Extraction, Multi-Column Clean Up and Concentration;** Tom Hall; Rudolf Addink; *Fluid Management Systems, Watertown, MA*

WP 579 **Oklahoma Fish Kill Study: Looking for a Toxic Needle in an Environmental Haystack;** Tammy Jones-Lepp[1]; Wayne Sovocool[2]; Don Betowski[1]; Patrick DeArmond[3]; Vince Taguchi[4]; Charlita Rosal[1]; *[1]USEPA/ORD/NERL-ESD, Las Vegas, NV; [2]retired USEPA, Henderson, NV; [3]former USEPA post-doctoral Fellow, Las Vegas, NV; [4]Ministry of the Environment-Ontario, Toronto, Canada*

WP 580 **Determination of Alkylphenol Ethoxylate in Textiles and Leathers by NPLC and Quadrupole Orbitrap MS;** Nam-Yong Cheong[1]; Bruce Lee[1]; Su-Jin Eo[1]; Yoon-Suk Lee[2]; Seoung-Woon Myung[3]; *[1]KATRi, An-Yang, Korea; [2]Euro Science, Seong-Nam, Korea; [3]Kyonggi University, Su-Woon, Korea*

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WP 581 **Metabolomic Analysis of Estradiol-Induced Effects in the Human Breast Cancer Lines MCF-7 and T47D;** Liang Zhao[1]; Shelly Odwin-DaCosta[1]; Marguerite Vantangoli[2]; Mounir Bouhifd[1]; Andre Kleensang[1]; Lena Smirnova[1]; Helena Hogberg[1]; Kim Boekelheide[2]; James D. Yager[1]; Thomas Hartung[1]; *[1]Johns Hopkins University, Baltimore, MD; [2]Brown University, Providence, RI*

WP 582 **A Steroidomics Approach to Detect the Misuse of Oral Anabolic Steroids in Equine Sports by Biomarkers Profiling;** George H.M. Chan; Emmie N.M. Ho; Terence S.M. Wan; *Racing Laboratory, The Hong Kong Jockey Club, Sha Tin, N. T., Hong Kong, China*

WP 583 **Metabolomics Investigation of Spiked Compound Differences in Human Plasma;** Amrita Cheema[1]; John M Asara[2]; Thomas Neubert[3]; Chris Turck[4]; *[1]Georgetown University, Washington, DC; [2]Beth Israel Deaconess Medical Center, Boston, MA; [3]Skirball Institute, NYUMC, New York, NY; [4]Max Planck Institute of Psychiatry, Munich, Germany*

WP 584 **Development, Quantitative Evaluation and Application of a High Resolution Metabolomics Technology using HILIC Chromatography Coupled to a Q-Exactive Mass Spectrometer;** Xiaojing Liu; Alexander Shestov; Jason Locasale; *Cornell University, Ithaca, NY*

WP 585 **Gas Chromatography-Mass Spectrometry Analysis of Human Mesenchymal Stem Cell Metabolism during Proliferation and Osteogenic Differentiation under Different Oxygen Tensions;** Nathalie Munoz; Yijun Liu; Timothy Logan; *FSU, Tallahassee, Florida*

WP 586 **Ion Mobility-derived Collision Cross-Sections Databases for Metabolomics and Lipidomics;** Giuseppe Paglia[1]; Jonathan P. Williams[2]; Lochana Menikarachchi[3]; J. Will Thompson[4]; Hernando Olivos[5]; Steven Lai[5]; Richard Tyldesley-Worster[5]; Arthur Moseley[6]; David Grant[3]; James Langridge[5]; Bernhard O. Palsson[7]; Giuseppe Astarita[5]; *[1]Center for Systems Biology, University of Iceland, Reykjavik, Iceland; [2]Waters, Manchester, N/A; [3]University of Connecticut, Storrs, CT; [4]Duke University School of Medicine, Durham, NC; [5]Waters, Milford, MA; [6]Duke University School of Medicine, Durham, NC; [7]Systems Biology Research Group, UCSD, San Diego, CA*

WP 587 **Comparative Bovine and Human Milk Metabolomics: Generating a Reference Metabolome for Human Breast Function Diagnosis;** Robert Trengove[1]; Erin Fee[2]; Joel Gummer[1]; Kristin Piper[3]; James Lui[3]; Catherine Rawlinson[1]; Ching Lai[3]; Naomi Trengove[2]; Donna Geddes[3]; Peter Hartmann[3]; *[1]Murdoch University, Murdoch, Australia; [2]The University of Notre Dame Australia, Fremantle, WA; [3]The University of Western Australia, Perth, Australia*

WP 588 **Myth Busters: The Truth About Metabolomics And Gas Chromatography-High Resolution Time-of-Flight Mass Spectrometry;** David Alonso[1]; Joe Binkley[1]; Lorne Fell[2]; *[1]Leco Corporation, St. Joseph, MI; [2]Leco, St Joseph, MI*

WP 589 **Development of a Plant, Algae, and Microbial Metabolomics Research Coordination Network and US Chapter of the Metabolomics Society;** Lloyd W. Sumner[1]; Oliver Fiehn[2]; Georg Jander[3]; James C. Liao[4]; Basil Nikolau[5]; *[1]The Samuel Roberts Noble Foundation, Ardmore, OK; [2]University of California, Davis, Davis, CA; [3]Boyce Thompson Institute for Plant Research, Ithaca, NY; [4]University of California, Los Angeles, Los Angeles, CA; [5]Iowa State University, Ames, IA*

WP 590 **A Novel Batch Automated Multi-Recursive Data Processing Workflow for Rigorous Metabolite Profiling of Human Urine Analyzed by LC/MS;** Benjamin Owen; Sumit Shah; *Agilent Technologies, Wakefield, MA*

WP 591 **High Quality Batch Feature Extraction of Mass Spectrometry Data to Improve Statistical Analysis Results;** Yuqin Dai; Steven M. Fischer; Norton Kitagawa; Theodore R. Sana; *Agilent Technologies, Santa Clara, CA*

WP 592 **Metabolomics Technology Validated Quality Markers for Biobank Plasma Samples;** Michael Herold[1]; Beate Kamlage[1]; Oliver Schmitz[1]; Philipp Schatz[2]; *[1]metanomics GmbH, Berlin, Germany; [2]Metanomics Health GmbH, Berlin, Germany*

WP 593 **Metabolomics Profiling Workflow of Combining MS and NMR Datasets for a Single Sample;** Darrell Marshall[1]; Shulei Lei[1]; Yuting Huang[1]; Aracely Garcia-Garcia[2]; Rodrigo Franco[2]; Eric D. Dodds [1]; Robert Powers[1]; *[1]1Department of Chemistry, University of Nebraska-L, lincoln, Nebraska; [2]School of Veterinary Medicine and Biomedical Scie, Lincon, NE*

WP 594 **Direct Mitochondrial Metabolites Detection in a HepG2 Cell by Live Single-cell Mass Spectrometry;** Tsuyoshi Esaki; Sachiko Date; Hajime Mizuno; Ai Fujita; Tsutomu Masujima; *Quantitative Biology Center (QBiC), RIKEN, Suita, Osaka, Japan*

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WP 595 **Comprehensive, Accurate, and Precise Quantification of Acylcarnitines and Acyl-CoAs in Tissues using On-Line Ion-Exchange Trapping and UHPLC-MS/MS;** Charles L. Hoppel; Paul E. Minkler; Maria S.K. Stoll; Stephen T. Ingalls; *Case Western Reserve Univ., Cleveland, OH*

WP 596 **A Validated High-throughput Assay for the Quantification of Amino Acids in Metabolic Phenotyping Studies;** Nicola Gray[1]; Robert Plumb[2]; Ian Wilson[1]; Jeremy Nicholson[1]; *[1]Imperial College London, London, UK; [2]Waters, Milford, MA*

WP 597 **Characterization of HILIC Columns with Zwitterionic Functional Groups: Correlation between Retention, Selectivity, Stationary Phase and Water Layer Thickness;** David Lentz[2]; Tobias Jonsson[1]; Phuoc Dinh[3]; Patrik Appelblad[1]; Wen Jiang[1]; *[1]Merck Millipore, Darmstadt, Germany; [2]EMD Millipore, Billerica, MA; [3]Umea University, Umea, Sweden*

WP 598 **Trapping micro-LC/MS/MS Isotope Dilution Mass Spectrometry in the High Throughput and Ultra-Sensitive Quantification of Serum Vitamin D Metabolites;** Eslam Nouri; ming zhang; Haoying Yu; Jun Qu; *University at Buffalo, Buffalo, NY*

WP 599 **Development of a Chromatography-less Quantification Method for Plant Secondary Metabolites by Solvent-compensated System Tandem Electrospray Mass Spectrometry;** Che-I Liao; Kuo-Lung Ku; *National Chiayi University, Chiayi City, Taiwan*

WP 600 **Omics Tools for the Biological Evaluation of Olive-Derived Bioactive Substances;** Nikolaos Lemonakis[1]; Maria Halabalaki[1]; Vassilios Mougios[2]; Lindsay Brown[3]; Hemant Poudyal[3]; Alexios Leandros Skaltsounis[1]; Anthony Tsarbopoulos[4]; Evangelos Gikas[1]; *[1]Univerity of Athens, Department of Pharmacy, Athens, Greece; [2]Aristotle University of Thessaloniki, Thessaloniki, Greece; [3]University of Southern Queensland, Australia; [4]University of Athens Medical School, Athens, Greece*

WP 601 **Disruption of Amino Acid Metabolism in Radiation-Induced Lung Injury;** Fei Li[1]; Jace Jones[1]; Gregory Tudor[2]; Catherine Booth[2]; Thomas MacVittie[3]; Maureen Kane[1]; *[1]University of Maryland, School of Pharmacy, Baltimore, MD; [2]Epistem Ltd, Manchester, UK; [3]University of Maryland, School of Medicine, Baltimore, MD*

WP 602 **Multiomic Profiling of Acute Immune Response in an SIV Macaque Model of HIV-AIDS;** Ravi Tharakan[1]; Anne Blackwell[2]; Ceereena Ubaida Mohien[1]; David Colquhoun[3]; Brigitte Simons[4]; David Graham[1]; *[1]JHU, Baltimore, MD; [2]Agilent Technologies, Wilmington, DE; [3]Shimadzu Scientific Instruments, Columbia, MD; [4]AB SCIEX, Montreal, QC*

WP 603 **Metabolomic and Lipidomic Analyses of Diet-Induced Inhibition of Hepatic De Novo Lipogenesis with Carbohydrate Restriction;** Daniela M Schlatzer[1]; Michelle A Puchowicz[1]; Giovanni Pallante[2]; Tim Stratton[2]; Mark R Chance[1]; Junhua Wang[2]; *[1]Case Western Reserve University, Cleveland, OH; [2]Thermo Fisher Scientific, San Jose, CA*

WP 604 **MRMPROBS Suite: Metabolomics Software for Large-Scale Multiple Reaction Monitoring Assays;** Hiroshi Tsugawa[1, 2]; Mitsuhiro Kanazawa[3]; Atsushi Ogiwara[3]; Masanori Arita[1, 4]; *[1]RIKEN, Yokohama, Japan; [2]Osaka Univ., Osaka, Japan; [3]Reifycs, Inc., Minato-ku, Japan; [4]NIG, Mishima, Japan*

WP 605 **Development of Peak Reconstruction Program for Isotope Labeling LC-MS-based Quantitative Metabolomics;** Tao Huan; Liang Li; *University of Alberta, Edmonton, Canada*

WP 606 **Quantitation of Amino Acids and Vitamins in Culture Media and Mammalian Cells by Liquid Chromatography-Tandem Mass Spectrometry;** Jinshu Qiu; Pik Kay Chan; Pavel V. Bondarenko; *Amgen, Thousand Oaks, CA*

WP 607 **An LC-MS-MS-based Targeted Metabolomics Platform and Its Use to Define a Metabolomic Signature of Glutamine-Dependent Reductive Carboxylation in Cancer Cells;** Zeping Hu; *UT Southwestern Medical Center, Dallas, TX*

WP 608 ***In vivo* Stable Isotope Labeling of ^{13}C and ^{15}N Labeled Metabolites and Lipids;** Susanne Breitkopf[1]; Min Yuan[1]; Costas Lyssiotis[3]; John M Asara[1, 2]; *[1]Beth Israel Deaconess Medical Center, Boston, MA; [2]Harvard Medical School, Boston, MA; [3]Weill Cornell Medical College, New York, NY*

WP 609 **Protocol for Determination of Redox and Bioenergetics Molecules in Tissue Samples using Tandem Mass Spectrometry and Zwitterionic HILIC Columns;** Hardik Shah; *Albert Einstein College of Medicine, Bronx, NY*

WP 610 **Development and Application of a UPLC/MRM-MS Method for the Comprehensive Analysis of >50 Bile Acids in Human and Mouse Samples;** Jun Han[1]; Yang Liu[1]; Renxue Wang[2]; Victor Ling[2]; Christoph Borchers[1, 3]; *[1]University of Victoria-Genome BC Proteomics Centre, Victoria, Canada; [2]BC Cancer Agency, University of British Columbia, Vancouver, Canada; [3]UVic Dept of Biochemistry and Microbiology, Victoria, Canada*

WP 611 **3-Nitrophenylhydrazine as an Efficient Chemical Derivatization Reagent in LC/MS-Based Quantitative Metabolomics;** Jun Han[1]; Karen Lin[1]; Carita Sequeria[1]; Christoph Borchers[1, 2]; *[1]University of Victoria-Genome BC Proteomics Centre, Victoria, Canada; [2]UVic Dept of Biochemistry and Microbiology, Victoria, Canada*

WP 612 **LC/MS Response Factor Dependence on Mobile Phase Composition using newly Authenticated Acylsugar Metabolites;** Banibrata Ghosh; Zhenzhen Wang; A. Daniel Jones; *Michigan State University, East Lansing, MI*

WP 613 **Simultaneous Analysis of Primary Metabolites by Triple Quadrupole LC/MS/MS using Pentafluorophenylpropyl Column;** Tsuyoshi Nakanishi; *Shimadzu Corporation, Kyoto, Japan*

WP 614 **Parallel UHPLC-MS/MS System for High-Speed SRM Quantification using Fast Electrospray Polarity Switching;** Kyoko Watanabe[1, 2]; Emmanuel Varesio[1]; Neil Loftus[3]; Gerard Hopfgartner[1]; *[1]University of Geneva, University of Lausanne, Geneva, Switzerland; [2]Shimadzu Corporation, Kyoto, Japan; [3]Shimadzu Corporation, Manchester, UK*

WP 615 **MALDI-TOF as a New Tool for Quantification of Polyamines;** Masoud Zabet Moghaddam[1]; Ruchi Hooda[1]; Mohamed Fokar[2]; Susan San Francisco[1]; *[1]Texas Tech University, Lubbock, TX; [2]Oklahoma State University, Ardmore, OK*

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WP 618 **Human rCYP Phenotyping as a Model Experiment for Combination of Qualitative and Quantitative HRMS Data in Drug Discovery;** JianHua Liu[1]; Veronica Zelesky[1]; Carrie Funk[2]; Nathanial Woody[2]; John Janiszewski[1]; Ismael Zamora[3]; Eva Duchoslav[4]; *[1]Pfizer Inc., Groton, CT; [2]Pfizer, Groton, CT; [3]Lead Molecular Design, S.L., Sant Cugat Del Valles, Spain; [4]AB Sciex, Concord, ON*

WP 619 **Simultaneous Metabolic Stability Determination and Metabolite Identification Using Q Exactive System;** Ruiqing Qiu; Gang Luo; *Covance, Madison, WI*

WP 620 **High Resolution Mass Spectrometry Quan/Qual-applications in high Throughput Hepatocyte Stability Assay;** Yongmin Li[1]; Sam Sperry[1]; Keeley Murphy [2]; John Fink[2]; Juntyma Engtrakul[1]; Niresh Hariparsad[1]; Jean-Francois Levesque[1]; Peter Littlewood[1]; Alice Tsai[1]; Weichao Chen[1]; *[1]Vertex Pharmaceuticals Inc., San Diego, CA; [2]ThermoFisher Scientific, San Jose, CA*

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WP 622 **An Integrated Process for Metabolite Based *in vitro* Reaction Phenotyping in Early Discovery using LC/HRMS;** Jonathan L. Josephs[1]; Emily Luk[1]; Mary Grubb[1]; Yanou Yang[1]; William Humphreys[2]; *[1]Bristol-Myers Squibb, Pennington, NJ; [2]Bristol-Myers Squibb, Lawrenceville, NJ*

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WP 625 **The Application of UHPLC and Ultrafast-LCMSMS to the Analysis of Small Volume Biological Samples for Drug Residues;** Paul Wynne[1]; Bruce Fraser[2]; John Hewetson[3]; Nigel Grieves[3]; *[1]Shimadzu, Park Orchards, Australia;*

[2]Shimadzu Scientific Instruments (Oceania), Palmerston North, New Zealand; [3]Shimadzu Australasia, Sydney, Australia

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WP 627 **The ADME-Hub: Formalizing and Automating Information Flow in the Preparation and Measurement of Lead Optimization Assays;** Wayne Lootsma[1]; Steven Ainley[1]; Nick Levitt[2]; Brendon Kapinos[3]; Veronica Zelesky[3]; John Janiszewski[3]; *[1]Sound Analytics, LLC, Niantic, CT; [2]TwoCenter Technologies, Cambridge, MA; [3]Pfizer Inc., Groton, CT*

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WP 635 **Investigating Biological Variation in Human Hepatocytes of Phase I and II drug Metabolism Enzymes;** Xu Wang[1]; Hui Zhang[2]; Christie Hunter[3]; *[1]AB SCIEX, Framingham, MA; [2]Pfizer, Groton, CT; [3]AB SCIEX, Redwood City, CA*

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WP 638 **Capillary Microsampling (CMS) of Whole Blood for Drug Discovery Studies in Mice: An Alternative to DBS Sampling in Bioanalysis;** Walter Korfmacher[1]; Maria Fitzgerald[1]; Yongyi Luo[2]; Stacy Ho[1]; Jie Wang[2]; Zhongtao Wu[2]; Richard Knapp[2]; Gregory Snow[3]; Tom O'Shea[1]; *[1]Genzyme, Waltham, MA; [2]Sanofi, Waltham, MA; [3]Agilux Laboratories, Worcester, MA*

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WP 641 **Next Generation Plasma Collection Technology for the Clinical Analysis of Temozolomide by HILIC/MS/MS;** Alan J Barnes[1]; Adam McMahon[2]; Neil J Loftus[1]; *[1]Shimadzu, Manchester, UK; [2]WMIC, University of Manchester, Manchester, UK*

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WP 644 **Dried Plasma Spots Derived from Filtered Whole Blood. Hemato-compatible?;** Robert Sturm[1]; Jack Henion[1]; Richard Abbott[2]; Phillip Wang[3]; *[1]Quintiles, Ithaca, NY; [2]Shire, Hampshire, UK; [3]Shire, Wayne, PA*

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WP 654 **Multiplexed MRM-based Protein Quantification in Dried Blood Spot Samples;** Andrew Chambers[1]; Andrew Percy[1]; Juncong Yang[1]; Christoph Borchers[1,2]; *[1]University of Victoria-Genome BC Proteomics Centre, Victoria, Canada; [2]UVic Dept of Biochemistry and Microbiology, Victoria, Canada*

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WP 667 **Combining an Integrated Microfluidic Device with CCS Ion Mobility Screening for the Analysis of Pesticide Residues in Food;** Michael McCullagh[1]; Séverine Goscinny[2]; Vincent Hanot[2]; David Douce[1]; *[1]Waters (MS Technologies), Wilmslow, UK; [2]Scientific Institute of Public Health, Brussels, Belgium*

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WP 671 **Steroid and Lipid Analysis by High Resolution Ion Mobility-TOF MS;** Michael Groessl[1]; Bernhard Dick[2]; Bruno Vogt[2]; Richard Knochenmuss[1]; *[1]Tofwerk, Thun, Switzerland; [2]Bern University Hospital, Bern, Switzerland*

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[1]Washington State University, Pullman, WA; [2]University of Cincinnati, Cincinnati, OH

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WP 677 **An Ion Mobility Spectrometry-Mass Spectrometry Study of Metalated Isomeric Carbohydrates and their Electron Transfer Products;** Yuting Huang[1]; Eric D. Dodds [2]; *[1]University of Nebraska-Lincoln, Lincoln, NE; [2]University of Nebraska - Lincoln, Lincoln, NE*

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WP 680 **Improved Separation Methods for Rapid Analysis of Targeted Small Molecules on IMS/Q-TOF Platform;** Christopher Beekman[1]; David L. Wong[2]; Christian Klein[2]; Ruwan Kurulugama[2]; Richard A. Yost[1]; *[1]University of Florida, Gainesville, FL; [2]Agilent Technologies, Santa Clara, CA*

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WP 683 **Evidence for Unknown Structure Changes in Strained PAH Macrocyles by Fragmentation Ion Mobility Mass Spectrometry;** Wen Zhang; Martin Quernheim; Hans Joachim Räder; Klaus Müllen; *MPI for Polymer Research, Mainz, Germany*

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WP 693 **Accurate Ion Mobility Spectrometer;** Brian Hauck[1]; Bill Siems[1]; Charles Harden[2]; Vince McHugh[3]; Herbert Hill, Jr. [1]; *[1]Washington State University, Pullman, WA; [2]LEIDOS - US Army ECBC Operations, Gunpowder, MD; [3]U.S. Army Edgewood Chemical Biological Center, Aberdeen Proving Ground, MD*

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WP 696 **Correlating DMS Simulations with Experiment;** Frank Londry; Brad Schneider; Thomas Covey; *AB SCIEX, Concord, Canada*

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WP 698 **Improving Ion Mobility Measurement Sensitivity by Utilizing Helium in an Ion Funnel Trap;** Yehia Ibrahim; Sandilya Garimella; Aleksey Tolmachev; Erin Baker; Richard D. Smith; *Pacific Northwest National Laboratory, Richland, WA*

WP 699 **Cytochrome c Conformations Studied by Ion Mobility Spectrometry with Hydrogen-Deuteriuem Exchange and MS/MS Techniques;** Samaneh Ghassabi Kondalaji; Mahdiar Khakinejad; Stephen Valentine; *Morgantown, WV*

WP 700 **Conformational Preferences of Peptide – Alkali Metal Ion Adducts: The Effects of Polar Side Chain – Alkali Metal Ion Interactions;** Chunying Xiao; Lisa M. Pérez; David H Russell; *Texas A&M University, College Station, Texas*

Nanomaterials, 701 - 707

WP 701 **Inkjet Printed Gold Nanoparticle Surfaces for the Detection of Biomolecules by Laser Desorption/ Ionization Mass Spectrometry;** Alyssa Marsico; Brian Creran; Bradley Duncan; S. Gokhan Elci; Vincent Rotello; Richard Vachet; *University of Massachusetts Amherst, Amherst, Massachusetts*

WP 702 **Characterization of Monolayer Films of Asymmetric Metallosurfactants by Matrix Assisted Ionization Vacuum Mass Spectrometry;** Tarick El-Baba; Lanka Wickramasinghe; Claudio Verani; Sarah Trimpin; *Wayne State University, Detroit, MI*

WP 703 **Combined Mass Spectrometric Imaging for Obtaining Site-Specific Information about Nanoparticle Stability in Tissues;** Sukru Gokhan Elci; Bo Yan; Sung Tae Kim; Chang Soo Kim; Krishnendu Saha; Daniel F. Moyano; Vincent M. Rotello; Richard W. Vachet; *University of Massachusetts, Amherst, MA*

WP 704 **Investigation of Protein Corona on CpG Oligodeoxynucleotides Conjugated Nanotube with Mass Spectrometry;** Shang Zeng; Wenwan Zhong; *University of California, Riverside, Riverside, CA*

WP 705 **Cluster Ion Source Coupled to a 9.4 T FT-ICR Mass Spectrometer for Experimental Study of Fullerene Formation and Gas-Phase Chemistry;** Paul W. Dunk[1]; Ryan A. Barrett[2]; Nathan K. Kaiser[1]; Alan G. Marshall[3]; Harold W. Kroto[2]; *[1]National High Magnetic Field Laboratory, Tallahassee, FL; [2]Florida State University, Tallahassee, FL; [3]Ion Cyclotron Resonance Prog, Tallahassee, FL*

WP 706 **Mass Spectrometry-Based Analysis of Graphene Oxide Degradation Products;** Wentao Jiang[1]; Hao Bai[1]; Gregg P. Kotchey[1]; Wissam A. Saidi[1]; Benjamin J. Bythell[2]; Jacqueline M. Jarvis[3]; Alan G. Marshall[2, 3]; Rena A.S. Robinson[1]; Alexander Star[1]; *[1]University of Pittsburgh, Pittsburgh, Pennsylvania; [2]National High Magnetic Field Laboratory, Tallahassee, FL; [3]Florida State University, Tallahassee, FL*

WP 707 **Investigating Engineered Nanomaterial Induced Damage to Genomic DNA via Tandem Mass Spectrometry;** Elijah J. Petersen; Pawel Jaruga; Miral Dizdaroglu; Bryant C. Nelson; *National Institute of Standards and Technology, Gaithersburg, MD*

Challenges in Identification, 709 -723

WP 709 **The Secret of Stradivarius: Is it Possible to Clue It?;** Olga Polyakova[1]; Savva Girshenkoa[1]; Slava. Artaev[3]; Alessandra Tata[2]; Andreia Porcari[2]; Eduardo Schmidt[2]; Marcos Eberlin[2]; Albert T. Lebedev[1]; *[1]Moscow State University, Moscow, Russian Federation; [2]ThoMSon Mass Spectrometry Laboratory, Campinas, Brazil; [3]LECO Corporation, St Joseph, MI*

WP 710 **Isolation, Structure Elucidation and Reference Synthesis of Impurities in LX1606 by Mass Directed Fraction Collection, MS/MS, TOF/MS and NMR Spectroscopy;** Leonard O. Hargiss; Philip Keyes; Matthew M. Zhao; Weiguo Liu; *Lexicon Pharmaceuticals, Princeton, NJ*

WP 711 **Comparison of Electrospray Ionization(ESI) and Atmospheric Pressure Chemical Ionization(APCI) of Labile Anti-Malarial Compounds to Monitor Pharmacokinetics of Transdermal Patches;** Almas Taj Awan[1]; Ilza M. O. Sousa[2]; Fabricio F. Favero[2]; Nubia C. A. Queiroz[2]; Marcos N. Eberlin[1]; Mary Ann Foglio[2]; *[1]ThoMSon Mass spectrometry Laboratory, UNICAMP, Campinas, SP; [2]CPQBA, UNICAMP, Campinas, SP*

WP 712 **Characterization of Novel Methylindole-Glutathione-related Conjugates by LC-High Resolution Mass Spectrometry;** Chenghong Zhang; Shuguang Ma; Cornelis Hop; Cyrus Khojasteh; *Genentech, South San Francisco, CA*

WP 713 **The Use of Linear Ion Trap for HPLC Profiling of Ginsenosides in Plant Extracts and Ginseng Based Products;** Andrey Stavrianidi; Igor Rodin; Irina Ananieva; Oleg Shpigun; *MSU, Moscow, RU*

WP 714 **Characterization of Glycosylated Flavonoids in Plant Extracts : A "Same Masses" Nightmare;** Claude-Paul Lafrance; Maxim Maheux; *TransBIOTech, Levis,*

WP 715 **Proteolytic Activity Elicited during Work-Up Of Human Serum Samples – Obstacle for Biomarker Analysis: Mass Spectrometric Characterization of Cleavage Products;** Jingzhi Yang[1]; Claudia Roewer[1]; Cornelia Koy[1]; Manuela Russ[1]; Martin Sklorz[2, 3]; Ralf Zimmermann [2, 3]; Uwe Fritschen[4]; Juliane C. Finke [4]; Michael O. Glocker[1]; *[1]Proteome Center Rostock, University of Rostock, Rostock, Germany; [2]Institute of Chemistry, University of Rostock, Rostock, Germany; [3]Helmholtz Zentrum München, Munich, Germany; [4]HELIOS Clinic Emil von Behring, Berlin, Germany*

WP 716 **Elevated Pressure Improves the Extraction and Identification of Proteins Recovered from Formalin-Fixed, Paraffin-Embedded Tissue Surrogates;** Carol Fowler[1]; Cedric Moore[3]; Timothy O'Leary[2]; Jeffrey Mason[1]; *[1]Baltimore VA Medical Center, Baltimore, MD; [2]Veterans Health Administration, Washington, DC; [3]Johns Hopkins University, Baltimore, MD*

WP 717 **LC-MS/MS Impurity Profiling and Quantitation for an Improved Bioprocess for the Production of a Fab Fragment in *E. coli*;** Anita Krishnan; Shirishkumar Patel; Shalvi Shah; Sudheer Babu; Shardul Salunkhe; Sachin Rewanwar; Naidu Mookala; Archana Verma; Nagnath Mandi; Praveen Muneshwar; Sandeep Somani; Ashok Mishra; Brajesh Varshney; Rustom Mody; *Lupin limited, Biotech, Pune, India*

WP 718 **Discovery and Characterization of a Novel Photo-Oxidative Histidine-Histidine Crosslink in IgG1 Antibody Utilizing ^{18}O-labeling and Mass Spectrometry;** Min Liu[1, 2]; Zhongqi Zhang[1]; Janet Cheetham[1]; Da Ren[1]; Zhaohui Sunny Zhou[2]; *[1]Amgen, Inc., Thousand Oaks, CA; [2]Northeastern University, Boston, MA*

WP 719 **Comparative Identification Methods of MS Data: Profile Versus Centroid Acquisition and the Advantage of Preliminary Multivariate Curve Resolution (MCR-ALS) Analysis;** Eva Gorrochategui[1]; Yongdong Wang[2]; Sílvia Lacorte[1]; Cinta Porte[1]; Romà Tauler[1]; *[1]Institute of Environ. Assessment & Water Research, Barcelona, Spain; [2]Cerno Bioscience, Norwalk, VA*

WP 720 **A New GC "Retention Projection" Database Enables Calculation of Appropriate Retention Time Tolerance Windows without Having Standards Physically on Hand;** Brian Barnes[1]; Michael Wilson[2]; Peter Carr[1]; Mark Vitha[3]; Corey Broeckling[4]; Adam Heuberger[4]; Jessica Prenni[4]; Gregory Janis[5]; Henry Corcoran[5]; Nicholas Snow[6]; Shilpi Chopra[6]; Ramkumar Dhandapani[6]; Amanda Tawfall[7]; Lloyd Sumner[7]; Paul Boswell[2]; *[1]University of Minnesota, Minneapolis, MN; [2]University of Minnesota, Saint Paul, MN; [3]Drake University, Des Moines, IA; [4]Colorado State University, Fort Collins, CO; [5]MedTox Laboratories, Saint Paul, MN; [6]Seton Hall University, South Orange, NJ; [7]The Samuel Roberts Noble Foundation, Ardmore, OK*

WP 721 **Accurate Prediction of Retention in Hydrophilic Interaction Chromatography (HILIC) by Back-Calculation of HPLC Gradient Profiles;** Nu Wang; Paul G. Boswell; *University of Minnesota, Saint Paul, MN*

WP 722 **Validation of Decoy Models for HRM/SWATH Acquisition as Used in Spectronaut;** Oliver M. Bernhardt; Roland M. Bruderer; Tejas Gandhi; Saša M. Miladinović; Oliver Rinner; Lukas Reiter; *BiognoSYS AG, Zurich, Switzerland*

WP 723 **Differentiating Gold Nanoparticle Cell Surface Adhesion from Cellular Internalization using Laser Desorption Ionization Mass Spectromet;** Singyuk Hou; Ying Jiang; Sung Tae Kim; Ziwen Jiang; Vincent Rotello; Richard Vachet; *University of Massachusetts, Amherst, Massachusetts*

High Mass Accuracy / High Performance MS: Applications, 724 - 739

WP 724 **Isotopic Exchange Mass Spectrometry Reveals Molecular Structure of Natural Organic Matter;** Yury Kostyukevich[1]; Alexey Kononikhin[1]; Igor Popov[2]; Eugene Nikolaev[1]; *[1]Institute for Energy Problems of Chemical Physics, Moscow, RUSSIA; [2]IBCP RAS, Moscow, Russian Federation*

WP 725 **Qual/Quan Discovery Bioanalytical Strategies for Macromolecular Peptides using High Resolution Mass Spectrometry;** Asoka Ranasinghe; Eugene F. Ciccimaro; Celia D'Arienzo; Timothy Olah; *Bristol-Myers Squibb, Princeton, NJ*

WP 726 **Eliminating Interferences in Serum Extracts using High Resolution Accurate Mass Spectrometry;** Jolaine Hines; Amy Gorsh; Kendall Cradic; Ravinder Singh; Stefan Grebe; *Mayo Clinic, Rochester, MN*

WP 727 **Characterization of an Improved Ultra-High Resolution Quadrupole Time of Flight (UHR-TOF) Instrument for Proteomics Applications;** Markus Lubeck; Stephanie Kaspar; Annette Michalski; Oliver Raether; Christoph Gebhardt; Carsten Baessmann; *Bruker Daltonik GmbH, Bremen, Germany*

WP 728 **Utilizing Very High Resolution Fine Isotopic Fragmentation Data to Refine Elemental Composition Determination;** Tim Stratton; *Thermo Fisher Scientific, San Jose, CA*

WP 729 **High-resolution Two-Dimensional FT-ICR Mass Spectrometry and Applications to Top-Down and Bottom-up Proteomics and Environmental Samples;** Maria van Agthoven[1]; Christopher Wootton[1]; Andrew Soulby[1]; Juan Wei[1]; Mark Barrow[1]; Lionel Chiron[2]; Marie-Aude Coutouly[2]; Marc-André Delsuc[3]; Christian Rolando[4]; Peter O'Connor[1]; *[1]University of Warwick, Coventry, UK; [2]NMRTEC, Illkirch-Graffenstaden, France; [3]IGBMC, Illkirch-Graffenstaden, France; [4]Université Lille 1, Sciences et Technologies, Villeneuve d'Ascq, France*

WP 730 **Faster is Better? A Look at Speed vs Complexity in the Orbitrap Fusion;** Jolene K. Diedrich[1]; Antonio F. M. Pinto[2]; John R. Yates III[1]; *[1]The Scripps Research Institute, La Jolla, CA; [2]CAPES Foundation, Brasilia, Brazil*

WP 731 **Rapid Accurate Mass Strategy for Photodegradation Study of Machite Green under Natural Sunlight Irritation;** Yanchun Sun[1]; Jiehui Hu[2]; Xiaoyan Xu[2]; Ting Liu[2]; Chengyuan Cai[2]; *[1]Heilongjiang River Fishery Research Institute, Harbin, China; [2]AB SCIEX, Shanghai, China*

WP 732 **Utility of High Resolution ESI CID, HCD and ETD MS^n for Complete Structural Elucidation of Large Cyclic Peptides and Metabolites;** Eugene F. Ciccimaro[1]; Qian Ruan [1]; Serhiy Hnatyshyn[1]; Timothy Olah [1]; Hongxia (Jessica) Wang[3]; Gary Walker[2]; Marshall M. Siegel[2]; *[1]Bristol-Myers Squibb, Princeton, NJ; [2]MS Mass Spec Consultants, Fair Lawn, NJ; [3]Thermo Fisher Scientific, San Jose, CA*

WP 733 **High Resolution Mass Spectrometry (GC-APCI-/LDI-/ESI-FTICRMS) of Heavy Fuel Oil and Particulate Matter Emitted by a Ship Diesel Engine;** Martin Sklorz[1, 2]; Christopher Rüger[1, 2]; Theo Schwemer[1, 2]; Ralf Zimmermann[1, 2]; *[1]University of Rostock, Rostock, Germany; [2]Helmholtz Zentrum München, Munich, Germany*

WP 734 **Resolution Requirement for Isotopic Fine Structure Determination of Peptide Fragment with Introduced mDa Stable Isotope Encoding;** Greg T. Blakney[1]; Chad Weisbrod[1]; Nathan Kaiser[1]; Chris L. Hendrickson[1]; Alan G. Marshall[1, 2]; *[1]National High Magnetic Field Laboratory, Tallahassee, FL; [2]Dept. of Chemistry, Florida State University, Tallahassee, FL*

WP 735 **Determination of Site-Specific Protein Disulfide Bond Redox Potentials by Top-Down FT-ICR Mass Spectrometry;** Xiaoyan Guan[1]; Nicolas L. Young[1]; Alan G. Marshall[1, 2]; *[1]National High Magnetic Field Laboratory, Tallahassee, FL; [2]Florida State University, Tallahassee, FL*

WP 736 **Developing an MS-based Platform for High-throughput and Quantitative Assessment of Protein-ligand Interaction: Application in Drug Candidate Screening;** Xin Chen[1]; Shanshan Qin[1]; Lixin Li[2]; Cheng Yang[2]; Wenqing Shui[3]; *[1]College of Life Sciences, Nankai University, Tianjin, China; [2]High-throughput Molecular Drug Discovery Center, Tianjin, China; [3]Tianjin Institute of Industrial Biotechnology, CAS, Tianjin, China*

WP 737 **Large Scale Targeted Protein Quantification using WiSIM-DIA workflow on a Orbitrap Fusion Tribrid Mass Spectrometer;** Reiko Kiyonami[1]; Bhavin Patel[2]; Michael W. Senko[1]; Vlad Zabrouskov[1]; Jarrett Egertson[3]; Ying Sonia Ting[3]; Michael J. Maccoss[3]; John C. Rogers[2]; Andreas FR Hühmer[1]; *[1]Thermo Fisher Scientific, San Jose, CA; [2]Thermo Fisher Scientific, Rockford, IL; [3]Univ of Washington, Seattle, WA*

WP 738 **TMT 10-plex Quantification with Synchronous Precursor selection-MS^3 Enables Robust Global Classification of Protein Subcellular Localization in Pluripotent Embryonic Stem Cells;** Andy Christoforou[1, 2]; Claire Mulvey[1, 2]; Lisa M. Breckels[1]; Penny Hayward[2]; Laurent Gatto[1]; Rosa Viner[3]; Alfonso Martinez Arias[2]; Kathryn S. Lilley[1]; *[1]Dept. of Biochemistry, University of Cambridge, Cambridge, UK; [2]Dept. of Genetics, University of Cambridge, Cambridge, UK; [3]ThermoFisher Scientific, San Jose, CA*

WP 739 **Characterization of Metabolites Inmicrosomal Metabolism of aconitineby High-Performance Liquid Chromatography/Quadrupoleion Trap/Time-Of-Flight Mass Spectrometry;** Cuiping Yang[1]; Changkun Li[2]; Tianhong Zhang[1]; Qian Sun[2]; Yueqi Li[2]; Guixiang Yang[2]; Taohong Huang[2]; Shin-ichi Kawano[2]; Yuki Hashi[2]; Zhenqing Zhang[1]; *[1]Beijing Institute of Pharmacology and Toxicology, Beijing, China; [2]Shimadzu (China) Co., Ltd., Shanghai, China*

Instrumentation: New Developments in Ionization and Sampling, 740 - 759

WP 740 **Remote Laser Ablation Electrospray Ionization Mass Spectrometry for Non-Proximate Analysis;** Laine Compton[1]; Brent Reschke[2]; Jordan Friend[2]; Matthew Powell[2]; Akos Vertes[1]; *[1]George Washington University, Washington, District of Columbia; [2]Protea Biosciences, Inc., Morgantown, WV*

WP 741 **Single-probe: A Novel Sampling and Ionization Device for Mass Spectrometry Studies of Single Cells, Biological Tissues, and Protein PTMs;** Zhibo Yang; Ning Pan; Wei Rao; Rachel Vowcicefski; Chuanbin Mao; Xuewei Qu; *University of Oklahoma, Norman, OK*

WP 742 **A Comparison of Ion Suppression Across Flow Regimes and the Implications of Reduced Suppression on Sensitivity and Assay Precision;** Jay S. Johnson; James Murphy; Paul Rainville; *Waters Corporation, Milford, MA*

WP 743 **Conical Duct (ConDuct) ESI Inlet Electrodes Produce Intense Laser-Like Focused Ion Beams with Close to 100% Ion Transmission Efficiency;** Andrew N. Krutchinsky; Julio C. Padovan; Herbert Cohen; Brian T. Chait; *Rockefeller University, New York, NY*

WP 744 **Comprehensive Mass Spectrometric Analysis of Ablated Proteins in Ultrafast Desorption by Vibrational Excitation (DIVE);** Marcel Kwiatkowski[1]; Marcus Wurlitzer[1]; Ling Ren[2]; Yinfei Lu[2]; Wesley Robertson[2]; R.J. Dwayne Miller[2]; Hartmut Schlüter[1]; *[1]University Medical Centre Hamburg-Eppendorf, Hamburg, Germany; [2]MPSD for Structural Dynamics, Hamburg, Germany*

WP 745 **Sub-ambient Pressure Ionization Nanoelectrospray (SPIN): High Sensitivity Detection and Extended Structural Characterization of Labile Compounds Unattainable by Conventional ESI;** Jonathan T. Cox; Scott R, Kronewitter; Anil Shukla; Ronald J. Moore; Keqi Tang; Richard D. Smith; *Pacific Northwest National Laboratory, Richland, WA*

WP 746 **Novel Quantitative Strategies for Condensed Phase Membrane Introduction Mass Spectrometry: Mitigating Ion Suppression and Extending Linear Dynamic Range;** Kyle D. Duncan[1, 2]; Gregory W. Vandergrift[1]; Mathias Baltes[1]; Erik T. Krogh[1, 2]; Christopher G. Gill[1, 2]; *[1]Applied Environmental Research Laboratories (AERL), Vancouver Island University, Nanaimo, Canada; [2]Chem. Dept, University of Victoria, Victoria, BC, Canada*

WP 747 **Slug Flow Microextraction NanoESI with Real-Time Derivatization for Rapid Analysis of Biofluid Samples;** Yue Ren; Morgan McLuckey; Jiangjiang Liu; Zheng Ouyang; *Purdue University, West Lafayette, IN*

WP 748 **Persistent Multiply Charged Ion Signals Generated by Liquid MALDI Enables Sensitive ETD and Ion Mobility MS Analysis;** Jeff Brown[1, 2]; Michael Morris[2]; Pavel Ryumin[1]; Rainer Cramer[1]; *[1]University of Reading, Reading, UK; [2]Waters Corporation, Wilmslow, UK*

WP 749 **Controlling Ionization Chemistry in Plasma-Assisted Reaction Chemical Ionization;** Haopeng Wang[1]; Ninghang Lin[1]; Kaveh Kahen[2]; Hamid Badiei[2]; Kaveh Jorabchi[1]; *[1]Georgetown University, Washington, DC; [2]PerkinElmer Inc., Woodbridge, Canada*

WP 750 **Optimization of Thin Film Solid Phase Microextraction (SPME) Devices for Direct Analysis in Real Time (DART) Coupled with Tandem MS;** Germán Augusto Gómez-Ríos; Nathaly Reyes-Garcés; Barbara Bojko; Janusz Pawliszyn; *University of Waterloo, Waterloo, Canada*

WP 751 **Characterising Linear and Radial Surface Acoustic Wave Nebulisation Devices for Optimising Protein Ionisation by Design;** Andrew Dennison[1]; Yifan Li[1]; Scott Heron[2]; C. Logan Mackay[1]; David Goodlet[2]; Patrick Langridge-Smith[1]; Anthony Walton[1]; Andrew Mount[1]; *[1]The University of Edinburgh, Edinburgh, UK; [2]University of Maryland, Baltimore, MD*

WP 752 **Signal and Signal-to-noise Enhancement Mediated by Helium with Coanda Effect Electrospray Ionization (CEESI) Source;** Yixin Zhu[2]; Tingting Lv[2]; Peiming Song[2]; Rong Wang[1]; *[1]Icahn School of Medicine at Mount Sinai, New York, NY; [2]Zhejiang Haochuang, Hangzhou, China*

WP 753 **Development of a Vacuum Ultraviolet Photoionization Source for Gas Chromatography used with a High Resolution Time of Flight Mass Spectrometer;** Lloyd Allen; Roza Wojcik; Viatcheslav Artaev; *LECO Corp., Saint Joseph, MI*

WP 754 **Development of a Chip-Based Nanobore Column Platform with Universal Connectivity, Column Heating and Sheath Gas Capability;** Helena Svobodova[1]; Peter Wang[2]; Amanda Berg[1]; Gary A. Valaskovic[1]; *[1]New Objective, Inc., Woburn, MA; [2]New Objective, Inc., Shanghai, China*

WP 755 **Matrix Assisted Ionization Vacuum (MAIV) Using FT-ICR;** Evgenia Tisdale[1]; Beixi Wang[2]; Sarah Trimpin[2]; Charles L. Wilkins[1]; *[1]University of Arkansas, Fayetteville, AR; [2]Wayne State University, Detroit, MI*

WP 756 **Flow Dynamics Technique for Sampling and Separation of Neutrals from Analytes Based on Their Axial Momentum Density Differences;** Gary Salazar[1, 2]; Soenke Szidat[1, 2]; *[1]Depart. of Chem. and Biochem., Univ. of Bern, Bern, Switzerland; [2]Oeschger Centre for Climate Change Research, Bern, Switzerland*

WP 757 **Development of a Novel TRESI-MS Capillary Mixing Device and Proof of Concept via Characterization of Known Protein Interactions;** Nicholas Zinck[1]; Ann-Katherine Stark Stark [1]; Michal Sharon[2]; Derek Wilson[1]; *[1]York University, Toronto, Canada; [2]Weizmann Institute of Science, Rehovot, Israel*

WP 758 **Further Developments Interfacing a High Performance Ion Mobility Spectrometer to LTQ Series Mass Spectrometers;** Robert Jackson; Adam Graichen; Mark Osgood; Ching Wu; *Excellims Corporation, Acton, MA*

WP 759 **Development of an Inline Microfluidic Electrochemical Cell to Study Carbon Dioxide Reduction Mechanisms;** Luke Wooster; Yeon Jae Ko; Alessandra Ferzoco; *Rowland Institute at Harvard, Cambridge, MA*

FAIMS and DMS, 760 - 779

WP 760 **Optimization and Performance Characterization of a Microscale FAIMS Chip Coupled to an Orbitrap Mass Spectrometer;** Lauren Brown[1]; Robert Smith[1]; Alastair Taylor[1]; Michael Winter[1]; Danielle Toutoungi[1]; Dirk Nolting[2]; Alexander Makarov[2]; *[1]Owlstone Ltd, Cambridge, UK; [2]ThermoFisher Scientific, Bremen, Germany*

WP 761 **On a Novel Interface for Electrospray Ionization (ESI)-Field Asymmetric Waveform Ion Mobility Spectrometry (FAIMS) and Significant Improvement in Sensitivity;** Satendra Prasad; Michael W. Belford; Jean-Jacques Dunyach; *Thermo Fisher Scientific, San Jose, CA*

WP 762 **Effect of Electrode Geometry on FAIMS Gas Flow Focusing and Lateral Diffusion;** Jean-Jacques Dunyach; Satendra Prasad; Michael Belford; *Thermo Fisher Scientific, San Jose, CA*

WP 763 **Effect of FAIMS Gas Velocity on Resolution, Sensitivity, and Nanospray Formation;** Michael Belford; Satendra Prasad; Jean-Jacques Dunyach; *Thermo Fisher Scientific, San Jose, CA*

WP 764 **Development and Application of FAIMS for the Investigation of FGF Signaling;** Hongyan Zhao; Debbie L. Cunningham; Andrew J. Creese; John K. Heath; Helen J. Cooper; *School of Biosciences, University of Birmingham, Birmingham, UK*

WP 765 **FAIMS Coupled with HCD Product Ion-Triggered ETD Mass Spectrometry for the Analysis of N- glycosylation in Proteins;** Gloria N. Ulasi; Andrew Creese; Cleidiane G. Zampronio; Helen J. Cooper; *School of Biosciences, University of Birmingham, Egbaston, UK*

WP 766 **FAIMS Fractionation Improves Protein Identification for Low-Abundance Samples;** Kristian E. Swearingen; Jason M. Winget; Michael R. Hoopmann; Robert L. Moritz; *Institute for Systems Biology, Seattle, WA*

WP 767 **Differential Ion Mobility Separations in Pure Helium and He Mixtures using Microchips;** Alexandre A. Shvartsburg; Yehia Ibrahim; Richard D. Smith; *Pacific Northwest National Laboratory, Richland, WA*

WP 768 **Determination of Solvent Effects from Ionization Source on Differential Ion Mobility Spectrometry Separations;** Brandon Santiago; Gary Glish; *University of North Carolina at Chapel Hill, Chapel Hill, NC*

WP 769 **Differential Mobility Separation Pre-filtration on a Portable, Compact Mass Spectrometer;** Spiros Manolakos; Theresa Evans-Nguyen; Francy Sinatra; James Alberti; *The Charles Stark Draper Laboratory, Tampa, FL*

WP 770 **Linked Scanning of Helium and Compensation Voltage to Improve the Resolving Power of Differential Ion Mobility Spectrometry Separations;** Rachel Harris; Samantha Isenberg; Brandon Santiago; Gary L. Glish; *University of North Carolina, Chapel Hill, NC*

WP 771 **Improved DMS Performance with a Jet Injector Inlet;** Brad Schneider[1]; Erkinjon Nazarov[2]; Thomas Covey[1]; *[1]AB SCIEX, Concord, Canada; [2]Draper Laboratories Bioengineering Center, Tampa, FL*

WP 772 **Improved Mass Spectrometer Robustness with DMS Pre-Filtering;** Yang Kang; Bradly Schneider; Thomas R. Covey; *AB Sciex, Concord, Canada*

WP 773 **Discovery of Abundant, Ubiquitous and Intriguing Contaminants in Drinking Water using Differential Ion Mobility and Soft Mass Spectrometry;** Wojciech Gabryelski[1]; Jadwiga Lyczko[1]; Daniel Beach[2]; *[1]University of Guelph, Guelph, Canada; [2]National Research Council Canada, Halifax, Canada*

WP 774 **Feasibility Study on the Detection of Volatile Organic Compounds (VOCs) from Potato Tuber Soft Rot by Differential Mobility Spectrometry (DMS);** Lav R. Khot[1]; Jessica Tufariello[2]; Ashley Almaguer[1]; Eric J. Lynch[3]; Paul J. Rauch[3]; Dennis A. Johnson[4]; Nora Olsen[5]; William Siems[2]; Herbert H. Hill[2]; *[1]Biological Systems Engineering WSU, Pullman, WA; [2]Chemistry WSU, Pullman, WA; [3]Chemring Sensors and Electronic Systems, Charlotte, NC; [4]Plant Pathology WSU, Pullman, WA; [5]Plant, Soil, and Entomological Sciences UI, Moscow, ID*

WP 775 **Rapid Identification of β-carboline Hallucinogens: Harmine and Harmaline, by Pressure Cycling Technology (PCT) and DMS-MS;** Adam B. Hall[1]; Amol Kafle[1]; Alex Thompson[3]; Frederick Li[2]; Kaitlyn Duffy[1]; James Glick[1]; Stephen L. Coy[1]; Paul Vouros[1]; *[1]Northeastern University, Boston, MA; [2]Boston University School of Medicine, Boston, MA; [3]Vermont Forensic Laboratory, Waterbury, VT*

WP 776 **Targeted Analysis of Polar Analytes by DMS-MS for Radiation Biodosimetry;** Amol Kafle[1]; Stephen Coy[1]; Fred Li[1]; Evagelia Laiakis[2]; Albert Fornace[2]; Paul Vouros[1]; *[1]Northeastern University, Boston, MA; [2]Georgetown University, Washington, DC*

WP 777 **The Application of Differential Mobility Spectrometry(DMS) to the Characterization of the Lipid Profile of Commercially Available Olive Oils;** Paul C. Winkler[1]; Paul Baker[2]; Christopher Borton[1]; *[1]AB Sciex, Golden, CO; [2]AB Sciex, Framingham, MA*

WP 778 **Trimethylation and Chemical Modifiers in IMS/MS Peptide Analysis: Performance Enhancement Through Solution- And Gas-Phase Chemistry;** Voislav Blagojevic; Amanda De Filippis; Diethard K. Bohme; *York University, Toronto, Canada*

WP 779 **Conformer Isolation in Intrinsically Disordered Protein Ensembles using DMS-MS;** Shaolong Zhu[1]; Larry Campbell[2]; Yves LeBlanc[2]; Derek J. Wilson[1]; *[1]York University, Toronto, Canada; [2]AB SCIEX, Toronto, Canada*

7:30 - 8:00 am ..... Set up all Thursday posters
10:30 am - 1:00 pm ..... Odd-numbered posters present
12:00 - 2:30 pm ..... Even-numbered posters present
2:30 - 3:00 pm ..... Remove all Thursday posters

Imaging MS: Instrumentation, 001 - 012

ThP 001 **Optimization of the MALDI Imaging Laser Repetition Rates using an Orthogonal MALDI Mass Spectrometer;** Emmanuelle Claude; Mark Towers; James Langridge; *Waters corporation, Manchester, UK*

ThP 002 **Modifications to a Linear Time-of-Flight Mass Spectrometer for Mass Resolved Microscopy with the PImMS Camera;** Edward Halford[1]; Benjamin Winter[1]; Simon King[1]; Mark Mills[2]; Steve Thompson[2]; Vic Parr[2]; Jaya John John[1]; Andrei Nomerotski[3]; Claire Vallance[1]; Renato Turchetta[4]; Mark Brouard[1]; *[1]University of Oxford, Oxford, UK; [2]SAI Ltd., Manchester, UK; [3]Brookhaven National Laboratory, Upton, NY; [4]Rutherford Appleton Laboratory, Oxford, UK*

ThP 003 **Toward Subcellular MALDI-MS Imaging of Plant Tissues by Modification of MALDI-LTQ-Orbitrap Optics;** Andrew Korte[1, 2]; Young Jin Lee[1, 2]; *[1]Iowa State University, Ames, IA; [2]Ames Laboratory - US DoE, Ames, IA*

ThP 004 **Vertically Aligned Transmission Geometry Laser Ablation into a Non-Contact Liquid Vortex Capture Probe for Mass Spectrometry Imaging;** Gary J. Van Berkel; Olga Ovchinnikova; Deepak Bhandari; *Oak Ridge National Laboratory, Oak Ridge, TN*

ThP 005 **Multimodal Chemical and Physical Surface Characterization on a Combined AFM-MS Platform;** Olga S. Ovchinnikova; Gary J. Van Berkel; *Oak Ridge National Laboratory, Oak Ridge, TN*

ThP 006 **Comparison of UV-MALDI and IR-MALDESI Mass Spectrometry Imaging of Biological Tissue Sections;** Milad Nazari[1]; Elias Rosen[1]; Mark T. Bokhart[1]; Corbin Thompson[2]; Craig Sykes[2]; Angela D. M. Kashuba[2]; David C. Muddiman[1]; *[1]North Carolina State University, Raleigh, NC; [2]The University of North Carolina, Chapel Hill, NC*

ThP 007 **Toward High Spectral and Spatial Resolution Mass Spectrometry Imaging of Biological Tissue Sections by IR-MALDESI Coupled to the Q Exactive;** Eli Rosen; Guillaume Robichaud; Jeremy Barry; David C. Muddiman; *NC State University, Raleigh, NC*

ThP 008 **Multiple MS/MS Transition Monitoring in a Single Laser Shot on a MALDI TOF/TOF Mass Spectrometer;** Boone Prentice; Richard Caprioli; *Vanderbilt University, Nashville, TN*

ThP 009 **Tissue Protein Imaging at 2.5µm Spatial Resolution and High Speed using Transmission Geometry MALDI Source Integrated into a TOFMS Instrument;** Andre Zavalin[1]; Junhai Yang[1]; Kevin Hayden[2]; Marvin Vestal[2]; Richard Caprioli[1]; *[1]Vanderbilt University, Nashville, TN; [2]SimulTOF Systems, Sudbury, MA*

ThP 010 **Mass Spectrometry Imaging of Biological Systems using Laser Ablation Plume Capture in Aerosol (LAPCA);** Jonathan Brauer; Jan Sunner; Iwona Beech; Eric Kaufman; *University of Oklahoma, Norman, OK*

ThP 011 **Improved Biological Imaging with Gas Cluster Ion Beams;** John Fletcher[1]; Tina Angerer[1]; Paul Blenkinsopp[2]; Andrew Ewing[1, 3]; *[1]University of Gothenburg, Gothenburg, Sweden; [2]Ionoptika Ltd, Southampton, UK; [3]Chalmers University of Technology, Gothenburg, Sweden*

ThP 012 **Development of New Stigmatic Imaging Mass Spectrometer and its Application to surface Analysis of High Functional Organic Materials;** Jun Aoki; Hisanao Hazama; Kunio Awazu; Michisato Toyoda; *Osaka University, Toyonaka-Shi, Japan*

Informatics: Quantitation/Validation, 013 - 036

ThP 013 **A Novel and Straightforward Experimental Null Strategy Enables Accurate Evaluation and Control of False-Discovery of Significantly-Altered-Proteins in label-Free Quantitative Proteomics;** Xiaomeng Shen; Jun Qu; Jun Li; *University at Buffalo, Buffalo, New York*

ThP 014 **Systematic Assessment of Survey Scan- and MS2-Based Strategies for Label-Free Quantitative Proteomics using High-Resolution MS Data;** Chengjian Tu[1]; Jun Li[1]; Quanhu Sheng[2]; Ming Zhang[1]; Jun Qu[1]; *[1]University at Buffalo, Buffalo, NY; [2]Vanderbilt University, Nashville, TN*

ThP 015 **Comparison of High-End Software for label Free Quantitative Proteomics;** Alon Savidor[1]; Stefan Tenzer[2]; Joerg Kuharev[2]; Yishai Levin[1]; *[1]Weizmann Institute of Science, Rehovot, Israel; [2]University Medical Center of the Johannes Gutenbe, Mainz, Germany*

ThP 016 **Comparison of Label Free Quantification Tools;** Lei Xin[1]; Baozhen Shan[1]; Hao Lin[1]; Weiwu Chen[1]; Mohammad Rahman[1]; Bin Ma[2]; *[1]Bioinformatics Solutions Inc., Waterloo, CANADA; [2]University of Waterloo, Waterloo, ON*

ThP 017 **Protein Identification and Quantitative Analysis with N-Terminal Sequencing by Mass Spectrometry;** Baozhen Shan; Hao Lin; *Bioinformatics Solutions Inc., Waterloo, Canada*

ThP 018 **False Quantification in SILAC Proteomic Experiments;** Chris McKennan; Hua Ding; Lynn Spruce; Steven H. Seeholzer; *Children's Hospital of Philadelphia, Philadelphia, PA*

ThP 019 **Systematic Comparison of Super-SILAC and Label-Free Quantification for Single-Shot Proteome Analysis;** Andreas Tebbe; Martin Klammer; Stefanie Sighart; Christoph Schaab; Felix Oppermann; Henrik Daub; *Evotec München, Munich, Germany*

ThP 020 **Estimating Effects of Peptide Co-Fragmentation on iTRAQ Quantification by Simulating Multiplexed Spectra for Reliable Identification of Differentially Expressed Peptides;** Honglan Li[1]; Kyu-Baek Hwang[1]; Dong-Gi Mun[2]; Hokeun Kim[2]; Hangyeore Lee[2]; Sang-Won Lee[2]; Eunok Paek[3]; *[1]Soongsil University, Seoul, Republic of Korea; [2]Korea University, Seoul, Republic of Korea; [3]Hanyang University, Seoul, Republic of Korea*

ThP 021 **Census 2: Isobaric Labeling Data Analysis in an Automated Way;** Robin Park; Aaron Aslanian; Daniel B. McClatchy; Harshil Shah; Xuemei Han; John Yates; *The Scripps Research Institute, San Diego, CA*

ThP 022 **Logical Bayesian Networks for Proteomics;** Kurt De Grave; Jan Ramon; *KU Leuven, Leuven, Belgium*

ThP 023 **Statistical Analysis of Bayesian Hierarchical Inversion for MRM Protein Quantification and QDA Serum Sample Classification;** Laurent Gerfault[1]; Amna Klich[2]; Catherine Mercier[2]; Pascal Roy[2]; Jean François Giovannelli[3]; Audrey Giremus[3]; Pierre Mahe[4]; Jean Philippe Charrier[5]; Bruno Lacroix[5]; Pierre Grangeat[1]; *[1]CEA, Leti, Minatec Campus, Grenoble, FrancE; [2]HCL, Univ. Lyon 1, CNRS UMR 5558, Lyon, France; [3]Univ. Bordeaux, IMS, UMR 5218, Bordeaux, France; [4]bioMérieux, Grenoble, France; [5]bioMérieux, Marcy L'etoile, France*

ThP 024 **Identification and Verification of the Missing Proteins for the C-HPP by Using the Mass Spectral Library and MRM Technique;** Jin-Young Cho; Hyoung-Joo Lee; Seul-Ki Jeong; Kwang-Youl Kim; Young-Ki Paik; *YPRC, Seoul, Korea, Republic*

ThP 025 **CPTAC Assay Portal: a community Web-Based Repository for Well-Characterized Quantitative Targeted Proteomics Assays;** Jeff Whiteaker[1]; Goran Halusa[2]; Andrew Hoofnagle[3]; Vagisha Sharma[3]; Brendan MacLean[3]; Ping Yan[1]; John Wrobel[4]; Jacob Kennedy[1]; DR Mani[5]; Lisa Zimmerman[6]; Matthew Meyer[7]; Mehdi Mesri[8]; Henry Rodriguez[8]; Amanda Paulovich[1]; *[1]Fred Hutchinson Cancer Research Center, Seattle, WA; [2]Leidos Biomedical Research Inc, Frederick, MD; [3]University of Washington, Seattle, WA; [4]University of North Carolina, Chapel Hill, NC; [5]Broad Institute, Cambridge, MA; [6]Vanderbilt University School of Medicine, Nashville, TN; [7]Washington University School of Medicine, St. Louis, MO; [8]National Cancer Institute, Bethesda, MD*

ThP 026 **A Scientific Workflow for Automatic Peptide Selection for Targeted Proteomics Experiments;** Yassene Mohammed[1, 2]; Dominik Domanski[3]; Angela Jackson[1]; Derek Smith[1]; Andre Deelder[2]; Magnus Palmblad[2]; Christoph Borchers[1, 4]; *[1]University of Victoria-Genome BC Proteomics Centre, Victoria, Canada; [2]Center for Proteomics and Metabolomics,Leiden Univ, Leiden, The Netherlands; [3]Polish Academy of Sciences, Warsaw, Poland; [4]UVic Dept of Biochemistry and Microbiology, Victoria, Canada*

ThP 027 **Protein Prospector as a Component in a Label Free/ SRM Pipeline;** Peter R Baker[1]; Anatoly Urisman[2]; Robert Chalkley[2]; *[1]UCSF, Rokietnica, POLAND; [2]UCSF, San Francisco, CA*

ThP 028 **MS-Umpire: Java Open-Source MS[1] Quantitation Software Based on Untargeted Feature Detection Algorithm for Proteomics and Metabolomics Data;** Chih-Chiang Tsou; Alexey Nesvizhskii; *University of Michigan, Ann Arbor, MI*

ThP 029 **Unprecedented Quantitative Evaluation of LC-MS Isotope Trace Feature Detection Using Ground Truth Data;** Rob Smith; Ryan Money; John Prince; Dan Ventura; *Brigham Young University, Provo, UT*

ThP 030 **Novel Proteomics Mass Spectrometry Simulation in Java: JAMSS;** Rob Smith; John Prince; *Brigham Young University, Provo, UT*

ThP 031 **New Functionality for the Trans-Proteomic Pipeline: Tools for the Analysis of Proteomics Data;** Luis Mendoza[1]; David D. Shteynberg[1]; Joseph Slagel[1]; Michael R. Hoopmann[1]; Henry Lam[2]; Jimmy Eng[3]; Eric W Deutsch[1]; Robert L Moritz[1]; *[1]Institute For Systems Biology, Seattle, WA; [2]Hong Kong University of Science and Technology, Hong Kong, China; [3]University of Washington, Seattle, WA*

ThP 032 **A GPU-Powered, Massively Parallel Nonparametric Statistics Server for Analysis and Exploration of Large-Scale Quantitative Data between and across Quantitative Experiments;** John P. Wilson[1]; Eric Paniagua[1]; Robert M. Farber[2]; Darryl J.C. Pappin[1]; *[1]Cold Spring Harbor Laboratory, Cold Spring Harbor, NY; [2]Blackdog Endevours LLC, Gig Harbor, WA*

ThP 033 **PeptideDepot PlugIn: Using Statistical Tool to Improve Quality of Quantitative Proteomics Data Generated by Mass Spectrometry;** Qinqin Ji[1]; Samantha Beik[2]; Arthur Salomon[1, 2]; *[1]Department of Chemistry, Brown University, Providence, RI; [2]Department of Molecular Biology, Cell Biology, and, Providence, RI*

ThP 034 **ProteoSuite v1.0 – An Open Source Framework for Quantitative Proteomics Analysis Based on PSI Data Standards;** Faviel Gonzalez[1]; Andrew Collins[1]; Jun Fan[2]; Huaizhong Zhang[3]; Andrew Dowsey[3]; Henning Hermjakob[4]; Conrad Bessant[2]; Simon Hubbard[3]; Andrew Jones[1]; *[1]University of Liverpool, Liverpool, UK; [2]Queen Mary University of London, London, UK; [3]University of Manchester, Manchester, UK; [4]European Bioinformatics Institute, Cambridge, UK*

ThP 035 **Multi-Instrument, Skyline-Based Comparison of DIA Peptide Identification and Statistical Confidence Tools Enables Improved, Novel Peak Scoring Strategy;** Dario Amodei[1]; Don Marsh[2]; Hannes Rost[3]; Lucia Espona Pernas[3]; George Rosenberger[3]; Ruedi Aebersold[3]; Parag Mallick[1]; Michael J. Maccoss[2]; Brendan Maclean[2]; *[1]Stanford University, Palo Alto, California; [2]Univ of Washington, Seattle, WA; [3]ETH Zurich, Zurich, Switzerland*

ThP 036 **Evaluation of Progenesis QI for Proteomics and Progenesis Post-Processor (PPP) as a Simplified Workflow for Ion-Mobility Enabled Data-Independent SILAC Studies;** Joanne B. Connolly[1]; Lee A Gethings[1]; Kelly McMahon[1]; Robert Tonge[1]; Johannes Pc Vissers[1];

Anthony D Whetton[2]; Andrew R Jones[3]; James Langridge[1]; *[1]Waters Corporation, Manchester, UK; [2]University of Manchester, Manchester, UK; [3]University of Liverpool, Liverpool, UK*

Informatics: Pathway Analysis, 037 - 040

ThP 037 **Improved Peak Detection and Deconvolution of Native Protein Complex Electrospray Mass Spectra;** Jonathan Lu; Michael Trnka; Shenheng Guan; Alma Burlingame; *University of California, San Francisco, San Francisco, CA*

ThP 038 **Quantitative Proteomics to Unravel the Expression and Translocation of MET Proto-Oncoprotein to Mitochondria;** Kae Hwan Sim; Siu Kwan SZE; *School of Biological Sciences, Nanyang Technological University, Singapore 637551, SINGAPORE*

ThP 039 **Using Causal Discovery Techniques to Infer Signaling Pathways from Mass Spectrometry Data;** Jennifer Teubl[1]; Kelly Ruggles[1]; Himanshu Grover[1]; Philipp Mertins [2]; Karl Clauser[2]; Sherri R. Davies [3]; R. Reid Townsend [3]; Matthew J. Ellis [3]; Steven A. Carr[2]; David Fenyo[1]; *[1]NYU Langone Medical Ctr, Ny, NY; [2]Broad Institute, Cambridge, MA; [3]Washington University, St. Louis, MO*

ThP 040 **Pathway Enrichment Analysis for Multi-omic Data using netSVM;** Li Chen; Yuan Tian; Caitlin Choi; Shisheng Sun; Jianying Zhou; Hui Zhang; Daniel Chan; Zhen Zhang; *Johns Hopkins School of Medicine, Baltimore, MD*

Informatics: Systems Biology, 041 - 046

ThP 041 **A Novel Method for Integration of Proteomic and Transcriptomic Data;** Ekaterina Mostovenko[1]; Cheryl Lichti [1]; Qianghu Wang[2]; Erik Sulman[2]; Carol Nilsson [1]; *[1]UTMB Galveston, Galveston, TX; [2]University of Texas M.D. Anderson Cancer Center, Houston, TX*

ThP 042 **Co-Expression Network Analysis of Quantitative Proteomics Data: A New Approach for Studying Neuropsychiatric Disease;** Matthew L MacDonald[1]; Ying Ding[2]; Jason Newman[1]; David A Lewis[1]; Robert A Sweet[1]; Nathan Yates[2]; *[1]University of Pittsburgh, Dept of Psychiatry, Pittsburgh, Pennsylvania; [2]University of Pittsburgh, Biomedical Mass Spectr, Pittsburgh, Pennsylvania*

ThP 043 **Construction and Assessment of Individualized Proteogenomic Databases for Large-Scale Analysis of Non-Synonymous Single Nucleotide Variants;** Karsten Krug; Sasa Popic; Alejandro Carpy; Katarina Matic; Christoph Taumer; Boris Macek; *Proteome Center Tuebingen, University of Tuebingen, Tuebingen, Germany*

ThP 044 **Flexible, Accessible and Reproducible Workflows for Tandem Proteogenomic and Metaproteomic Analysis using the Galaxy-P Platform;** Pratik Jagtap[1]; Julie Yang[2]; Getiria Onsongo[4]; Joel Kooren[2]; Sricharan Bandhakavi[3]; James Johnson[4]; Joel Rudney[2]; Tim Griffin[2]; *[1]Center for Mass Spectrometry and Proteomics, UMN, St.Paul, MN; [2]University of Minnesota, Minneapolis, MN; [3]Bio-Rad Laboratories, Hercules, CA; [4]Minnesota Supercomputing Institute, Minneapolis, MN*

ThP 045 **Proteogenomics as a Crucial Tool in the Search for Short Secreted Proteins;** Ira Cooke[1, 2]; Dan Jones[3, 4]; Cecilia Deng[5]; Pierre Faou[1]; Nathan Hall[2]; Vignesh Jayachandran[1]; Michael Liem[1]; Adam Taranto[3]; Kim Plummer[3]; Suresh Mathivanan[1]; *[1]Department of Biochemistry, La Trobe University, Melbourne, Australia; [2]Life Sciences Computation Centre (VLSCI), Melbourne, Australia; [3]Department of Botany, La Trobe University, Melbourne, Australia; [4]Plant Biosecurity CRC, Canberra, Australia; [5]Institute for Plant and Food Reseach, Auckland, New Zealand*

ThP 046 **Mass Spectrometry based Draft of the Human Proteome;** Mathias Wilhelm[1]; Judith Schlegl[2]; Hannes Hahne[1]; Amin Moghaddas Gholami[1]; Marcus Lieberenz[2]; Emanuel Ziegler[2]; Lars Butzmann[2]; Siegfried Gessulat[2]; Harald Marx[1]; Mikhail Savitski[3]; Karsten Schnatbaum[4]; Ulf Reimer[4]; Holger Wenschuh[4]; Marcus Bantscheff[3]; Anja Gerstmair[2]; Franz Faerber[2]; Bernhard Kuster[1]; *[1]Technical Universitiy Munich, Freising, Germany; [2]SAP AG, Walldorf, DE; [3]Cellzome, Heidelberg, DE; [4]JPT Peptide Technologies, Berlin, DE*

Informatics: Crosslinking and Structure Analysis, 048 - 056

ThP 048 **Identifying Cross-linked Peptides using Protein Prospector;** Robert Chalkley[1]; Michael Trnka[1]; Nicholas Michael[2]; Peter R Baker[1]; *[1]UCSF, San Francisco, CA; [2]Reading Scientific Services Ltd, Reading, UK*

ThP 049 **Comprehensive Identification of Disulfide Bonds Using Proteinase K Digestion and Second-Order Crosslinking Analysis;** Karl Makepeace[1]; Jason Serpa[1]; Evgeniy Petrotchenko[1]; Christoph Borchers[1, 2]; *[1]University of Victoria-Genome BC Proteomics Centre, Victoria, Canada; [2]UVic Dept of Biochemistry and Microbiology, Victoria, Canada*

ThP 050 **Application of a Fast Sorting Algorithm to the Assignment of Mass Spectrometric Crosslinking Data;** Evgeniy Petrotchenko[1]; Carol Parker[1]; Christoph Borchers[1,2]; *[1]University of Victoria-Genome BC Proteomics Centre, Victoria, Canada; [2]UVic Dept of Biochemistry and Microbiology, Victoria, Canada*

ThP 051 **Optimizing pLink for Disulfide-bond Analysis;** Sheng-Bo Fan[1]; Shan Lu[2]; Bing Yang[2]; Jia-Ming Meng[1]; Chi Hao[1]; Long Wu[1]; Kun Zhang[1]; Rui-Xiang Sun[1]; Meng-Qiu Dong[2]; Si-Min He[1]; *[1]ICT, Chinese Academy of Sciences, Beijing, China; [2]National Institute of Biological Sciences, Beijing, Beijing, China*

ThP 052 **Software Tools for Improved Efficiency and Automated Interpretation of Mass Spectrometric Analysis of Chemically Crosslinked Proteins;** Guanghui Wang[1]; Kevin Ramkissoon[2]; Jenna Dumond[2]; Joan Ferraris[2]; Maurice Burg[2]; Marjan Gucek[1]; *[1]Proteomics Core, NHLBI, NIH, Bethesda, MD; [2]LKEM, NHLBI, NIH, Bethesda, MD*

ThP 053 **Application of Non-selective Photoreactive Cross-linking in Mass Spectrometry-based Structural Proteomics;** Kuan-Chieh Peng; Pang-Hung Hsu; *National Taiwan Ocean University, Keelung, Taiwan*

ThP 054 **Analysis of Protein-Protein Interactions using Chemical Cross-Linking Mass Spectrometry (CXMS): Novel Computational Approaches;** Mihir Jaiswal[1, 2]; Nathaniel Crabtree[1, 2]; Michael Bauer[2]; Roger Hall[2]; Kevin Raney[2]; Boris Zybailov[1, 2]; *[1]University of Arkansas at Little Rock, Little Rock, AR; [2]University of Arkansas for Medical Sciences, Little Rock, AR*

ThP 055 **Metaproteomic Protein Identification Based on a Species-Level Similarity Correction;** Anke Penzlin; Martin Lindner; Joerg Doellinger; Wojtek Dabrowski; Andreas Nitsche; Bernhard Renard; *Robert Koch Institute, Berlin, Germany*

ThP 056 **$^{14}N^{15}N$ DXMSMS Match Program for the Automated Analysis of LC/ESI-MS/MS Crosslinking Data from Experiments Using ^{15}N Metabolically Labeled Proteins;** Evgeniy Petrotchenko[1]; Christoph Borchers[1, 2]; *[1]University of Victoria-Genome BC Proteomics Centre, Victoria, Canada; [2]UVic Dept of Biochemistry and Microbiology, Victoria, Canada*

Informatics: Intact Proteins, 057 - 064

ThP 057 **Automated Protein Identification and Sequencing Using Top-Down MS Data;** Christian Heckendorf; Roger Theberge; Jean Spencer; Catherine E. Costello; Mark E. Mccomb; *Boston University School of Medicine, Boston, MA*

ThP 058 **ProSight Lite: Freeware for Targeted Top Down Protein Mass Spectrometry and PTM Localization;** Ryan Fellers[1]; Richard Leduc[2]; Xiang Yu[1]; Bryan Early[1]; Paul Thomas[1]; Neil L. Kelleher[1]; *[1]Northwestern University, Evanston, IL; [2]Indiana University, Bloomington, IN*

ThP 059 **Improvements upon the C-Score: a Bayesian Framework for Proteoform Characterization in Top Down Proteomics;** Paul Thomas[1]; Ryan Fellers[1]; Bryan Early[1]; Joseph Greer[1]; Richard Leduc[2]; Neil L. Kelleher[1]; *[1]Northwestern University, Evanston, IL; [2]Indiana University, Bloomington, IN*

ThP 060 **A Framework for Error-Tolerant Identification and Characterization of Protein Complexes by Database Searching and Top Down Tandem Mass Spectrometry;** Pierre C. Havugimana; Owen S. Skinner; Philip D. Compton; Bryan P. Early; Joseph B. Greer; Ryan T. Fellers; Neil L. Kelleher; *Northwestern University, Evanston, IL*

ThP 061 **Differential Profiling of Intact Proteins Using a Novel Two-Pass Approach;** Norton Kitagawa; Christine Miller; Steven M. Fischer; Yinghang Yang; Stephen Madden; *Agilent Technologies, Inc., Santa Clara, CA*

ThP 062 **A Top-Down Driven Approach To *De Novo* Protein Sequencing;** Kira Vyatkina[1]; Lennard Dekker[2]; Si Wu[3]; Vitalii Demyanyuk[4]; Xiaowen Liu[5]; Mikhail Dvorkin[1]; Sonya Alexandrova[1]; Martijn M. Vanduijn[2]; Theo M. Luider[2]; Nikola Tolic[3]; Ljiljana Pasa-Tolic[3]; Pavel A. Pevzner[1, 6]; *[1]SPb Academic University, St Petersburg, Russian Federation; [2]Erasmus Medical Center, Rotterdam, Netherlands; [3]PNNL, Richland, WA; [4]SPb National Research University IFMO, St Petersburg, Russian Federation; [5]IUPUI, Indianapolis, IN; [6]UCSD, La Jolla, CA*

ThP 063 **Complete and Confident Protein Characterization Using Top-down Mass Spectrometry and Isotopic Envelope Fingerprinting;** Zhixin Tian; kaijie Xiao; *Department of Chemistry, Tongji University, Shanghai, China*

ThP 064 **De novo protein sequencing by combining top-down and bottom-up tandem mass spectra;** Xiaowen Liu[1]; Lennard Dekker[2]; Si Wu[3]; Martijn Vanduijn[2]; Theo Luider[2]; Nikola Tolic[3]; Mikhail Dvorkin[4]; Sonya Alexandrova[4]; Kira Vyatkina[4]; Ljiljana Pasa-Tolic[3]; Pavel Pevzner[5]; *[1]IUPUI, Indianapolis, IN; [2]Erasmus Medical Center, Rotterdam, Netherlands; [3]PNNL, Richmond, WA; [4]St. Peterburg Academic University, St. Peterburg, Russia; [5]UCSD, La Jolla, CA*

Intact Proteins: Quantitative Analysis, 065 - 069

ThP 065 **Top-down Quantitative Proteomics Reveals Concerted Changes in Myofilaments in Ischemic Heart;** Ying Peng[1]; Zachery Gregorich[2]; Santosh G Valeja[3]; Huseyin Guner[1]; Yi-Chen (Ivy) Chen[4]; Timothy Hacker[1]; Xiaowen Liu[5]; Ying Ge [1]; *[1]University of Wisconsin - Madison, Madison, WI; [2]UW Madison, Madison, WI; [3]University of Wisconsin- Madison, MADISON, WI; [4]University of Wisconsin-Madison, Madison, WI; [5]IUPUI, Indianapolis, IN*

ThP 066 **Investigation of Instrumental Variables Effect on Intact Protein Multiple Reaction Monitoring Reproducibility in a Next Generation Triple Quadrupole Mass Spectrometer;** Evelyn Wang[1]; Peter Combe[2]; Erin McAllister[2]; Kevin Schug[1]; *[1]University of Texas at Arlington, Arlington, TX; [2]Shimadzu Scientific Instruments, Columbia, MD*

ThP 067 **Characterization of Intact and Reduced Therapeutic Monoclonal Antibodies using Microflow Size Exclusion Chromatography Coupled with Mass Spectroscopy;** Khaled Mrizig[1]; Xiang Zhu[1]; Remco Van Soest[1]; Eric Johansen[2]; Subodh Nimkar[1]; *[1]SCIEX Separations, Division of AB SCIEX, Redwood City, CA; [2]AB SCIEX, Redwood CIty, CA*

ThP 068 **NeuCode SILAC Enables Multiplexed Protein Quantitation From the Top Down;** Timothy W. Rhoads; Christopher M. Rose; Nicholas M. Riley; Derek J. Bailey; Anna E. Merrill; Alexander S. Hebert; Michael S. Westphall; Joshua J. Coon; *University of Wisconsin, Madison, WI*

ThP 069 **Generalized Top-down Proteomics and Proteoform Analysis Platform with Wide and Narrow pI IEF-SPLC-MS;** Steven Patrie; *UT Southwestern Med. Center, Dallas, TX*

Proteins: Phosphoproteins, 070 - 083

ThP 070 **Differential Phosphoproteomic Profiling of Human Myogenesis using Stable Isotope Labeling by Amino acids (SILAC);** Natarajan V Bhanu[1]; Rosalynn Molden[2]; Zuofei Yuan[1]; Benjamin A Garcia[1]; *[1]University of Pennsylvania, Philadelphia, PA; [2]Princeton University, Princeton, NJ*

ThP 071 **Hidden quantification – Obvious Modifications: Combining Metabolic Labeling with Top- Down Phospho- Proteomics using 2D Gel Electrophoresis (2D GE);** Andreas Otto; Carolin Dewald; Christian Henschker; Michael Hecker; Dörte Becher; *University Greifswald, Greifswald, Germany*

ThP 072 **Identification of Potential Downstream Targets of a Histidine Phosphatase Domain of the General Transcription Factor IIIC;** Marco L. Hennrich[1]; Nicholas M. I. Taylor[2]; Sebastian Glatt[1]; Helga Groetsch[1]; Anne-Claude Gavin[1]; Christoph W. Mueller[1]; *[1]EMBL Heidelberg, Heidelberg, Germany; [2]Centro de Investigaciones Biologicas, Madrid, Spain*

ThP 073 **Demonstration of Orthogonal Complementary Enrichment Methods for Enhanced Phosphopeptide Profiling of Drug-Treated Gastric Carcinoma Cells;** Charles L. Farnsworth; Hongbo Gu; Xiaoying Jia; Kimberly Lee; Jian Min Ren; Jeffrey C. Silva; *Cell Signaling Technology, Danvers, MA*

ThP 074 **Dimethyl Labeling Approach to the Study of the TLR Response Pathway;** Art Nuccio; Nathan Manes; Virginie Sjoelund; Aleksandra Nita-Lazar; *NIH, Bethesda, MD*

ThP 075 **Meta-analysis of Arabidopsis Phospho-proteomics;** Klaas J. van WIjk[1]; Giulia Friso[1]; Dirk Walther[2]; Waltraud X. Schulze[3]; *[1]Cornell University, Ithaca, NY; [2]Max Planck Institute for Plant Physiology, Golm, Germany; [3]3Department of Plant Systems Biology, Stuttgart, Germany*

ThP 076 **Quantitative Analysis of Phosphoproteins During *Candida albicans* Hyphal Formation;** Susan T. Weintraub[1]; Kevin Hakala[1]; Sammy Pardo[1]; Brian C. Searle[2]; Derek Thomas[3]; *[1]UT Health Science Center at San Antonio, San Antonio, TX; [2]Proteome Software Inc., Portland, OR; [3]Grand Valley State University, Allendale, MI*

ThP 077 **Global Phosphoproteome Profiling For the Characterization of Escherichia Coli Strains;** Rabih Jabbour[1]; Raja Sekhar Nirujogi[3]; Samir Deshpande[2, 2]; Mary Wade[1]; A. Peter Snyder[4]; Akhilesh Pandey[3]; *[1]ECBC, Apg, MD; [2]Science and Technology Corp., Edgewood, MD; [3]Johns Hopkins University School of Medicine, Baltimore, MD; [4]US Army /ECBC, Bel Air, MD*

ThP 078 **Development of Antibody-like Nanomaterials to Enrich Phosphoproteins for Proteome Analysis;** Leekyoung Hwang; Zachery R. Gregorich; Santosh G. Valeja; Serife A. Gunner; Wenxuan Cai; Song Jin; Ying Ge; *University of Wisconsin-Madison, Madison, WI*

ThP 079 **A Sensitive Assay to Estimate Total Protein Phosphorylation Level in Complex Samples;** Li Pan; Jiazhen Zhang; Chuan-Chih Hsu; Linna Wang; Anton Iliuk; Weiguo Andy Tao; *Purdue University, West Lafayette, IN*

ThP 080 **SILAC-based Quantitative Phosphoproteomics Identifies Substrates of Ser/Thr/Tyr Kinases and Phosphatases in Bacillus Subtilis;** Vaishnavi Ravikumar[1]; Lei Shi[2]; Karsten Krug[1]; Ivan Mijakovic[2, 3]; Boris Macek[1]; *[1]Proteome Center Tuebingen, Tuebingen, Germany; [2]AgroParisTech, Grignon, France; [3]Chalmers University of Technology, Gothenburg, Sweden*

ThP 081 **Quantitative Phosphoproteomics of STEK Cell Lines Implicates Novel Pathways in Pathogenesis of Fragile X Syndrome and Autism Spectrum Disorders;** Katarina Matic[1]; Timo Eninger[1]; Barbara Bardoni[2, 3]; Laetitia Davidovic[2, 3]; Boris Macek[1]; *[1]Proteome Center Tuebingen, Tuebingen, Germany; [2]Institut de Pharmacologie Moléculaire et Cellulair, Valbonne, France; [3]Universite´ de Nice-Sophia Antipolis, Nice, France*

ThP 082 **Quantitative Analysis of the Phosphoproteome Demonstrates Novel Roles of the O-GlcNAc Transferase in Modulating Cellular Signaling;** Jun Zhong; Marissa Martinez; Srona Sengupta; Albert Lee; Xinyan Wu; Raghothama Chaerkady; Robert O'Meally; Karen Reddy; Robert Cole; Akhilesh Pandey; Natasha Zachara; *Johns Hopkins University, Baltimore, MD*

ThP 083 **-Omics Investigation of *Sulfolobus solfataricus* in Response to Different Carbon Sources;** Wen Qiu; Trong Khoa Pham; Phillip C. Wright; *Chelsi Institute, The University of Sheffield, Sheffield, UK*

Proteins: Non-Covalent Interactions, 084 - 104

ThP 084 **Characterization of Drug Mode-of-Action using Protein Stability Measurements;** M. Ariel Geer[1]; Douglas H. Weitzel[2]; Do Yeon Kwon[1]; Tesia N. Stephenson[1]; Mark W. Dewhirst[2]; Jiyong Hong[1]; Michael C. Fitzgerald[1]; *[1]Duke University, Durham, NC; [2]Duke University Medical Center, Durham, NC*

ThP 085 **SILAC-Based Strategy for Proteome-Wide Thermodynamic Analysis of Protein-Ligand Binding Interactions;** Jagat Adhikari[1]; Michael C. Fitzgerald[1, 2]; *[1]Duke Medical Center, Durham, NC; [2]Duke University, Durham, NC*

ThP 086 **The Effect of Mutations in beta-Amyloid on Zinc Ion Coordination;** Igor Popov[1, 2]; Maria Indeykina[2, 4]; Alexey Kononikhin[1, 2]; Sergey Kozin[3]; Eugene Nikolaev[1, 2]; *[1]Moscow Institute of Physics and Technology, Dolgoprudny, Russia; [2]Emanuel Institute of Biochemical Physics, Moscow, Russia; [3]Engelhardt Institute of Molecular Biology, Moscow, Russia; [4]Institute for Energy Problems of Chemical Physics,, Moscow, Russia*

ThP 087 **Natural Products: A Promising Source for Potential *β*-Amyloid Inhibitors;** Anthony Tsarbopoulos[1]; Nikolaos Stavros Koulakiotis[2]; Dimitrios Anagnostopoulos[3]; Ioannis Kostakis[4]; *[1]University of Athens Medical School, Athens 115 27, Greece; [2]University of Patras, Pharmacy Department, Patras 26504 , Greece; [3]The Goulandris Natural History Museum, Kifissia 145 62, Greece; [4]University of Athens, Pharmacy Dpt., Athens 157 71, Greece*

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ThP 160 **A Novel LC-MS^2 Product Dependent Parallel Data Acquisition Function and Data Analysis Workflow for Sequencing and Identification of intact Glycopeptides;** Sz-Wei Wu[1, 2]; Tsung-Hsien Pu[1]; Rosa Viner[3]; Kay-Hooi Khoo[1]; *[1]Academia Sinica, Taipei, Taiwan; [2]Thermo Fischer Scientific Taiwan, Taipei, Taiwan; [3]Thermo Fischer Scientific, San Jose, CA*

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ThP 167 **An Integrated Platform of LC-MS, HPAEC-PAD, and Bioinformatics for the Carbohydrate Profiling of Therapeutic Glycoproteins;** Andrea Gray; Joshua Wilhide; Shaunak Uplekar; Govind Rao; William LaCourse; *University of Maryland Baltimore County, Baltimore, MD*

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ThP 171 **Development of Isotope-Labeled Viral Protein Concatemers for Targeted, Absolute Quantification of all Herpes Simplex Virus Structural Proteins during Infection;** Todd M. Greco[1]; Beatriz Oliveira[1]; Aaron Lin[1]; Kay Grunewald[2]; Ileana M. Cristea[1]; *[1]Princeton University, Princeton, NJ; [2]Oxford University, Oxford, UK*

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Michael Cartron; Pu Qian; Mark Dickman; Neil Hunter; *University of Sheffield, Sheffield, UK*

ThP 173 **MS^E as a Means of Determining Label Incorporation Efficiency and Determining Empirical Normalization Constants for iTRAQ/TMT-based Experiments;** Yong Yang[1]; Kevin Howe[1]; Sheng Zhang[2]; Theodore W Thannhauser[1]; *[1]USDA-ARS, Cornell University, Ithaca, NY; [2]Cornell University, Ithaca , NY*

ThP 174 **Direct Comparison of TMT Labeling vs. Spectral Counting for Relative Peptide Quantification using a Two-proteome Model;** Rachel Rodrigues; David Nusinow; Steven Gygi; *Harvard Medical School, Boston, MA*

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ThP 267 **Development and Translation of a Targeted Assay to Detect Aspiration Across a Clinical Cohort;** Laura Dubois[1]; J. Will Thompson[1]; William Parker[2]; Shu Lin[2]; R. Duane Davis[2]; Sassan Azad[3]; Shaf Keshavjee[3]; Arthur Moseley[1]; *[1]Duke University School of Medicine, Durham, NC; [2]Duke Department of Surgery, Durham, NC; [3]Toronto Lung Transplant Program, Toronto, Canada*

ThP 268 **Development of a Reference Measurement System for Urinary Albumin;** Ashley Beasley-Green; David Bunk; Karen Phinney; *National Institute of Standards and Technology, Gaithersburg, MD*

ThP 269 **Adductomics Analysis of Human Serum Albumin by Mass spectrometry;** Lu Deng[1, 2]; Rupasri Mandal[1, 2]; David Wishart[1, 2]; *[1]The Metabolomics Innovation Centre, Edmonton, AB; [2]University of Alberta, Edmonton, Canada*

ThP 270 **Quantification of Mucins in Sputum by Targeted Mass Spectrometry and Stable Isotope Dilution;** Rui Cao; Amina Ford; Giorgia Radicioni; Tiffany Wang; Yuanli Li; Mehmet Kesimer; *University of North Carolina, Chapel Hill, NC*

ThP 271 **Normal Prion Protein in *Drosophila* Enhances the Toxicity of Pathogenic Polyglutamine Proteins;** Jong Bok Seo[1]; Eunjung Bang[1]; Young Ho Koh[2]; *[1]Korea Basic Science Institute, Seoul, South Korea; [2]Ilsong Institute of Life Science, Hallym Universit, Anyang, South Korea*

ThP 272 **QC Metrics Fulfill Regulatory Need for Clinical Laboratory;** Surendra Dasari; Jason D Theis; Roman Zenka; Julie A Vrana; Paul J Kurtin; *Mayo Clinic, Rochester, MN*

ThP 273 **Mass Spectrometry Approaches to Investigating HIV-1 Sequence Variance;** Ceereena Ubaida Mohien; Ravi Tharakan; David Graham; *Johns Hopkins University, Baltimore, MD*

ThP 274 **Exploring Resistance to Targeted Therapies Through Pathway-Level Proteomics;** Lauren C. Keilich[1]; Andrew J. Phillips[1]; Katerina Politi[2]; Xiaoling Song[2]; Brad J. Williams[3]; Scott J. Geromanos[3]; Dustin Yaworsky[3]; Stuart Welling[3]; *[1]Department of Chemistry, Yale University, New Haven, CT; [2]Department of Pathology, Yale Medical School, New Haven, CT; [3]Waters Corporation, Milford, CT*

ThP 275 **Temporal Phosphoproteomic Study on Estrogen Receptor-Dependent Cytotoxicity in Renal Cell Carcinoma;** Wei-Chi Ku[1]; Zhi-Yu Liu[1, 2]; Chi-Jung Huang[1, 3]; Kuo-Chiang Chen[3]; Yen-Chieh Wang[3]; Shao-Kuan Chen[3]; Chih-Ming Lin[3]; *[1]Fu Jen Catholic University, New Taipei, Taiwan; [2]National Taiwan University, Taipei, Taiwan; [3]Cathay General Hospital, Taipei, Taiwan*

ThP 276 **Comprehensive Proteomic Analysis of Cisplatin Sensitive and Resistant Epithelial Ovarian Cancer Tumor Cells Guided by Transciptomics;** Elizabeth Nguyen[1]; Kaisa Huhtinen[1]; Youngah Goo[2]; Jussi Salmi[1]; Riika Lund[1]; Robert Moulder[1]; Olli Carpen[1]; Riita Lahesma[1]; David Goodlett[2]; *[1]Turku Centre for Biotechnology, Turku, Finland; [2]University of Maryland, Baltimore, MD*

ThP 277 **Towards Mass Spectrometric Profiling of Urinary Bladder Cancer–Optimization of sample Preparation, Protein Extract Generation, In-Solution Digestion, and nanoESI-IMS-MSe Analysis;** Cornelia Koy[1]; Gargee Mukherjee[1]; Claudia Roewer[1]; Samanthi Wickramasekara[2]; Claudia S. Maier[2]; Chris Protzel[3]; Oliver Hakenberg[3]; Michael O. Glocker[1]; *[1]Proteome Center Rostock, Rostock, Germany; [2]Department of Chemistry, Oregon State University,, Corvallis, OR; [3]Urology Clinic and Polyclinic, University Medicin, Rostock, Germany*

ThP 278 **Proteomic Analysis of Plasmodium Berghei Hepatic Stage Merosomes;** Raja Sekhar Nirujogi[1, 4]; Satish Mishra[2]; Photini Sinnis[3]; Akhilesh Pandey[4]; *[1]Institute of Bioinformatics, Bangalore, India; [2]Central Drug Research Institute, Lucknow, UP, India; [3]JHMRI, Johns Hopkins University, Baltimore, MD; [4]Johns Hopkins University School of Medicine, Baltimore, MD*

ThP 279 **Effect of Statins on the Proteome of Human Pancreatic Stellate Cells;** Nerea Cuevas Polo[1]; Kevin Broadbelt[1]; Darwin Conwell[2]; Hanno Steen[1]; *[1]Harvard Medical School/ Children's Hospital Boston, Boston, MA; [2]Ohio State University Wexner Medical Center, Ohio, OH*

ThP 280 **A Comprehensive Tumor Tissue Analysis in Glioblastoma: Towards Understanding the Pathophysiology of Tumor Progression;** Vadiraja B. Bhat[1]; Maxime S. Heroux[2]; Marla A. Chesnik[2]; Mona Al-Gizawiy[2]; Shama P. Mirza[2]; *[1]Agilent Technologies, Wilmington, DE; [2]Medical College of Wisconsin, Milwaukee, WI*

ThP 281 **Quantitative Profiling of protein Tyrosine Kinases In Human Cancer Cell Lines by Multiplexed Parallel Reaction Monitoring Assays;** Hye-Jung Kim[1, 2]; Ming Li[3]; Daniel C. Liebler[1, 2]; *[1]Department of Biochemistry, Vanderbilt University, Nashville, TN; [2]Jim Ayers Institute, Vanderbilt-Ingram Center, Nashville, TN; [3]Department of Biostatistics, Vanderbilt University, Nashville, TN*

ThP 282 **Quantitative Analysis of the Synaptic Proteome in the Nucleus Accumbens in Schizophrenia;** Suhong Zhang[1]; Stephanie Willard[1]; Warren Bilker[2]; Karin Borgmann-Winter[1, 3]; Chang-Gyu Hahn[1]; *[1]Univ of Pennsylvania Dept of Psychiatry, Philadelphia, PA; [2]Univ of Penn Dept of Biostatistics and Epidemiolog, Philadelphia, PA; [3]Children's Hospital of Philadelphia, Philadelphia, PA*

ThP 283 **96FASP is a High Throughput Approach for Quantitative Clinical Proteomics;** Yanbao Yu; Moo-Jin Suh; Patricia Sikorski; Keehwan Kwon; Karen Nelson; Rembert Pieper; *J. Craig Venter Institute, Rockville, MD*

ThP 284 **Urinary Proteomics in the Discovery of Candidate Protein Biomarkers in Type 1 Diabetes Cohort;** Moo-Jin Suh; Yanbao Yu; Karen Nelson; Ramana Madupu; Rembert Pieper; *J. Craig Venter Institute, Rockville, MD*

ThP 285 **Development and Validation of an Analytical Method for Discovery of Biomarkers of Preterm Birth;** Tracey C. Fleischer; Chad L. Bradford; Ashoka D. Polpitiya; Jeff S. Flick; Trina Pugmire; Robert D. Severinsen; Ilia Ichetovkin; Durlin Hickok; J. Jay Boniface; *Sera Prognostics, Salt Lake City, UT*

ThP 286 **Development of Multiplex Biomarker Analysis Approach for the Diagnosis of Transitional Cell Carcinoma from Canine Urine Proteome;** Samanthi I Wickramasekara[1]; Shay Bracha[1]; Michael McNamara[2]; Ian Hilgart[1]; Marcus Weinman[1]; Milan Milavancev[1]; Jan Medlock[1]; Claudia Maier[1]; *[1]Oregon State University, Corvallis, OR; [2]Providence Portland Medical Center, Portland, OR*

ThP 287 **Evaluation of SWATH™ as a Diagnostic Tool for Bacterial Identification Using a Strain's Specific Library;** Sylvie Bourassa[1]; Isabelle Kelly[1]; Frederic Fournier[1]; Benjamin Nehme[1]; Daniel Defoy[1]; Brigitte Simons[2]; Maurice Boissinot[3]; Michel Bergeron[3]; Arnaud Droit[1, 4]; *[1]Proteomics, CHU de Quebec Research Center, Quebec, Canada; [2]AB SCIEX, Concord, ON; [3]Infectiology, CHU de Quebec Research Center, Quebec, Qc; [4]Molecular Medicine, Laval University, Quebec, Qc*

ThP 288 **Multivariate Statistical Procedures Implemented within the Framework of Statistical Process Control to Evaluate Data Quality in LC MS/MS;** Michael Bereman; Gina Hilton; Emily Griffith; *North Carolina State University, Raleigh, NC*

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ThP 289 **Proteomic Comparison among CD133+ and CD133- Population in Colorectal Cancer and Normal Colon Epithelium;** Smathorn Thakolwiboon[1, 2]; Jianhui Zhu[1]; David M. Lubman [1]; *[1]University of Michigan Medical Center, Ann Arbor, MI; [2]Faculty of Medicine Siriraj Hospital, Mahidol Univ, Bangkok, Thailand*

ThP 290 **Classification of Breast Cancer Sub-types with Site-Specific Phosphoryaltion Changes;** Harsha P. Gunawardena[1]; Jonathon O'Brien[2]; John A. Wrobel[1]; Ling Xie[1]; Xian Chen[1]; *[1]Biochemistry & Biophysics, School of Medicine, UNC-Chapel Hill, NC; [2]Biostatistics, Gillings School of Public Health, UNC-Chapel Hill, NC*

ThP 291 **Comparative Tissue Proteomics of Microdissected Specimens for Biomarker Discover of Bladder Cancer;** Yi-Ting Chen[1]; Chien-Lun Chen[2]; Ting Chung[1]; Chih-Ching Wu[1]; Jau-Song Yu[1]; Yu-Sun Chang[1]; *[1]Chang Gung*

University, Taoyuan, Taiwan; [2]Department of Urology, Chang Gung Memorial Hospita, Taoyuan, Taiwan

ThP 292 **Retrospective Label-Free Characterization of Androgen-Regulated Prostate Cancer Associated Proteins from Murine Formalin Fixed Paraffin Embedded Tissue Sections;** Owen E. Branson[1, 2]; Jennifer M. Thomas-Ahner[2]; Steven K. Clinton[2]; Michael A. Freitas[1, 2]; *[1]The Ohio State Biochemistry Program, Columbus, OH; [2]The Ohio State University Wexner Medical Center, Columbus, OH*

ThP 293 **Extracellular Matrix Proteome in Colorectal Cancer;** Cinzia Magagnotti[1]; Luca Genovese[1]; Manuela Nebuloni[2]; Massimo Alfano[1]; Annapaola Andolfo[1]; *[1]San Raffaele Scientific Institute, Milan, Italy; [2]University of Milan, Milan, Italy*

ThP 294 **Proteomics Profiling of Pancreatic Patient Tumors and Their Xenografts: a Case Study;** Bingwen Lu[1]; Camino Menendez[3]; Pedro P. Lopez-Casas[3]; Peter Olson[1]; David Shields[2]; Manuel Hidalgo[3]; Jeremy Myers[1]; Kim Ardnt[1]; *[1]Pfizer, Pearl River, NY; [2]Pfizer, La Jolla, CA; [3]Spanish National Cancer Research Center, Madrid, SP*

ThP 295 **Toward the Elucidation of Changes in Protein Ubiquitylation Correlating with Ovarian Cancer BRCA1 Clinical Subtypes;** Stefani Thomas[1]; Ie-Ming Shih[1]; Douglas Levine[2]; Zhen Zhang[1]; Daniel Chan[1]; Hui Zhang[1]; *[1]Johns Hopkins University, Baltimore, MD; [2]Memorial Sloan Kettering Cancer Center, New York, NY*

ThP 296 **Two-Dimensional Liquid Chromatography Coupled to Mass Spectrometry for Proteomic Profiling of Paraffin Embedded Lung Tumor Tissues;** Nilini Ranbaduge; Ferdinando Cerciello; Joseph Amann; David Carbone; Vicki Wysocki; *The Ohio State University, Columbus, OH*

ThP 297 **Stretch-Induced Proteomic Changes in Vascular Smooth Muscle Cells of Rat Portal Vein in Vivo;** Rui Zhu[1]; Amani Al Outa[2]; Zein Farhat[2]; Firas Kobeissy[2]; Ramzi Sabra[2]; Asad Zeidan[2]; Yehia Mechref[1]; *[1]Texas Tech University, Lubbock, TX; [2]American University of Beirut, Beirut, Lebanon*

ThP 298 **Age-Dependent Changes of Protein Expressions in Caenorhabditis elegans;** Krishna Vukoti; Masaru Miyagi; *Case Western Reserve University, Cleveland, OH*

ThP 300 **Proteomic Analyses of Aortas Reveal Conserved Protein Abundance Changes Associated with Aging in Monkeys and Rats;** Zongming Fu[1]; Mingyi Wang[2]; Eric Grote[1]; Jing Zhang[2]; Vidya Venkatramnn[1]; Xiaoqian Liu[1]; Pingbo Zhang[1]; Allen Everett[1]; Edward Lakatta[2]; Jennifer Van Eyk[1]; *[1]Johns Hopkins University, Baltimore, MD; [2]Laboratory of Cardiovascular Science, NIA, NIH, Baltimore, MD*

ThP 301 **Direct Monitoring of Cerebellar Phosphorylation Dynamics in a Kinase Knockout Mouse;** Eleonora Corradini[1, 2]; Raghavan Vallur[3, 4]; Linsey M. Raaijmakers[1, 2]; Susanne Feil[3]; Robert Feil[3]; Albert J. R. Heck[1, 2]; Arjen Scholten[1, 2]; *[1]Utrecht University, Utrecht, The Netherlands; [2]Netherlands Proteomics Centre, Utrecht, The Netherlands; [3]University of Tübingen, Tübingen, Germany; [4]German Center for Neurodegenerative diseases, Tübingen, Germany*

ThP 302 **DiART Tandem Mass Spectrometric Analysis Reveals Anti-Oxidant Signaling of Elderberry and Sutherlandia against Transient Cerebral Ischemia in Mice;** Hui Zhou[1, 2]; Zhe Qu[1, 2]; Jiankun Cui[1, 2]; Agnes Simonyi[2, 3]; Jilong Li[4]; Shuwei Li[8]; Victoria A. Engel[1, 2]; Shanyan Chen[1, 2]; Jianlin Cheng[4]; C. Michael Greenlief[5]; Andrew L. Thomas[6]; Kevin L. Fritsche[7]; William R. Folk[3]; Dennis B. Lubahn[3, 7]; Grace Y. Sun[2, 3]; Zezong Gu[1, 2]; *[1]University of Missouri School of Medicine Patholog, Columbia, MO; [2]MU SOM Center for Translational Neuroscience, Columbia, MO; [3]University of Missouri School of Medicine Biochem, Columbia, MO; [4]University of Missouri Computer Sci., Informatics, Columbia, MO; [5]University of Missouri Department of Chemistry, Columbia, MO; [6]University of Missouri Southwest Res. Center, Columbia, MO; [7]University of Missouri Division of Animal Sciences, Columbia, MO; [8]University of Maryland Chemistry and Biochemistry, College Park, MD*

ThP 303 **Proteomic Profiling of Pig Colon Mucosa to Study the Effect of Consuming Anthocyanin-Rich Purple-fleshed Potatoes;** Sridhar Radhakrishnan[1, 2]; Vadiraja Bhat[3]; Sung woo Kim[4]; Andrey Ptitsyn[5]; Lavanya Reddivari[6]; Jairam Vanamala[2]; *[1]Colorado State University, Fort Collins, Colorado; [2]Food Science, Penn State University, University Park, PA; [3]Agilent Technologies, Wilmington, DE; [4]Animal Science, North Carolina State University, Raleigh, North Carolina; [5]Sidra Medical and Research Center, Doha, Qatar; [6]Plant Science, Penn State University, State College, PA*

ThP 304 **Comparative Proteomic Analysis of Carbonylated Proteins from the Striatum and Cortex of Pesticide Treated Mice;** Christina Coughlan[1]; Douglas Walker[2]; Kelly Lohr[3]; Michael Caudle[3]; Kristofer Fritz[1]; James Roede[1]; *[1]University of Colorado Anschutz Medical Campus, Aurora, CO; [2]Tufts University, Medford, MA; [3]Emory University, Atlanta, GA*

ThP 305 **Liver Proteome Analysis Suggests Altered Lipid Metabolism in Alzheimer's Disease;** Adam Evans; Renã Robinson; *University of Pittsburgh, Department of Chemistry, Pittsburgh, Pa*

ThP 306 **Multi-platform Data Integration of the Cerebral Cortex Proteome in Rodent Models of Fear Conditioning and Repetitive Blast;** Angela M. Boutte'[1]; Joy Guingab-Cagmat[2]; Eric Mauldin-Jeronimo[3]; Larry P. Simmons[1]; Stephen T. Ahlers [3]; Raymond F. Genovese[1]; Frank C. Tortella[1]; Kara E. Schmid[1]; Jitendra R. Dave[1]; *[1]Walter Reed Army Institute of Research, Silver Spring, MD; [2]Banyan Biomarkers, Inc., Alachua, FL; [3]Naval Medical Research Center, Silver Spring, MD*

ThP 307 **Proteomic Analysis of Liver in Rats with lead Exposure and Iron-Supplemented;** Mileni Silva Fernandes[2]; Aline Lima Leite[2]; Fernanda Zucki[1]; Lucas Ferreira Almeida[1]; Marilia Afonso Rabelo Buzalaf[1]; *[1]USP-FOB, Bauru, BRAZIL; [2]Federal University of São Carlos, São Carlos, SP*

ThP 308 **Proteomic MS analysis of FASP-Processed FFPE Leptomeningeal Amyloid Brain Tissue Identifies Transthyretin Where Immunohistochemical Staining Fails;** Anna Okumu[1]; Michael Greicius[2]; Edward Plowey[3]; Yuxi Wu[1]; Allis Chien[1]; Chris Adams[1]; *[1]Stanford University Mass Spectrometry, Stanford, CA; [2]Dept of Neurology, Stanford Univ. Sch. of Medicine, Stanford, CA; [3]Dept of Pathology, Stanford Univ. Sch. of Medicine, Stanford, CA*

ThP 309 **Identification of Toluene Diisocyanate-Conjugated Murine Protein Targets following Dermal Exposures;** Justin M. Hettick; Ajay P. Nayak; Carrie M. Long; Stacey E. Anderson; Paul D. Siegel; *NIOSH, Morgantown, WV*

ThP 310 **Novel Proteogenomic Analysis Establishes the Sea Star *Patiria miniata* as a New Systems Biology Model for Neuronal Regeneration;** Catarina Franco[1, 2]; Michael Sweredoski[2]; Parul Kudtarkar[3]; R. Andrew Cameron[3]; Sonja Hess[2]; *[1]Instituto de Tecnologia Química e Biológica, Oeiras, Portugal; [2]Proteome Exploration Laboratory, Caltech, Pasadena, CA; [3]Center for Computational Regulatory Genomics, Caltech, CA*

ThP 311 **In-Depth Proteomic Analysis of Human Substantia Nigra;** Chan-Hyun Na; *Johns Hopkins University School of Medicine, Baltimore, MD*

ThP 312 **Comparative Proteome Analysis of Porcine Placenta between Small and Large Litter Size Groups;** Dong-Gi Lee[1]; Young-Moon Kang[1, 4]; Sang-Je Park[2]; Hwa Chun Park[3]; Chul Wook Kim[2]; Jong-Soon Choi[1, 4]; *[1]Korea Basic Science Institute, Daejeon, South Korea; [2]Gyeongnam National University of Science and Techn, Jinju, South Korea; [3]Dasan Genetics, Namwon, South Korea; [4]GRAST, Chungnam National University, Daejeon, South Korea*

ThP 313 **Mass Spectrometry-based Proteomics of Human Induced Pluripotent Stem Cells (hiPSC) Cultured in Suboptimal Culture Conditions;** Melkamu Getie-Kebtie[1]; Natalia Pripuzova[1]; Christopher Grunseich[2]; Colin Sweeney[3]; Harry Malech[3]; Michail Alterman[1]; *[1]Division of Cell and Gene Therapy, CBER, FDA, Bethesda, MD; [2]Neurogenetics Branch, NINDS, NIH, Bethesda, MD; [3]Laboratory of Host Defenses, NIAID, NIH, Bethesda, MD*

ThP 314 **Phosphoproteomic Analysis Reveals Regulatory Mechanisms at the Kidney Filtration Barrier;** Markus Rinschen[1]; Xiongwu Wu[2]; Tim König[3]; Trairak Pisitkun[4]; Bernard Brooks[2]; Pedro Beltrao[5]; Marcus Krüger[6]; Paul Brinkkötter[1]; Thomas Benzing[1]; *[1]Internal Medicine II, University Hospital Cologne, Koeln, Germany; [2]NIH, NHLBI, Bethesda, MD; [3]CECAD, Cologne, Germany; [4]Chulalongkorn University, Bangkok, Thailand; [5]EMBL, EBI, Hinxton, Cambridge, UK; [6]MPI Bad Nauheim, Bad Nauheim, Germany*

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ThP 315 **Short GeLC-SWATH: a Fast and reliable Quantitative Approach for Proteomic Screenings - Special Focus on Membrane Proteins;** Sandra Anjo[1, 2]; Cátia Santa[1]; Bruno Manadas[1, 3]; *[1]CNC - Center for Neuroscience and Cell Biology, Cantanhede, Portugal; [2]University of Coimbra, Coimbra, Portugal; [3]Biocant – Biotechnology Innovation Center, Cantanhede, Portugal*

ThP 316 **Exploring Impact of Dynamic Accumulation for Improving MS/MS Quality of QqTOF Data;** Aaron Hudson[1]; Christie Hunter[2]; Sean L. Seymour[3]; Nic Bloomfield[1]; *[1]AB SCIEX, Framingham, MA; [2]AB SCIEX, Foster City, CA; [3]AB SCIEX, Redwood City, CA*

ThP 317 **In-Depth Proteome Coverage by Iterative Data Dependent Acquisition on a Benchtop Orbitrap Mass Spectrometer;** Mathias Mueller; Tabiwang N. Arrey; Thomas Rietpietsch; Florian Grosse-Coosmann; Andreas Kuehn; Catharina Crone; Torsten Ueckert; Markus Kellmann; *Thermo Fisher Scientific (Bremen) GmbH, Bremen, Germany*

ThP 318 **Comparison of Data-Dependent Acquisition (DDA) and Data-Independent Acquisition (DIA) Strategies in Discovery and Label-Free Quantitation of a Complex Proteome;** Suresh Annangudi; David McCaskill; Jeffrey Gilbert; *Dow Agrosciences, Indianapolis, IN*

ThP 319 **Examining the Proteomic Consequences of Aneuploidy in Yeast using a Multi-Notch MS3-method for Accurate Multiplexed Quantification with Isobaric Tags;** Noah E. Dephoure[1]; Eduardo Torres[2]; Steven Gygi[3]; *[1]Weill Cornell Medical College, New York, NY; [2]University of Massachusetts Medical School, Worcester, MA; [3]Harvard Medical School, Boston, MA*

ThP 320 **MS³-based Quantitative Proteomics using Pulsed-Q Dissociation (PQD);** Zhiyun Cao; Adam R. Evans; Renã A. S. Robinson; *University of Pittsburgh, Pittsburgh, PA*

ThP 321 **Performance Evaluation of a Fast Sequencing Quadrupole Orbitrap MS for Shotgun Proteomics;** Christian D. Kelstrup[1]; Tabiwang N. Arrey[2]; Rosa R. Jersie-Christensen[1]; Andreas Kuehn[2]; Markus Kellmann[2]; Jesper V. Olsen[1]; *[1]NNF Center for Protein Research, Copenhagen, Denmark; [2]Thermo Fisher Scientific, Bremen, Germany*

ThP 322 **High Resolution Large-Scale Targeted Proteomics Using Intelligent Parallel Reaction Monitoring;** Sebastien Gallien; Sang-Yoon Kim; Bruno Domon; *Luxembourg Clinical Proteomics Center, Strassen, Luxembourg*

ThP 323 **Expansion of Ion Library for Mining SWATH Data through Fractionation Proteomics;** Jin Zi[1]; Shenyan Zhang[1]; Ruo Zhou[1]; Baojin Zhou[1]; Guixue Hou[1, 2]; Fengji Tan[1]; Bo Wen[1]; Quanhui Wang[1, 2]; Liang Lin[1]; Siqi Liu[1, 2]; *[1]Proteomics Division, BGI-Shenzhen, Shenzhen, China; [2]Beijing Institutes of Genomics, CAS, Beijing, China*

ThP 324 **Evaluation of Data-Independent Acquisition (DIA) Approaches for Spiked Peptides in HeLa Digest on Q-OT-qIT Mass Spectrometer;** Wei Zhang[1]; Reiko Kiyonami[2]; Zheng Jiang[1]; Wei Chen[1]; *[1]ThermoFisher Scientific, Shanghai, CHINA; [2]ThermoFisher Scientific, San Jose, CA*

ThP 325 **Captive Spray Ionization Facilitates Data Independent Acquisition - PAcIFIC for Proteomics;** Young Ah Goo[1]; John Chapman[2]; Scott Edgar[2]; Bao Tran[1]; David Goodlett[1]; *[1]University of Maryland, Baltimore, MD; [2]University of Washington, Seattle, WA*

ThP 326 **An Approach for Peptide Identification Combining DDA and DIA on a Q Exactive Plus Prototype with a High-Field Orbitrap;** Han-Yin Yang; Jarrett Egertson; Gennifer Merrihew; Michael J. Maccoss; *Univ of Washington, Seattle, WA*

ThP 327 **NeuCode + SWATH = a Good Combination;** Alicia Richards; Catherine E. Minogue; Alex Hebert; Jarred W. Rensvold; Anna Merrill; Allison Balloon; Michael S. Westphall; Audrey P. Gasch; David J. Pagliarini; Joshua J. Coon; *University of Wisconsin, Madison, WI*

ThP 328 **Training Wheels and (Data) Independence for Top-Down Proteomics;** Aaron O. Bailey; David M. Horn; *Thermo Fisher Scientific, San Jose, CA*

ThP 329 **Combination of DDA, DIA and Targeted Approaches for the Analysis of Protein-Metabolite Interactions using Proteolytic Probes and an Orbitrap Fusion;** Paolo Nanni[1]; Paul Boersema[2]; Yuehan Feng[2]; Christian Trachsel[1]; Nathalie Selevsek[1]; Paola Picotti[2]; Ralph Schlapbach[1]; *[1]University/ETH Zurich - FGCZ, Zurich, Switzerland; [2]ETH Zurich, Dept Biology, Institute of Biochemisty, Zurich, Switzerland*

ThP 330 **Differential Mobility Separation (DMS) to Improve Spectral Correlation in SWATH™ Acquisition;** Nic Bloomfield; J.C. Yves Leblanc; Stephen A Tate; *AB SCIEX, Concord, On, Canada*

ThP 331 **Proteomic Analysis of Cuticular Proteins from Anopheles Gambiae using LC-MS/MS;** Majors Badgett; Ron Orlando; Judith Willis; Tyler Reed; Yihong Zhou; *University of Georgia, Athens, GA*

ThP 332 **Implementation of an Optimized Metaproteomic Approach for Comprehensively Characterizing the Microbial Functionality in the Human Infant Gut;** Weili Xiong[1]; Rachel Adams[1]; Michael Morowitz[2]; Jill Banfield[3]; Robert Hettich[4]; *[1]University of Tennessee, Knoxville, TN; [2]School of Medicine, University of Pittsburgh, Pittsburgh, PA; [3]Department of Earth and Planetary Science, UC, Berkeley, CA; [4]Oak Ridge National Laboratory, Oak Ridge, TN*

ThP 333 **Mass Spectrometry-based Proteomics for the Identification and Characterization of Double-Blind Microorganism Mixtures;** A. Peter Snyder[1]; Rabih Jabbour[1]; Mary Margaret Wade[1]; Samir Deshpande[2]; Patrick McCubbin[3]; *[1]US Army /ECBC, Bel Air, MD; [2]Sceince and Technology Corporation, Abingdon, MD; [3]Optimetrics, Abingdon, MD*

ThP 334 **Temporal Analysis of Pathogen-Induced Gastrointestinal Inflammatory States via Host-Centric Proteomic Analysis of Stool;** Joshua S. Lichtman; Katharine Ng; Angela Marcobal; Justin S. Sonnenburg; Joshua E. Elias; *Stanford University, Stanford, CA*

ThP 335 **Identifying Novel Coregulators and Post-Translational Modifications that Control LRH1 Function using Proteomic Approaches;** Yelenis Mari; Graham M. West; Bruce D. Pascal; Patrick R. Griffin; *Scripps Florida, Jupiter, FL*

ThP 336 **Novel Insights into the Dynamic Deep Redox Proteome;** Aleksandra Binek; Inmaculada Jorge Cerrudo; Emilio Camafeita; Elena Bonzón-Kulichenko; Juan Antonio López; Borja Ibáñez; Mario Nuño Ayala; Jesús Vázquez; *CNIC, Madrid, Spain*

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ThP 337 ***Francisella* Infection Alters Phosphatidylinositol in White Pulp Splenic Macrophages;** Alison Scott; Robert Ernst; *University of Maryland, Baltimore, Baltimore , MD*

ThP 338 **Systems Biology Analysis of Temporally-Resolved Phagosome Proteomes following Uptake via Key Phagocytic Receptors;** Brian Dill[1]; Marek Gierliński[2]; Alba Gonzales Arandilla[1]; Manman Guo[1]; Matthias Trost[1]; *[1]MRC PPU, University of Dundee, Dundee, UK; [2]Data analysis group, University of Dundee, Dundee, UK*

ThP 339 **Development of IP-MS Method for Discovery of Downstream Mediators of mTOR Signaling that Regulate T-helper Cell Differentiation;** Olesya Chornoguz; Stefani Thomas; Robert O'Meally; Jonathan Powell; *Johns Hopkins School of Medicine, Baltimore, MD*

ThP 340 **The Protein Interactome of Critical Viral DNA Sensors Reveals New Insights into Innate Immunity;** Benjamin Diner; Tuo Li; John Fuesler; Marni Crow; Ileana M. Cristea; *Princeton University, Princeton, NJ*

ThP 341 **Identification of Naturally Processed MHC Class I-restricted HIV Epitopes Presented by Human HIV-Infected Cells;** Marijana Rucevic; *Ragon Institute of MGH, MIT & Harvard, Boston, MA*

ThP 342 **Defining the Peptidome of HIV-1 Infected Cells using an Optimized LC-MS/MS Analysis Workflow;** Nicola Ternette[1]; Hongbing Yang[1]; Philip Charles[1]; Roman Fischer[1]; Nadine Dudek[2]; Anthony Purcell[2]; Lucy Dorrell[1]; Benedikt Kessler[1]; Tomas Hanke[1]; *[1]University of Oxford, Oxford, UK; [2]Monash University, Melbourne, Australia*

ThP 343 **A nano-UPLC-ESI-MS^3 Method To Directly Identify Low Abundant HPV T Cell Epitopes on the Cell Surface;** Renata Blatnik[1]; Stephanie Hoppe[1]; Marius Kuepper[1]; Agnieszka K. Grabowska[1]; Annette Scharf[2]; Uwe Warnken [1]; Martina Schnoelzer [1]; Thomas Ruppert[2]; Christoph Roesli[1]; Angelika B. Riemer [1]; *[1]German Cancer Research Center (DKFZ), Heidelberg, Germany; [2]ZMBH, Heidelbeg, Germany*

ThP 344 **The CD90+ T-cell Proteome during the Progression of Alzheimer's Disease;** Zhiyun Cao; Renã Robinson; *University of Pittsburgh, Pittsburgh, PA*

ThP 345 **Immunoglobulin Light Chain Repertoire Profiling using microLC-ESI-Q-TOF MS;** David Barnidge[1]; Surendra Dasari[2]; Melissa Snyder[1]; Jerry Katzmann[1]; David Murray[1]; *[1]Mayo Clinic / DLMP, Rochester, MN; [2]Mayo Clinic, Rochester, MN*

ThP 346 **Investigation of Macrophage Polarization States by LC/ESI/MS and LC/MALDI/MS;** Matthias Knust; Rohana Lyianage; Jackson, Jr. Lay; Julie A. Stenken; *University of Arkansas, Fayetteville, AR*

ThP 347 **Characterization of CD200R-Mediated Signaling in Human Macrophages by Comprehensive Quantitative PTMomics Strategies;** Ane Landt Larsen[2]; Torben Barington[2]; Martin Røssel Larsen[1]; *[1]Department of Biochemistry and Molecular Biology, University of Southern Denmark, Odense, Denmark; [2]Department of Clinical Immunology, Odense University Hospital, Denmark*

ThP 348 **Comparative Proteomics of Eosinophils and Neutrophils;** Emily M. Wilkerson; Nicholas W. Kwiecien; Mats W. Johansson; Nicholas M. Riley; Michael S. Westphall; Deane Mosher; Joshua J. Coon; *University of Wisconsin, Madison, WI*

ThP 349 **Monitoring IgM and IgA Monoclonal Immunoglobulins in Patients with a Monoclonal Gammopathy using microLC-ESI-Q-TOF MS;** Paula Ladwig[1]; David Barnidge[2]; David Murray[2]; *[1]Mayo Clinic, Rochester, MN; [2]Mayo Clinic / DLMP, Rochester, MN*

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ThP 350 **Probing Conformational Changes of *Eukaryotic Elongation Factor 2 Kinase* by Covalent Labeling;** Christopher M. Crittenden; John P. O'Brien; William R. Parker; Clint Tavares; David Giles; Kevin Dalby; Jennifer S. Brodbelt; *University of Texas at Austin, Austin, TX*

ThP 351 **A New Method for Detecting and Identifying Carbonylated Biomolecules: Application to *in vitro* Oxidized Tau Protein by MALDI-Mass Spectrometry;** Lyna Sellami[1]; Claude Villard[1]; Pasale Barbier[1]; Jean-Michel Brunel[1]; Matthew Openshaw[2]; Omar Belgacem[2]; Daniel Lafitte[1]; *[1]Aix-Marseille Universite, Marseille, FR; [2]Shimadzu, Kratos, Manchester, UK*

ThP 352 **High Resolution Characterization of Antithrombin III-Arixtra Binding Interface by Sub-Microsecond Hydroxyl Radical Protein Footprinting;** Qi Gao; *Complex Carbohydrate Research Center, UGA, Athens, GA*

ThP 353 **Profiling Yeast Cell Surface Proteins of S. cerevisae by Magnetic Nanoparticles Based Covalent Labeling of Amine Groups;** Ujwal Patil[1]; Parisa Pirani[1]; Yang Cai[2]; Matthew Tarr[1]; *[1]University of New Orleans, New Orleans, LA; [2]The Research Institute for Children, New Orleans, LA*

ThP 354 **Membrane Interactions of Cytochrome P450 2B4 and Cytochome b_5 Studied by Photoactivable Protein Nanoprobes and High Resolution Mass Spectrometry;** Tomas Jecmen[1, 2]; Renata Ptackova[1, 2]; Vera Cerna[2]; Petr Novak[1, 2]; Petr Hodek[2]; Miroslav Sulc[1, 2]; *[1]Institute of Microbiology, ASCR, Prague, Czech Republic; [2]Department of Biochemistry, Charles University, Prague, Czech Republic*

ThP 355 **Uncovering Biomolecular Structure at Single Residue Resolution using Mass Spectrometry Based Covalent Labeling;** Parminder Kaur[1, 2]; Janna Kiselar[1]; Giridharan Gokulrangan [1]; Mark Chance[1, 2]; *[1]Case Western Reserve University, Cleveland, OH; [2]NeoProteomics, Inc., Cleveland, OH*

ThP 356 **Time-Resolved OH-Footprinting Reveals Mechanism of Proton-Coupled Zinc Transport in YiiP;** Mark Chance[1]; Sayan Gupta[1]; Jie Cheng[2]; Dax Fu[2]; *[1]Case Western Reserve University, Cleveland, OH; [2]Johns Hopkins University, Baltimore, MD*

ThP 357 **Characterization of the Modification of Bruton's Tyrosine Kinase (BTK) by Small Molecule Covalent Inhibitor Using LC-MS;** Keerthi Jayasundera[2]; Wilson Phung[1]; Wendy Sandoval[1]; Ryan Takahashi[1]; James Crawford[1]; Adam Johnson[1]; Cyrus Khojasteh[1]; Cornelis Hop[1]; Shuguang Ma[1]; *[1]Genentech Inc, South San Francisco, CA; [2]Purdue University, West Lafayette, IN*

ThP 358 **Promoting Ozonolysis for Protein Footprinting by Radical Probe Mass Spectrometry;** Simin D. Maleknia[1]; Keith Fisher[2]; *[1]University of New South Wales, Sydney, Australia; [2]University of Sydney, Sydney, Australia*

ThP 359 **Covalent-labeling Strategy for the Thermodynamic Analysis of Protein Folding and Ligand Binding in Complex Mixtures;** Yingrong Xu[1]; Erin C. Strickland[1, 2]; Emily R. Derbyshire[1]; Michael C. Fitzgerald[1]; *[1]Duke University, Durham, NC; [2]Current Address: Ameritox, Greensboro, NC*

ThP 360 **Differential Surface Modification under Denaturing And Native Conditions for the Identification of Surface-Exposed Amino Acid Residues in Alpha-Synuclein;** Nicole Sessler[1]; Nicholas Brodie[1]; Evgeniy Petrotchenko[1]; Christoph Borchers[1, 2]; *[1]University of Victoria-Genome BC Proteomics Centre, Victoria, Canada; [2]UVic Dept of Biochemistry and Microbiology, Victoria, Canada*

ThP 361 **Structural Proteomic Analysis of SOD1 Aggregation;** Nicholas Brodie[1]; Evgeniy Petrotchenko[1]; Christoph Borchers[1, 2]; *[1]University of Victoria-Genome BC Proteomics Centre, Victoria, Canada; [2]UVic Dept of Biochemistry and Microbiology, Victoria, Canada*

ThP 362 **Conformational Analysis of Intrinsically Disordered Proteins by Fast Photochemical Oxidation of Proteins;** Mohammed Al-Naqshabandi[1, 2]; Hao Zhang[3]; Ben Niu[3]; Michael L. Gross[3]; David Weis[1]; *[1]University of Kansas, Lawrence, KS; [2]University of Soran, Erbil, Iraq; [3]Washington University, St Louis, MO*

ThP 363 **Probing Conformational Changes in Amyloid Beta Aggregation by Fast Photochemical Oxidation of Proteins (FPOP);** Ke Sherry Li; Ying Zhang; Don L. Rempel; Michael L. Gross; *Department of Chemistry, Washington University, St. Louis, MO*

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ThP 364 **A Laser Desorption Mass Spectroscopy Study of Titan Aerosol Analogs Formed from Aromatic Precursors;** Melissa Trainer[1]; Joshua Sebree[2]; Xiang Li[1]; Veronica Pinnick[1]; Stephanie Getty[1]; William Brinckerhoff[1]; *[1]NASA, Greenbelt, MD; [2]University of Northern Iowa, Cedar Falls, IA*

ThP 365 **In Situ Analysis of Organics on Planetary Surfaces by Miniature Two-Step Laser Time-of-Flight Mass Spectrometer;** Xiang Li[1]; Stephanie Getty[2]; William Brinckerhoff[2]; Timothy Cornish[3]; Scott Ecelberger [3]; Melissa Floyd[2]; Qinghao Wu[4]; Richard Zare[4]; Jamie Elsila Cook[2]; *[1]University of Maryland, Baltimore County, Baltimore, MD; [2]NASA GSFC, Greenbelt, MD; [3]C&E Research, Inc., Columbia, MD; [4]Stanford University, Stanford, CA*

ThP 366 **The Identification of Biosignatures on Planetary Surfaces from in situ Techniques, Including Miniaturized Mass Spectroscopy;** Kyle Uckert[1]; Nancy J. Chanover[1]; Stephanie Getty[2]; William B. Brinckerhoff[2]; David G. Voelz[1]; Nancy McMillan[1]; Xifeng Xiao[1]; Xiang Li[3]; Mellisa Floyd[2]; Penelope J. Boston[4]; *[1]New Mexico State University, Las Cruces, NM; [2]NASA GSFC, Greenbelt, MD; [3]University of Maryland, Baltimore County, Greenbelt, MD; [4]New Mexico Institute of Mining and Technology, Socorro, NM*

ThP 367 **Molecular Composition and Optical Properties of Organo-Nitrogen Species in Organic Aerosol;** Chris Stangl; Murray Johnston; *University of Delaware, Newark, DE*

ThP 368 **Reaction of Gas-Phase Dimethylamine with Ammonium Sulfate Aerosol Particles;** Justin Krasnomowitz; Bryan Bzdek; Murray Johnston; *University of Delaware, Newark, Delaware*

ThP 369 **Gas Chromatography-Mass Spectrometry Performance Demonstration of the Mars Organic Molecule Analyzer;** Veronica Pinnick[1]; Arnaud Buch[2]; Noël Grand[4]; Cyril Szopa[3]; Friso H.W. Van Amerom[5]; Ryan M. Danell[6]; Caroline Freissinet[1]; Ricardo Arevalo[1]; Stephanie Getty[1]; William Brinckerhoff[1]; Paul Mahaffy[1]; Fred Goesmann[7]; *[1]NASA GSFC, Greenbelt, MD; [2]Ecole Centrale Paris, Châtenay-Malabry, France; [3]LATMOS, Paris, France; [4]LISA, Paris, France; [5]MiniMass, Hyattsville, MD; [6]Danell Consulting, Inc., Winterville, NC; [7]Max Planck Institut für Sonnensystemforschung, Lindau, Germany*

ThP 370 **Survivability of Electrosprayed Bacterial Spores upon High-Velocity Surface Impact;** Brandon L Barney; Kit Anderson; Daniel E Austin; *Brigham Young University, Provo, UT*

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ThP 375 **Lipidome Analysis of Plasma, Livers, And Adipose Tissues in High-Fat-Diet-Fed Mice Using Supercritical Fluid Chromatography Coupled to High-Resolution Mass Spectrometry;** Takayuki Yamada[1]; Yoshihiro Izumi[1]; Shin Nishiumi[2]; Masaru Yoshida[2]; Eiichiro Fukusaki[1]; Takeshi Bamba[1]; *[1]Dept. Biotech., Grad. Sch. Eng., Osaka Univ., Suita, Japan; [2]Div. Gastro., Kobe Univ. Grad. Sch. Med., Kobe, Japan*

ThP 376 **Alterations of Lipid Metabolism in Preeclampsia: Lipid Characterization in the Maternal Circulation and Placenta;** Simon Brown[1]; Samuel Eather[1]; Dilys Freeman[2]; Barbara Meyer[1]; Todd W Mitchell[1]; *[1]University of Wollongong, Wollongong, Australia; [2]University of Glasgow, Glasgow, UK*

ThP 377 **Understanding the Role of Lipids during the Embryonic Development of the American Alligator (Alligator mississipiensis) using a Lipidomics Approach;** Stephen Somerville[1]; John Bowden[2]; Theresa Cantu[1]; Louis J. Guillette, Jr. [1]; *[1]Medical University of South Carolina, Charleston , SC; [2]NIST, Charleston , SC*

ThP 378 **Supercritical Fluid Chromatography Coupled to Mass Spectrometry for Comprehensive Bile Acid Profiling;** Kaori Taguchi; Eiichiro Fukusaki; Takeshi Bamba; *Graduate school of engineering, Osaka university, Suita, Japan*

ThP 379 **Characterization of Human Cancer Cell Lines Using Rapid Evaporative Ionization Mass Spectrometry;** Nicole Strittmatter[1]; Anna Lovrics[2]; Emrys A Jones[1]; Ottmar Golf[1]; Kirill Veselkov[1]; Gergely Szakacs[2]; Zoltan Takats[1]; *[1]Imperial College London, London, UK; [2]Hungarian Academy of Sciences, Budapest, Hungary*

ThP 380 **Lipogenesis in Adipocyte using Isotope Tracer Mass Spectrometry;** Fereshteh Zandkarimi; Claudia S. Maier; *Chemistry Department of Oregon State University, Corvallis, OR*

ThP 381 **Lipidomics by Infusion-Based MS/MS^{ALL} Reveals Novel Aspects of Fatty Liver Disease;** Jeff Mcdonald; *UT Southwestern Medical Center, Dallas, TX*

ThP 382 **Quantitative Characterization of Protein and Lipid Content of Lipoprotein Particle Size Fractions by AF4, Dynamic Light Scattering and LC-MS/MS;** John R. Barr; Zsuzsanna Kuklenyik; Michael Gardner; Jon Rees; David M. Schieltz; Lisa McWilliams; James Pirkle; *CDC, Atlanta, GA*

ThP 383 **Direct Identification of Omega-3/6 Fatty Acid Incorporated Phosphatidylcholine in Mouse Serum and Tissue by MALDI-MS and LC-MS Based Metabolic Profiling;** Lin Tan; Patrea Rhea; Peiying Yang; *MD Anderson Cancer Center, Houston, TX*

ThP 384 **Analysis of Polyunsaturated Fatty Acid Metabolites in Brain After Traumatic Brain Injury by High Resolution LC-MS/MS;** Karl R Kevala; Abhishek Desai; Hee-Yong Kim; *National Institutes of Health, Bethesda, MD*

ThP 385 **Lipidomic Analysis of Differentiating Osteoblastic Cells;** Xiaoli Gao; Lee-Chuan Caroline Yeh; Sammy Pardo; Martin L. Adamo; John C. Lee; Susan T. Weintraub; *UT Health Science Center at San Antonio, San Antonio, TX*

ThP 386 **Angiotensin Converting Enzyme Regulates the Lipid Composition of Macrophages;** Bogdan-Gabriel Gugiu[1]; Teresa Hong[1]; Kenneth Bernstein[2]; Markus Kalkum[1]; *[1]City of Hope, Duarte, CA; [2]Cedars-Sinai Medical Center, Los Angeles, CA*

ThP 387 **Ethanol Induced Quantitative Brain Lipid Changes in Mice;** Aurelie Roux[1]; Shelley N Jackson[1]; Ludovic Muller[1, 2]; Joseph R. O'Rourke[3]; Panayotis K. Thanos[3]; Nora D. Volkow[1]; Amina S. Woods [1]; *[1]NIDA-IRP, NIH, Baltimore, MD; [2]University of Pittsburgh, Pittsburgh, PA; [3]Stony Brook University, Stony Brook, NY*

ThP 388 **Multivariate Analyses of Phospholipids in Normal and Ischemic Rat Brain Parenchyma;** Hay-Yan J. Wang[1]; Hsuan-Wen Wu[1]; Zhi-Fu Zheng[1]; Ping-Ju Tsai[2]; Cheng Bin Liu[1, 3]; *[1]National Sun Yat-Sen University, Kaohsiung, TAIWAN; [2]Yuan's General Hospital, Kaohsiung, Taiwan; [3]Veterans General Hospital-Kaohsiung, Kaohsiung, Taiwan*

ThP 389 **State-of-the-art LC-MS Based Lipidomics Applied to the Study of Lung Diseases;** Koen Sandra[1]; Ruben t'Kindt[1]; Eef Telenga[2]; Roland Hoffmann[2]; Lucie Jorge[1]; Antoon van Oosterhout[2]; Nick ten Hacken[2]; Pat Sandra[1]; *[1]RIC, Kortrijk, Belgium; [2]UMCG, Groningen, The Netherlands*

ThP 390 **Identification of Lipid Biomarkers from Mouse Lung Tissue via the Use of UPC² Tandem Mass Spectrometry;** Jace W. Jones; Fei Li; Claire L. Carter; Keely Pierzchalski; Pu-Ting Xu; Isabel L. Jackson; Zeljko Vujaskovic; Maureen A. Kane; *University of Maryland, Baltimore, MD*

ThP 391 **Cerebrospinal Fluid and Plasma Lipid Profiling using High Resolution Mass Spectrometry and Integrated Data Processing Tools;** Benoit Colsch[1]; Alexandre Seyer[2]; Samia Boudah[1]; Simon Broudin[2]; Christophe Junot[1]; *[1]CEA de SACLAY, Gif Sur Yvette Cedex, France; [2]Profilomic SA, Boulogne-Billancourt, France*

ThP 392 **Comparative Metabolomics Analysis of Prostate Cancer Cells with Different Ethnic Backgrounds;** Julius Nyalwidhe[1]; Tanya Burch[1]; Johng Rhim[2]; James Langridge[4]; Andy Baker[3]; Giorgis Isaac[3]; *[1]Eastern Virginia Medical School, Norfolk, VA; [2]Center for Prostate Disease Research, Bethesda, MD; [3]Waters Corporation, Milford, MA; [4]Waters Corporation, Manchester, UK*

ThP 393 **Lipidomic Analysis of Different Cotton Seed Oil Genotypes Using Novel Analytical and Informatics Tools;** Vladimir Shulaev[1]; Michael Jones[2]; Drew Sturtevant[1]; Patrick Horn[1]; Janna Crossley[1]; Kent Chapman[1]; James Langridge[3]; Giorgis Isaac[2]; *[1]University of North Texas, Denton, TX; [2]Waters Corporations, Milford, MA; [3]Waters Corporations, MAnchester, UK*

ThP 394 **Rejuvenation of Negative Ion Chemical Ionization Mass Spectrometry for the Lipid Biomarker Detection of Tuberculosis and Leprosy in Archaeological Material;** Houdini Wu[1]; Oona Lee[1]; David Minnikin[1]; Gurdyal Besra[1]; Helen Donoghue[2]; Ildiko Pap[3]; Christos Economou[4]; Anna Kjellström[4]; Gareth Llewellyn[5]; Christopher Williams[5]; *[1]University of Birmingham, Birmingham, UK; [2]University College London, London, UK; [3]Hungarian Natural Science Museum, Budapest, HUNGARY; [4]Stockholm University, Stockholm, Sweden; [5]Swansea University, Swansea, UK*

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ThP 395 **Tandem Mass Spectrometric Quantification of Oxidized Products of Polyunsaturated Fatty Acids in biofluids and tissue;** Jaeman Byun; Lixia Zeng; Subramaniam Pennathur; *University of Michigan, Ann Arbor, MI*

ThP 396 **Lipidomic Differentiation of Breast Cancer Tissues and Surrounding Normal Tissues using HILIC-HPLC/ESI-MS;** Eva Cífková[1]; Michal Holčapek[1]; Miroslav Lísa[1]; Vitaliy Chagovets[1]; David Vrána[2]; Jiří Gatěk[3]; Bohuslav Melichar[2]; *[1]University of Pardubice, Pardubice, Czech Republic; [2]Palacký University, Olomouc, Czech Republic; [3]Tomáš Baťa University, Zlín, Czech Republic*

ThP 397 **Isometric Separation of Brain Glucosylated Lipids by Hydrophilic Interaction Liquid Chromatography –ESI-MS using Zwitterionic Columns;** Kazuki Nakajima; Hisako Akiyama; Kaori Tanaka; Yoshio Hirabayashi; *RIKEN Brain Science Institute, Wako-Shi, Japan*

ThP 398 **A Comprehensive Monitoring Method for lipid Mediators using a High-Speed LC/MS with Continuous Ionization Polarity Switching;** Masaki Yamada[1, 2]; Yoshihiro Kita[1]; Takahiro Kohira[1, 3]; Suzumi Tokuoka[1]; Takao Shimizu[1, 4]; *[1]The University of Tokyo, Tokyo, JAPAN; [2]Shimadzu Corporation, Kyoto, Japan; [3]Japanese Red Cross Society, Tokyo, Japan; [4]National Center for Global Health and Medicine, Tokyo, Japan*

ThP 399 **Shotgun Fatty Acidomics Analysis of Eicosanoids in Biological Samples by Charge-Remote Fragmentation Approaches;** Miao Wang; Chunyan Wang; Xianlin Han; *Sanford-Burnham Medical Research Institute, Orlando, FL*

ThP 400 **Micro-LC-MS/MS Analysis of Endocannabinoids in Brain Tissues;** Ming Qi; Matthew Hill; David Schriemer; *University of Calgary, Calgary, CANADA*

ThP 401 **Evaluation of Anti-Proliferative and Lipoxygenase-Inhibitory Effects of Protolichesterinic Acid;** Finnur F. Eiriksson[1, 2]; Margrét Bessadóttir[1]; Stefan Becker[1]; Margrét H. Ögmundsdóttir[1]; Sesselja S. Ómarsdóttir[1]; Helga Ögmundsdóttir[1]; Margret Thorsteinsdottir[1, 2]; *[1]University of Iceland, Reykjavik, IS; [2]ArcticMass, Reykjavik, IS*

ThP 402 **Quantitative Analysis of Bile Acids and Taurine Conjugates in Mouse Plasma Using a High Resolution Accurate Mass Approach;** Shunyan Mo; Karin Green; Timothy P. Fitzgibbons; Scott A. Shaffer; *University of Massachusetts Medical School, Worcester, MA*

ThP 403 **High Throughput and High Sensitivity LC-MS/MS Analysis of GM1 and GM2 Gangliosides in Brain;** Karin Green; Cara M. Weismann; Miguel Sena Esteves; Scott A. Shaffer; *University of Massachusetts Medical School, Worcester, MA*

ThP 404 **LC-MS Analysis of Cholestenoic Acid from Microliter Volumes of Plasma;** Fred Bjorn Lih; Michael Fessler; Kenneth B. Tomer; Leesa Deterding; *NIEHS/NIH, Research Triangle Park, NC*

ThP 405 **Application of LC-MS/MS based Lipid Profiling/ Biochemical Assays and Affinity Proteomics for MAGL Target Validation;** Timothy He; Scott Britain; Tatiana Tolstykh; Heike Arlt; Ronaldo Tomlinson; Frank Sun; Hong Cheng; Dmitri Wiederschain; Bailin Zhang; *Sanofi Oncology, Cambridge, MA*

ThP 406 **Improving Lipid Profiling Performance using MicroFlow Liquid Chromatography and High Resolution Mass Spectrometry;** Jinyuan Wang[1]; Baljit Ubhi[1]; Christie Hunter[1]; Anthony Romanelli[2]; Alexander Chassy[3]; Tomas Cajka[3]; Oliver Fiehn[3]; *[1]AB SCIEX, Redwood City, CA; [2]AB SCIEX, Framingham, MA; [3]UC Davis, Davis, CA*

ThP 407 **Qualitative and Quantitative Analysis of Oxidized Fatty Acids by Information Dependent and Data Independent Strategies on a QTOF Instrument;** Xu Wang[1]; Priscilla BMC Derogis[2]; Sayuri Miyamoto[2]; Sahana Mollah[3]; Christie Hunter[3]; *[1]AB SCIEX, Framingham, MA; [2]Instituto de Química - Universidade de São Paulo, São Paulo, Brazil; [3]AB SCIEX, Redwood City, CA*

ThP 408 **Application of SPME in Plasma Lipid Analysis: Quantification of Polyunsaturated Fatty Acids in Fish Plasma, and Patients Undergone Cardiac Surgery;** Afsoon Pajand Birjandi; Barbara Bojko; Janusz Pawliszyn; *University of Waterloo, Waterloo, Canada*

ThP 409 **Multiplexed Lipid Quantification via Isobaric Mass Tagging and Targeted MS/MS;** Shuai Nie[1]; Cassie J. Fhaner[1]; Gavin E. Reid[1, 2]; *[1]Department of Chemistry, Michigan State University, East Lansing, MI; [2]Department of BMB, Michigan State University, East Lansing, MI*

ThP 410 **Supercritical Fluid Chromatography - Electrospray Ionization Mass Spectrometry as a Novel Approach for Fast and Complex Lipidomic Characterization;** Michal Holcapek; Miroslav Lísa; *University of Pardubice, Pardubice, Czech Republic*

ThP 411 **Total Cholesterol Analysis in Plasma at 7 Seconds Per Sample using LDTD-MS/MS;** Sarah Demers[1]; Pierre Picard[2]; Serge Auger[2]; Gregory Blachon[2]; *[1]Université Laval, Québec, QC; [2]Phytronix Technologies, Inc., Quebec, QC*

ThP 412 **Quadruple Parallel Mass Spectrometry (LC1/MS4) 'extract-Filter-Shoot' Method for Lipid and Vitamin D Analysis;** William C Byrdwell; *USDA, ARS, BHNRC, FCMDL, Beltsville, MD*

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ThP 413 **Herbal Supplement Screening: HPTLC Ambient Mass Spectrometry for Rapid Separation and Screening from Complex Mixtures;** Elizabeth Crawford[1]; Robert Goguen[1]; Brian Musselman[1]; Jason Shepard[2]; *[1]IonSense, Inc., Saugus, MA; [2]University at Albany, Albany, NY*

ThP 414 **Rapid Screening of Antibacterials in a Wide Variety of Consumer Products using Ambient Ionization Mass Spectrometry;** Sharanya Reddy; Craig Whitehouse; *PerkinElmer, Shelton, CT*

ThP 415 **Statistical Analysis and Forensics Determination of Designer Drugs via Direct Analysis in Real Time Mass Spectrometry (DART-MS);** Jason Shepard[1]; Joseph Lapointe[2]; Brian D. Musselman[2]; Rabi Musah[1]; Robert B. Cody[3]; A. John Dane[3]; *[1]University at Albany, Albany, NY; [2]IonSense, Inc., Saugus, MA; [3]JEOL USA, Inc., Peabody, MA*

ThP 416 **Rapid Analysis and Differentiation of Smokeless Powders using DSA/TOF;** Avinash Dalmia[1]; Jeff Jagmin[2]; Sergey Rakov[3]; Craig M. Whitehouse[3]; *[1]Perkinelmer, Shelton, CT; [2]Washington State Patrol, Seattle, WA; [3]PerkinElmer, Branford, CT*

ThP 417 **Metabolomics Study of Arabidopsis Mutants Using Atmospheric Pressure GC-MS^E Approach and Multivariate Statistical Analysis;** Carolina Salazar[1]; Giorgis Isaac[2]; Steven Lai [2]; Nobuhiro Suzuki[1]; Janna Crossley[1]; James Langridge[2]; Ron Mittler[1]; Giuseppe Astarita [2]; Vladimir Shulaev[1]; *[1]University of North Texas, Denton, TX; [2]Waters Corporation, Milford, MA*

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ThP 421 **SILAC-Based LC-MS Assay to Measure Microtubule Dynamics in Neuronal Cell Cultures;** Cong Wei; Craig Polson; Joseph L. Cantone; Jere E. Meredith; Dieter M. Drexler; *Bristol-Myers Squibb, Wallingford, CT*

ThP 422 **A Simplified LC-MS/MS-MRM Method for Quantitation of Risperidone and 9-Hydroxyrisperidone in Human Plasma;** Rachelle Jacoby; Farbod Fazlollahi; Kym Francis Faull; *UCLA, Los Angeles, CA*

ThP 423 **Altered Steroid Profiles in Metastatic Bone Prostate Cancer Models using LC/MSMS;** Sumankalai Ramachandran; Zahi Mitri; Sankar Maity; John Araujo; Eleni Efstathiou; Christopher Logothetis; Mark Titus; , *Houston, TX*

ThP 424 **Differential Mobility Spectrometry: Investigating Instrument Parameters That Influence Sensitivity in Quantitative LC/MS/MS Bioanalysis;** Jefry Shields[1]; Brendon Kapinos[1]; John Janiszewski[1]; Richard Kibbey[3]; Anthony Romanelli[2]; *[1]Pfizer Inc., Groton, CT; [2]AB SCIEX, Framingham, MA; [3]Yale University, New Haven, CT*

ThP 425 **Exploring microLC/MS/MS for Accelerating Peptide Quantitation Assays;** Xiang Zhu[1]; Christie Hunter[2]; Khaled Mriziq[1]; Remco Van Soest[1]; Subodh Nimkar[1]; *[1]SCIEX Separations, Division of AB SCIEX, Redwood City, CA; [2]AB SCIEX, Redwood City, CA*

ThP 426 **New LC-MS/MS Method to Quantify Biotin and Bisnorbiotin in Urine;** Olga Malysheva[1]; Cydne Perry[1, 2]; Larry Walker[1]; Marie Caudill[1]; *[1]Cornell University, Ithaca, NY; [2]Shephard University, Shepherdstown, WV*

ThP 427 **Low Picomola Quantification of Metanephrine and Normetanephrine in Plasma by SPE-LC-MS/MS;** Sha Joshua Ye; Mitesh Patel; Hui Qiao; Ellie Majdi; *Ionics Mass Spectrometry Gro, Bolton, Canada*

ThP 428 **Quantification of 17β-Estradiol as A Biomarker in Mouse Plasma: A Microsampling Approach Coupled with LC-MS/MS Analysis;** Jianshuang Wang; Brian Dean; Xiao Ding; *Genentech, South San Francisco, CA*

ThP 429 **Development of a Quantitative High-Throughput Immunomagnetic-UHPLC-MS/MS Method for Detecting Human Exposure to Tricresyl Phosphate;** Darryl Johnson[1]; Melissa Carter[2]; Brian Crow[2]; Thomas Blake[2]; Rudolph Johnson[2]; *[1]ORISE Centers for Disease Control and Prevention,, Atlanta, GA; [2]CDC, Atlanta, GA*

ThP 430 **An Integrated LC-MS System for Simultaneous Preparation, Separation, Detection, and Quantification of Proteins and Small Molecules from Biological Fluids;** Evelyn Wang[1]; Danajaya Kalu appulage[1]; Benjamin Figard[2]; Kevin Schug[1]; *[1]The University of Texas at Arlington, Arlington, TX; [2]Shimadzu Scientific Instruments, Inc., Houston, TX*

ThP 431 **Nanospray HPLC-Chip/MS System for Detection of F_2-Isoprostanes in Urine and Plasma;** Paul E. Minkler; Stephen T. Ingalls; Lori Hezel; Charles L. Hoppel; *Case Western Reserve Univ., Cleveland, OH*

ThP 432 **LC-MS/MS Method Development and Stability Assessment for the Analysis of Norepinephrine in Pig Kidney Tissues;** Ling Morgan; *Agilux Laboratories, Worcester, MA*

ThP 433 **Comparison of Nano-Flow and Standard Flow-Rate LC-QQQ Platforms using Putative Prostate Cancer Protein Biomarkers;** Brian Flatley[1]; Cathy Rooney [1]; Stella Ademowo[1]; Xiao Zhang[2]; Christine Miller[3]; Trevor Clancy[4]; Moyez Dharsee[2]; Kristin Austlid Taskén[4]; Lorelei Mucci[5]; William Watson[1]; Kenneth Evans[2]; Stephen Pennington[1]; *[1]University College Dublin, Dublin, IRELAND; [2]Ontario Cancer Biomarker Network, Toronto, Canada; [3]Agilent Technologies, Santa Clara, CA; [4]Oslo University Hospital, Oslo, Norway; [5]Harvard School of Public Health, Boston, MA*

ThP 434 **LC-MS/MS Analysis of urinary Multiple Biomarkers : Stability Study and Artificial Formation of 8-OHdG, Biomarker for Oxidative Stress;** Shu-Ting Chen; Kuen-Yuh Wu; *Institute of Occupational Medicine and Industrial, Taipei, Taiwan*

ThP 435 **A Rapid LC-MS/MS Measurement of Urea as a Biomarker in Human Bronchoalveolar Lavage Fluid and Plasma;** Tian-Sheng Lu; Aiping Zhu; Elise Snider; Jon Bruss; Yong-Xi Li; *Medpace, Cincinnati, OH*

ThP 436 **Determination of Homocysteine, Cysteine, Cystathionine, S-Adenosylmethionine and S-Adenosylhomocysteine in Biological Samples Using Ultra Performance Liquid Chromatography with Tandem Mass Spectrometry;** Yi Tao; Lizhi Guo; Hongmei Wang; Weimin Hu; Fangfang Chen; Xin Zhang; *WuXi AppTec Co., Shanghai, China*

ThP 437 **Method to Detect Blood Doping Practices in Sport Through the Measurement of Reticulocytes in Dried Blood Spots by LC-MS/MS;** Holly Cox; Cole Hughes; Daniel Eichner; *Sports Medicine Research and Testing Laboratory, Salt Lake City, UT*

ThP 438 **Improved Sensitivity for the Selective Quantitation of LTB4 in Human Plasma and Sputum via UPLC-MS/MS;** Chad Moore; Dan Li; Aihua Liu; Laixin Wang; Min Meng; *Tandem Labs, Salt Lake City, UT*

ThP 439 **A Quantitative Proteomic Approach (UPLC-HDMS^E) to Identify Biomarkers of Myofibroblast Formation in Idiopathic Pulmonary Fibrosis;** Leanne Wickens[1, 2]; Akul Singhania[3]; Franco Conforti[3]; Katherine O'Reilly[2, 4]; Donna Davies[2, 3]; Paul J. Skipp[1, 2]; *[1]Centre for Proteomic Research, Uni of Southampton, Southampton, UK; [2]NIHR Respiratory Biomedical Research Unit, Southampton, UK; [3]Faculty of Medicine, University of Southampton, Southampton, UK; [4]Respiratory Medicine, MMUH, Dublin, Ireland*

ThP 440 **Quantitative Analysis of cAMP and cGMP in Microwave Fixed Brain Tissue by HPLC/MS/MS: Adenosine is Key in Determining Sample Quality;** Forrest Helfrich; Marieke Van Der Hart; Arash Rassoulpour; *Brains On-Line, South San Francisco, CA*

ThP 441 **Immunoaffinity LC-MS/MS for the Quantitation of IL-6R in Mouse Colon Tissue Samples for Preclinical Study;** Yongxin Zhu; Celia D'Arienzo; John Mehl; Guodong Chen; Huadong Sun; Qihong Zhao; Adrienne Tymiak; Timothy Olah; *Bristol-Myers Squibb Company, Princeton, NJ*

ThP 442 **Combining Immuno Affinity Purification and Fast LC-MS to Characterize Peptide Isoforms of Diagnostic Cancer Markers;** Antoine Lesur; Lina Ancheva; Sebastien Gallien; Jan van Oostrum; Bruno Domon; *Luxembourg Clinical Proteomics Center, Strassen, Luxembourg*

ThP 443 **Determination of Acetylcholine in Microdialysis Samples using HILIC coupled with High Resolution Mass Spectrometry;** Emily Miller; Hongying Gao; Christopher Holliman; *Pfizer, Groton, CT*

ThP 444 **Analysis of Multiple DNA Adducts in Cancer Patients by Stable Isotope Dilution Nanoflow LC-Nanospray Ionization Tandem Mass Spectrometry;** Hsueh-Chun Wang; Hauh-Jyun Candy Chen; *National Chung Cheng Univ., Ming-Hsiung, Chia-Yi, Taiwan*

ThP 445 **Development of a Robust, Accurate and Reproducible Procedure for Quantitative Analysis of Cardiac Troponin T using a Chip-Based Nanospray Source;** Mariola Olkowicz[1]; Iwona Rybakowska[1]; Stefan Chłopicki[2]; Helena Svobodova[3]; Gary Valaskovic[3]; Ryszard Smolenski[1]; *[1]Medical University of Gdansk, Gdansk, Poland; [2]Jagiellonian Centre for Experimental Therapeutics, Krakow, Poland; [3]New Objective Inc., Woburn, MA*

ThP 446 **Analysis of Pteridines by CE-MS;** Nicolas Drouin[2]; Julie Schappler [2]; Serge Rudaz [2]; Martin Greiner[1]; *[1]Agilent Technologies, Waldbronn, Germany; [2]University of Geneva, Geneva, Switzerland*

ThP 447 **Quantitation of Glutathione and Its Redox Species in Blood and Saliva using Speciated Isotope Dilution Mass Spectrometry (EPA Method 6800);** Mesay Mulugeta Wolle[1]; Logan Miller[1]; Timothy Fahrenholz[2]; H. M. Skip Kingston[1]; Matt Pamuku[2]; Scott Faber[3]; *[1]Duquesne University, Pittsburgh, PA; [2]Applied Isotope Technologies, Pittsburgh, PA; [3]The Children's Institute of Pittsburgh, Pittsburgh, PA*

ThP 448 **An Effective Biomarker in Chronic Obstructive Pulmonary Disease (COPD);** Shuren Ma[1]; Jiangtao He[1]; Yong Y Lin[1]; Jerome Cantor[2]; Toyonobu Usuki[3]; Gerard Turino[1]; *[1]Roosevelt Hospital, Mount Sinai School of Medicine, New York, NY; [2]St John's University - Queens, New York, NY; [3]Sophia University, Tokyo, Japan*

ThP 449 **Mass Spectrometry-Based Proteomics: Discovery and Absolute Quantification of Neuroinjury Biomarkers;** Ahmed Moghieb; Nancy Denslow; Richard A. Yost; Kevin K.W. Wang; *University of Florida, Gainesville, Florida*

ThP 450 **Characterizing Qualitative and Quantitative Global Changes in Mesenchymal Stem Cells using a Novel Real-Time Modified DIA Method;** Maryann S. Vogelsang[1]; Amol Prakash[1]; David Sarracino[1]; Scott Peterman[1]; Barbara Frewen[1]; Victoria V Lunyak[2]; Benny Blackwell[2]; James R. Tollervey[2]; Gouri Vadali[1]; Shadab Ahmad[1]; Gregory Byram[1]; Bryan Krastins[1]; Mary F. Lopez[2]; *[1]BRIMS, Thermo Fisher Scientific, Cambridge, MA; [2]Buck Institute for Age Research, Novato, CA*

ThP 451 **Scheduled Collision Energy Improves the Proteome Coverage and Quantification Accuracy by iTRAQ;** Jian-Ying Zhou; Lijun Chen; Daniel W. Chan; Hui Zhang; *Johns Hopkins School of Medicine, Baltimore, MD*

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ThP 452 **New Chemical Cross-Linking Methodology for Acidic Side Chain Residues;** Mariana Fioramonte[1]; Fabio C Gozzo[2]; *[1]University of Campinas, Campinas, Brazil; [2]IQ - University of Campinas, Campinas, Brazil*

ThP 453 **Use of Cross-Linking/Mass Spectrometry to Predict Tertiary Structure of a Polyketide Synthase;** Hugo César Ramos De Jesus[1]; Gabriela Desireé Tormet González[1]; Luciana Gonzaga de Oliveira[1]; Tiago S. Balbuena[2]; Fabio C. Gozzo[1]; *[1]State University of Campinas - UNICAMP, Campinas, Brazil; [2]São Paulo State University - UNESP, Jaboticabal, Brazil*

ThP 454 **Applications of New Reagents for *in vitro* and *in vivo* Chemical Crosslinking of Protein Complexes by Mass Spectrometry (CXL-MS);** Angela Walker; Lolita Piersimoni; Chunchao Zhang; Hye Kyong Kweon; Eric Tse; Billy Samulak; Janine Maddock; Daniel Southworth; Hollis Showalter; Philip Andrews; *University of Michigan, Ann Arbor, MI*

ThP 455 **Using Isotopically-Coded N-terminal Modification and Non-Specific Proteinase K Digestion for the Identification of Zero-Length Crosslinks;** Jason Serpa[1]; Evgeniy Petrotchenko[1]; Christoph Borchers[1, 2]; *[1]University of Victoria-Genome BC Proteomics Centre, Victoria, Canada; [2]UVic Dept of Biochemistry and Microbiology, Victoria, Canada*

ThP 456 **Improving Cross-Linked Peptide Identification in Megadalton Complexes across Different High Resolution Instrument Platforms;** Romina Hofele[1]; Chung-Tien Lee[1]; Olexandr Dybkov[1]; Christof Lenz[1, 2]; Henning Urlaub[1, 2]; *[1]Max Planck Institute for Biophysical Chemistry, Göttingen, Germany; [2]Inst. for Clin. Chem., Univ. Med. Center Göttingen, Göttingen, Germany*

ThP 457 **Mass-spectrometry-Based Quantitative Protein–RNA Cross-Linking Study;** Saadia Qamar[1]; Katharina Kramer[1]; Timo Sachsenberg[2]; Oliver Kohlbacher[2]; Henning Urlaub[1, 3]; *[1]Max Planck Institute for Biophysical Chemistry, Göttingen, Germany; [2]University of Tübingen, Tübingen, Germany; [3]University Medical Center Göttingen, Göttingen, Germany*

ThP 458 **Protein–RNA Contacts in CRISPR-Cas Protein Complexes of the Prokaryotic Adaptive Immune Systems;** Kundan Sharma[1]; Katharina Kramer[1]; Timo Sachsenberg[2]; Oliver Kohlbacher[2]; Raymond Staals[3]; Tim Künne[3]; Stan J. J. Brouns[3]; John Van der Oost[3]; Henning Urlaub[1, 4]; *[1]Max Planck Institute for Biophysical Chemistry, Göttingen, Germany; [2]University of Tübingen, Tübingen,*

Germany; [3]Wageningen University, Wageningen, The Netherlands; [4]University Medical Center Göttingen, Göttingen, Germany

ThP 459 **DTT Mediates Site-Specific Protein/RNA Crosslinking upon UV Irradiation;** Uzma Zaman[1]; Katharina Kramer[1]; Timo Sachsenberg[2]; Oliver Kohlbacher[2]; Christof Lenz[1, 3]; Henning Urlaub[1, 3]; *[1]Max Planck Institute for biophysical Chemistry, Goettingen, Germany; [2]Applied Bioinformatics group, Tuebingen, Germany; [3]University Medical Center, Goettingen, Goettingen, Germany*

ThP 460 **Structural Mass Spectrometric Analysis of FOXO Transcription Factor/DNA Response Element Interaction;** Hynek Mrazek[1]; John Mangrum[2]; Matteo Scalabrin[2]; Petr Man[1, 3]; Daniele Fabris[2]; Petr Novak[1, 3]; *[1]Institute of Microbiology, ASCR, Prague, Czech Republic; [2]The RNA Institute, University at Albany, Albany, NY; [3]Faculty of Sciences, Charles University, Prague, Czech Republic*

ThP 461 **An Electrochemistry-Assisted Cross-Linking Method for Probing Protein Conformational Structures by Mass Spectrometry;** Qiuling Zheng[1]; Hao Zhang[2]; Hao Chen[1]; *[1]Ohio University, Athens, OH; [2]Washington University in St. Louis, St. Louis, MO*

ThP 462 **Defining Structural Dynamics of Protein Complexes Using Quantitative Cross-linking Mass Spectrometry;** Clinton Yu[1]; Haibin Mao[2]; Eric Novitsky[1]; Shenheng Guan[3]; Scott Rychnovsky[1]; Ning Zheng[2]; Lan Huang[1]; *[1]University of California, Irvine, Irvine, CA; [2]University of Washington, Seattle, WA; [3]University of California, San Francisco, San Francisco, CA*

ThP 463 **Improved Identification of Cross-Linked Peptides via an Optimized 2D High-/Low-pH RPLC-MSn Workflow;** Alex Huszagh; Wang Xiaorong; Yingying Yang; Clinton Yu; Eric James Novitsky; Scott Rychnovsky; Lan Huang; *University of California, Irvine, Ca*

ThP 464 **Protein Interactions and Topologies in Antibiotic Resistant *Acinetobacter baumannii* Cells;** Xia Wu; Juan D. Chavez; Chunxiang Zheng; Arti Navare; Devin Schweppe; Jimmy K. Eng; Pradeep K. Singh; Colin Manoil; James E. Bruce; *University of Washington, Seattle, WA*

ThP 465 **Protein Interaction Topologies in Cells: A View from the Inside;** James Bruce; Juan Chavez; Arti Navare; Devin Schweppe; Chunxiang Zheng; Xia Wu; *University of Washington, Seattle, WA*

ThP 466 **Quantifying Protein-Protein Interactions with Protein Interaction Reporter Technology;** Juan Chavez; Chunxiang Zheng; Jimmy K. Eng; James Bruce; *University of Washington, Seattle, WA*

ThP 467 **Probing Conformation of G Protein-Coupled Receptor 110 by Chemical Crosslinking and Mass Spectrometry;** Bill Huang; Ji-Won Lee; Hee-Yong Kim; *NIAAA/NIH, Rockville, MD*

ThP 468 **Diazo Crosslinkers as Structural Probes for MS-based Elucidation of Nucleic Acids and Protein-Nucleic Acid Complexes;** Matteo Scalabrin; Sugyan Dixit; Daniele Fabris; *University at Albany, The RNA Institute, Albany, NY*

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ThP 469 **UVPD and IMS-MS: Photodissociation of Ions Selected by Drift-Time Separation and/or m/z Ratio;** Jeff Brown[1]; Bruno Bellina[3]; Kevin Giles[1]; Mike Morris[1]; Isabelle Compagnon[2]; Perdita Barran[3]; *[1]Waters Corporation, Wilmslow, UK; [2]Université Lyon 1, Lyon, France; [3]The University of Manchester, Manchester, UK*

ThP 470 **Additional Models of a Mammalian Cryptochrome – E3 Ubiquitin Ligase Complex Restrained by Results from Ion Mobility Mass Spectrometry;** Samuel Marionni; Weiman Xing; Ning Zheng; Matthew Bush; *University of Washington, Seattle, WA*

ThP 471 **Exploring the Relationship between Incremental and Conformational Contributions to the Collision Cross Section of Nucleic Acid-Ligand Complexes;** Jennifer Lippens[1]; Bill Redick[1]; Katharyn Wendt[1]; Srivathsan Ranganathan[1]; Jacob Miner[2]; Angel Garcia[2]; D Fabris[1]; *[1]The RNA Institute, University at Albany, Albany, NY; [2]Rensselaer Polytechnic Institute (RPI), Troy, NY*

ThP 472 **Novel Real-Time Dual Filtering Technique for Multiplexed IM-QTOF All-Ions Analysis of Complex Protein Digests;** Bruce Wang; William Frazer; Christian Klein; Ruwan Kurulugama; Edward Darland; George Stafford; Gregor Overney; *Agilent Technologies, Santa Clara, CA*

ThP 473 **Using Differential Mobility Spectrometry to Measure the Interactions of Hormone Peptides with Divalent Metal Ions and Solvent Molecules;** Chang Liu[1]; J. Larry Campbell[1]; J.C. Yves Leblanc[1]; Jefry Shields[2]; John S. Janiszewski[2]; *[1]AB SCIEX, Concord, ON, Canada; [2]Pfizer Inc., Groton, CT*

ThP 474 **Limits to the Mobility-Selected Current Transmitted and to the Chemical Background in a Differential Mobility Analyzer (DMA);** Mario Amo-Gonzalez[2]; Juan Fernandez De La Mora[1]; *[1]Yale University - Mechanical Engineering Departmen, New Haven, CT; [2]SEADM, Boecillo, Valladolid, Spain*

ThP 475 **Electrical Mobilities of Near-Spherical, Positively- and Negatively-Charged Ionic Liquid Nanodrops in Monatomic and Polyatomic gases: Influence of Ion-Induced Dipole Interactions;** Juan Fernández-García; Juan Fernández de la Mora; *Yale University, New Haven, CT*

ThP 476 **Tandem Transversal Modulation IMS and Linear Trap Quadrupole MS: Towards a Functional Ion Mobility System for Ion Trap MS;** Miriam Macia[1]; Cesar Barrios[1, 2]; Guillermo Vidal de Miguel[1]; *[1]SEADM S.L., Boecillo, SPAIN; [2]University of Valladolid, Valladolid, Spain*

ThP 477 **Enhanced Separation Capacity via Vapor Doping in Tandem Transversal Modulation IMS-IMS-MS;** Vivek Rawat[2]; Chris Hogan[2]; Guillermo Vidal de Miguel[1]; *[1]SEADM S.L., Boecillo, Spain; [2]University of Minnesota, Minneapolis, Minnesota*

ThP 478 **Development of the Periodic Focusing Differential Mobility Analyzer (PFDMA)- a portable, high resolution ion mobility spectrometer;** Kent Gillig; Chung-Hsuan Chen; *Academia Sinica, Taipei, Taiwan*

ThP 479 **A Molecular Modeling Study on the Collision Cross Section for Ion Mobility Spectrometry;** Glenn E. Spangler; *Technispan LLC, Lutherville, MD*

ThP 480 **Validation of an Improved Momentum-Transfer Theory for Ion Mobility Using Accurate Hard-Sphere Kinetic Computations;** William F. Siems[1]; Larry Viehland[2]; Herbert H. Hill, Jr[1]; *[1]Washington State University, Pullman, WA; [2]Chatham University, Pittsburgh, PA*

ThP 481 **AT-Hook Peptide and Protein Isomerization Dynamics: Solution vs Gas-Phase;** Emily Schenk[1]; Genevieve Gozo[1]; Mark Ridgeway[2]; Melvin A. Park[2]; Fenfei Leng[1]; Francisco Fernandez Lima[1]; *[1]Florida International University, Miami, FL; [2]Bruker Daltonic, Inc., Billerica, MA*

ThP 482 **Understanding Global Ion Mobility Separation Differences of Biomolecules in Alternative Drift Gases;** Jody C. May[1]; Katrina L. Leaptrot[1]; Nichole M. Lareau[1]; Ruwan T. Kurulugama[2]; George C. Stafford[2]; Alex Mordehai[2]; John C. Fjeldsted[2]; John A. Mclean[1]; *[1]Vanderbilt University, Nashville, TN; [2]Agilent Technologies, Santa Clara, CA*

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ThP 483 **Data-Independent Analysis of Proteomic Samples Utilizing in-Frame Collision Energy Ramping by Drift Tube based Ion Mobility Mass Spectrometry;** Christian Klein[1]; Ed Darland[1]; Bill Frazer[1]; Kevin Crowell[2]; Bill Barry[1]; Ruwan Kurulugama[1]; Bruce Wang[1]; Alex Mordehai[1]; Gregor Overney[1]; George Stafford[1]; John Fjeldsted[1]; *[1]Agilent Technologies, Inc, Santa Clara, CA; [2]Pacific Northwest National Lab, Richland, WA*

ThP 484 **Evaluation of a High Performance Ion Mobility-MS Platform for Structural Measurements in Different Drift Gases Combined with Computational Strategies;** Ruwan T. Kurulugama[1]; Alex Mordehai[1]; Nathan Sanders[1]; Sarah M. Stow[2]; Jody C. May[2]; John A. Mclean[2]; George C. Stafford[1]; John C. Fjeldsted[1]; *[1]Agilent Technologies, Santa Clara, CA; [2]Vanderbilt University, Nashville, TN*

ThP 485 **Structural Mass Spectrometry of Protein Modification by Unique Oxidation Processes;** Libin Xu[1, 2]; Jay G. Forsythe[1, 2]; Jody C. May[1, 2]; Keri A. Tallman[1, 2]; Ned A. Porter[1, 2]; John A. Mclean[1, 2]; *[1]Department of Chemistry, Vanderbilt University, Nashville, TN; [2]VICB, Vanderbilt University, Nashville, TN*

ThP 486 **Combined Electron Transfer Dissociation-Ion Mobility-Collision Induced Dissociation-Mass Spectrometry Techniques for the Characterization of Proteins, Glycans, and Glycoproteins;** Nichole M. Lareau; Jody C. May; John A. McLean; *Vanderbilt University, Nashville, TN*

ThP 487 **Structural Analysis of Protein Complexes using Integrated Crosslinking and Ion Mobility-Mass Spectrometry;** Billy Samulak; Philip Andrews; Brandon Ruotolo; *University of Michigan, Ann Arbor, MI*

ThP 488 **Site-Directed Mutagenesis of Amyloid β to Elucidate Binding Location of Leucine-Enkephaline Using Ion Mobility - Mass Spectrometry;** Molly Soper; Brandon Ruotolo; *University Of Michigan, Ann Arbor, MI*

ThP 489 **Ion Mobility Mass Spectrometry and Chemical Crosslinking Reveal the 3D Architecture of the Urease Pre-Activation Complex;** Joseph Eschweiler[1]; Mark Farrugia[2]; Robert Hausinger[2]; Brandon Ruotolo[1]; *[1]University of Michigan, Ann Arbor, MI; [2]Michigan State University, East Lansing, MI*

ThP 490 **Kinase Inhibitor Discovery through Ion Mobility-Mass Spectrometry: New Targets and Larger Libraries;** Jessica Rabuck-Gibbons[1]; Matthew Soellner[2]; Brandon Ruotolo[1]; *[1]Department of Chemistry, University of Michigan, Ann Arbor, MI; [2]College of Pharmacy, University of Michigan, Ann Arbor, Mi*

ThP 491 **Characterization of β-Cyclodextrin-Cholesterol-Ca^{+2} Complexes by Drift Tube Ion Mobility (IMS-MS);** Alfred L. Yergey[1]; Christian Klein[2]; Stephanie Cologna[1]; Paul S. Blank[1]; Ruwan Kurulugama[2]; Alex Mordehai[2]; William Barry[2]; Ed Darland[2]; Peter S. Backlund[1]; *[1]NIH, Bethesda, MD; [2]Agilent Technologies, Santa Clara, CA*

ThP 492 **Discrimination of Epimeric Glycans and Glycopeptides using Travelling Wave Ion-Mobility Mass Spectrometry: towards a Comprehensive Carbohydrate Sequencing Strategy;** Christopher Gray[1]; Peter Both[1]; Anthony Green[1]; Robert Šardzik[1]; Josef Voglmeir[2]; Dominique Richardson[1]; Goran Widmalm[4]; Sabine Flitsch[1]; Rob Field[3]; Claire Eyers[5]; *[1]University of Manchester, Manchester, UK; [2]Nanjing Agricultural University, Nanjing, China; [3]John Innes Centre, Norwich, UK; [4]Stockholm University, Stockholm, Sweden; [5]University of Liverpool, Liverpool, UK*

ThP 493 **Large-Scale Structural Analysis of Proteolytic Peptides with C-terminal and N-terminal Lysine Residues;** Christopher Lietz; Qing Yu; Xueqin Pang; Lingjun Li; *University of Wisconsin, Madison, WI*

ThP 494 **IMS-MS Analysis of the Protein Complex GroEl Reveals Dimers, Trimers, Heptamers, and 11-mers with Widely Different Compactness;** Juan Fernandez De La Mora[1]; Chris Hogan[2]; *[1]Yale University - Mechanical Engineering Departmen, New Haven, CT; [2]University of Minnesota, Minneapolis, Minnesota*

ThP 495 **Ion Mobility-Mass Spectrometry for Molecular Nanomaterials;** Kellen M. Harkness[1]; Andrzej Balinski[2]; Jay G. Forsythe[2]; David E. Cliffel[2]; John A. McLean[2]; Francesco Stellacci[1]; *[1]Ecole Polytechnique Federale de Lausanne, Lausanne, CH; [2]Vanderbilt University, Nashville, TN*

ThP 496 **Simultaneous Quantification of Aclidinium and its Metabolites in Human Plasma using LC-MS/MS Coupled with SelexION™ Technology;** Qingguo Tian[1]; Haodan Yuan[1]; Jordi Aubets[2]; Josep Jansat[2]; Daksha Desai-Krieger[1]; Andreas Grill[1]; *[1]Forest Laboratories, Inc., Farmingdale, NY; [2]Almirall S.A., Sant Feliu de Llobregat, Spain*

ThP 497 **Solving Selectivity Challenges in Qualitative and Quantitative Analysis of Drugs and Metabolites;** Kaoru Karasawa[1]; Suma Ramagiri[2]; Carmai Seto[2]; Natalia Penner[3]; *[1]AB SCIEX, Tokyo, Japan; [2]AB SCIEX, Concord, ON; [3]Biogen Idec, Cambridge, MA*

ThP 498 **Comprehensive Two-Dimensional Separation of Alcohol Ethoxylates Coupling Ion Mobility-Mass Spectrometry and Hydrophilic Interaction Chromatography Using a Customized Sub-2 µm Column;** Qiang Ma[1, 2]; Xi Chen[3]; Hua Bai[1]; Chao Wang[1]; *[1]Chinese Academy of Inspection and Quarantine, Beijing, China; [2]Purdue University, West Lafayette, IN; [3]Waters Corporation, Shanghai, China*

ThP 499 **Separation of Aromatic Amino Acids Enantiomers by traveling Wave Ion Mobility – Mass Spectrometry;** Virginie Domalain[1]; Marie Hubert-Roux[1]; Catherine Lange[1]; Jacques Rouden[2]; Carlos Afonso[1]; *[1]Normandie Univ UMR 6014, FR 3038; Univ Rouen; CNRS, Mont Saint Aignan, France; [2]Normandie Univ UMR 6507, FR 3038; ENSICAEN; CNRS, Caen, France*

ThP 500 **An Investigation of 3-methylxanthine Supramolecular Complexes using Field Asymmetric Waveform and Drift Tube Ion Mobility Spectrometry Combined with Mass Spectrometry;** Kayleigh Arthur; James Reynolds; Colin Creaser; *Loughborough University, Loughborough, UK*

ThP 501 **ATP-induced Reduction in Conformational Flexibility of a Membrane-embedded Rotary ATPase: Evidence from Ion Mobility Mass Spectrometry;** Min Zhou[1, 2]; Argyris Politis[1, 3]; Roberta.B Davies[4, 5]; Idlir Liko[1]; Kuan-Jung Wu[1]; Alastair G. Stewart[4, 5]; Daniela Stock[4, 5]; Carol V. Robinson[1]; *[1]University of Oxford, Oxford, UK; [2]Nanjing University of Science and Technology, Nanjing, China; [3]University of Ulster, Ulster, UK; [4]The Victor Chang Cardiac Research Institute, Darlinghurst, Australia; [5]The University of New South Wales, Sydney, Australia*

ThP 502 **Formation of Intramolecular H-bonds Retains Discrete Conformations of Cyclic peptides;** Suk-Joon Hyung; Xidong Feng; Ye Che; Justin Stroh; Michael Shapiro; *Pfizer, Groton, CT*

ThP 503 **Contribution of Ion Mobility for Structural Analysis and Analytical Chemistry: the Use of Selective IMS Shift Reagents;** Christopher Kune; Johann Far; Cédric Delvaux; Gauthier Eppe; Edwin De Pauw; *Mass spectrometry laboratory, University of Liège, Liège, Belgique*

ThP 504 **Characterization of the Retinal Protonated Schiff Base in the Gas Phase by Photoisomerization Action Spectroscopy;** Neville Coughlan; Katherine Catani; Brian Adamson; Evan Bieske; *University of Melbourne, Melbourne, Australia*

ThP 505 **Differential Mobility Spectrometry as a Measure of ion Solvation: The Roles of Solvents and Ionic Structures for Separating Quinoline-Based Drugs;** J. Larry Campbell[1]; J.C. Yves Leblanc[1]; Chang Liu[1]; John Janiszewski[2]; W. Scott Hopkins[3]; Gene F. Ye[3]; *[1]AB SCIEX, Concord, ON, ON; [2]Pfizer Inc., Groton, CT; [3]University of Waterloo, Waterloo, ON*

ThP 506 **Differential Mobility Spectrometry for Gas-Phase Fractionation Increases Proteome Coverage and Improves Ion Library Creation for SWATH™ Acquisition;** Mark Cafazzo[1]; Christie L Hunter[2]; Samuel L Bader[3]; Robert L Moritz[3]; *[1]AB SCIEX, Framingham, MA; [2]AB SCIEX, Foster City, CA; [3]ISB, Seatlle, WA*

ThP 507 **Enhanced Separation and Ion Prefiltering using a High Performance Ion Mobility Device Coupled with the LTQ series of Mass Spectrometers;** Adam M Graichen[1]; Robert Jackson[1]; Ching Wu[1]; Mark Osgood[1]; Dirk Nolting[2]; Alexander Makarov[2]; *[1]Excellims Corporation, Acton, MA; [2]Thermo Fisher Scientific (Bremen) GmbH, Bremen, Germany*

ThP 508 **Electrospray Ionization Mechanisms for Large Polyethylene Glycol Chains studied through IMS-IMS separation;** Carlos Larriba Andaluz[1]; Juan Fernandez De La Mora[2]; David Clemmer[3]; *[1]University of Minnesota, Minneapolis, MN; [2]Yale University - Mechanical Engineering Departmen, New Haven, CT; [3]Indiana University, Bloomington, IN*

ThP 509 **Analysis of Positional Poly(Pyridylalkyl Methacrylate) Isomers by Ion Mobility and Electrospray Ionization Mass Spectrometry;** Michelle Kushnir; Chrys Wesdemiotis; *University of Akron, Akron, OH*

ThP 510 **Characterization of Giant Calixarenes by MALDI MS and Ion Mobility Spectrometry;** Esra Altuntas[1]; Marion Rollet[1]; Didier Gigmes[1]; Vincent Huc[2]; Laurence Charles[1]; *[1]Aix-Marseille University, Marseille, France; [2]University Paris-Sud, Paris, France*

ThP 511 **Absolute Quantitation of an Amyloidogenic HIV infection-enhancing Human Semen Peptide Using MALDI TOF IM-MS;** Haichuan Liu[1]; Nadia Roan[2, 3]; Jason Neidleman[3]; Susan Fisher[1]; Warner Greene[3]; H. Ewa Witkowska[1]; *[1]UCSF Sandler-Moore Mass Spectrometry Core Facility, San Francisco, CA; [2]Department of Urology, University of California, San Francisco, CA; [3]Gladstone Institute of Virology and Immunology, San Francisco, CA*

ThP 512 **Data-independent MS^E with Ion Mobility Identifies GPX4 as a New Target for Anti-Cancer Drugs;** Lewis M. Brown[1]; Rohitha SriRamaratnam[1]; Wan Seok Yang[1]; Matthew E. Welsch[1]; Kenichi Shimada[1]; Rachid Skouta[1]; Vasanthi S. Viswanathan[2]; Jaime H. Cheah[2]; Paul A. Clemons[2]; Alykhan F. Shamji[2]; Clary B. Clish[2]; Albert W. Girotti[3]; Virginia W. Cornish[1]; Stuart L. Schreiber[2]; Brent R. Stockwell[1, 4]; *[1]Columbia University, New York , NY; [2]Broad Institute of Harvard and MIT, Cambridge, MA; [3]Medical College of Wisconsin, Milwaukee, WI; [4]Howard Hughes Medical Institute, New York, NY*

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ThP 513 **Energetics Comparison of the Venturi Easy Ambient Sonic-spray Ionization and Development of an Original Dual Sprayer Device;** Bessem Brahim[1]; Denis Lesage[1]; Sandra Alves[1]; Marcos Eberlin[2]; Richard Cole[1]; Jean-Claude Tabet[1]; *[1]UPMC (Paris 6), Paris, France; [2]UNICAMP, Campinas, Brazil*

ThP 514 **Sequence-scrambling in Collision-induced Dissociation of Oligonucleotides;** Brett Harper; Elizabeth Neumann; Touradj Solouki; *Baylor University, Waco, TX*

ThP 515 **Charge and Signal Enhancement in Negative Mode Electrospray Mass Spectrometry of DNA Oligomers: Effects of Additives and Solvent Compositions;** You-Jun Fu; Paritosh Pande; Ashis Basu; *Department of Chemistry, University of Connecticut, Storrs, CT*

ThP 516 **A Method for RNA Epigenetics: Enhancing the Comparative Analysis of RNA Digests for Modification Mapping via Isotope Enrichment;** Collin Wetzel; Patrick Limbach; *University of Cincinnati, Cincinnati, OH*

ThP 517 **An Exclusion List Strategy to Improve Detection of Modified Oligonucleotides from RNA;** Xiaoyu Cao; Patrick Limbach; *University of Cincinnati, Cincinnati, OH*

ThP 518 **Alternative Ammonium Acetate Mobile Phases for LC-MS/MS Analysis of Oligonucleotides;** Kirk Gaston; Patrick Limbach; *University of Cincinnati, Cincinnati, OH*

ThP 519 **Unbiased identification of Protein–RNA Contact Sites *in vivo* at Amino Acid and Nucleotide Resolution after UV Cross-Linking;** Katharina Kramer[1]; Timo Sachsenberg[2]; Benedikt Beckmann[3]; Saadia Qamar[1]; Matthias W. Hentze[3]; Oliver Kohlbacher[2]; Henning Urlaub[1]; *[1]Max Planck Institute for Biophysical Chemistry, Goettingen, Germany; [2]University of Tübingen, Tübingen, Germany; [3]European Molecular Biology Laboratory EMBL, Heidelberg, Germany*

ThP 520 **Direct Identification and Characterization of Human Cellular microRNAs by Liquid Chromatography – Tandem Mass Spectrometry and Database Searching;** Hiroshi Nakayama[1, 2]; Yoshio Yamauchi[3]; Masato Taoka[3]; Toshiaki Isobe[2, 3]; *[1]RIKEN, Wako, Japan; [2]CREST, JST, Tokyo, Japan; [3]Tokyo Metropolitan University, Tokyo, Japan*

ThP 521 **Accurate Identification of small RNAs Loaded into the RNA-Induced Silencing Complex by Immunocapture LC-MS;** Kristin L. Geddes; Charles D. Thompson; Mark T. Cancilla; *Merck, West Point, PA*

ThP 522 **Quantification of DNA Adducts of 1, 3-Butadiene *in vivo* Using NanoLC/ESI$^+$ High Resolution MS^3 Mass Spectrometry (nanoLC/ESI$^+$-HRMS^3);** Dewakar Sangaraju; Peter Villalta; Natalia Tretyakova; *University of Minnesota, Minneapolis, MN*

ThP 523 **Determination of N7-methyl-Guanine DNA Adducts by Liquid Chromatography – Tandem Mass Spectrometry;** Benjamin Moeller[1]; Leonard Collins[2]; Marcie Grimes[1]; Philip Kuehl[1]; Steven Belinsky[1]; James Swenberg[1]; Jacob McDonald[1]; *[1]Lovelace Respiratory Research Institute, Albuquerque, NM; [2]University of North Carolina, Chapel Hill, NC*

ThP 524 **High Resolution LC/MS/MS Study of the Interactions of Inorganic Mercury (II) with Nucleic Acids Rich in Thymine;** Janna Anichina; Andre Schreiber; Takeo Sakuma; *AB SCIEX, Concord, Canada*

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ThP 526 **GMP-Compliant Analysis of Large RNA/DNA Hybrids in Preparation of a Clinical Trial;** Roger E. Moore; Denise A. Keen; Piotr Swiderski; Bogdan-Gabriel Gugiu; Christopher Lincoln; Markus Kalkum; *City of Hope, Duarte, CA*

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ThP 527 **Rapid Screening and Quantitative Analysis of 87 Pesticide Residues in Traditional Chinese Medicinal Herbs by Liquid Chromatography-Tandem Mass Spectrometry;** Zhi Cheng[2]; Meiling Lu[3]; Rong Zhang[1]; Ying Liu[1]; Minglin Wang[2]; Jinhua Wang[1]; *[1]Beijing Entry-Exit Inspection&Quarantine Bureau, Beijing, China; [2]Shandong Agriculture University, Taian, China; [3]Agilent Technologies Beijing, Beijing, China*

ThP 528 **Determination of Synthetic Adulterants in Dietary Supplements and Traditional Chinese Medicines (TCM) using liquid Chromatography-Tandem Mass Spectrometry with Triggered MRM;** Yue Song[1]; Shao-Zhen Wang[1]; Man-Yu Zhang[1]; Wen-Yen Lee[1]; Shan-An Chan[2]; *[1]Agilent, Shanghai, China; [2]Agilent Taipei, Taiwan*

ThP 529 **Identify Chemical and Herbal Components of an Unknown TCM Product Using LC/MS Coupled with a Novel Informatics Platform;** Lirui Qiao[1]; JIng Huang[1]; Diane Diehl[2]; Kate Yu[2]; *[1]Waters China, Shanghai, China; [2]Waters Corporation, Milford, MA*

ThP 530 **Rapid Identification of Complex Constituents in Cordyceps Cicadae using High Resolution Mass Spectrometry with Targeted and Non-Targeted Processing Workflows;** Bo Tan[1]; Yizhun Zhu[1]; Ting Liu[2]; Kerong Zhang[2]; Cheng Yang[2]; *[1]School of Pharmacy Fudan University, Shanghai, CHINA; [2]AB Sciex Company, Shanghai, China*

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ThP 531 **A Miniature Capillary Electrophoresis Mass Spectrometry System;** Yinna Zhang[1]; Zejian Huang[2]; Wei Xu[1]; *[1]Beijing Institute Of Technology, Beijing, China; [2]Chinese Scientific Metrology Institute, Beijing, China*

ThP 532 **The Characterization of Polysorbates and the Identification of Their Breakdown Products by Tandem High Speed Mass Spectrometry;** Stephen Rumbelow[1]; James Ferguson[2]; Johnie Brown[2]; Keith Goodman[2]; *[1]Croda Inc, New Castle, DE; [2]AB SCIEX, Framingham, MA*

ThP 533 **Ultra High Performance Liquid Chromatography Tandem Quadrupole-Time of Flight Mass Spectrometry for the Identification of Major Impurities in Synthesized Pharmaceuticals;** Tao Bo; Zheng-Xiang Zhang; We Du; *Agilent Technologies (China), Beijing, China*

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ThP 535 **Bioanalytical Method Development for the Quantitative Analysis of a Polymer CAPA for Stability Study in Phosphate Buffered Saline;** Xiaohui Chen; Stephanie Dodd; Upendra Argikar; Jakal Amin; Panos Hatsis; *Novartis, Cambridge, MA*

ThP 536 **Rapid Differentiation of isobaric Drugs using a Novel Direct Sample Analysis Source, CID, and Accurate Mass TOF Mass Spectrometry;** Robert J. Seward; Bonnie Marmor; Andrew Tyler; *PerkinElmer, Waltham, MA*

ThP 537 **Identification and Quantification of Contaminants in Compressor Oil by High Resolution LCMS;** Zhibin Zhang[1]; Kate Comstock[2]; *[1]Emerson Climate Technology, Sidney , OH; [2]Thermo Fisher Scientific, San Jose, CA*

ThP 538 **Determination of Ribavirin Triphosphate in Rat Blood and Liver by Liquid Chromatography/High-Resolution Accurate Mass Spectrometry;** Yi Tao; Hui Hong; Lirong Fan; Xin Zhang; *WuXi AppTec Co., Shanghai, CHINA*

ThP 539 **Q Exactive Quantitation of Deuterium Enriched Isotopomers;** Greg Waitt; Jon D. Williams; Todd Shearer; *GlaxoSmithKline, Research Triangle Park, NC*

ThP 540 **FTMS-based Isotopic Simulator Improves Accuracy of Mass and Intensity Measurements;** Hans Pfaff; *Thermo Fisher Scientific (Bremen) GmbH, Bremen, Germany*

ThP 541 **ESI-Q-TOF Structural Characterization of Prominent MS/MS Product Ions of Veterinary Drugs for Improved Regulatory Monitoring;** Alberto Nuñez[1]; Steve Lehotay[1]; Lucía Geis-Asteggiante[2]; *[1]USDA-ARS-ERRC, Wyndmoor, PA; [2]University of Maryland, College Park, MD*

ThP 542 **Proof of Principle Study: Non-Targeted Differential Analysis of Drug-Spiked Dog Urine vs. Control Urine;** Hemakanthi De Alwis; Upul Nishshanka; *U.S. Food and Drug Administration, Laurel, MD*

ThP 543 **Quantification of Triamcinolone Acetonide in Rabbit Plasma by Supported Liquid Extraction Followed by UHPLC-QTOF High Resolution Mass Spectrometry;** Damon Papac; Alan Mueller; *Navigen, Salt Lake City, UT*

ThP 544 **Detection of Persistent Organic Pollutants using Atmosheric Pressure Gas Chromatography and a Novel Acquisition Mode for Quadrupole Time-of-Flight MS;** Lauren Mullin[1]; Adam Ladak[2]; Kendon Graham[1]; Ingrid Ericson Jogsten[3]; Gareth Cleland[1]; Bert van Bavel[3]; *[1]Waters Corporation, Milford, MA; [2]Waters Corporation, Beverly, MA; [3]MTM Research Centre, Örebro University, Örebro , Sweden*

ThP 545 **Increasing Protein Sequence Coverage Exploring Alternative Enzymes in Combination with Decison-Tree Based Tandem Mass Spectrometry on the Orbitrap Fusion<br abp="982">;** Onno Bleijerveld[1]; Liesbeth Hoekman[1]; A.F. Maarten Altelaar[1, 2]; *[1]The Netherlands Cancer Institute, Amsterdam, The Netherlands; [2]Utrecht University, Utrecht, Netherlands*

ThP 546 **Rapid Automated Direct Infusion Ultrahigh Resolution Mass Spectrometry of siRNA and Their Metabolites from Various *in vitro* Biomatrices;** Kristen Kwasnjuk; Christopher Kochansky; BaoJen Shyong; Charles Thompson; Mark Cancilla; *Merck & Co., Inc., West Point, PA*

ThP 547 **New Algorithms and Workflow for Significantly Improved Untargeted 2-Sample-Comparison using High-Resolution Data from TOF/Q-TOF Mass Spectrometers;** Frank Kuhlmann; Xiangdong Li; *Agilent Technologies, Santa Clara, CA*

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ThP 550 **Chemical Mechanisms of Atmospheric Aging of Secondary Organic Aerosol;** Peijun Tu; Murray Johnston; *University of Delaware, Newark, DE*

ThP 551 **Rapid Separation of Hexabromocyclododecane Diastereomers and Enantiomers using a Novel Method Combining Supercritical Fluid Chromatography and MS/MS Detection;** Lauren Mullin[1]; Ingrid Ericson Jogsten[2]; Jennifer Burgess[1]; Andy Aubin[1]; Dawei Geng[2]; Kendon Graham[1]; Bert van Bavel[2]; *[1]Waters Corporation, Milford, MA; [2]MTM Research Centre, Örebro University, Örebro, Sweden*

ThP 552 **Analytical Methods Assessment and Developments of Alternative Flame Retardants;** Tan Guo; Yunzhui Wang; Myrto Petreas; JuneSoo Park; *Department of Toxic Substance Control, Berkeley, CA*

ThP 553 **Secondary Organic Aerosol from Gas Phase Methylsiloxane Oxidation: Products and Reaction Mechanisms;** Yue Wu; Murray Johnston; *University of Delaware, Newark,*

ThP 554 **Identification of Intermediates from Ozone Oxidation of Oseltamivir Phosphate using an Ion Trap - Time of Flight Mass Spectrometry;** Hong Youngmin[1, 2]; Jaewoo Song[1]; Ingyu Lee[2]; Hyunook Kim[2]; *[1]Dong-il Shimadzu, Seoul, Republic of Korea; [2]The University of Seoul, Seoul, Republic of Korea*

ThP 555 **Comparing X!Tandem and Sequest Algorithms for Soil Metaproteomes;** Krystalle S. Diaz[1]; Eun-Hae Kim[1]; Robert M. Jones[1]; Ben J. Woodcroft[2]; Manesh B. Shah[3]; Gene W. Tyson[2]; Nathan C. Verberkmoes [4]; Virginia I. Rich[1]; *[1]University of Arizona, Tucson, AZ; [2]University of Queensland, Queensland, Australia; [3]Oak Ridge National Laboratories, Oak Ridge, TN; [4]New England Biolabs Inc, Ipswich, MA*

ThP 556 **Non-Target and Post-Target Analysis of Organic Environmental Contaminants in River Sediments;** Jonathan Byer[1]; Brad Hill[2]; Joe Binkley[1]; *[1]Leco Corporation, St Joseph, MI; [2]Environment Canada, Burlington, ON*

ThP 557 **Environmental Forensics Analysis in Proximity to Unconventional Drilling Activity: Air and Soil Contamination Study Initiated through Amateur Documentation and Collection;** Doug Carlton[1]; Sabra Ramirez[1]; Zacariah Hildenbrand[1, 2]; Brian Fontenot[1]; Jayme Walton[1, 3]; Kevin Schug[1]; *[1]The University of Texas at Arlington, Arlington, TX; [2]Inform Environmental, LLC, Dallas, TX; [3]SWCA Environmental Consultants, Arlinton, TX*

ThP 558 **Determination of inositol Phosphates in Lake Sediments with Ion-Exchange Chromatography Coupled with Mass Spectrometry;** Julia V Paraskova; Emil Rydin; Per J R Sjöberg; *Department of Chemistry - BMC, Uppsala University, Uppsala, Sweden*

ThP 559 **Analysis of Naphthenic Acids in Oil Sands Process Water (OSPW) using LC/TOF;** Avinash Dalmia; Thomas White; *Perkinelmer, Shelton, CT*

ThP 560 **A Streamlined Workflow for the Rapid Detection and Identification of Unknown Contaminants in Environmental Samples using Semi Permeable Membrane Devices;** David Hardy[1]; Peter Russell[1]; Praveen Kutty[2]; Anthony Gravell[2]; *[1]ACD/Labs, Bracknell, UK; [2]Natural Resources Wales, Llanelli, Wales*

ThP 561 **Determination of Aroclor 1254 and 1260 in Soil Samples by Headspace Solid Phase Microextraction – GC/MS using Partial Least-Squares Regression;** Mengliang Zhang; Peter de B. Harrington; *Ohio University, Athens, OH*

ThP 562 **One Step Extraction, Clean Up and Direct-to-vial Concentration For PCBs in Soil and Sediment;** Justin Blau; Lawrence Kramer; *Fluid Management Systems, Watertown, MA*

ThP 563 **Automated Solid Phase Extraction of Semi-Volatile Organic Compounds (AB8270SIM) in Water;** Rudolf Addink; Lawrence Kramer; *Fluid Management Systems, Watertown, MA*

ThP 564 **EPA 1664A: Oil and Grease by Solid Phase Extraction (SPE);** Alex Sharopov; Rudolf Addink; *Fluid Management Systems, Watertown, MA*

ThP 565 **Qualitative and Quantitative Analysis of Contaminants of Emerging Concern in Biosolids Using Dilute-and-Shoot UHPLC-Orbitrap MS Method;** Ahmed Mostafa[1]; Paul Yang[2]; Jonathan Beck[3]; Maciej Bromirski[4]; Dipankar Ghosh[3]; Charles Yang[3]; Lynda McCarthy[1]; *[1]Ryerson University, Toronto, Canada; [2]Ontario Ministry of the Environment, Etobicoke, Canada; [3]Thermo Fisher Scientific, San Jose, CA; [4]Thermo Fisher Scientific GmbH, Bremen, N/A*

ThP 566 **Environmental Analysis of Poly- and Perfluoroalkyl Compounds using a Q-Exactive Orbitrap: Optimization for a Laser Diode Thermal Desorption Method;** Gabriel Munoz[2, 3]; Sung Vo Duy[1]; Hélène Budzinski[3]; Pierre Labadie[3]; Jinxia Liu[4]; Sébastien Sauvé[1]; *[1]Université de Montreal, Montreal, Canada; [2]Université de Bordeaux, Talence, France; [3]CNRS, Talence, France; [4]McGill University, Montreal, Canada*

ThP 567 **Use of Automated Sample Preparation in ISO 17025 Accreditation;** Donald Tang; Tom Hall; *Fluid Management Systems, Watertown, MA*

ThP 568 **Comprehensive Analysis of Brominated Flame Retardants using HESI, APCI and APPI on a TSQ Quantiva;** Mark Dreyer; Maria Prieto Conaway; Mary Blackburn; *Thermo Fisher Scientific, San Jose, CA*

ThP 569 **Petroleum Analysis by Orbitrap Elite Mass Spectrometry with Multiple Ionization Methods;** Pengxiang Yang[1]; Keith Waddell[1]; Brian Ruddy[2]; Matt Ashby[2]; Leonard Nyadong[3]; *[1]Thermo Fisher Scientific, San Jose, CA; [2]Taxon Biosciences, Tiburon, CA; [3]Philips 66, Houston, TX*

ThP 570 **Application of Ultra-High Resolution Tandem Mass Spectrometry in Non-Targeted Analysis of Emerging Environmental Contaminants;** Lee Ferguson[1]; Gordon Getzinger[1]; Heather Stapleton[1]; Jonathan Beck[2]; *[1]Duke University, Durham, NC; [2]Thermo Fisher Scientific, San Jose, CA*

ThP 571 **Using GC Triple Quadrupole MS in Full scan, SIM and SRM to provide the highest coverage for regulated methods;** Paul Silcock[1]; Dwain Cardona[2]; Cristian Cojocariu[1]; Alexander Semyonov[2]; David Steiniger[2]; *[1]Thermo Fisher Scientific, Runcorn, UK; [2]Thermo Fisher Scientific, Austin, TX*

ThP 572 **Nationwide Survey of Nitrosamines by SPE Optimization with fully automated GC-EI-MS/MS;** Jaewon Choi[1]; YD Kim[1]; JM Jung[2]; HJ Huebschmann[3]; *[1]Kwater, Daejeon, South Korea; [2]Thermo Fisher Scientific, Seoul, Korea; [3]Thermo Fisher Scientific, Singapole, Singapole*

ThP 573 **Analysis of Environmental Samples with a Novel Atmospheric Pressure GC Source Coupled to High-Resolution TOF-MS;** Thomas Arthen-Engeland[1]; Andreas Stelter[1]; Armin Holle[1]; Joe Anacleto[2]; Carsten Baessmann[1]; *[1]Bruker Daltonik GmbH, Bremen, Germany; [2]Bruker Daltonics, Milton, ON, Canada*

ThP 574 **Portable Digital Linear Ion Trap Mass Spectrometer Used for VOCs On-line Detections;** Zhengxu Huang[1]; Wei Gao[1]; Li Ding[3]; Wenjian Sun[3]; Lulu Sun[2]; Bing Xue[2]; Gongyu Jiang[3]; Hui Mu[3]; Zhen Zhou[1, 2]; *[1]Jinan University, Guangzhou, Guangdong, China; [2]Hexin Analytical Instrument Co., Ltd, Guangzhou, Guangdong, China; [3]Shimadzu Research Laboratory (Shanghai) Co., Ltd., Shanghai, China*

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ThP 575 **Approaching the Ideal Forensic GC-MS;** Tal Alon[1, 3]; Alexander Fialkov[1]; Aviv Amirav[1, 2]; *[1]Tel-Aviv University, Tel-Aviv, Israel; [2]Aviv Analytical, Tel Aviv, Israel; [3]Afeka Academic College of Engineering, Tel Aviv , Israel*

ThP 576 **Low Level Determination Of Synthetic Cannabinoids (SPICE) And Metabolites From Oral Fluid Using A Novel C18-Based Stationary Phase By UHPLC-MS/MS;** Alan McKeown[1]; Carl Zimmerman[2]; *[1]Advanced Chromatography Technologies Ltd, Aberdeen, UK; [2]MAC-MOD Analytical Inc., Chadds Ford, PA*

ThP 577 **Analysis of Organic Gunshot Residue from Clothing by Solid Phase Microextraction with Gas Chromatography-Mass Spectrometry;** Brent Casper[1]; Bert C. Lynn[2]; *[1]Univ of Kentucky, Lexington, KY; [2]University of Kentucky, Lexington, KY*

ThP 578 **Determining the Efficacy of Antimicrobial Solutions at Preserving Accerelant Residues in Soil Using Headspace Sorptive Extraction and GC-EI-MS;** Nicholas Vercruysse; *George Mason University, Fairfax, VA*

ThP 579 **Exploring the Integration of PSI-FAIMS-MS for Forensic Applications;** Chia-Wei Tsai[1, 2]; Christopher A. Tipple[3]; Richard A. Yost[1]; *[1]Department of Chemistry, University of Florida, Gainesville, FL; [2]CFSRU, Visiting Scientist Program, FBI Laboratory, Quantico, VA; [3]CFSRU, FBI Laboratory Division, Quantico, VA*

ThP 580 **Analysis of Plastic Explosives by Comprehensive Multidimensional GC-MS (GC×GC-ToF);** Chia-Wei Tsai[1, 2]; Sarah M. Kile[3]; Christopher A. Tipple[4]; *[1]CFSRU, Visiting Scientist Program, FBI Laboratory, Quantico, VA; [2]Department of Chemistry, University of Florida, Gainesville, FL; [3]Explosives Unit, FBI Laboratory Division, Quantico, VA; [4]CFSRU, FBI Laboratory Division, Quantico, VA*

ThP 581 **Quantitation of Dyes in Forensic Fibers using UHPLC-TOF and Building a Dye Database using Accurate Mass;** Sharanya Reddy; Sergey Rakov; *PerkinElmer, Shelton, CT*

ThP 582 **Screening and Quantification of Opiates in Urine and Serum by UHPLC-TOF;** Sharanya Reddy; Nonie Danna; *PerkinElmer, Shelton, CT*

ThP 583 **Screening and Quantification of Benzodiazepams in Urine and Serum by LC-TOF;** Sharanya Reddy; Leslie Sullivan; George Perkins; *PerkinElmer, Shelton, CT*

ThP 584 **Screening and Quantification of the SAMHSA (NIDA) Panel in Urine and Serum using LC-Time of Flight Mass Spectrometry;** Avinash Dalmia; Noelle Elliott; Joanne Mather; Bonnie Marmor; George Perkins; *Perkinelmer, Shelton, CT*

ThP 585 **Comparison of Forensic Tandem Mass Spectral Data Obtained on Portable Instrumentation to an Established Reference Library;** Adam O'Leary[1]; Seth Hall[1]; Herbert Oberacher[2]; Christopher Mulligan[1]; *[1]Illinois State University, Normal, IL; [2]Innsbruck Medical University, Innsbruck, Austria*

ThP 586 **Establishing a Surface Swabbing Protocol Compatible with Ambient Sampling Mass Spectrometers for On-site Forensic Evidence Screening;** Alex Swiontek; Seth Hall; Adam O'Leary; Christopher Mulligan; *Illinois State University, Normal, IL*

ThP 587 **Simultaneous Screening and Quantitation of Ten Amphetamines in Urine by On-line SPE-LC/MS Method;** Helmy Rabaha[1]; Swee Chin Lim[1]; Zhe Sun[2]; Jie Xing[2]; Zhaoqi Zhan[2]; *[1]Department of Scientific Service, Ministry of Health, Brunei Darussalam; [2]Customer Support Centre, Shimadzu (Asia Pacific) Pte Ltd, 79 Science Park Drive, #02-01/08, Singapore 118264*

ThP 588 **The Analysis of Cannabinoids and Their Metabolites in Human Urine by LC-MS/MS;** Frances Carroll; *Restek, Bellefonte, PA*

ThP 589 **Evaluation of Drugs of Abuse Extraction from Oral Fluid using Supported Liquid Extraction prior to GC/MS and LC/MS Analysis;** Lee Williams[1]; Rhys Jones[1]; Helen Lodder[1]; Adam Senior[1]; Alan Edgington[1]; Geoff Davies[1]; Steve Jordan[1]; Claire Desbrow[1]; Victor Vandell[2]; Frank Kero[2]; *[1]Biotage GB Limited, Cardiff, UK; [2]Biotage LLC, Charlotte, NC*

ThP 590 **Screening of Forensic and Clinical Samples by SWATH Acquisition and Processing by High Resolution / High Accuracy Reference Spectra;** Stefan König; Susanne Nussbaumer; Thomas Wüthrich; Werner Bernhard; Wolfgang Weinmann; *Institut für Rechtsmedizin, Universität Bern, Bern, Switzerland*

ThP 591 **Rapid and Simple Determination of Benzodiazepines, Zolpidem and Thier Metabolites using Direct Injection Liquid Chromatography-Tandem Mass Spectrometry;** Yu-Dong Jeong[1]; SungIll Suh[2]; Moon Kyo In[2]; Junghan Song[3]; Jin Young Kim[2]; Ki-Jung Paeng[1]; *[1]Yonsei University, Wonju, South Korea; [2]Supreme Prosecutors' office, Seoul, South Korea; [3]Seoul National University Bundang Hospital, Bundang, South Korea*

ThP 592 **Simultaneous Analysis for Forensic Drugs in Human Blood and Urine using Ultra-High Speed LC-MS/MS;** Toshikazu Minohata[1]; Keiko Kudo[2]; Kiyotaka Usui[3]; Noriaki Shima[4]; Munehiro Katagi[4]; Noriaki Ikeda[2]; Hitoshi Tsuchihashi[5]; Koichi Suzuki[5]; *[1]Shimadzu Corporation, Kyoto, Japan; [2]Kyushu University, Fukuoka, Japan; [3]Tohoku University Graduate School of Medicine, Sendai, Japan; [4]Osaka Prefectural Police, Osaka, Japan; [5]Osaka Medical Collage, Takatsuki, Japan*

ThP 593 **LC-MS Identification of Etanercept in Equine Plasma for Doping Control;** Fuyu Guan[1]; Cornelius Uboh[2]; Lawrence Soma[3]; *[1]University of Pennsylvania, West Chester, PA; [2]Pennsylvania Equine Toxicology and Research Center, West Chester, PA; [3]University of Pennsylvania, Kennett Square, PA*

ThP 594 **Elucidation of the Biotrasformation Pathways of New Designer Drugs by Chromatography-Mass Spectrometry following *in vitro* Metabolism Studies;** Xavier De La Torre; Caterina Covelli; Monica Mazzarino; Mario Nardone; Alessandra Stampella; Francesco Botrè; *Laboratorio Antidoping FMSI, Rome, Italy*

ThP 595 **LC-MS/MS Analytical Procedure to Detect Small Peptides in Biological Samples: Evaluation of Different SPE Extraction Sorbents and Protocols;** Monica Mazzarino; Valeria Calvaresi; Xavier de la Torre; Chiara Sebastianelli; Francesco Botrè; *Laboratorio Antidoping FMSI, Rome, Italy*

ThP 596 **Characterization of E-Cigarettes Liquid Contents and Transformation Products by LC-MS, GC-MS and ICP-MS Techniques;** Claudio Medana[1]; Cecilia Sala[1]; Raffaele Pellegrino[2]; Riccardo Aigotti[1]; Federica Dal Bello[1]; Giancarlo Bianchi[2]; Enrico Davoli[2]; *[1]University of Turin, Torino, ITALY; [2]Mario Negri Institute, Milano, N/A*

ThP 597 **Rapid Characterization of Methylone Analogues by Direct Analysis in Real Time Quadrupole Time-of-Flight;** Seongshin Gwak; Jose Almirall; *Florida International University, Miami, FL*

ThP 598 **Analysis of Cathinones in Plasma Using LC-MS/MS;** Jonathan Ho[1]; Shu-Yuan Cheng[2]; Theron Ng-A-Qui[2]; Bruce Eng[1]; *[1]Shimadzu Scientific Instruments, Inc., Somerset, NJ; [2]John Jay College of Criminal Justice, CUNY, New York, NY*

ThP 599 **Determination of Opiates, Amphetamines and Cocaine in Whole Blood, Plasma and Urine by UHPLC-MS/MS using a QuEChERS Sample Preparation;** Sylvain Dulaurent[2]; Mikael Levi[1]; Jean-Michel Gaulier[2]; Stephane Moreau[3]; Pierre Marquet[2, 4]; *[1]Shimadzu France, Noisiel, France; [2]CHU Limoges, Department of Pharmacology and Toxico, Limoges, France; [3]Shimadzu Europe, Albert-Hahn Strasse 6-10, Duisburg, Germany; [4]Univ Limoges, Limoges, France*

ThP 600 **Determination of Δ9-tetrahydrocannabinol and Two of its Metabolites in Whole Blood, Plasma and Urine by UHPLC-MS/MS using QuEChERS Sample Preparation;** Sylvain Dulaurent[1]; Mikael Levi[2]; Jean-Michel Gaulier[1]; Stephane Moreau[3]; Pierre Marquet[1, 4]; *[1]Chu Limoges, Department of Pharmacology and Toxico, Limoges, France; [2]ShimadzuFrance, Noisiel, France; [3]Shimadzu Europe, Albert-Hahn Strasse 6-10, Duisburg, Germany; [4]Univ Limoges, Limoges, France*

ThP 601 **Methods for Characterizing the Performance of Ambient Pressure Ionization Sources;** Tim Brewer[1]; Thomas Forbes[2]; Leoonard Demoranville[3]; Shin Muramato[2]; Edward Sisco[4]; Greg Gillen[2]; *[1]NIST, Gaithersburg, MD; [2]National Institute of Standards and Technology, Gaithersburg, MD; [3]Centre College, Danville, KY; [4]University of Maryland, College Park, MD*

ThP 602 **Using an Ambient Sampling, Portable Mass Spectrometer for the Direct Analysis of Species Related to Desomorphine ("Krokodil") Synthesis;** Seth Hall; Adam O'Leary; Angelica Traub; Christopher Mulligan; *Illinois State University, Normal, Il*

ThP 603 **A Sensitive and Comprehensive Method for the Screening and Confirmation of Drugs of Abuse in oral fluid by LC-QTOF;** Sheher Bano Mohsin; Andre Szczesniewski; *Agilent Technologies, Schaumburg, IL*

ThP 604 **An Analysis of Philadelphia Currency Contaminated with Cocaine;** Brooks F. Mirabella; Karen S. Wendling; *Chestnut Hill College, Philadelphia, PA*

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ThP 605 **Molecular Gastronomy of Coffee: Using Gas Chromatography Mass Spectrometry to Investigate Roles of Origin, Roasting & Storage on Flavor Components;** Steven B. Foster; Stephanie I. Allred; Emily P. Erdman; Jane Hsi; Dallas P. Milligan; Anna Marie Rowell; Josie M. Smith; Ronald L. Halterman; *University of Oklahoma, Department of Chemistry &, Norman, OK*

ThP 606 **Characterization of Marine Dietary Supplements using Travelling Wave Ion Mobility Mass Spectrometry Coupled to UPLC;** Fereshteh Zandkarimi[1]; Mirela Galusca[2]; Jeffrey Morré[1]; Claudia S. Maier[1]; *[1]Oregon State University, Corvallis, OR; [2]University of Arad, Arad, Romania*

ThP 607 **The Complimentary Use of MALDI-TOF MS Protein Fingerprinting and SSTR Genetic Profiling for the Identification and Characterization of Brewer's Yeast;** Sarah Marie Lyons[1]; Hend Ibrahim[1]; Dana Sedin[2]; Kelly Tretter[2]; Drew Bombard[2]; Jessica Prenni[1]; *[1]Colorado State University, Fort Collins, CO; [2]New Belgium, Fort Collins, Co*

ThP 608 **Brewing a Better Beer: Application of UPLC-MS Metabolomics to Develop Non-Volatile Markers of Beer Stability during Storage;** Adam Heuberger[1]; Kaylyn Kirkpatrick[1]; Lindsay Guerdrum[2]; Dana Sedin[2]; Jessica Prenni[1]; *[1]Colorado State University, Fort Collins, CO; [2]New Belgium Brewing Company, Fort Collins, CO*

ThP 609 **Merits of fast, High Resolution Time-of-Flight Mass Spectrometry for the Aroma Profiling of Cheese Samples at Different Maturity Levels;** Thomas M. Groeger[1]; Ralf Zimmermann[1, 2]; Muammer Kaplan[3]; Elmas Oktem [3]; Wibke Peters[4]; Juergen Wendt[4]; *[1]JMSC, CMA Helmholtz Zentrum Muenchen, Neuherberg, Germany; [2]JMSC, Analytical Chemistry, University of Rostock, Rostock, Germany; [3]TUBITAK Marmara Research Centre Food Institute, Gebze, Turkey; [4]LECO European LSCA Centre, Moenchengladbach, Germany*

ThP 610 **MALDI-TOF-MS Screening of Skim Milk Powder for Economically Motivated Adulteration with Foreign Proteins: An Inter-laboratory Feasibility of Concept Demonstration;** Peter Scholl[1]; Samantha Farris[1]; Roman Romero[2]; Peter Harrington[3]; Jeffrey Moore[4]; Petra Lutter[5]; *[1]US FDA, Baltimore, MD; [2]Nestlé Research Centre, Lausanne, Switzerland; [3]Ohio University, Athens, OH; [4]US Pharmacopeial Convention, Rockville, MD; [5]Nestlé Quality Assurance Center, Weiding, Germany*

ThP 611 **Proteomcis Deciphers Dairy and Bakery Recipes Used in Ancient China;** Anna Shevchenko[1]; Yimin Yang[2]; Changsui Wang[2]; Andrej Shevchenko[1]; *[1]MPI of Molecular Cell Biology and Genetics, Dresden, Germany; [2]University of Chinese Academy of Sciences, Beijing, China*

ThP 612 **Differentiation of Whiskies with Data Fusion of Organic and Inorganic Features;** Catherine Stacey[1]; Mark Upton[2]; Robert Hoult[2]; *[1]PerkinElmer, Waltham, MA; [2]PerkinElmer, Seer Green, UK*

ThP 613 **Top-Down, High-Throughput Proteomics using a New LC-MS Platform Provides New Ammunition against Pervasive Fish Fraud in less than 1 hour;** Daniel Lopez Ferrer[1]; Michael Blank[1]; Monica Carrera[2]; Jose M. Gallardo[2]; Michael Andersen[3]; Nicolais Bache[1]; Andreas Huhmer[1]; *[1]Thermo Fisher Scientific, San Jose, CA; [2]CSIC, Vigo, SPAIN; [3]Thermo Fisher Scientific, Odense, Denmark*

ThP 614 **Profiling 100+ Years of Port-style Wines Using UHPLC/QTOF-MS;** Anthony L. Robinson[1]; Jerry Zweigenbaum[2]; Robert Trengrove[3]; Susan E. Ebeler[4]; Thomas S. Collins[4]; *[1]Treasury Wine Estates, Nuriootpa, SA, Australia; [2]Agilent Technologies, Wilmington, DE; [3]Murdoch University, Murdoch, WA, Australia; [4]UC Davis, Department of Viticulture & Enology, Davis, CA*

ThP 615 **Characterization of Flavors and Origin of Tequila and Agave Distillates Using Accurate Mass GC/QTOF and Mass Profiler Professional;** Rafael Acosta[1]; Dale Walker[2]; Ron Honnold[2]; *[1]Agilent Technologies, Mexico City, Mexico; [2]Agilent Technologies, Santa Clara, CA*

ThP 616 **Vitamin D and 25-Hydroxy Vitamin D in Human Milk by LC-MSMS;** Guy L. Dufresne; *Health Canada food lab, Longueuil, Canada*

ThP 617 **Characterization of Food Products by GC×GC-TOFMS and GC-high resolution TOFMS: A Food "omics" Approach;** Elizabeth Humston-Fulmer; Jeffrey Patrick; Joe Binkley; David Alonso; *Leco Corporation, St. Joseph, MI*

ThP 618 **Evaluation of Volatiles in Edible Oils by SPME-DART-QTOF;** Susan Seegers; Tiffanie West; *Bunge North America, Bradley, IL*

ThP 619 **Quality Control of Cooking Oils by GC-MS Profiling and Spectral Fingerprinting;** Pui Hei Chan[1]; Yue Zhu[2]; Karl, W. K. Tsim[1]; Henry Lam[1]; *[1]The Hong Kong University of Science and Technology, Kowloon, Hong Kong; [2]Nanjing University of Chinese Medicine, Nanjing, China*

ThP 620 **A Novel Technique to Increase Sensitivity for the Analysis of Volatile Compounds with DART-MS;** Yuki Kudou[1]; Takehito Sagawa[2]; Takao Nishiguchi[1]; Kazumasa Kinoshita[1]; *[1]BioChromato, Fujisawa, Japan; [2]S&B Foods, Tokyo, Japan*

ThP 621 **Health Sustaining Components Analysis by LC-MS in Heavy Fermented "Miso";** Atsuko Takahashi[1]; Hiromitsu Watanabe[2]; Yuichiro Miyasaka[3]; Tsuyoshi Esaki[1]; Hajime Mizuno[1]; Tsutomu Masujima[1]; *[1]Quantitative Biology Center (QBiC), RIKEN, Suita, Japan; [2]Prof.Emeritus Hiroshima Univ., Hiroshima, Japan; [3]Miyasaka Brewery CO.,Ltd., Tokyo, Japan*

ThP 622 **Metabolite Profiling of Edible Bird's Nest using GC/MS and LC/MS;** Sam Li[1]; Yong Guan Chua[1]; Lai Peng Leong[1]; Bosco Bloodworth[2]; *[1]National University of Singapore, Singapore, SINGAPORE; [2]Health Sciences Authority, Singapore, Singapore*

ThP 623 **Mass Spectrometry Approach for Identification of Porcine and Bovine Gelatin Biomarkers in Food Commodities;** Wan Noor Faradalila Wan Jamaluddin [1]; Venkatesha Gaddemane[2]; Fanny Widjaja[2]; Chee Sian Gan[2]; Dzulkifly Mat Hashim[1]; *[1]Universiti Putra Malaysia, Serdang, Malaysia; [2]Agilent Technologies, Singapore, Singapore*

ThP 624 **Characterization of Proanthocyanidin Content in Dietary Supplement Standard Reference Materials by Two-Dimensional Liquid Chromatography with High-Resolution Mass Spectrometry;** Benjamin Place; Catherine Rimmer; *National Institute of Standards and Technology, Gaithersburg, MD*

ThP 625 **Detection and Quantitation of PDE-5 Inhibitor Adulterants in Herbal Supplements;** Kevin Krock; *Shimadzu Scientific Instruments, Pleasanton, CA*

ThP 626 **Identification of Undeclared Designer Anabolic Steroids in a Vitamin-B Dietary Supplement: Mass Spectral Clues for Forensic Investigation;** Jonathan J. Litzau; Travis M. Falconer; Mary B. Jones; Sarah E. Voelker; *U.S. Food & Drug Administration, Cincinnati, OH*

ThP 627 **Nitration of Some Flavonoids Found in Beer;** Larry Sallans; Stephen Macha; *University of Cincinnati, Cincinnati, OH*

ThP 628 **Characterization of Phosvitin Digests Using MALDI-TOF Mass Spectrometry;** Himali Samaraweera[1]; Sun Hee Moon[1]; Eun Joo Lee[2]; Jennifer E. Grant[3]; Jordan Fouks[4]; Joo Won Suh[5]; Dong Ahn[1, 6]; *[1]Dept. of Animal Science, Iowa State University, Ames, IA; [2]Dept. of Food and Nutrition, Univ. Wisconsin-Stout, Menomonie, WI; [3]Dept. of Biology, Univ. Wisconsin- Stout, Menomonie, WI; [4]Applied Science Program, Univ. Wisconsin-Stout, Menomonie, WI; [5]Center for Nutraceutical/Pharmaceutical Materials, Yongin, South Korea; [6]Dept.of Animal Science and Tech., Sunchon National, Sunchon , South Korea*

ThP 629 **Quantitative Analysis of Hops Bittering Acids by Direct Analysis Electrospray Ionization Mass Spectrometry;** Gregg Hasman Jr; Andre Venter; *Western Michigan University, Kalamazoo, MI*

ThP 630 **Simultaneous Screening of Multiple Plant-Based Allergens and Gluten using Liquid Chromatography-Mass Spectrometry;** Jennifer Sealey Voyksner[1]; Robert Voyksner[1]; Jerry Zweigenbaum[2]; *[1]LCMS Limited, Durham, NC; [2]Agilent Technologies, Willmington, DE*

ThP 631 **Novel Endogenous Iron-Binding Compounds in Wines Discovered through Exploitation of Iron's Characteristic Isotopic Signature;** Oliver Baars; David H. Perlman; *Princeton University, Princeton, NJ*

ThP 632 **A LCMS Method for the Detection of Cocoa Butter Substitutes, Replacers, and Equivalents in Commercial Chocolate-like Products;** Jared Russell; Kevin Krock; Liling Fang; Will Bankert; *Shimadzu Scientific Instruments, Inc., Pleasanton, CA*

ThP 633 **High Throughput Characterization of Katsuobushi using DART-MS with High-Speed Polarity Switching;** Shun Wada[1]; Keiko Matsumoto[2]; Jun Watanabe[2]; Teruhisa Shiota[3]; *[1]Inst. of oil & fats, other foods Inspection, Tokyo, Japan; [2]Shimadzu Corporation, Kyoto, Japan; [3]AMR, Tokyo, Japan*

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ThP 634 **Mass Spectrometry-based Metabolomics Analysis Reveals Age-related Pathway Changes in *Drosophila melanogaster*;** Yuping Cai; Yuan Guo; Zhengjiang Zhu; *IRCBC, Chinese Academy of Sciences, Shanghai, China*

ThP 635 **Development of a Targeted Metabolic LC-MS/MS Assay to Assess Nanotoxicity In *C. Elegans*;** Jeanita Pritchett; Ashley Beasley-Green; Bryant Nelson; *National Institute of Standards and Technology, Gaithersburg, MD*

ThP 636 **Large-scale Metabolic Profiling of Saponins in *M. truncatula* Ecotypes;** Zhentian Lei; Bonnie Watson; David Huhman; Shelagh Henson; Lloyd Sumner; *The Samuel Roberts Noble Foundation, Ardmore, OK*

ThP 637 **Metabolic Pathway Directed Targeted Metabolomics by Mining High Resolution Full Scan MS Data Sets – a Food Metabolomics Case Study;** Heiko Neuweger; Klaus Meyer; Verena Tellström; Aiko Barsch; *Bruker Daltonik, Bremen, Germany*

ThP 638 **Targeted Metabolomic Analysis to Interrogate the Role of cellular Retinol-Binding Protein, Type 1 in retinoic Acid Biosynthesis;** Jianshi Yu; Jace Jones; Keely Pierzchalski; Maureen Kane; *University of Maryland at Baltimore, Baltimore, MD*

ThP 639 **Study of How Variation in Fragmentation Energy Affects Our Ability to Apply MS/MS Information to small Molecule Formula Assignment;** Jane Razumovskaya; Ralf Tautenhahn; Tim Stratton; Sachin Deshpande; *Thermo Fisher Scientific, San Jose, CA*

ThP 640 **Development of a Software Toolbox for Systematic Annotation of Plant Metabolomes;** Feng Qiu; Dennis D. Fine; Daniel J. Wheritt; Zhentian Lei; Lloyd W. Sumner; *The Samuel Roberts Noble Foundation, Ardmore, OK*

ThP 641 **High Sensitivity Analysis of Metabolites in Serum Using Simultaneous SIM and MRM Modes in a Triple Quadrupole GC/MS/MS;** Shuichi Kawana[1]; Yukihiko Kudo[2]; Kenichi Obayashi[2]; Laura Chambers[3]; Richard Whitney[3]; Haruhiko Miyagawa[2]; *[1]Shimadzu, Osaka, Japan; [2]Shimadzu, Kyoto, Japan; [3]Shimadzu Scientific Instruments, Columnbia, MD*

ThP 642 **Metabolite Profiling of Active Metabolites of Vitamin A in Lung Epithelial Cells;** Wenjing Li[1]; Jace W. Jones[1]; Jianshi Yu[1]; Keely Pierzchalski[1]; Pu-Ting Xu[2]; Isabel L. Jackson[2]; Zeljko Vujaskovic[2]; Gregory Tudor[3]; Catherine Booth[3]; Thomas J. MacVittie[2]; Maureen A. Kane[1]; *[1]University of Maryland, School of Pharmacy, Baltimore, MD; [2]University of Maryland, School of Medicine, Baltimore, MD; [3]Epistem Ltd, Manchester, UK*

ThP 643 **Examination of Multi-Vitamin and -Mineral Supplementation Effects on Saliva Metabolomics;** LeeCole Legette; Elizabeth Hardardt; Jaewoo Choi; Jan F. Stevens; *Oregon State University, Corvallis, OR*

ThP 644 **Identification of Natural Substrates of Spermidine/spermine acetyltransferase 2 (SAT2) by metabolomic approaches;** Han-Jia Lin[1]; Yu-Ling Peng[1]; Hsien-Hong Chang[2]; *[1]Taiwan Ocean University, Keelung, Taiwan; [2]National Taiwan Ocean University, Keelung, Taiwan*

ThP 645 **Improvements of Salicylic Acid Detection in Engineered *Escherichia coli* Cells Using HPLC and GC-MS Techniques;** Trong Khoa Pham[1]; Martynas Serys-Kubertavicius[1]; Joy Mukherjee[1]; Catherine A. Biggs[1]; Felix Dafhnis-Calas[2]; Stephan Heeb[2]; Miguel Camara[2]; Natalio Krasnogor[3]; Phillip C. Wright[1]; *[1]CHELSI Institute, The University of Sheffield, Sheffield, UK; [2]School of Life Sciences, University of Nottingham, Nottingham, UK; [3]School of Computing Science, Newcastle University, Newcastle, UK*

ThP 646 **Tracking Nocardioazine Biosynthesis with Liquid Chromatographic Accurate Tandem Mass Spectrometry: Trytophan Diketopiperazine Fragmentation in Positive and Negative Ion Modes;** Angela M. Hansen[1]; Norah Alqahtani[2]; Suheel Porwal[2]; Rajesh Viswanathan[2]; Jonathan A. Karty[1]; *[1]Indiana University, Bloomington, IN; [2]Case Western Reserve University, Cleveland, OH*

ThP 647 **Development of a Multi-Omics Approach using a Single Extraction;** John Bowden[1]; Tracey Schock[1]; Miki Watanabe[1]; Satomi Kohno[2]; *[1]NIST, Charleston, SC; [2]Medical University of South Carolina, Charleston, SC*

ThP 648 **Isotopic Tracer Analysis Provides Insight to the Mechanism of Action Aminooxyacetate and Inhibition of tumor Cell Proliferation;** Fang Wang; Eugene Melamud; Kim Arndt; Jeremy Myers; *Oncology Research, Pfizer WRD, Pearl River, NY*

ThP 649 **Automated Data Acquisition and Analysis Workflows for Metabolomics Analysis of Plant-Microbe Interactions and ^{13}C Incorporation by GC/MS;** Stefan Jenkins[1]; Shengjing Shi[2, 3]; Beibei Huang[2]; Marcus Schicklberger[1]; Mary Firestone[1, 2]; Romy Chakraborty[1]; David Wemmer[1, 2]; Trent Northen[1]; *[1]Lawrence Berkeley National Laboratory, Berkeley, CA; [2]University of California, Berkeley, Berkeley, CA; [3]University of Oklahoma, Oklahoma CIty, OK*

ThP 650 **Metabolomics: The Study of Serum Metabolites and Traumatic Injury;** Janine Johnson; *University of Connecticut, Storrs, CT*

ThP 651 **Serum Metabolomics from a Brazilian Population using GC-MS;** Kallyandra Padilha[1]; Gabriela Venturini[1]; Celso Blatt[2]; Alexandre Pereira[1]; *[1]Heart Institute, Sao Paulo, Brazil; [2]Agilent Technologies, Barueri, Brazil*

ThP 652 **PMR: Plant & Microbial Metabolomics Resource;** Manhoi Hur; Joon-Yong Lee; Ling Li; Eve Syrkin Wurtele; *Iowa State University, Ames, IA*

ThP 653 **The Wheat Defensome under Challenge by Fungal Pathogens - A Metabolite MRM Atlas Approach;** Joel Gummer[1]; Catherine Rawlinson[2]; Kar-Chun Tan[3]; Richard McCulloch[2]; Aiko Barsch[4]; Joe Anacleto[5]; Richard Oliver[3]; Robert Trengove[1, 2]; *[1]Metabolomics Australia, Murdoch University, Perth, Australia; [2]Separation Science and Metabolomics Laboratory, Perth, Australia; [3]Dept. Environment & Agriculture, Curtin University, Perth, Australia; [4]Bruker Daltonics, Bremen, Germany; [5]Bruker Daltonics, Milton, Canada*

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ThP 654 **Investigation of Serum Metabolome Changes in Postmenopausal Women after Administration of Phytoestrogenic Dietary Supplements;** Caleb Nienow[1]; Jeff Dahl[2]; Richard B. Van Breemen[3]; *[1]University of Illinois at Chicago, Chicago, IL; [2]Shimadzu, Columbia, MD; [3]University of Illinois, Chicago, IL*

ThP 655 **Detection of Recurrent Breast Cancer by Metabolite Profiling: Initial Validation Results;** Haiwei Gu[1, 2]; Danijel Djukovic[1, 2]; Robert Ballas[3]; Narasimhamurthy Shanaiah[2]; G.A. Nagana Gowda[1]; Frederic Waldman[4]; Beverly Handy[5]; Daniel Raftery[1, 2]; *[1]University of Washington, Seattle, WA; [2]Matrix-Bio, Inc., Fort Wayne, IN; [3]Biomarker Associates, Inc., Newark, DE; [4]Quest Diagnostics, San Juan Capistrano, CA; [5]The University of Texas M.D. Anderson Cancer Cente, Houston, TX*

ThP 656 **Metabolomics Analysis Reveals Dietary Components in Nipple Aspirate Fluid;** Jessica A. Miller[1]; Patricia A. Thompson[1]; Andrew Baker[2]; H-H Sherry Chow[1]; *[1]University of Arizona Cancer Center, Tucson, AZ; [2]Waters Corporation, Milford, CT*

ThP 657 **Pathway-Centric Integrative Analysis Identifies RRM2 as a Prognostic Marker in Breast Cancer Associated with Poor Survival and Tamoxifen Resistancer;** Nagireddy Putluri; *Baylor College of Medicine, Houston, TX*

ThP 658 **Pathway-Based Integrative Analysis Reveals a Key Role for the Hexosamine Biosynthetic Pathway in Prostate Cancer Progression;** Arun Sreekumar; *Baylor College of Medicine, Houston, TX*

ThP 659 **Targeted LC-MS/MS Metabolic Profiling for Monitoring Colon Cancer Progression;** Jiangjiang Zhu[1]; Danijel Djukovic[1]; Lingli Deng[2]; Haiwei Gu[1]; Daniel Raftery[1, 3]; *[1]University of Washington, Seattle, WA; [2]Xiamen University, Xiamen, P.R. China; [3]Fred Hutchinson Cancer Research Center, Seattle, Washington*

ThP 660 **Comprehensive Profiling of Bioactive Lipids in Human Plasma: Understanding Biochemical Effects of Pulmonary Rehabilitation on COPD Patients;** Chen Zhang; Sherman Gorbis; John Wang; A. Daniel Jones; *Michigan State University, East Lansing, MI*

ThP 661 **Lipidomics of Alzheimer's Disease using an Integrated Microfluidic-Ion Mobility-MS Device;** Steven Lai; Angela Doneanu; James Murphy; James Langridge; Giuseppe Astarita; *Waters Corporation, Milford, MA*

ThP 662 ***In vivo* LC/MS-based Metabolic Flux Analysis to Delineate Nucleotide Metabolism in Diabetes;** Anna Mathew; Jaeman Byun; Pradeep Kayampilly; Farsad Afshinnia; Subramaniam Pennathur; *University of Michigan, Ann Arbor, MI*

ThP 663 **Preliminary Screening of Dried Blood Serum Spots (DBS) for Organic Components by On-Line Supercritical Fluid Extraction- Gas Chromatography/ Mass Spectrometry;** Bruce A. Benner; Jessica Reiner; *NIST, Gaithersburg, MD*

ThP 664 ***In-situ,* Real-Time Analysis of Upper Gastrointestinal Mucosa by the Direct Combination of Rapid Evaporative Ionization Mass Spectrometry (REIMS) and Endoscopy;** Juzheng Huang; Cristina Guallar-Hoyas; Sacheen Kumar; Nima Abbassi-Ghadi; Emrys Jones; Jonathan Hoare; George Hanna; Zoltan Takats; *Faculty of Medicine, Imperial College London, London, UK*

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ThP 665 **Quantitative Analysis of Tricyclic Antidepressants in Urine by Rapidfire Coupled with Triple Quadrupole Mass Spectrometry;** Flaubert Mbeunkui; Sarah Sullivan; R. Brent Dixon; *Physician's Choice Laboratory Services, Rock Hill, SC*

ThP 666 **Determination of Serum Protein Binding of Lipophilic Compounds by Ultracentrifugation and LC-MS/MS Analysis;** Jun Zhang; Dieter Drexler; Brian McAuliffe; Chris Cianci; Wilson Shou; *Bristol-Myers Squibb Company, Wallingford, CT*

ThP 667 **Quantification of Active Pharmaceutical Ingredient by Triple Quadrupole ICP-MS;** Naoki Sugiyama[1]; Yasumitsu Ogra[2]; Yasumi Anan[2]; *[1]Agilent Technologies Japan, Hachioji-shi, Japan; [2]Showa Pharmaceutical University, Machida-shi, Japan*

ThP 668 **Simultaneous Determination of Zolmitriptan and its metabolite in Human Plasma Using LC-MS/MS Techniques;** Moo-Young Kim; Marsha Luna; Rochelle Burke; Julie Showalter; Yansheng Liu; *KCAS, Shawnee, KS*

ThP 669 **A Sensitive HPLC-MS/MS Method for the Quantitative Determination of Bromocriptine in Human Prolactinoma Tissues;** Qingce Zang[1]; Yang Liu[2]; Jiuming He[1]; Xiaofei Yue[1]; Ruiping Zhang[1]; Renzhi Wang[2]; Zeper ABLIZ[1]; *[1]Institute of Materia Medica, CAMS&PUMC, Beijing, China; [2]Peking Union Medical College Hospital, CAMS&PUMC, Beijing, China*

ThP 670 **Robust Quantitative Droplet-Based Liquid Microjunction Surface Sampling HPLC-MS/MS System;** Vilmos Kertesz; Gary J. Van Berkel; *Oak Ridge National Laboratory, Oak Ridge, TN*

ThP 671 **Quantitation of Anacetrapib, Stable-Isotope Labeled-Anacetrapib (Microdose), and Four Metabolites in Human Plasma Using Liquid Chromatography Tandem Mass Spectrometry;** Cynthia M. Chavez-Eng; Ryan Lutz; Dina Goykhman; Kevin Bateman; *Merck & Co., West Point, PA*

ThP 672 **Rapid Development of Analytical Method for Antiepileptic Drugs in Plasma using UHPLC Method Scouting System Coupled to LC/MS/MS;** Miho Kawashima[1]; Satohiro Masuda[2]; Ikuko Yano[2]; Kazuo Matsubara[2]; Kiyomi Arakawa[3]; Qiang Li [3]; Yoshihiro Hayakawa[3]; *[1]Shimadzu Corporation, Tokyo, JAPAN; [2]Kyoto University Hospital, Kyoto, Japan; [3]Shimadzu Corporation, Kyoto, Japan*

ThP 673 **Stereospecific Metabolite Profiling of Racemic Warfarin using 2D LC/MS Q-TOF Analysis;** Siji Joseph[1]; Smriti Khera[2]; Murali Subramanian[3]; *[1]Agilent technologies, Bangalore, INDIA; [2]Agilent Technologies, Santa Clara, CA, US; [3]Biocon BMS, Syngene Internationl, Bangalore, India*

ThP 674 **An SFC-MS/MS Detection Method for the *in vivo* Quantitation of the Ganglionic Blocker Hexamethonium;** Sarah M Osgood; Amanda J King-Ahmad; Christopher L Holliman; *Pfizer, Groton, CT*

ThP 675 **Indirect and Direct LC/MS Methods for Quantification of Ribavirin and Its Phosphate Metabolites in Biological Samples;** Chao Li; Feng Wang; Greg Waitt; Jon Williams; Chris Barringer; Vishal Shah; David Wagner; Glenn Smith; John Dunn; *GlaxoSmithKline, Research Triangle Park, NC*

ThP 676 **Measurement of Serum Concentrations of Olaparib by LC-MS/MS-MRM;** Huseyin Kayadibi; Christopher Ryan; Farbod Fazlollahi; Julian Whitelegge; Kym Faull; *Pasarow Mass Spectrometry Laboratory, UCLA, Los Angeles, CA*

ThP 677 **Bioanalysis of an Oligonucleotide Class Macromolecule from Urine and Skin Tissue Using Liquid Chromatography - Tandem Mass Spectrometry;** Hang Zeng[1]; Eugene Kadar[1]; Elisabeth Lonie[2]; John Nowak[2]; Rick Steenwyk[1]; *[1]Pfizer, Inc., Groton, CT; [2]Pfizer, Inc., Andover, MA*

ThP 678 **Ketamine CYP3A Mediated Metabolism Study using Mammalian Liver S9 Fractions, cDNA Expressed Enzymes and Liquid Chromatography Tandem Mass Spectrometry;** Raphaël Santamaria; Floriane Pailleux; Francis Beaudry; *Université de Montréal, St-Hyacinthe, CANADA*

ThP 679 **Comparative Cellular Pharmacology of a β-D-2'-*C*-methyl-2,6-diaminopurine ribonucleoside phosphoramidate RS-1389 with INX189 and IDX184 in Rat, Dog, Monkey and Human Hepatocytes;** Sijia Tao[1]; Longhu Zhou[1]; Shaoman Zhou[1]; Jong-Hyun Cho[1]; Steven J. Coats[2]; Raymond F. Schinazi[1]; *[1]Emory University School of Medicine, Atlanta, GA; [2]RFS Pharma LLC, Tucker, GA*

ThP 680 **Determination of the Bioavailability Characteristics of a Novel TMZ Based Therapeutic via CEMS for the Treatment of Brain Cancer;** Neloni R Wijeratne[1]; Ruth M. Alvarez[1]; Ahyoung Joo[1]; Thomas Chen[2]; Hee-Yeon Cho[2]; Axel H. Schonthal[2]; Florence M Hofman[2]; Chitra Ratnayake[3]; Jonathan E Katz[1]; *[1]CAMM/USC, Los Angeles, CA; [2]USC, Los Angeles, CA; [3]AB Sciex, Brea, CA*

ThP 681 **Occidiofungin Kinetics in Blood Plasma following Different Routes of Administration in a Murine Model;** Akshaya Ravichandran[1]; Jamie Humphries[2]; Lawrence Dangott[1]; Jerome Escano[1]; Wanjin Tang[1]; James Smith[1]; *[1]Texas A&M University, College Station, TX; [2]ThermoScientific, Austin, TX*

ThP 682 **Development of a Quantitative LCMS Method for the Peptide RF9 in Equine Plasma;** Curtis Korthanke[1]; Lawrence Dangott[1]; Jamie Humphries[2]; Marcel Amstalden[1]; Gary Williams[1]; *[1]Texas A&M University, College Station, TX; [2]ThermoScientific, Austin, TX*

ThP 683 **Profiling the Anti-Tumor Ability of Vitamin D Metabolites by UPLC-MS;** Liu Chia-Hsiun; Chiang Kun-Chun; Hsu Pang-Hung; *, Keelung, R.O.C.*

ThP 684 **The Effects of Obesity on Anesthetic Drug Distribution – Absolute Quantitation of Propofol in Human Plasma by GC-MS/MS;** Karolina M. Krasinska[1]; Jerry Ingrande[2]; Allis S. Chien[1]; *[1]SUMS, Stanford University, Stanford, CA; [2]Department of Anesthesiology, Stanford University, Stanford, CA*

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ThP 685 **Activated-Ion Electron Transfer Dissociation for the Improved Fragmentation of Intact Protein Cations;** Nicholas Riley; Christopher Rose; Timothy Rhoads; Michael Westphall; Joshua Coon; *University of Wisconsin, Madison, Wisconsin*

ThP 686 **Improved ETD Duty Cycle and Spectral Signal to Noise Ratio in a Dual Cell Linear Ion Trap;** Christopher Mullen[1]; Lee Earley[1]; Jean-Jacques Dunyach[1]; John E. P. Syka[1]; Jeffrey Shabanowitz[2]; A. Michelle English[2]; Donald F. Hunt[2]; *[1]Thermo Fisher Scientific, San Jose, CA; [2]University of Virginia, Charlottesville, VA*

ThP 687 **Structure of Arene-Linked Dinuclear Ruthenium(II) Organometallics–Peptide Complexes;** Laure Menin; Benjamin S. Murray; Luc Patiny; Yury O. Tsybin; Paul J. Dyson; *Ecole Polytechnique Federale de Lausanne, Lausanne, Switzerland*

ThP 688 **Electron Capture Dissociation of Sodiated Peptides on modified SCIEX Q-Star quadrupole-TOF mass spectrometer;** Valery G. Voinov; Samuel Bennett; Peter Hoffman; Joseph Beckman; Douglas Barofsky; *Oregon State University, Corvallis, OR*

ThP 689 **ECD, ECD/CID and HPLC ECD MRM of Phosphorylated Peptides in a Triple Quadrupole Mass Spectrometer;** Kenneth Newton[1]; Valery Voinov[2]; Samuel Bennett[2]; Peter Hoffman[2]; Douglas Barofsky[2]; *[1]Agilent Technologies, Santa Clara, CA; [2]Oregon State University, Corvallis, OR*

ThP 690 **Characterization of Surface Induced Dissociation in a Multi-Reflecting TOF - TOF Mass Spectrometer;** Aleksey Vorobyev; Andrey Trufanov; Sergey Kirillov; Anatoly Verenchikov; *MSC-CG, Bar, Montenegro*

ThP 691 **Investigation of Fragmentation of Tryptophan Nitrogen Radical Cation;** Andrii Piatkivskyi[1]; Marshall Happ[1]; Justin Kai-Chi Lau[2]; Alan C. Hopkinson[2]; Victor Ryzhov[1]; *[1]Northern Illinois University, Dekalb, IL; [2]York University, Toronto, Ontario, Canada*

ThP 692 **Evaluation of Dissociation Techniques for Non-Targeted Analyte Identification;** Travis Falconer; Enrique Yanes Santos; *US Food & Drug Administration, Cincinnati, OH*

ThP 693 **Novel Application of Electron Induced Dissociation (EID) for Steroid Fragmentation;** Christopher J. Thompson[1]; Guilong (Charles) Cheng[2]; *[1]Bruker Daltonics Inc., Billerica, MA; [2]Alexion Pharmaceutical Inc., Cheshire, CT*

ThP 694 **Fragmentation of Isotope Labeled and Unlabeled Azo Compounds;** Martin Clemen; Tassilo Muskat; Jürgen Grotemeyer; *Inst. f. Phys. Chem der CAU zu Kiel, Kiel, Germany*

ThP 695 **Ion–Molecule Reactions and Separation of $^{238}U/^{238}Pu$ Isobars in the Collision/reaction Cell of Tandem Inductively Coupled Plasma Mass Spectrometer;** Mohamed A. Amr; Saeed H. Al-Meer; *Qatar University, Doha, Qatar*

ThP 696 **Development of a Tune Method, Based on theoretical Studies, for the Comparison of CID Spectra from Various Instrumental Platforms;** Farid Ichou[1]; Adrian Schwarzenberg[1]; Denis Lesage[1]; Sandra Alves[1]; Richard B. Cole[1]; Xavier Machuron-Mandard[2]; Christophe Junot[3]; Jean-Claude Tabet[1]; *[1]University Paris VI (UPMC) case 45 UMR 7201 CNRS, Paris Cedex 05, France; [2]Atomic Energy Commission, Arpajon Cedex, France; [3]CEA, LEMM, DSV/ ibitec-S/SPI, 91191 Gif-sur-Yvette, France*

ThP 697 **Soft Supercharging of Biomolecular Ions in Electrospray Ionization Mass Spectrometry;** Xu Ning; Konstantin Chingin; Eric Handberg; Huanwen Chen; *East China Institute of Technology, Nanchang, China*

ThP 698 **Differentiation of Isomeric Branched Side-Chain Amino Acids by Electron Activated Dissociation;** Wendy Zhong[1]; Xiang Yu[2]; *[1]Merck, Summit, NJ; [2]Northwestern University, Evanston, IL*

ThP 699 **Are Acylium Ions Proton Donors or Hydride Acceptors in the Fragmentation of Protonated Amides?;** Yunfeng Chai; Yuanjiang Pan; *Zhejiang University, Hangzhou, China*

ThP 700 **Modeling the Dissociation of Cyclodextrin Dimer Ions and their Inclusion Complexes;** Justin Renaud; Kevin Berland; Paul Michael Mayer; *University of Ottawa, Ottawa, Canada*

ThP 701 **Characterisation of Point Mutations in Hemoglobin Chains using Top Down Mass Spectrometry;** Krisztina Radi[1]; Julia Smith[2]; James Scrivens[1]; *[1]University of Warwick - Life Sciences, Coventry, UK; [2]Bruker, Coventry, UK*

ThP 702 **Heterolytic or Homolytic Bond Cleavage: Possible Pathways for Generating Ions 170 and 171 from Dansylated Compounds under Electrospray Ionization;** Jianshuang Wang; Brian Dean; Xiao Ding; *Genentech, South San Francisco, CA*

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ThP 709 **MALDI in-Source Decay Fragmentation of Glycans with Iron Oxide Nanoparticle Matrices;** Qiaoli Liang; Yaolin Xu; Thomas Macher; Yuping Bao; Carolyn Cassady; *University of Alabama, Tuscaloosa, AL*

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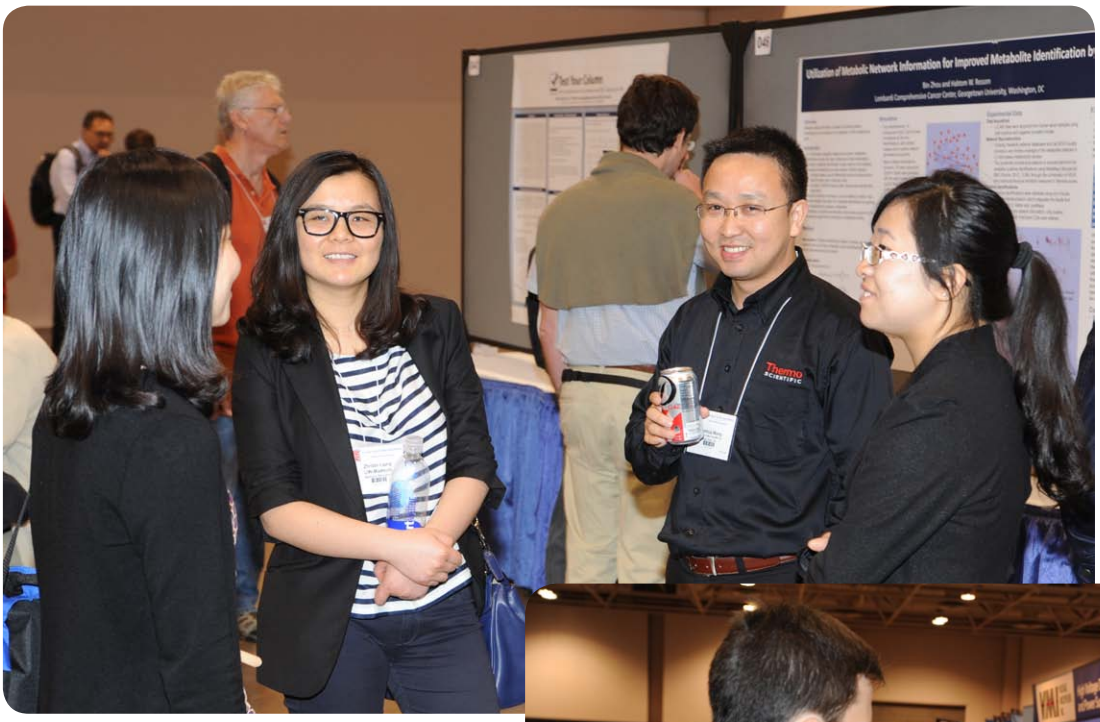

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50th Anniversary of the British Mass Spectrometry Society

50 YEARS of a vibrant community

BMSS EDUCATION – 14 years of MS training courses, 3 years of sponsored lecture tours, wide ranging outreach projects bringing MS into the community

BMSS INVESTING IN THE FUTURE – £1000s spent annually supporting student and doctoral travel and providing grants to aid pilot research projects

BMSS CONFERENCES – Annual meetings, Special Interest Group colloquia, co-hosting of interdisciplinary meetings in areas including proteomics and clinical applications

BMSS COMMUNICATION - Mass Matters is BMSS' official printed publication reporting on UK MS news and featured scientific articles. The website (www.BMSS.org) provides the latest information on upcoming meetings, BMSS activities, heritage archive

BMSS cordially invite you to join us at ASMS 2014 on the evening of Tuesday 17th June for a workshop where we will highlight UK MS research and celebrate the achievements of British mass spectrometrists.

To learn more visit www.bmss.org.uk

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