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Abstracts

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TECHNICAL PROGRAM

SUNDAY, MARCH 5, 2017
AFTERNOON

HERITAGE AWARD — Session 10

The Pittcon Heritage Award
arranged by Sarah Reisert, Chemical Heritage Foundation

Sunday Afternoon, Room Skyline Ballroom, West 375b
Sarah Reisert, Chemical Heritage Foundation, Presiding

4:45		**Presentation of the 2017 Pittcon Heritage Award to Robert J Warren, Leco, by Robert GW Anderson, Chemical Heritage Foundation**

THE WALLACE H. COULTER LECTURE — Session 20

The Wallace H Coulter Lecture

Sunday Afternoon, Room Skyline Ballroom, West 375b

5:00	(20-1)	**Integrated Brainwide Structural and Functional Analysis** KARL DEISSEROTH, Stanford University

SYMPOSIUM — Session 30

Accurate Mass Analysis of Organic Contaminants in Food and Water
arranged by Imma Ferrer, University of Colorado

Sunday Afternoon, Room W178b
Imma Ferrer, University of Colorado, Presiding

1:30		**Introductory Remarks - Imma Ferrer**
1:35	(30-1)	**High Resolution Mass Spectrometry Profiling of Dissolved Organic Matter in Environmental and Processed Water** MIRA PETROVIC, ICRA - Catalan Institute for Water Research, Yaroslav Verkh, Mira Celic
2:10	(30-2)	**Organic Contaminants Analysis in Water - From Influent to Effluents During Treatment by UHPLC-HRAM** DAN-HUI DOROTHY YANG, Agilent Technologies, Tarun Anumol, Angela Smith
2:45	(30-3)	**LC-MS as a Tool to Optimize Wastewater Treatment** VIVIANE YARGEAU, McGill University N/A
3:20		**Recess**
3:35	(30-4)	**Identification and Toxicity of Halogenated Nonylphenol Disinfection By-Products During Chlorination and Chloramination by High Resolution Mass Spectrometry** CHRISTIANE HOPPE-JONES, University of Arizona
4:10	(30-5)	**Accurate Mass Analysis of Environmental Contaminants: A 15-Year Journey** IMMA FERRER, University of Colorado, Michael Thurman

SYMPOSIUM — Session 40

ACS-DAC - Analytical Advances in Sustainable and Safe Nanotechnology
arranged by Wenwan Zhong, University of California Riverside and Lisa A Holland, West Virginia University

Sunday Afternoon, Room W179a
Wenwan Zhong, University of California Riverside, Presiding
Lisa A Holland, West Virginia University, Presiding

1:30		**Introductory Remarks - Wenwan Zhong and Lisa A Holland**
1:35	(40-1)	**Biomolecular Coronas on Nanoparticles** CATHERINE MURPHY, University of Illinois at Urbana-Champaign
2:10	(40-2)	**Design and Redesign of Sustainable Engineered Nanomaterials** CHRISTY L HAYNES, University of Minnesota
2:45	(40-3)	**Characterizing Nanoparticle Tissue Interaction via 3D Optical Imaging** WARREN CHAN, University of Toronto
3:20		**Recess**
3:35	(40-4)	**Separation and Fluorescence: Tools to Characterize Biomolecular Affinity in Nanomaterials** WENWAN ZHONG, University of California Riverside
4:10	(40-5)	**Biological Targeting and Biomolecular Screening of Nanoparticles: Toward Safer Materials** LISA A HOLLAND, West Virginia University, Tyler Davis, Marriah Ellington, Cassandra Crihfield

SYMPOSIUM — Session 50

Advances in All-Optical Laser Plasma Spectroscopy
arranged by Vassilia Zorba, Lawrence Berkeley National Laboratory

Sunday Afternoon, Room W179b
Vassilia Zorba, Lawrence Berkeley National Laboratory, Presiding

1:30		**Introductory Remarks - Vassilia Zorba**
1:35	(50-1)	**Exploring Mars with Curiosity: New LIBS Applications Out of This World** ROGER C WIENS, Los Alamos National Laboratory, Sylvestre Maurice, Sam Clegg
2:10	(50-2)	**The Use of Resonant Laser Pulses for Emission Enhancement in Laser-Induced Plasmas** STEVEN JAMES REHSE, University of Windsor, Russell A Putnam, Dylan J Malenfant, Beau G Greaves
2:45	(50-3)	**Progress and Challenges for LIBS in the Deep Ocean and Other High Pressure Environments** S MICHAEL ANGEL, University of South Carolina Columbia, Izlen Peksenar, Joseph Bonvallet, Patrick Barnett, Sam Clegg, Roger C Wiens, Shiv K Sharma
3:20		**Recess**
3:35	(50-4)	**Nanoparticle Enhancement in Laser Induced Plasma Emission** ALESSANDRO DE GIACOMO, University of Bari, Marcella Dell'Aglio, Can Koral, Rosalba Gaudiuso
4:10	(50-5)	**Femtosecond Filament-Laser Ablation Molecular Isotopic Spectrometry** VASSILIA ZORBA, Lawrence Berkeley National Laboratory, George Chan, Ran Hai, Xianglei Mao, Richard E Russo

SYMPOSIUM — Session 60

Advances in Laser Induced Breakdown Spectroscopy
arranged by Jagdish P Singh, JPS Advanced Technology R&D LLC and Richard E Russo, Lawrence Berkeley National Laboratory

Sunday Afternoon, Room W181a
Jagdish P Singh, JPS Advanced Technology R&D LLC, Presiding

1:30		**Introductory Remarks - Jagdish P Singh and Richard E Russo**
1:35	(60-1)	**Considerations On Some Uncommon Diagnostics and Analytical Topics in Laser Induced Breakdown Spectroscopy** NICOLO OMENETTO, University of Florida
2:10	(60-2)	**Industrial Applications of the Laser-Induced Breakdown Spectroscopy Technique** VINCENZO PALLESCHI, CNR
2:45	(60-3)	**Expanding Laser Ablation ICP-MS Capabilities with Simultaneous LIBS and LAMIS** RICHARD E RUSSO, Lawrence Berkeley National Laboratory
3:20		**Recess**
3:35	(60-4)	**Recent Advances and New Frontiers for the LIBS Technique** MOHAMAD SABSABI, NRC, Paul Bouchard, Aissa Harhira, Josette El-Haddad, Andre Moreau, Alain Blouin
4:10	(60-5)	**Laser Induced Breakdown Spectroscopy: Application to Food Sciences** JAGDISH P SINGH, JPS Advanced Technology R&D LLC, Chet R Bhatt, Charles Ghany, Bader Alfarraj, Fang Y Yueh

SYMPOSIUM — Session 70

Analytical Surface Characterization of Nanomaterials
arranged by Jill Millstone, University of Pittsburgh

Sunday Afternoon, Room W181b
Jill Millstone, University of Pittsburgh, Presiding

1:30		**Introductory Remarks - Jill Millstone**
1:35	(70-1)	**Gold and Silver in Nanoscale, Dispersed by Ligands to Molecular Precision** HANNU HAKKINEN, University of Jyvaskyla
2:10	(70-2)	**Non-Traditional Methods for Surface Characterization of Semiconductor Nanocrystals** EMILY WEISS, Northwestern University
2:45	(70-3)	**Single Atom Alloys for Efficient and Cost-Effective Catalysis** CHARLES SYKES, Tufts University

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3:20		**Recess**
3:35	(70-4)	**Catalytic Reactions on Optically Excited Plasmonic Metal Nanoparticles** SULJO LINIC, University of Michigan
4:10	(70-5)	**Ultrafast Surface-Enhanced Raman Spectroscopic Studies of Molecule-Nanoparticle Surface Interactions** RENEE FRONTIERA, University of Minnesota

SYMPOSIUM **Session 80**

Carbon Nanomaterial-Enabled Microsensing Technologies
arranged by Prabhu Arumugam, Louisiana Tech University
and Hongjun Zeng, Advanced Diamond Technologies, Inc

Sunday Afternoon, Room W181C
Prabhu Arumugam, Louisiana Tech University, Presiding

1:30		**Introductory Remarks - Prabhu Arumugam and Hongjun Zeng**
1:35	(80-1)	**Carbon Nanomaterial-Enabled Microelectrodes for Chronic Neurochemical Detection** PRABHU ARUMUGAM, Louisiana Tech University, Gaurab Dutta, An-Yi Chang, Shabnam Siddiqui, Hongjun Zeng
2:10	(80-2)	**Electrochemical Protease Profiling Toward Cancer Analyses Using Peptides Functionalized at Carbon Nanofiber Nanoelectrode Arrays** JUN LI, Kansas State University
2:45	(80-3)	**Nanocarbon Materials for Biosensing and Bioimaging: Graphene vs. Carbon Nanotubes** YUEHE LIN, Washington State University
3:20		**Recess**
3:35	(80-4)	**Nitrogen-Incorporated Tetrahedral Amorphous Carbon Thin-Film Electrodes: Electrochemical Detection Coupled with FIA and HPLC** GREG SWAIN, Michigan State University
4:10	(80-5)	**In Vivo Carbon Nanotube Sensors** NICOLE M IVERSON, University of Nebraska Lincoln, Eric M Hofferber, Joseph A Stapleton, Janelle J Adams, Victoria A Bart

SYMPOSIUM **Session 90**

Food Analysis - Looking Beyond Mass Spectrometry
arranged by Katherine Carlos and Lowri deJager, US FDA

Sunday Afternoon, Room W183c
Katherine Carlos, US FDA, Presiding

1:30		**Introductory Remarks - Katherine Carlos and Lowri de Jager**
1:35	(90-1)	**Traceability of Agricultural Produce via Multi-Isotopic Analysis: Advantages and Limitations** ROSS STEVENSON, Sciences de la terre et de l'atmosphere; UQAM, David Widory
2:10	(90-2)	**Multivariable RF Based Sensors for Food Quality and Safety** CHERYL SURMAN, GE Global Research, Nandini Nagraj, Radislav Potyrailo, Yongjae Lee, Daniel Paik, Patrick Spooner, Zhexiong Tang, Raul Mihali, Anton Simunovic
2:45	(90-3)	**Raman Microspectroscopy and Its Applicability to Food Industry Challenges** STEVEN ZBYLUT, General Mills
3:20		**Recess**
3:35	(90-4)	**Applications of NMR in Food Analysis** CLARK RIDGE, U.S. Food and Drug Administration
4:10		**Open Discussion**

SYMPOSIUM **Session 95**

Translational Microfluidic Platforms for Clinical Diagnostics
arranged by Ryan C Bailey, University of Michigan

Sunday Afternoon, Room W183b
Ryan C Bailey, University of Michigan, Presiding

1:30		**Introductory Remarks - Ryan C Bailey**
1:35	(95-1)	**Electrophoretic Cytometry: High Selectivity Measurement of Cell-to-Cell Variation in Protein Signaling** AMY E HERR, University of California Berkeley
2:10	(95-2)	**MS-INDx: Moving an In Vitro Diagnostic for Multiple Sclerosis from the Academic Lab to Market and Lessons Learned Along the Way** DANA SPENCE, Michigan State University
2:45	(95-3)	**Microfluidic Trapping System for Cell Engineering and Phenotype Assay** LIDONG QIN, Houston Methodist Research Institute
3:20		**Recess**
3:35	(95-4)	**Precision Medicine Using Circulating Markers: A New Paradigm for Managing Complex Diseases** STEVEN SOPER, University of Kansas
4:10	(95-5)	**Building a Droplet Microfluidic Toolbox for Low Input Epigenetics** RYAN C BAILEY, University of Michigan

WORKSHOPS **Session 100**

CACA - How to be Successful in Your Career
arranged by Tao Jiang, Mallinckrodt Pharmaceuticals and Chuping Luo, Advanced Materials Technology

Sunday Afternoon, Room W184a
Tao Jiang, Mallinckrodt Pharmaceuticals, Presiding

1:30		**Introductory Remarks - Tao Jiang and Chuping Luo**
1:35	(100-1)	**What I Tried to Teach My Graduate Students About Success** MILTON L LEE, Brigham Young University
2:05	(100-2)	**The Importance of Choosing a Career Doing Something You Really Like** CHRISTOPHER POHL, Thermo Fisher Scientific
2:35	(100-3)	**Technical Skill and Knowledge is Necessary, But Far From Sufficient - Other Factors are Even More Important** PETER T KISSINGER, Purdue University
3:05		**Recess**
3:20	(100-4)	**Career Journey from a Scientist to Business Executive** LINDA DE JESUS, Thermo Fisher Scientific
3:50	(100-5)	**Career Development Often Driven by the Opportunity and Persistence** SHUANG (JAKE) YANG, Johns Hopkins University
4:20		**Panel Discussion**

ORGANIZED CONTRIBUTED SESSIONS **Session 110**

Advanced Concepts in Ion Chromatography and Recent Trends
arranged by Kannan Srinivasan, Thermo Fisher Scientific

Sunday Afternoon, Room W184d
Kannan Srinivasan, Thermo Fisher Scientific, Presiding

1:30	(110-1)	**Analysis of Disinfection By-Products by Ion Chromatography and Conductivity Detection** HERB WAGNER, Independent Contractor
1:50	(110-2)	**Recent Advances in Suppressed Ion Chromatography with Carbonate Eluents** KANNAN SRINIVASAN, Thermo Fisher Scientific, Brittany Omphroy, Mrinal Sengupta
2:10	(110-3)	**Applications of Ion Chromatography in Pharmaceuticals** SHREEKANT KARMARKAR, Baxter Healthcare
2:30	(110-4)	**Applications of Electrochemical Detection Following Ion Chromatography** WILLIAM RICHARD LACOURSE, University of Maryland Baltimore County, Joshua A Wilhide, Andrea R Gray, William M Cunning
2:50		**Recess**
3:05	(110-5)	**Suppressed Conductometric Open Tubular Ion Chromatography** PURNENDU K DASGUPTA, University of Texas Arlington, Weixiong Huang
3:25	(110-6)	**The Many Retention Modes of Ion Chromatography: What Do We Know?** CHARLES A LUCY, University of Alberta
3:45	(110-7)	**Faster Ion Chromatography for New and Existing Methods** JEFFREY ROHRER, Thermo Fisher Scientific, Hua Yang, Terri Toyoko Christison, Jingli Hu, Carl A Fisher
4:05		**Panel Discussion**

ORGANIZED CONTRIBUTED SESSIONS **Session 120**

Ionophore-Based Chemical Sensors I
arranged by Philippe Buhlmann, University of Minnesota and Eric Bakker, University of Geneva

Sunday Afternoon, Room W184bc
Philippe Buhlmann, University of Minnesota, Presiding

1:30	(120-1)	**Novel Nanopore-Based Chemical Sensing Strategies** ROBERT E GYURCSANYI, Budapest University of Technology and Economics, Gergely Lautner, Soma Papp, Gyula Jágerszki
1:50	(120-2)	**Light Addressable Multianalyte Sensing of Ion Activity** ERIC BAKKER, University of Geneva

TECHNICAL PROGRAM

2:10 (120-3) **Hydrophobic Barriers in Solid-State Potentiometric Ion-Selective Electrodes** TOM LINDFORS, Åbo Akademi University, Ngoc Minh Nguyen Huynh, Zhanna A Boeva, Ning He

2:30 (120-4) **Simple Voltammetric Method for the Determination of the Partition and Diffusion Coefficients in Soft Polymeric Membranes** ERNO LINDNER, The University of Memphis, James B Sheppard, Bradley Hambly, Bradford Pendley

2:50 **Recess**

3:05 (120-5) **Metastable-State Photoacids Towards Activatable and Controllable in Ion Sensing for Biological Applications** KARIN Y CHUMBIMUNI-TORRES, University of Central Florida, Parth Patel, Renán Santiago Góngora

3:25 (120-6) **Conducting Polymer Nanospheres for Optical and Electrochemical Sensors** AGATA MICHALSKA, University of Warsaw, Katarzyna Kłucińska, Emilia Stelmach, Ewa Jaworska, Anna Kisiel, Krzysztof Maksymiuk

3:45 (120-7) **Biofouling of Ionophore-Doped Ion-Selective Electrode Membranes Revisited** PHILIPPE BUHLMANN, University of Minnesota, Adam Dittmer

4:05 (120-8) **Potentiometric Sensing of Biomacromolecules by Using Surface Molecularly Imprinted Polymeric Membrane Electrodes** WEI QIN, Yantai Institute of Coastal Zone Research, Chinese Academy of Sciences, Rongning Liang, Jiawang Ding

ORAL SESSIONS — Session 130

Analysis of Pharmaceutical Ingredients by GC (Half Session)

Sunday Afternoon, Room W175a
Pete Broske, Agilent Technologies, Presiding

1:30 (130-1) **GC-FID Method for High-Throughput Analysis of Residual Solvents in Pharmaceutical Drugs and Intermediates** ERIK L REGALADO, Merck Research Laboratories, Timothy Nowak, Gabriel Graffius, Christopher J Welch

1:50 (130-2) **Heat of Fusion Determination of Melting Point Standards by Differential Scanning Calorimetry** OSOMWONKEN J IGBINOSUN, United States Pharmacopeial Convention, Guillermo A Casay, Kristina Lilova, Arnold Luk, Antonio Hernandez-Cardosoa, Arthur Strohl

2:10 (130-3) **From Sample Preparation to Analysis: An Exploration of Method Development Considerations for Headspace GC** RAMKUMAR DHANDAPANI, Phenomenex, Kristen Parnell, Timothy Anderson

2:30 (130-4) **How to Identify and Measure What's in Your Products: Material Characterization** LEE MAROTTA, PerkinElmer, Alan Gallaspy, Timothy Ruppel

ORAL SESSIONS — Session 140

Chromatography Stationary Phases (Half Session)

Sunday Afternoon, Room W175b
Ashish Tripathi, US Army, Presiding

1:30 (140-1) **GCxGC Stationary Phase Characterization** ROMAN JARAMILLO, Penn State

1:50 (140-2) **Silanol Activity of Core-Shell Columns** KARINA M TIRADO-GONZALEZ, University at Buffalo, The State University of New York, Nahyr A López-Dauphin, Luis A Colon

2:10 (140-3) **A LC-MS/MS Method for Vitamin B12 Analysis in Infant and Adult Nutrition Formulas and Its Comparison with the AOAC 2014.02 LC-UV Method** SNEH D BHANDARI, Merieux NutriSciences, Tiffany Gallegos-Peretz

2:30 (140-4) **Comparing Ionic Liquid and Polysiloxane Stationary Phase Selectivity for the Analysis of Polycyclic Aromatic Hydrocarbons** LEONARD M SIDISKY, MilliporeSigma, James L Desorcie, Tyler Young, Greg A Baney, Gustavo Serrano

ORAL SESSIONS — Session 150

Environmental Separations

Sunday Afternoon, Room W175c
Olujide Akinbo, Butler University, Presiding

1:30 (150-1) **Liquid and Gas Chromatographic Retention Behavior of Polycyclic Aromatic Sulfur Heterocycles on Shape Selective Stationary Phases** WALTER BRENT WILSON, National Institute of Standards and Technology (NIST), Lane C Sander, Stephen A Wise

1:50 (150-2) **ASTM Method D8028 Determination of Dissolved Gases in Water** ANNE JUREK, EST Analytical, Kelly Cravenor, Lindsey Pyron, Adam Guichard

2:10 (150-3) **Update on Improvements to Dissolved Hydrocarbon Gases in Water Analysis** MARK L BRUCE, TestAmerica

2:30 (150-4) **Dual µECD US-EPA Methods Using an Innovative New Gas Chromatographic Platform** KENNETH G LYNAM, Agilent Technologies, Amanda Kaspick

2:50 **Recess**

3:05 (150-5) **Linear and Equimolar Response of Hydrocarbons, Oxygenates and Highly Functionalized Organic Compounds Over 7 Orders of Magnitude with Reaction-FID** ANDREW JAMES JONES, Activated Research Company

3:25 (150-6) **Monitoring of Cyanotoxins in New York State Fresh Water by Liquid Chromatography-Tandem Mass Spectrometry** BUU TRAN, Wadsworth Center, Morgan Robinson, Sarah Neely, Richard Okoniewski, Kenneth Aldous

3:45 (150-7) **Rapid In-Situ Measurements of Mineral Carbonates Dissolution with Increasing CO_2 Pressure Using Underwater LIBS** CHRISTIAN L GOUEGUEL, National Energy Technology Laboratory, Jinesh C Jain, Dustin L McIntyre, Harry M Edenborn N/A

4:05 (150-8) **Optimizing the Analysis of Semi-Volatiles by EPA Method 8270** TOMMASO ALBERTINI, Thermo Fisher Scientific, Fausto Pigozzo, Flavio Bedini, Jason Cole

ORAL SESSIONS — Session 160

Fluorescence and Luminescence Advances

Sunday Afternoon, Room W176a
Lixia Zhou, Oregon State University, Presiding

1:30 (160-1) **Competitive Multicomponent Anion Exchange Adsorption of Proteins: Comparison of Single Molecule Dynamics and Isocratic Chromatographic Retention** LYDIA KISLEY, University of Illinois at Urbana-Champaign

1:50 (160-2) **Spatially Resolved Photoluminescence Reveals Spectral Heterogeneities in Organic-Inorganic Lead Halide Perovskite Microcrystals** VARUN MOHAN, University of Illinois at Urbana-Champaign, Pooja Tyagi, Prashant K Jain

2:10 (160-3) **Reflective Walled Sample Compartment for Sensitive Detection of Fluorescent Analytes** SURAJ KUMAR PANIGRAHI, IIT Madras, Ashok Kumar Mishra

2:30 (160-4) **Photophysics of Cyano-Substituted Hydroquinones: Promising Candidates as Super Photoacids with Tunable Acidity** MUHAMMAD ZAHID, University of Agriculture Faisalabad, Asim Mansha, Guenter Grampp, Ijaz A Bhatti N/A

2:50 **Recess**

3:05 (160-5) **Co-Localized Excitation-Emission Resolution (CLEER): A Tool for Two-Photon Multicomponent Analysis in Biological Matrices** C KYLE ALMLIE, Oregon State University, Sean M Burrows

3:25 (160-6) **Proposition of a Global Fluorescence Intensity Decay Method for Analytical Applications** ASHOK KUMAR MISHRA, IIT Madras, Suraj Kumar Panigrahi N/A

3:45 (160-7) **Development of Fluorescent Molecular Probes Based on Cyanopyranyl Fluorophore for the Detection of Biological Substances Such as Glycoconjugates or Dopamines** YOSHIO SUZUKI, AIST

4:05 (160-8) **Metal Enhanced Fluorescence on Gold Nanostars: Role of Nanostar Plasmon Band and Fluorophore Spectrum Overlap** LIXIA ZHOU, Oregon State University, Sean M Burrows, Kuan-Jen Chen

ORAL SESSIONS — Session 170

Forensic Separations (Half Session)

Sunday Afternoon, Room W175b
Ashish Tripathi, US Army, Presiding

3:05 (170-1) **Development of a Unified GC-MS/FID Method to Determine Various Classes of Synthetic Drugs Using Retention Indices** SARAH HOWSHALL, The Pennsylvania State University, William Campbell, Jenifer Smith, Frank Dorman

3:25 (170-2) **Confident Identification of Cannabinoids by Tandem Ionization GCxGC-TOF MS** LAURA MCGREGOR, Markes International, Matthew Edwards, Wade Bontempo, Chris Hall, Massimo Santoro

3:45 (170-3) **Quantitative Determination of Various Cannabinoids from Biological Matrices Using Biocompatible Solid Phase Micro-Extraction (BioSPME)** SARA E SMITH, MilliporeSigma, Emily R Barrey, Craig Aurand, Candace Price

4:05 (170-4) **The Use of Solid Phase GC-IR in Forensic** TOM KEARNEY, DANI Instruments, Stephanie Fisher, Conor Sullivan

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ORAL SESSIONS **Session 180**

Measuring Dopamine and Serotonin In Vivo

Sunday Afternoon, Room W176b
Leslie Sombers, North Carolina State University, Presiding

1:30 (180-1) **The Effect of Raclopride on the Kinetic Diversity of Dopamine in Rat's Dorsal Striatum** REBECCA WU, University of Pittsburgh, Adrian C Michael N/A

1:50 (180-2) **Characterizing Optically Evoked Dopamine in the Olfactory Tubercle of the Rat Brain Using In Vivo Fast-Scan Cyclic Voltammetry** KEN TARO WAKABAYASHI, Research Institute on Addictions, University at Buffalo, Rohan Bhimani, Caroline E Bass, Jinwoo Park

2:10 (180-3) **Modeling Optogenetically Evoked Electrochemical Measurements of Dopamine in the Dorsal and Ventral Striatum** ELAINE MARIE ROBBINS, University of Pittsburgh, Sweyta Lohani, Andrea Jaquins-Gerstl, Bita Moghaddam, Adrian C Michael

2:30 (180-4) **Nicotinic Acetylcholine Receptor (nAchR) Mediated Dopamine Release in Drosophila Melanogaster** POOJAN PYAKUREL, University of Virginia, B Jill Venton

2:50 **Recess**

3:05 (180-5) **Serotonin Neurotransmission in Different Brain Regions: A Combined Voltammetry, Microscopy and Mathematical Study** AYA ABDALLA, University of South Carolina, Pavithra Pathirathna, Srimal A Samaranayake, Yunju Jin, Chris Atcherley, Michael L Heien, Michael Reed, Fred Nijhout, Janet Best, David Linden, Parastoo Hashemi

3:25 (180-6) **Coregulation of Serotonin and Histamine in the Context of Neurodegeneration** SRIMAL A SAMARANAYAKE, University of South Carolina, Robert F Roscoe, Aya Abdalla, Rhiannon Robke, Fred Nijhout, Michael Reed, Janet Best, Rosemarie M Booze, Parastoo Hashemi

3:45 (180-7) **Fast Scan Cyclic Voltammetry Analysis of Serotonin: Does Thimerosal Alter Neurotransmitters at a Fundamental Level?** ALYSSA WEST, University of South Carolina, Aya Abdalla, Parastoo Hashemi

4:05 (180-8) **Carbon Composite Electrode Arrays for Monitoring Spatial Release of Serotonin From the Entire Murine Colon** BHAVIK PATEL, University of Brighton, Nirav Patel, Aidan Fagan-Murphy, Derek Covill

ORAL SESSIONS **Session 190**

Metabolomics, Proteomics, and Lipidomics

Sunday Afternoon, Room W176c
David E Alonso, Leco Corporation, Presiding

1:30 (190-1) **The Utilization of Increased Speed, Enhanced Chromatography and High Mass Spectral Resolution for Routine and Discovery Based Analysis of Human Plasma** DAVID E ALONSO, LECO Corporation, Joseph E Binkley

1:50 (190-2) **Discovery of Novel Metabolite Biomarkers for Chiari Malformation** HE HUANG, University of Akron, Orseola Arapi, Harold Rekate, Leah Shriver

2:10 (190-3) **Mass Spectrometry Based Label-Free Quantitation of Peptides Related to Opioid-Induced Hyperalgesia (OIH) in Mice** KRISHNA ANAPINDI, University of Illinois at Urbana-Champaign, Ning Yang, Elena V Romanova, Stanislav S Rubakhin, Amynah Pradhan, Jonathan V Sweedler

2:30 (190-4) **Metabolomic Profiling of Food Diets Using Ion Chromatography with High Resolution Mass Spectrometry** TERRI TOYOKO CHRISTISON, Thermo Fisher Scientific, Reiko T Kiyonami, Ralf Tautenhaum, Tim J Stratton, Jeffrey Rohrer

2:50 **Recess**

3:05 (190-5) **Capillary Microsampling CE-ESI-MS Enables Analysis of Metabolites in Single Embryonic Cells of the Developing Frog (Xenopus) Embryo** ERIKA P PORTERO, George Washington University, Rosemary Masu Onjiko, Sally A Moody, Peter Nemes

3:25 (190-6) ***Pseudomonas Aeruginosa* Proteomics for Models of Multispecies Biofilms** YENI P YUNG, University of Illinois at Chicago, Luke Hanley, Ross P Carlson

3:45 (190-7) **Feasibility of Utilizing Untargeted Lipidomic Profiling for Detection of Clear Cell Renal Cell Carcinoma** MARÍA EUGENIA MONGE, Centro de Investigaciones en Bionanociencias, María E Knott, Lydia I Puricelli

4:05 (190-8) **Improving Chromatographic Performance in Top-Down Proteomics of Histones** YIYANG ZHOU, Purdue University, Ximo Zhang, Luca Fornelli, Phil Compton, Neil Kelleher, Mary J Wirth

ORAL SESSIONS **Session 200**

New Developments in GC

Sunday Afternoon, Room W177
Cai Huamin, Valco Instruments Co., Inc., Presiding

1:30 (200-1) **Nano Volume Injector Valve for Fast and Ultra-Fast Gas Chromatography Analysis** STANLEY D STEARNS, Valco Instruments Co. Inc., Martin Brisbin, Huamin Cai

1:50 (200-2) **Optimization of GC Chromatography by Inlet Liner Selection** TIMOTHY ANDERSON, Phenomenex

2:10 (200-3) **"Wooly Mammoth:" A New Species of GC Inlet Liner Quells the Ancient Glass Wool Activity Problem** RACHAEL SIMON, Agilent Technologies, Jonathan Zuk N/A

2:30 (200-4) **Simultaneous Multizone Fast Temperature Controls Optimized for Micro GC - Thinking Outside the Airbath Box** DALE ASHWORTH, Valco Instruments, Stanley D Stearns, Huamin Cai

2:50 **Recess**

3:05 (200-5) **A GCxGC Flow Modulator with Alternate Primary Column Flow Direction for Long Secondary Separation Time** HUAMIN CAI, Valco Instruments Co. Inc., Stanley D Stearns

3:25 (200-6) **Using Free, High-Performance, Computer Modeling Software to Simulate Gas Chromatographic Separations** REBECCA STEVENS, Restek Corporation, Jaap de Zeeuw, Kristi Sellers, Scott Adams

3:45 (200-7) **Detailed Microstructure Analyses of Chlorinated Polymers** VISHNUPRIYA BHAKTHAVATSALAM, AAS, RRDC, Reliance Industries Ltd, Harshada Thakar, Chandra Goecher, Suryakant Bhosle N/A

ORAL SESSIONS **Session 205**

Others - Methodologies and Applications

Sunday Afternoon, Room W183a
Iona Black, JMU/Yale University, Presiding

1:30 (205-1) **Achiral/Chiral x Chiral 2D-LC Analysis of Stereoisomers Applying Ultrafast Enatioseparations in the Second Dimension** CHANDAN BARHATE, University of Texas at Arlington, Erik Regalado, Christopher Welch, Daniel Armstrong

1:50 (205-2) **Ion Pairing as the Main Pathway for Reducing Electrostatic Repulsion Among Organothiolate Self-Assembled on Gold Nanoparticles in Water** HA GANGANATH SANJEEWA PERERA, Mississippi State University

2:10 (205-3) **"As Seen on TV" - Using DSC & Thermogram Recognition Software to Identify Polymer Foam Composition of a Top-Selling Kitchen Utensil Scrubber** BOB FIDLER, NETZSCH Instruments NA LLC, Peter Vichos, Mike Hsu, Hui Hu

2:30 (205-4) **On-Resonance Fluorescence, Resonance Rayleigh Scattering, and Ratiometric Resonance Synchronous Spectroscopy of Molecular- and Quantum Dot-Fluorophores** WK KUMUDU SIRIWARDANA, Mississippi State University

2:50 **Recess**

3:05 (205-5) **Real-Time X-Ray Diffraction and Applications** CHRISTOPHER RYAN SHAFFER, Thermo Fisher Scientific

3:25 (205-6) **A Handheld Standoff Handheld Spectrometer Based on Electronically Tunable Quantum Cascade Lasers - Methods and Results for Homeland Security** MARK FRANCIS WITINSKI, Pendar Technologies

3:45 (205-7) **Dielectrophoretic Manipulation of Individual Ag and Pt Nanoparticles and Their Stochastic Electrochemical Detection** ALIAKSEI BOIKA, University of Akron, Jason Bonezzi, Tulashi Luitel

4:05 (205-8) **Recent Advances of Molecular Spectroscopy in Natural Product and Bioanalytical Research** CHRISTIAN HUCK, University of Innsbruck N/A

TECHNICAL PROGRAM

ORAL SESSIONS — Session 210

Petrochemical Analysis by GC (Half Session)

Sunday Afternoon, Room W175a
Pete Broske, Agilent Technologies, Presiding

3:05 (210-1) **Rapid Analyses Condition Monitoring for Fuel and Antifreeze in Used Engine Oil** TIMOTHY RUPPEL, PerkinElmer

3:25 (210-2) **Water and Other Trace Compounds in Liquefied Petroleum Gas (LPG) Using Gas Chromatography Vacuum UV Detector (GC-VUV)** DAN WISPINSKI, Alberta Innovates Technology Futures, Jodi Johnston, Chris Goss, Philip Walsh

3:45 (210-3) **Temperature Control for Microchip Thermal Gradient Gas Chromatography** ABHIJIT GHOSH, Brigham Young University, Luke T Tolley, Milton L Lee, Jacob E Johnson, Jonathan G Nuss, Aaron R Hawkins, Brian D Iverson, H Dennis Tolley

4:05 (210-4) **Lipidic Ionic Liquid Stationary Phases for the Analysis of Hydrocarbons in Kerosene by Comprehensive Two-dimensional Gas Chromatography** HE NAN, Iowa State University, Cheng Zhang, Richard A O'Brien, James H Davis, Jared L Anderson

SUNDAY POSTER SESSION — Session 220

Sunday posters will be on display 3:30 PM to 7:30 PM with authors present from 5:30 PM to 7:30 PM. All posters must be mounted by 3:00 PM. Posters that have not been taken down one-half hour after the designated time will be disposed of.

Sunday Poster Session
Sunday Afternoon, Skyline Ballroom, West 375a

(220-1 P) **Use of Quadrupole GC/MS for Accurate Mass Identification and Fragment Elucidation of Unknown Compounds** YONGDONG WANG, Cerno Bioscience, Don Kuehl

(220-2 P) **Cytotoxicity of Ionic Liquids – Liposome-Ionic Liquid Interactions Investigated by DSC, DLS, and NMR** SUVI-KATRIINA RUOKONEN, University of Helsinki, Corinna Sanwald, Alexandra Robciuc, Antti H Rantamäki, Joanna Witos, Alistair W King, Juha M Holopainen, Michael Lämmerhofer, Sami Hietala, Susanne K Wiedmer

(220-3 P) **Interactions Between Biomass-Dissolving Ionic Liquids and Lipid Vesicles Studied by Localized Surface Plasmon Resonance** SUSANNE K WIEDMER, University of Helsinki, Joanna Witos, Giacomo Russo, Suvi-Katriina Ruokonen

(220-4 P) **Centrifugal-Driven, Reduced-Dimension, Planar Chromatography** RACHEL STRICKHOUSER, University of Tennessee Knoxville, Nahla Hatab, Nickolay Lavrik, Michael Sepanaik

(220-5 P) **Evaluation of C30 Phase Bonded on Superficially Porous Silica** NORIKAZU NAGAE, ChromaNik Technologies Inc., Tomoyasu Tsukammoto, Shun Kojima

(220-6 P) **Modular Assembly Techniques to Synthesize Biofunctionalized Core-Shell Nanoparticle Probes for Multimodal Imaging and Therapeutics Delivery** PRAKASH D NALLATHAMBY, University of Notre Dame, Ryan K Roeder, Karen Cowden-Dahl, Clodia Osipo, Alexander Bobbs, Tyler E Curtis, Lisa Irimata

(220-7 P) **Noise Source Characterization of Inductively Coupled Plasma – Optical Emission Spectroscopy** LAUREN GRABOWSKI, University of South Carolina, Scott Goode

(220-8 P) **Detection of Endocrine Disruptors Using Male Blacknose Dace (Rhinichthys Atratulus)** WALTER BOWYER, Hobart and William Smith Colleges, Nicolette E Andrzejczyk, Emily Knipper, Sydney Smilen, Susan Cushman

(220-9 P) **New Selectivity for Core-Shell HPLC Columns** MARK WOODRUFF, Fortis Technologies Ltd, Ken Butchart

(220-10 P) **Examination of Various Alkaloids as Biomarkers in Archaeological Artifacts Using LC/MS and GC/MS** TIMOTHY J WARD, Millsaps College, Sara M Barker, Amanda R Kaminski, Co Quach, Ardith D Bravenec, Max F Harrigill

(220-11 P) **Micellar HPLC and UHPLC of Terephthalic Acid Impurities** ASHLEY E RICHARDSON, Miami University, Shakeela D McPherson, Jennifer M Fasciano, Richard E Pauls, Neil D Danielson

(220-12 P) **Mass Spectrometry with Cold EI - GC-MS LC-MS and Real Time Analysis** AVIV AMIRAV, Tel Aviv University, Alexander Fialkov, Uri Keshet, Tal Alon

(220-13 P) **Determination of Organophosphorus Pesticides by Functionalized Ionic Liquid based Dispersive Liquid–Liquid Micro-Extraction with High Performance Liquid Chromatography** TIANSHU ZHOU, East China Normal University, Dingkun Lu, Wenting Shi

(220-14 P) **Extraction and Quantification of Polyphenols from Olive Oil on a Microfluidic Analyzer** MARÍA CAÑIZARES-MACÍAS, Universidad Nacional Autónoma de México, Kenia Chávez-Ramos

ACS POSTER — Session 230

ACS posters will be on display 3:30 PM to 7:30 PM with authors present from 5:30 PM to 7:30 PM. All posters must be mounted by 3:00 PM. Posters that have not been taken down one-half hour after the designated time will be disposed of.

ACS-DAC Poster Session
Sunday Afternoon, Skyline Ballroom, West 375a

(230-1 P) **An Automated Droplet-Based µChopper Resolves Small Fluorescence Differences and Enables Measurement of Single-Cell Fatty Acid Uptake** JEAN T NEGOU NEGOU, Auburn University, Adriana Avila Flores, Christopher J Easley

(230-2 P) **Toward Proximity-Effect Templated Fluorogenic Probes for Protein Quantification** XIANGPENG LI, Auburn University, Christopher J Easley

(230-3 P) **Evaluations of Toxicity in Artemia Franciscana** MELISSA A MORGAN, University of California Riverside, Cynthia K Larive, David C Volz

(230-4 P) **DNA Linkers and Diluents for Stable and Specific Gold Nanoparticle Bioconjugates in Multiplexed SPR Imaging Assays** SAMUEL S HINMAN, University of California Riverside, Kristy S McKeating, Quan Cheng

(230-5 P) **Transport and Transformation by the Colonic Epithelium** MEREDITH DINGES, University of California Riverside, Cynthia K Larive, Christian Lytle

(230-6 P) **Forensic Analysis of Lead Isotopes and Concentrations in Modern Humans Using Mass Spectrometry** SAMUEL J BROWN, Colorado College, Nathan W Bower, Gideon E Bartov, Craig C Lundstrom, Laura A Regan

(230-7 P) **An XRD and Metallographic Study of Ancient Minting Methods** NATHAN W BOWER, Colorado College, Stephen E Burt, David B Hendin

(230-8 P) **Investigation of Topography and Surface Charge of Human Erythrocytes with Scanning Ion Conductance Microscopy** CHENG ZHU, Indiana University, Wenqing Shi, Daleke David, Lane A Baker

(230-9 P) **Towards Mapping Nanoscale Transport with a Scanning Potentiometric Local Probe** LUSHAN ZHOU, Indiana University Bloomington, Lane A Baker

(230-10 P) **Study of Transepithelial Transport with Coupled Patch-Clamp and Potentiometric Ion Conductance Microscopy** YUHAN ZENG, Indiana University, Lushan Zhou, Wenqing Shi, Jianghui Hou, Lane A Baker

(230-11 P) **Fundamental Studies of Scanning Electrospray Microscopy (SESM)** ELIZABETH M YUILL, Indiana University, John Poehlman, Lane A Baker

(230-12 P) **Role of Nanopipette Properties on Electrospray Process** GARGI S JAGDALE, Indiana University, Anumita Saha-Shah, Lane A Baker

(230-13 P) **Dual-Barrel Ion Channel Probes for SICM** ALICIA K FRIEDMAN, Indiana University, Anna E Weber, Yi Zhou, Leonard K Bright, Craig A Aspinwall, Lane A Baker

(230-14 P) **Introducing Scanning Electrospray Microscopy to Desorption Electrospray Ionization for Simultaneous 4-D Topographical and Mass Spectrometry Imaging with Nanopipettes** TYLER J YARGER, Indiana University, Elizabeth M Yuill, Lane A Baker

(230-15 P) **Electrochemical Studies of Carbon Electrodes in Room Temperature Ionic Liquids – Effect of IL Type, Temperature and Electrode Microstructure on Capacitance** KIRTI BHARDWAJ, Michigan State University, Greg Swain

(230-16 P) **Resonance Raman Studies on Cytochrome P450s (P450BM3 and CYP17A1)** YILIN LIU, Marquette University, Andrew W Munro, Kirsty Mclean, Stephan G Sligar, Ruchia Duggal

(230-17 P) **First Generation Amperometric Biosensing Platforms for Detection of Sarcosine** MICHAEL J PANNELL, University of Richmond, Elizabeth E Doll, Najwa Labban, Julie A Pollock, Michael C Leopold

(230-18 P) **Layer-by-Layer Design of Xerogel-Based Amperometric First Generation Biosensors on Wire Electrodes** GRACE E CONWAY, University of Richmond, Michael C Leopold

(230-19 P) **Use of Raspberry Pi Technology for Colorimetric Detection for Microfluidics** KIMBERLEY FREDERICK, Skidmore College, Martin Bedulskij, Roxanna Martinez N/A

(230-20 P) **Development of a Paper Microfluidic Test for D-Lactate** KIMBERLEY FREDERICK, Skidmore College, Emily O'Connor, Nathanael Rehmeyer, Roxanna Martinez

(230-21 P) **Detection of Hydrofracking Water Infiltration in Surface Waters** KIMBERLEY FREDERICK, Skidmore College, Laura Swenson, Tiffany Henao, Ahmed Ismail

(230-22 P) **Enhanced Sensitivity of Inkjet Printed Sensors by Electrochemical Metal Deposition** SENSEN CHEN, Southern Illinois University

(230-23 P) **Protein Identification in Tetrahymena Thermophila Using Pressure Cycling Technology and LC-MS/MS** DOUGLAS BEUSSMAN, St. Olaf College, Zach J Turner, Mary Beth Dahl

(230-24 P) **Isotope Ratio Mass Spectrometry Analysis of Fibers and Effects of Chemical and Environmental Factors** DOUGLAS BEUSSMAN, St. Olaf College, Dat Le, Hannah Brown

(230-25 P) **Investigation of VOCs from Human Skin by GC-MS** DOUGLAS BEUSSMAN, St. Olaf College, Yuhui Chen

(230-26 P) **Analysis of IED Wires by Isotope Ratio Mass Spectrometry** DOUGLAS BEUSSMAN, St. Olaf College, Jane Vezina

(230-27 P) **Analysis of Decorative Candles for Volatile Organic Compounds** DOUGLAS BEUSSMAN, St. Olaf College, Caroline M Loe

(230-28 P) **Emission Measurements of Low Molecular Weight Compounds from Commercially-Used Polymeric Materials Induced by Heat and Sun-Light Treatment** AKIHIRO YAMASAKI, Seikei University, Miyuki Noguchi

(230-29 P) **Measurements of Emissions of Nicotine as a Maker Compound of Environmental Tobacco Smoke (ETS) and the Third Hand Smoke (THS)** MIYUKI NOGUCHI, Seikei University, Akihiro Yamasaki

(230-30 P) **Development of Portable Fluorescence Detection System Using an Organic Photodiode Array Detector** KAZUHIRO MORIOKA, Tokyo Metropolitan University, Hizuru Nakajima, Akihide Hemmi, Hulie Zeng, Shungo Kato, Katsumi Uchiyama

(230-31 P) **Detection and Discrimination of Counterfeit Pharmaceuticals Using Direct Analysis in Real Time—Time of Flight Mass Spectrometry with Multivariate Statistical Analysis** JACQUELINE A KROMASH, Trinity College, Thomas H Naragon, Matthew J Lucas, Kirsti A Wash, Robert B Cody, Janet F Morrison

(230-32 P) **Comparison of Multivariate Statistical Analysis Approaches Applied to DART-TOFMS Data for the Characterization of Counterfeit Pharmaceuticals** THOMAS H NARAGON, Trinity College, Jacqueline A Kromash, Robert B Cody, Janet F Morrison

(230-33 P) **Indirect Determination of Zinc by Thiol Complexation and Iodine Coulometric Titration with Photodiode Detection** JERALYNE B PADILLA MERCADO, Miami University, Stacey L Bretz, Neil D Danielson

(230-34 P) **Development of Liquid Sampling-Atmospheric Pressure Glow Discharge as a Field-Deployable Source for Elemental Analysis via Optical Emission Spectroscopy** HALL KATJA, Clemson University, R Kenneth Marcus

(230-35 P) **Parametric Dependence of Ambient Desorption Optical Emission Spectroscopy Utilizing a Liquid Sampling-Atmospheric Pressure Glow Discharge (AD-OES-LS-APGD) Microplasma** HTOO W PAING, Clemson University, R Kenneth Marcus

(230-36 P) **Studying of Hydrodynamic and Loading Characteristics in Analytical Protein Separations on Polypropylene Capillary-Channeled Polymer (C-CP) Phases** LEI WANG, Clemson University, R Kenneth Marcus

(230-37 P) **A Capillary Electrophoresis Study of the Association of Graphene Quantum Dots with Small Molecule and ssDNA Targets** LEONA SIRKISOON, Wake Forest University, Qian Liu, Honest Makamba, Christa L Colyer

(230-38 P) **Monitoring Benzene at ppt Levels at Fencelines of Chemical Plants or Refineries** JENNIFER MACLACHLAN, PID Analyzers, LLC, John N Driscoll

(230-39 P) **Determination of Estrogenic Steroids and Microbial/Photochemical Degradation of 17a-ethinylestradiol(EE2) in Lake Surface Water** YUEGANG ZUO, University of Massachusetts Dartmouth, Si Zhou, Faten Albalawi

(230-40 P) **Integrating Green Chemistry Principles into Analytical Chemistry Curriculum: Development of Green HPLC Methods for Determination of Renal Function Biomarkers in Human Fluids** YUEGANG ZUO, University of Massachusetts Dartmouth

(230-41 P) **Single-Molecule Fluorescence Imaging of Reversible DNA Hybridization to Enable Single-Molecule Microarrays** JOEL M HARRIS, University of Utah, Eric M Peterson, Michael W Manhart

AWARDS — Session 240

The Chromatography Forum of Delaware Valley Dal Nogare Award
arranged by Mary Ellen McNally, El DuPont de Nemours and Company

Monday Morning, Room W183a
Mary Ellen McNally, El DuPont de Nemours and Company, Presiding

8:30		**Introductory Remarks - Mary Ellen McNally**
8:35		**Presentation of the 2017 Chromatography Forum of Delaware Valley Dal Nogare Award to Andras Guttman, Sciex by Mary Ellen McNally, El DuPont deNemours and Company**
8:40	(240-1)	**Analytical Glycomics** ANDRAS GUTTMAN, Sciex
9:15	(240-2)	**Application of Separation-Mass Spectrometry to Biotechnology** BARRY L KARGER, Northeastern University
9:50	(240-3)	**Porous Polymer-Based Monolithic Columns-25 Years Old and Still Growing** FRANTISEK SVEC, The Molecular Foundry, LBNL
10:25		**Recess**
10:40	(240-4)	**Capillary Electrophoresis/Laser-Induced Fluorescence Detection: Then and Now** MILOS V NOVOTNY, Indiana University
11:15	(240-5)	**Mapping Dynamic Protein Interaction Landscapes in Saccharomyces Cerevisiae Using a Novel Whole Network Enrichment Approach** JOHN R YATES, The Scripps Research Institute, Benjamin D Stein, Diego Calzolari, Mathieu Lavallee-Adam

AWARDS — Session 250

The Pittsburgh Conference Achievement Award (Dauenhauer)
arranged by Resa Stauffer, The Pittsburgh Conference

Monday Morning, Room W183b
Resa Stauffer, The Pittsburgh Conference, Presiding

8:30		**Introductory Remarks - Resa Stauffer**
8:35		**Presentation of the 2017 Pittsburgh Conference Achievement Award to Paul J Dauenhauer, University of Minnesota, by Melinda R Stephens, Chair, Society for Analytical Chemists of Pittsburgh**
8:40	(250-1)	**Universal Carbon Detector (UCD) for Calibration-Free Quantification of Complex Mixtures** PAUL J DAUENHAUER, University of Minnesota
9:15	(250-2)	**At-Line Approach Combining Automated Sample Preparation and Gas Chromatography with Universal Carbon Response** MARCELO FILGUEIRA, Dow Chemical, Reetam Chakrabarti, Francois Huby, Eric Schmidt, Bill Winniford
9:50	(250-3)	**Total Hydrocarbon Analysis with the TOtM Reactor** JOHN WASSON, Wasson-ECE Instrumentation
10:25		**Recess**
10:40	(250-4)	**The Expanded Toolbox of Universality of Non-Mass Spectrometric Detection for Gas Chromatography** DOUG D CARLTON, University of Texas at Arlington, Ling Bai, Kevin A Schug
11:15	(250-5)	**GC and GC/MS of Rocket Fuels and Bomb Residues** HAROLD M MCNAIR, Virginia Tech

TECHNICAL PROGRAM

AWARDS — Session 260

The Pittsburgh Conference Achievement Award (Robinson)
arranged by Michelle Ward, University of Pittsburgh

Monday Morning, Room W183c
Michelle Ward, University of Pittsburgh, Presiding

8:30		**Introductory Remarks - Michelle Ward**
8:35		**Presentation of the 2017 Pittsburgh Conference Achievement Award to Renã A S Robinson, University of Pittsburgh, by Michelle Ward, Chair-elect, Society for Analytical Chemists of Pittsburgh**
8:40	(260-1)	**Improving Multiplexing and Versatility of cPILOT for Quantitative Proteomics** RENÃ A S ROBINSON, University of Pittsburgh
9:15	(260-2)	**Novel Ionization Technologies for Biological Mass Spectrometry** SARAH TRIMPIN, Wayne State University
9:50	(260-3)	**IMS-MS as a Means of Revealing New States During the Melting of Proteins** DAVID E CLEMMER, Indiana University
10:25		**Recess**
10:40	(260-4)	**Cutaneous Melanoma: Implications for Precision Medicine** BRANDY YOUNG, Hampton University
11:15	(260-5)	**Proteomic Profiling of Novel Drug-Protein Interactions** NATHAN A YATES, University of Pittsburgh

SYMPOSIUM — Session 270

Advances in Biological Mass Spectrometry
arranged by Ronghu Wu, Georgia Institute of Technology

Monday Morning, Room W178b
Ronghu Wu, Georgia Institute of Technology, Presiding

8:30		**Introductory Remarks - Ronghu Wu**
8:35	(270-1)	**Single Cell Proteomics Using Frog (Xenopus Laevis) Blastomeres Isolated from Early Stage Embryos** NORMAN J DOVICHI, University of Notre Dame, Liangliang Sun, Kyle Dubiak, Elizabeth H Peuchen, Paul Huber
9:10	(270-2)	**Understanding the Crosstalk Between Cellular Pathways in Acute Myeloid Leukemia** BENJAMIN GARCIA, University of Pennsylvania School of Medicine
9:45	(270-3)	**Mapping and Quantitation of Glycosylation Sites on Proteins** CARLITO LEBRILLA, University of California
10:20		**Recess**
10:35	(270-4)	**A Novel MS-Based Method to Systematically Study Human Cell Surface Glycoprotein Dynamics** RONGHU WU, Georgia Institute of Technology
11:10	(270-5)	**Methods for Quantitative Analysis of Glycoproteins** HUI ZHANG, Johns Hopkins University

SYMPOSIUM — Session 280

Advances in Nucleic Acid Ligand Screening Methods Against Extra-Cellular Targets
arranged by Prabodhika Mallikaratchy, City University of New York

Monday Morning, Room W179b
Prabodhika Mallikaratchy, City University of New York, Presiding

8:30		**Introductory Remarks - Prabodhika Mallikaratchy**
8:35	(280-1)	**Biomarker Discovery Using Cell-SELEX: A Chemical Biology Approach** WEIHONG TAN, University of Florida
9:10	(280-2)	**Plasma Exosome Profiling of Cancer Patients by a Next Generation Systems Biology Approach** MICHAEL FAMULOK, University of Bonn, Valeriy Domenyuk, Nianqing Xiao, Heather O'Neill, Ryan Wang, Tassilo Hornung, Mark Miglarese, Günter Mayer, David Spetzler
9:45	(280-3)	**Forward and Reverse Translation with Antithrombotic Aptamers** BRUCE SULLENGER, Duke University
10:20		**Recess**
10:35	(280-4)	**GlycoDNA Aptamers for HIV Vaccine Discovery** ISAAC KRAUSS, Brandeis University
11:10	(280-5)	**Nuclease-Activated Nucleic Acid Probes for Detection of Breast Cancer Circulating Tumor Cells (CTCs)** PALOMA H GIANGRANDE, University of Iowa, Sven Kruspe, David Dickey, Sukriti Kamboj, Karen Clark, Kevin Urak, Elliot Burghardt, Brian Smith, Alexandra Thomas, James McNamara

Author and presider lists are available at www.pittcon.org

SYMPOSIUM — Session 290

Clinical Biophotonics
arranged by Igor K Lednev, University at Albany, SUNY
and Juergen Popp, Leibniz Institute of Photonic Technology

Monday Morning, Room W179a
Juergen Popp, Leibniz Institute of Photonic Technology, Presiding

8:30		**Introductory Remarks - Igor K Lednev and Juergen Popp**
8:35	(290-1)	**Raman Point-of-Care Diagnosis of Infectious Diseases** JUERGEN POPP, Leibniz Institute of Photonic Technology
9:10	(290-2)	**New Advances in Molecular Spectroscopic Imaging** JI-XIN CHENG, Purdue University
9:45	(290-3)	**Computational Imaging, Sensing and Diagnostics** AYDOGAN OZCAN, University of California Los Angeles
10:20		**Recess**
10:35	(290-4)	**Raman Hyperspectroscopy of Blood for Alzheimer's Disease Diagnostics** IGOR K LEDNEV, University at Albany, The State University of New York, Oleksandr Kazakov, Lenka Halamkova
11:10	(290-5)	**Fluorescence Lifetime Technique for Surgical Imaging, Guidance and Augmented Reality** LAURA MARCU, University of California Davis

SYMPOSIUM — Session 300

Identification and High Throughput Analysis for Food Safety and Cosmetics
arranged by Perry G Wang, US FDA and Xiaogang Chu, China Academy of Inspection and Quarantine

Monday Morning, Room W181a
Perry G Wang, US FDA, Presiding
Xiaogang Chu, China Academy of Inspection and Quarantine, Presiding

8:30		**Introductory Remarks - Perry G Wang and Xiaogang Chu**
8:35	(300-1)	**The Application of Matrix Effect Factor (MEF) for High Throughput Cosmetics Analysis by LC-MS** WANLONG ZHOU, US FDA, Perry G Wang, James B Wittenberg
9:10	(300-2)	**Using Thermal Desorption Flame-Induced Atmospheric Pressure Chemical Ionization Mass Spectrometry to Rapidly Determine Chemical Compounds in Cosmetics and Food Products** JENTAIE SHIEA, Nat'l Sun Yat-Sen University, Yi-Tzu Cho, Hung Su, Cheng Sy-Chyi
9:45	(300-3)	**Screening for Contaminants in Food Products with Mass Spectrometry** JACK HENION, Advion, Inc., Nigel Sousou, Changtong Hao, Simon Prosser, Murali Reddy, Kaushik Banerjee
10:20		**Recess**
10:35	(300-4)	**Arsenic Species and N-chloro-organics in Drinking Water and Food** X CHRIS LE, University of Alberta, Xing-Fang Li, Qingqing Liu, Hanyong Peng, Xiufen Lu
11:10	(300-5)	**Fast, Automatic, and Accurate Determination and Identification of Targeted Analytes in High-Throughput Analysis by Chromatography – Tandem Mass Spectrometry** STEVEN LEHOTAY, USDA ARS ERRC, Yelena Sapozhnikova

SYMPOSIUM — Session 310

Ionic Liquids for Electrocatalysis and Gas Sensors
arranged by Xiangqun Zeng, Oakland University and Sheng Dai, University of Tennessee

Monday Morning, Room W181b
Xiangqun Zeng, Oakland University, Presiding

8:30		**Introductory Remarks - Xiangqun Zeng and Sheng Dai**
8:35	(310-1)	**Tiny High Sensitivity Printed Electrochemical Sensors for Air Quality and E-Health Applications** JOSEPH ROBERT STETTER, KWJ Engineering Inc.
9:10	(310-2)	**Wearable Gas Exposure Monitoring with Microfabricated RTIL Electrochemical Sensors** ANDREW MASON, Michigan State University, Heyu Yin, Hao Wan, Sina Parsnejad
9:45	(310-3)	**Nanostructure of the Ionic Liquid – Graphite Stern Layer** ROB ATKIN, University of Newcastle, Aaron Elbourne, Samila McDonald, Kislon Voitchovsky, Frank Endres, Gregory G Warr
10:20		**Recess**
10:35	(310-4)	**Ionic Liquids for Controlled Synthesis of Functional Materials for Energy-Related Applications** SHENG DAI, Oak Ridge National Laboratory
11:10	(310-5)	**Ionic Liquids for Electroanalysis and Electrocatalysis** XIANGQUN ZENG, Oakland University, Yongan Tang, Min Guo, Lu Lin

SYMPOSIUM **Session 320**

Label-Free Detection for Microfluidic Bioanalyses
arranged by Ryan T Kelly, Pacific Northwest National Laboratory

Monday Morning, Room W181c
Ryan T Kelly, Pacific Northwest National Laboratory, Presiding

8:30		**Introductory Remarks - Ryan T Kelly**
8:35	(320-1)	**Digital Microfluidics with Label-Free Detection for Bioanalysis** AARON WHEELER, University of Toronto
9:10	(320-2)	**Nanoporous Gold Array: A Versatile Plasmonic Chip for High-Performance Surface-Enhanced Spectroscopy and Analytical Sensing** WEI-CHUAN SHIH, University of Houston
9:45	(320-3)	**Label-Free, Multiplexed Analyses of Biomolecular Binding Interactions at Model Cell Membrane Interfaces Enabled by Nanodiscs and Silicon Photonic Sensor Arrays** RYAN C BAILEY, University of Michigan
10:20		**Recess**
10:35	(320-4)	**Microfluidic Sample Preparation, Separation and Delivery for Ultrasensitive MS-Based Bioanalyses** RYAN T KELLY, Pacific Northwest National Laboratory, Ying Zhu, Yongzheng Cong, Erin S Baker, Richard D Smith
11:10	(320-5)	**Microchambers and Microdroplets: New Perspectives for Proteomics and Single-Cell Analysis** PETRA S DITTRICH, ETH Zurich

SYMPOSIUM **Session 330**

Miniature Mass Spectrometers
arranged by Zheng Ouyang and R Graham Cooks, Purdue University

Monday Morning, Room W475a
Zheng Ouyang, Purdue University, Presiding

8:30		**Introductory Remarks - Zheng Ouyang and R Graham Cooks**
8:35	(330-1)	**Novel Scan Methods Using Miniature Ion Trap Mass Spectrometers** R GRAHAM COOKS, Purdue University, Dalton Snyder, Christopher Pulliam, Patrick Fedick
9:10	(330-2)	**High Pressure Mass Spectrometry: A Path to Handheld Analyzers with Specificity and Sensitivity** J MICHAEL RAMSEY, University of North Carolina at Chapel Hill
9:45	(330-3)	**Miniaturized Wire Ion Trap** DANIEL AUSTIN, Brigham Young University, Qinghao Wu, Richard Zare, Ailin Li, Yuan Tian, Aaron R Hawkins, Derek Andrews, Trevor Decker, Joshua McClellan
10:20		**Recess**
10:35	(330-4)	**Portable Digital Linear Ion Trap Mass Spectrometer** WEI GAO, Guangzhou Hexin Instrument Co., Ltd. N/A
11:10	(330-5)	**Integrated Miniature Mass Spectrometry Systems** ZHENG OUYANG, Purdue University, R Graham Cooks

ORGANIZED CONTRIBUTED SESSIONS **Session 340**

Drug Detection in the Field
arranged by Maggie Tam, Canada Border Services Agency
and Charles S Harden, US Army Edgewood Chem Bio Center

Monday Morning, Room W184a
Maggie Tam, Canada Border Services Agency, Presiding

8:30	(340-1)	**Progress and Challenges to Realizing Roadside Detection of Acute Marijuana Consumption** BRIAN H CLOWERS, Washington State University, Peyton Nosbusch, Nick Lovrich, Wenjie Liu, Herbert Hill
8:50	(340-2)	**Detection of Drugs of Abuse and Forensic Attribution Using Raman Spectroscopy and Existing Military Chemical Detection Equipment** JASON GUICHETEAU, USA RDECOM Edgewood Chemical Biological Center, Charles S Harden, Gretchen Blethen, Vincent McHugh, Ashish Tripathi, Neal Kline, Erik David Emmons, Augustus W Fountain
9:10	(340-3)	**Detection of Drug Consumption in Human Breath** WOLFGANG VAUTZ, ION-GAS Gmbh
9:30	(340-4)	**Detection of Drugs with Cantilever-Enhanced Photoacoustic Spectroscopy** JAAKKO LEHTINEN, Gasera Ltd, Sauli Sinisalo, Ismo Kauppinen
9:50		**Recess**
10:05	(340-5)	**High Performance Ion Mobility Spectrometry for Accurate Chemical Identification in the Field** CHING WU, Excellims Corporation, Eugenie Hainsworth, Adam Graichen
10:25	(340-6)	**Portable Mass Spectrometer for Drug Detection in the Field** SHUN KUMANO, Hitachi, Ltd., Masuyuki Sugiyama, Masuyoshi Yamada, Kazushige Nishimura, Tsukasa Shishika, Akihito Kaneko, Hidetoshi Morokuma, Hiroyuki Inoue, Yuichiro Hashimoto
10:45	(340-7)	**Study of Designer Drugs with Electrochemistry** TSUNGHSUEH WU, University of Wisconsin-Platteville, Rachel Eckmann
11:05	(340-8)	**Paper-Based Diagnostic Devices in the Hands of Untrained Users** ANDRES WILDE MARTINEZ, California Polytechnic State University

ORGANIZED CONTRIBUTED SESSIONS **Session 350**

Extractables and Leachables Analysis
arranged by Dujuan Lu, SGS and Christopher M Jones, Baxter Healthcare Corporation

Monday Morning, Room W184d
Christopher M Jones, Baxter, Presiding

8:30	(350-1)	**Chemical Assessments Supporting Post-approval Change Control of Pharmaceutical Packaging and Medical Devices** VISHAL J BARGE, Baxter Healthcare N/A
8:50	(350-2)	**Extractable and Leachable Studies of Parenteral Infusion and Transfusion Products** JIANFENG HONG, Fresenius Kabi USA LLC
9:10	(350-3)	**Simplifying the Detection of Known Components Using a New Commercially Available E & L Accurate-Mass Database and MS/MS Library** DAVID A WEIL, Agilent Technologies, Emma Rennie, Gordon Ross, Shi-Fen Xu, Syed Lateff, Mashan Miladi, Dan-Hui Dorothy Yang
9:30	(350-4)	**Unknown Identification in E&L Studies** MEGAN BERGAUFF, SGS
9:50		**Recess**
10:05	(350-5)	**Identification of IV Bag Extractables Using GCMS, LCMS, and ICP-MS** KATE COMSTOCK, Thermo Fisher Scientific, Dujuan Lu
10:25	(350-6)	**Extractable Profiles of Packaging Materials for Permanently Implantable Medical Devices** XUEJUN JAY LIU, Ethicon, Johnson & Johnson, Ying Jiang, Robert Schiksnis, Joseph Rafalko, Yvonne Long, Yijun Lu
10:45	(350-7)	**Extractables and Leachables from Single-Use Systems** BENBEN SONG, PALL Corporation
11:05	(350-8)	**Ion Mobility-Mass Spectrometry: A Novel Approach to Screening for Extractable and Leachable Components from Packaging Material** JANE ALLISON COOPER, Waters Corporation, Baiba Cabovska

ORGANIZED CONTRIBUTED SESSIONS **Session 360**

Ionophore-Based Chemical Sensors II
arranged by Philippe Buhlmann, University of Minnesota

Monday Morning, Room W184bc
Philippe Buhlmann, University of Minnesota, Presiding

8:30	(360-1)	**Fluorescence Nanosensor for Ratiometric Detection of Intracellular Calcium** GUOXIN RONG, Northeastern University, Eric Kim, Heather A Clark
8:50	(360-2)	**Aluminum(III)-Octaethylporphyrin-Based Fluoride-Selective Paper Optode Fabricated by Inkjet Printing** XUEWEI WANG, University of Michigan, Mark E Meyerhoff
9:10	(360-3)	**Light Activated Electrochemistry for the Capture, Electrochemical Interrogation and Release of Rare Cells** JUSTIN GOODING, The University of New South Wales, Stephen G Parker, Ying Yang, Mehran B Kashi, Vinicius R Goncales, Simone Ciampi
9:30	(360-4)	**Upconversion Sensing Particles** ELIZABETH (LISA) HALL, University of Cambridge, Evaline S Tsai
9:50		**Recess**
10:05	(360-5)	**Colorimetric Microfluidic Paper-Based Analytical Devices: Role of the Paper on Sample Transport and Analytical Performance** DANIEL CITTERIO, Keio University, Riki Ota, Kentaro Yamada, Hiroyuki Shibata, Yoshiki Soda, Koji Suzuki
10:25	(360-6)	**Voltammetric Ion Selectivity of Thin Ionophore-Based Polymeric Membranes** SHIGERU AMEMIYA, University of Pittsburgh
10:45	(360-7)	**Potentiometric Characterization of Carbon-Based Ion-Selective Electrodes** DIPANKAR KOLEY, Oregon State University
11:05	(360-8)	**Nanopipet Supported ITIES Sensor Probes for the Detection of Ionic Species** MEI SHEN, University of Illinois at Urbana-Champaign, Nicholas Iwai, Albert Chang, Julian Romoro, Philip Oweimrin, Christopher Villaflor

TECHNICAL PROGRAM

ORAL SESSIONS — Session 370

Advances in Mass Spectrometry

Monday Morning, Room W175a
Partha Basu, Indiana University - Purdue University Indianapolis, Presiding

8:30 (370-1) **Effects of Molecular Gas Addition on a Helium-Based Flowing Atmospheric-Pressure Afterglow (FAPA) Ambient Desorption/Ionization Source** SUNIL P BADAL, Rensselaer Polytechnic Institute, Yi You, Jacob T Shelley

8:50 (370-2) **Rational Nano-Coulomb Ionization Mass Spectrometry** FACUNDO FERNÁNDEZ, Georgia Institute of Technology, Anyin Li, Yunlong Zi, Hengyu Guo, Zhong Lin Wang

9:10 (370-3) **High-Throughput Sensitive Single Particle ICP-MS Methods for Nanoparticle Characterization and Quantification** HONGLAN SHI, Missouri University of Science and Technology, Dan Yongbo, Ariel R Donovan, Chady Stephan, Heidi Crescek

9:30 (370-4) **Laser Ionization Mass Spectrometry Experiments in Manchester (UK): Chemistry, Nuclear Physics and Planetary Science Applications** ILYA STRASHNOV, The University of Manchester

9:50 **Recess**

10:05 (370-5) **Open Probe Fast GC-MS - Real Time Mass Spectrometry Analysis via Ambient Desorption, Ultra-Fast Separation and In-Vacuum Ionization** AVIV AMIRAV, Tel Aviv University, Uri Keshet, Tal Alon, Alexander Fialkov

10:25 (370-6) **Real-Time Detection of Volatile Food Contaminants by PTR-MS** JONATHAN BEAUCHAMP, Fraunhofer IVV, Andrea Buettner

10:45 (370-7) **Detection of Atoms, Molecules, and Biomolecules with a Solution Cathode Glow Discharge Ionization Source for Mass Spectrometry** COURTNEY L WALTON, Rensselaer Polytechnic Institute, Andrew J Schwartz, Kelsey L Williams, Gary Martin Hieftje, Jacob T Shelley

11:05 (370-8) **Ultra-Trace Analysis of Mercury Species in Drinking Water (sub pg/g) Using Ion Chromatography and Speciated Isotope Dilution Mass Spectrometry (IC-SIDMS)** PATRICK BENECEWICZ, Duquesne University, HM Skip Kingston, Stuart Procter, Larry Tucker, Matt Pamuku

ORAL SESSIONS — Session 380

Biomedical - Novel Techniques

Monday Morning, Room W175b
Matthew P Nelson, ChemImage Sensor Systems, Presiding

8:30 (380-1) **High-Throughput, Highly Parallel Magnetic Nanopore-Based Immunomagnetic Isolation of Exosomes for Cancer Diagnostics** JIN A KO, University of Pennsylvania, Neha Bhagwat, Stephanie Yee, Erica Carpenter, Ben Stanger, Dave Issadore

8:50 (380-2) **Cyclodextrins for Enhanced Selective Toxicity of Rhodamine 6G nanoGUMBOS: Chemotherapeutic Applications** NIMISHA BHATTARAI, Louisiana State University, Isiah M Warner, Mi Chen, Suzana Hamden

9:10 (380-3) **Quantitative Photoacoustic pH Imaging of In Vivo Tumor Models** CHANG HEON LEE, University of Michigan, Janggun Jo, Xueding Wang, Raoul Kopelman

9:30 (380-4) **Current Trends in Cancer Biomarker Discovery Using Urinary Metabolomics: Achievements and New Challenges** CASEY BURTON, Missouri University of Science and Technology, Yinfa Ma

9:50 **Recess**

10:05 (380-5) **Single Cell ICP-MS Quantification of Metal Content in Individual Cells - An Insight into Cancer Treatment** CHADY STEPHAN, PerkinElmer, Lauren Amable

10:25 (380-6) **Affino-Electrophoresis in Nano/Micro Fluidic Devices for Diagnostic Application** PRIYANKA ARYA, Sysmex Corporation, Masaya Kakuta

10:45 (380-7) **Online PTR-ToF-MS Applications Reveal the Influence of Oral and Nasal Routes of Breathing on Exhaled VOC Profiles** PRITAM SUKUL, University Medicine Rostock, Jochen K Schubert, Wolfram Miekisch, Svend Kamysek

11:05 (380-8) **In Situ Solid Phase Microextraction Coupled to LC-HRMS – Sample Collection-Free Approach to Metabolic Characterization of Organ Based on Kidney Model** BARBARA BOJKO, Nicolaus Copernicus University, Iga Stryjak

ORAL SESSIONS — Session 390

Environmental Analysis of Water Quality

Monday Morning, Room W175c
Marriah Ellington, West Virginia University, Presiding

8:30 (390-1) **Holographic Characterization of Contaminants in Wastewater** JAROSLAW M BLUSEWICZ, Spheryx, Inc., David B Ruffner, Fook Chiong Cheong, Laura A Philips

8:50 (390-2) **Rapid and Concomitant Analysis of Pharmaceuticals in Environmental Water by Coated Blade Spray (CBS)** JUSTEN J POOLE, University of Waterloo, German Augusto Gomez-Ríos, Janusz Pawliszyn

9:10 (390-3) **Evaluation of Extraction Techniques and Data Reduction Methods for Determination of Emerging Contaminants in Wastewater by GCxGC-TOFMS** MURRELL A KYRA, Penn State University, Jack Cochran, Frank Dorman

9:30 (390-4) **Determination of Trace Concentrations of Oxyhalides and Bromide in Municipal and Bottled Waters Using a Compact Ion Chromatography System** JINGLI HU, Thermo Fisher Scientific, Jeffrey Rohrer

9:50 **Recess**

10:05 (390-5) **Evaluation of Iodinated Disinfection By-Products Formation during Peracetic Acid Treatment by Using SPME-GC/MS and HPIC-MS/MS Detection** RUNMIAO XUE, Missouri University of Science and Technology, Honglan Shi, Craig D Adams, Yinfa Ma, Todd Eichholz

10:25 (390-6) **Identification of Emerging Disinfection Byproducts Originating from Organic UV Filters in Chlorinated Seawater Swimming Pools Using High-Resolution Mass Spectrometry** TAREK MANASFI, Aix-Marseille University, Jean-Luc Boudenne, Bruno Coulomb

10:45 (390-7) **Evolution of Ion Exchange Columns Used in Separation of Common Cations and Amines** MANIKANDAN JAYARAMAN, Thermo Fisher Scientific, Charanjit Saini, Christopher Pohl, Yan Liu, Maria Rey

11:05 (390-8) **An Alternate Approach to Using MS and MSD for Measuring Precision and Accuracy in GC/MS Methods** CHARLES G APPLEBY, U. S. EPA, Keith Strout

ORAL SESSIONS — Session 400

Food Identification (Half Session)

Monday Morning, Room W176a
James Harynuk, University of Alberta, Presiding

8:30 (400-1) **Determination of Carbohydrates and Organic Acids in Kombucha by Ion Chromatography** BEIBEI HUANG, Thermo Fisher Scientific, Jingli Hu, Jeffrey Rohrer

8:50 (400-2) **A Sub-Regional Study of the Chemical Composition of Bottled Waters Available in Midwestern United States and Their Compliance to Regulatory Values** OLUJIDE T AKINBO, Butler University, Abua Ikem, Jimmie Garth, Marianne Dolan-Timpe, Mikayla Morris, Jon Haslag

9:10 (400-3) **Authenticity and Purity Evaluation of Olive Oils Using Low-Field Benchtop NMR (LFBT-NMR)** JAMES HARYNUK, University of Alberta, Lawrence A Adutwum, Seo Lin Nam, A Paulina de la Mata, Bruce Lix

9:30 (400-4) **Unique GC Column Selectivity for Time and Cost-Efficient Separation of Complex Cis/Trans Fatty Acid Methyl Esters in Food** RAMKUMAR DHANDAPANI, Phenomenex, Marc Gregerson, A Carl Sanchez, Kristen Parnell, Timothy Anderson

ORAL SESSIONS — Session 410

Food Safety (Half Session)

Monday Morning, Room W176a
James Harynuk, University of Alberta, Presiding

10:05 (410-1) **Identification and Characterization of Food Packaging Contaminants Migrating into Food Simulants** YELENA SAPOZHNIKOVA, USDA, Eunha Hoh

10:25 (410-2) **Bio-Inspired Poly (Amic) Acid Nanostructured Membranes as Smart Food Packaging Materials** IDRIS YAZGAN, SUNY-Binghamton, Ayfer Akgul, Victor Kariuki, Ali Akgul, Omowunmi A Sadik, Jurgen Schulte, Susan V Diehl

10:45 (410-3) **On-Site Process Detection of Molds on Grain Using a GC-IMS** BERT UNGETHUEM, Airsense Analytics, Andreas Walte

11:05 (410-4) **Assessment of Essential and Toxic Elements in Imported Vegetables in Uyo, Nigeria Using Neutron Activation Analysis** IMAOBONG I UDOUSORO, University of Uyo, Lilian Okwumuo, Anthony Udoh N/A

Author and presider lists are available at www.pittcon.org

ORAL SESSIONS — Session 420

Laboratory Informatics

Monday Morning, Room W176b
Chin-I Shyr, The Pittsburgh Conference, Presiding

8:30	(420-1)	**Pay Now or Later: Creating Solid System Application User Requirements** KATHERINE H TEMPLE, CSols, Inc.
8:50	(420-2)	**How Much Does LIMS Cost? Licensing & Beyond** HOWARD ROSENBERG, CSols, Inc.
9:10	(420-3)	**A Data Acquisition, Visualization and Analysis Workbench for Open Source Analytical Instruments** JAY M PATEL, MonitorPollution.org, Robert S Phillips, Ivanov Dinko
9:30	(420-4)	**Keeping Your SDMS Fine-Tuned and User Friendly** CHRISTOPHER JAMES HAHN, CSols, Inc.
9:50		**Recess**
10:05	(420-5)	**Planning for Laboratory Software Implementations: Often-Overlooked Considerations** KATHERINE H TEMPLE, CSols, Inc.
10:25	(420-6)	**LIMS Project Success Through Proper Project Governance and Communications** HOWARD ROSENBERG, CSols, Inc.
10:45	(420-7)	**Use of Custom Access Based Reporting Systems for Sample QC Screening of Mass Chromatographic Data** EDUARDO SANCHEZ, ORISE/CDC, Jessica Rafson, Lydia G Thornburg, Christopher M Reese, David M Chambers
11:05	(420-8)	**Is SAP the Only System You Need to Operate Your QC Lab? A LOTR Parody** GEOFF TURNBULL, CSols, Inc.

ORAL SESSIONS — Session 430

LC/MS - Bioanalytical, Biomedical and Pharmaceutical

Monday Morning, Room W176c
Todd A Gillespie, Lilly Research Labs, Presiding

8:30	(430-1)	**Simultaneous Determination of 28 Pteridines, Folates, and Modified Nucleosides for Cancer Risk Screening Using Ultra-Fast Liquid Chromatography – Tandem Mass Spectrometry** CASEY BURTON, Missouri University of Science and Technology, Honglan Shi, Yinfa Ma
8:50	(430-2)	**Simultaneous Determination of Underivatized Amino Acids in Urine by High-Performance Liquid Chromatography – Tandem Mass Spectrometry for Breast Cancer Risk Screening** ALEXANDRE CRISTEA, Missouri University of Science and Technology, Casey Burton, Yinfa Ma, Honglan Shi
9:10	(430-3)	**Assessment of Flow-Through Desorption and Online SPE Technology for the Quantitation of Dried Blood Spots Using Isotope Dilution Mass Spectrometry** LOGAN MILLER, Duquesne University, Fredrick D Foster, Scott Faber, Matt Pamuku, HM Skip Kingston
9:30	(430-4)	**Automating Mobile Phase pH for Peptide Mapping for LC-UV-MS Methods** AMANDA DLUGASCH, Waters Corporation, Thomas Edward Wheat, Patricia R McConville
9:50		**Recess**
10:05	(430-5)	**Elucidation of the Folate-Derived Pteridine Biosynthetic Pathway Using Metabolic Flux Analysis** CASEY BURTON, Missouri University of Science and Technology, Honglan Shi, Yinfa Ma
10:25	(430-6)	**Use of a Triple Detection System Combining Photodiode Array, Evaporative Light Scattering and Mass Detection for Mass Balance in the Forced Degradation of Pharmaceuticals** PAULA HONG, Waters Corporation, Patricia R McConville
10:45	(430-7)	**Sensitive and Fast UPLC Method Coupled with Mass Detection for the Analysis of Genotoxic Impurities of Imatinib Mesylate** MARGARET MAZIARZ, Waters Corporation, Mark Wrona, Chris Henry
11:05	(430-8)	**Development and Comparison of Quantitative Methods Using Orthogonal Chromatographic Techniques for the Analysis of Potential Mutagenic Impurities** JENNIFER SIMEONE, Waters Corporation, Paula Hong, Patricia R McConville

ORAL SESSIONS — Session 440

Others - Chromatography and Sampling

Monday Morning, Room W177
Thomas E Wheat, Waters Corporation, Presiding

8:30	(440-1)	**Development and Validation of a Fast Stability-Indicating Method for the Assay of Pyrantel and Estimation of its Degradation Product in Oral Endectoparasitiside Chewable** PENG ZHANG, Merial, Abu Rustum
8:50	(440-2)	**Translating Traditional GC Methods to an Innovative New GC Platform** KENNETH G LYNAM, Agilent Technologies, Amanda Kaspick
9:10	(440-3)	**Assessment of Arsenic Species in Ginger** LEE YU, National Institute of Standards and Technology (NIST)
9:30	(440-4)	**A Convergent Methodology for Full Automation in Food Safety Analysis** FERNANDO M LANCAS, University of Sao Paulo, Bruno H Fumes, Mariane A Andrade, Ana L Toffoli N/A
9:50		**Recess**
10:05	(440-5)	**Determination of 8 Macrolide Residues in Royal Jelly Products by Liquid Chromatography-Tandem Mass Spectrometry** WU LIQIN, Zhejiang Academy of Agricultural Sciences, Shen Xueli N/A
10:25	(440-6)	**Towards a Detailed Characterization of Linker Drugs Using Two-Dimensional Liquid Chromatography-Mass Spectrometry** CJ VENKATRAMANI, Genentech, Shu Rong Huang, Ila Patel
10:45	(440-7)	**Rapid Isolation of Monoclonal Antibodies Using Peptides Immobilized in Porous Membranes** AUSTIN LANDRY BENNETT, Georgia Institute of Technology, Wenjing Ning, Weijing Liu, Merlin Bruening
11:05	(440-8)	**How to Use Automation to Achieve Extraordinarily High SPE Performance** MARK HAYWARD, ITSP Solutions, Jonathan Ho, Tom Moran, Kim Gamble

ORAL SESSIONS — Session 450

Sampling and Sample Preparation - MS and IC

Monday Morning, Room W475b
Lara P Phelps, US Environmental Protection Agency, Presiding

8:30	(450-1)	**Iron Oxide Xerogels for Arsenic Sampling from Drinking Water in Resource-Limited Environments** MICHAEL S BONO, Massachusetts Institute of Technology, Emily B Hanhauser, Charlene Ren, Chintan Vaishnav, A John Hart, Rohit Karnik
8:50	(450-2)	**Improved Cleanup of Pesticides in Dry, Difficult Matrices Using a Novel Dual-Layer SPE Cartridge for LC/MS/MS and GC/MS/MS Analysis** JENNIFER E CLAUS, MilliporeSigma, Katherine K Stenerson, Olga I Shimelis, Michael Ye
9:10	(450-3)	**Evaluation of A Novel Vapor Delivery Device for Homemade Explosives Analysis** LAURYN DEGREEFF, U.S. Naval Research Laboratory, Christopher Katilie, Michael Malito
9:30	(450-4)	**Extraction and Analysis of Organochlorine Pesticide Residues in Fatty Matrix by Lipid Removing Sorbent and GC/MSMS** JOAN STEVENS, Agilent Technologies, Derick Lucas, Limian Zhao
9:50		**Recess**
10:05	(450-5)	**Stability of VOCs in Blood Determined by SPME/GC/MS** LYDIA G THORNBURG, CDC, Christopher M Reese, Eduardo Sanchez, Jessica Rafson, David M Chambers
10:25	(450-6)	**In-Cap, Automated Sample Prep for Analysis of Anions Using Ion Chromatography** CHRISTOPHER POHL, Thermo Fisher Scientific, Roseanne Slingsby, Doug Jamieson, John Guajardo, Wu Thomas
10:45	(450-7)	**Application of a Personal Air Sampler** JASON S HERRINGTON, Restek, Jaap de Zeeuw, Rebecca Stevens, Gary Stidsen, Steve Kozel
11:05	(450-8)	**Improving On-Line (PAMS) and Canister-Based (TO-15) Analysis of Trace-Level Compounds in High-Humidity Ambient Air** MASSIMO SANTORO, Markes International, Nicola Watson, Chris Hall

TECHNICAL PROGRAM

ORAL SESSIONS — Session 460

Sampling and Sample Preparation - SPME

Monday Morning, Room W476
Vishal Sahore, Brigham Young University, Presiding

8:30 (460-1) **Extraction and Purification of DNA from Complex Biological Sample Matrices Using Solid-Phase Microextraction Coupled with Real-Time PCR** OMPRAKASH NACHAM, Iowa State University, Kevin D Clark, Jared L Anderson

8:50 (460-2) **Time Weighted Average Concentration Monitoring of Compounds with Wide Range of Physicochemical Properties in Aquatic Environment Using Thin Film Solid Phase Microextraction** EZEL BOYACI, University of Waterloo, Fardin Ahmadi, Chris Sparham, Janusz Pawliszyn

9:10 (460-3) **Evaluation and Application of SPME Arrows** JASON S HERRINGTON, Restek, Jaap de Zeeuw, Rebecca Stevens, Gary Stidsen, Steve Kozel

9:30 (460-4) **Optimization of Thin Film Microextraction Methods for Determination of Pesticides in Environmental Matrices** EMANUELA GIONFRIDDO, University of Waterloo, Hamed Piri-Moghadam, Angel Rodriguez-Lafuente, Jonathan J Grandy, Heather L Lord, Terry Obal, Janusz Pawliszyn

9:50 **Recess**

10:05 (460-5) **Deposition of a Sorbent into a Recession on a Solid Support Provides a New, Mechanically Robust Solid Phase Micro-Extraction Device** JUSTEN J POOLE, University of Waterloo, Jonathan J Grandy, German Augusto Gomez-Ríos, Nathaly Reyes-Garces, Ezel Boyaci, Harmen Vander Heide, Barbara Bojko, Janusz Pawliszyn

10:25 (460-6) **Investigation of the Hematocrit Effect on Solid Phase Microextraction** NATHALY REYES-GARCES, University of Waterloo, Barbara Bojko, Janusz Pawliszyn

10:45 (460-7) **New Generation of Biocompatible Solid SPME Coatings for Integrated Separation Platforms Applied to Targeted and Untargeted Analyses** EZEL BOYACI, University of Waterloo, Emanuela Gionfriddo, Janusz Pawliszyn

11:05 (460-8) **Development of an Easy and Automated On-Fiber Derivatization Protocol for Direct Analysis of Short-Chain Amines Using a Matrix Compatible Solid-Phase Microextraction Coating** EMANUELA GIONFRIDDO, University of Waterloo, Alice Passarini, Janusz Pawliszyn

POSTER SESSION — Session 470

All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Poster sessions are on the Exposition Floor, Aisle 2500-2600. PLEASE NOTE: You cannot get onto the exposition floor until 9:00 AM. Posters that have not been taken down one-half hour after the designated time will be disposed of.

Bioanalytical - MS, MS/GC, and LC/MS
Monday Morning, Exposition Floor, Aisle 2500-2600

(470-1 P) **Simultaneous LC/MS Analysis of Saccharides, Organic Acids, and Amino Acids Using Polymer-Based HILIC Column under Alkaline Conditions** LEAH BLOCK, Shodex, Showa Denko America, Junji Sasuga, Daisuke Maruyama, Ron Benson

(470-2 P) **Analysis of Antibody Drug Conjugates (ADC) by 2 µm Size Exclusion Chromatography Column with Dual Functionality** ATIS CHAKRABARTI, Tosoh Bioscience LLC, Richard C Manzari

(470-3 P) **Identification of Potential Biomarkers of Exposure to Avobenzone** PRABHA DWIVEDI, CDC, Manori Silva, Xiaoliu Zhou, Tolar Powell, Antonia Calafat, Xiaoyun Ye

(470-4 P) **Proteasome Capacity and Substrate Specificity Quantified by Mass Spectrometry** JARED LAMP, University of Notre Dame N/A

(470-5 P) **Combination of Liquid Chromatography-Surface Enhanced Raman Spectroscopy and Liquid Chromatography-Mass Spectrometry to Identify of SUMOylated Proteins Due to Nutrient Restriction in Colorectal Cancer** MONICA SCHROLL, University of Notre Dame, Zachary D Schultz, Amanda B Hummon

(470-6 P) **Comparative Buffer System Analysis for HPLC EC Detections of Neurotransmitters and Metabolites in Non-Mammalian Systems** MATTHEW H STODGHILL, Furman University, Nicholas John Kuklinski

(470-7 P) **In Vivo Quantification of Melanocortin Peptides Using Capillary Liquid Chromatography-Tandem Mass Spectrometry** ALEC C VALENTA, University of Michigan, Malcolm J Low, Robert T Kennedy

(470-8 P) **Analyzing Liposomal Drug Delivery Systems in Three-Dimensional Cell Culture Models Using MALDI-Imaging Mass Spectrometry** JESSICA K LUKOWSKI, University of Notre Dame, Amanda B Hummon

(470-9 P) **A Selective Capture/Release Approach to Simplified Metabolite Identification by Mass Spectrometry** JING SU, Northeastern Illinois University, Gabriela Martinez N/A

(470-10 P) **Determination of the Constituent Compounds in the Essential Oil from Dioscoreophyllum Cumminsii, A Multipurpose Phytomedicine by GCMS, and Their Relevance to the Bioactivity of the Plant** MODUPE MABEL OGUNLESI, University of Lagos, Maurice C Amos

(470-11 P) **GC-MS Identification of the Bioactive Compounds in the Essential Oil from the Aerial Parts of Cardiospermum Halicacabum, and Their Relevance to the Medicinal Uses of the Plant** MODUPE MABEL OGUNLESI , University of Lagos, Paul Osharive

(470-12 P) **Electrospun Nanocomposite Polyvinylpyrrolidone Fibers as Substrate for Surface-Assisted Laser Desorption/Ionization Time-of-Flight Mass Spectrometry** JUAN BIAN, The Ohio State University, Susan Olesik

(470-13 P) **High Efficiency Nebulizer for Single Cell TOF-ICP-MS** RYAN GARRETT BRENNAN, Glass Expansion Inc, Jerry Dulude, Adeeb Rahman

(470-14 P) **Investigation of the Selected Transition Metal Binding Characteristics of Methanobactin from *Methylosinus Trichosporium OB3b*** JACOB WATSON MCCABE, Texas A&M University Commerce, Rajpal Vangala, Laurence Angel

(470-15 P) **Biochemical Interactions on Cheese Rinds** JESSICA CLEARY, University of Illinois, Laura Sanchez

(470-16 P) **A Multi-Pronged Strategy to Identify HIV Protein Phosphorylation Sites** KATHLEEN ROWE, LaGuardia Community College

(470-17 P) **NOBCChE Poster Awardee - Variation in the Extent of Ion Fragmentation in Traveling Wave Ion Mobility Mass Spectrometry** JOSEPH N MWANGI, University of North Carolina at Greensboro, Norman H L Chiu, Daniel A Todd

POSTER SESSION — Session 480

All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Poster sessions are on the Exposition Floor, Aisle 2500-2600. PLEASE NOTE: You cannot get onto the exposition floor until 9:00 AM. Posters that have not been taken down one-half hour after the designated time will be disposed of.

Electrochemistry
Monday Morning, Exposition Floor, Aisle 2500-2600

(480-1 P) **Fabrication and Evaluation of Analytical Properties of N-Substituted Polypyrrole Ionic Liquid Coated Electrodes** AMILA M DEVASURENDRA, The University of Toledo, Cheng Zhang, Joshua A Young, Jared L Anderson, Jon R Kirchhoff, L M Viranga Tillekeratne

(480-2 P) **Robust Diamond Electrodes for Spectroelectrochemistry, Trace Metal Detection, and General Electroanalytical Applications** CORY ALLEN RUSINEK, Fraunhofer USA, Michael F Becker, Robert Rechenberg

(480-3 P) **Electrochemical Measurement of Vesicular Catecholamine Storage and Release: Understanding the Chemo-Brain** XIANCHAN LI, University of Gothenburg, Andrew Ewing

(480-4 P) **Biomimicking the Cell Redox Signaling: A Bipolar Nanopore Electrode for a Single Living Cell Probing** YILUN YING, East China University of Science and Technology, Yong-Xu Hu, Rui Gao, Yitao Long

(480-5 P) **Oxidation Properties of Aggregated Au Nanoparticles of Different Sizes** STACY ALLEN, University of Louisville, Francis Zamborini

(480-6 P) **Heavy Metal Detections by Carbon Nanotube Thread Electrochemical Cell** DAOLI ZHAO, University of Cincinnati, David Siebold, Noe Alvarez, Shanov N Vesselin, William R Heineman N/A

(480-7 P) **Electrochemical Visualization of Intracellular Hydrogen Peroxide Inside Signal Cell** JINGJING ZHANG, Nanjing University

(480-8 P) **Synthesis and Characterization of Electrospun Iridium-Cobalt Oxide Nanofibers and Their Catalytic Activity for Oxygen Evolution Reaction** AREUM YU, Ewha Womans University, Myung Hwa Kim, Chongmok Lee, Youngmi Lee

(480-9 P) **An Advanced Set-Up for the Real-Time Determination of Mass-Transfer Parameters During Oxygen Reduction Reaction (ORR) Measurements** RITESH N VYAS, Metrohm, Julia V Drunen, Corrado Locati

(480-10 P) **An Easy-to-Use Low-Noise Nanopore for Controlling Nanoparticle Translocation Dynamics** CHRIS GUNDERSON, University of Washington, Samuel Barlow, Bo Zhang

(480-11 P) **Simultaneous Electrochemical Determination of Caffeine and Vanillin by Using Poly (Alizarin red S) Modified Glassy Carbon Electrode** HAYATI FILIK, Istanbul University

(480-12 P) **Ultra-Simple and Rapid Approach for the Preparation of Solid Contact Ion Selective Electrodes** TOLULOPE ANDREW FAYOSE, Keele University N/A

Author and presider lists are available at www.pittcon.org

(480-13 P) **Analyzing the Bio-Compatibility of Collagen on Electrochemical, Aptamer-Based Sensors** INAYAH ENTZMINGER, University of Maryland, Baltimore County, Mirelis Santos Cancel, Ryan White

(480-14 P) **Improving the Reproducibility of Electrically Deposited Glucose Oxidase-Embedded Chitosan Coatings onto Carbon Fiber Microelectrodes** CAITLIN E DONAHUE, Roanoke College, Timothy W Johann, Richard B Keithley

(480-15 P) **Fabrication and Electrochemical Characterization of Binary Composites of Iridium and Ruthenium Oxides** YUN-BIN CHO, Ewha Womans University, Chongmok Lee, Youngmi Lee

(480-16 P) **The Effect of Carbon Fiber Microstructure on Electrochemical Performance of Disk-Shaped Microelectrodes for Fast-Scan Cyclic Voltammetry** TYLER WILLIAM BEGER, Roanoke College, Richard B Keithley

(480-17 P) **Electrochemical Micronutrient Sensing: Quantification of the Potassium Ion** ISAAC A TAYLOR, Indiana University - Purdue University Indianapolis, Frederique Deiss

(480-18 P) **Stripping Voltammetry Study of Citrate-Cu Core/Shell Bimetallic Nanoparticles (NPs)** DHRUBA K PATTADAR, University of Louisville

(480-19 P) **Atmospheric Corrosion Study of Metals in an Industrial Environment of Ahmadabad** SUNILKUMAR PUNAMBHAI PAREKH, CU Shah Science College N/A

(480-20 P) **Electrochemical Detection for High Sensitivity Cardiovascular Tests at the Point of Care** FANG LAI, Ohmx Corporation, Eric J Van Groll, Rebecca S Hoo, Janelle N Fawver, Thomas J Meade, Y P Bao

(480-21 P) **Electrochemical Deposition of Tantalum in Non-Aqueous Media and Its Electrochemical Applications** ARA JO, Ewha Womans University, Youngmi Lee, Chongmok Lee

(480-22 P) **The Role of Serotonin in Comorbid Depression and Obesity** MELINDA HERSEY, University of South Carolina , Claudia Grillo, Victoria Macht, Adrienne Green, Jim R Fadel, Srimal A Samaranayake, Lawrence Reagan, Parastoo Hashemi

(480-23 P) **DMSO Slows the Second Step of Exocytosis and Changes the Fraction of Partial Catecholamine Release** SOODABEH MAJDI, University of Gothenburg, Neda Najafinobar, Jelena Lovric, Andrew Ewing

(480-24 P) **Combined Amperometry and Intracellular Electrochemical Cytometry of Vesicles to Study the Effect of Anti-Cancer Drugs on Catecholamine Transmitter Secretion from Single Sells** ZAHRA TALEAT, Chalmers University of Technology, Xianchan Li, Andrew Ewing

(480-25 P) **Single Cell Amperometry Reveals How Barbiturates Modulate Exocytosis of Catecholamine Transmitters** DAIXIN YE, Gothenburg University, Andrew Ewing

(480-26 P) **Fabrication of High-Density DNA Microelectrode Arrays Using Light Activated Electrochemistry** LEILA ZAREI, University of New South Wales

(480-27 P) **One-Pot Green Synthesis of Noble Bimetallic Nanoparticles Decorated Reduced Graphene Oxide/Carbon Nanorods for High Sensitive Hydrazine Sensor** RINKY SHA, Indian Institute of Technology Hyderabad, Parikshit Sahatiya, Solomon Jones, Sushmee Badhulika, Arthi Gopalakrishan N/A

(480-28 P) **Sub-Microsecond Plasmonic Imaging Based Electrochemical Detection Reveals Conformational Gating of Electron Transfer of Cytrochrome c** YAN WANG, Arizona State University, Xiaonan Shan, Hui Wang, Hongyuan Chen, Nongjian Tao

POSTER SESSION — Session 490

All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Poster sessions are on the Exposition Floor, Aisle 2500-2600. PLEASE NOTE: You cannot get onto the exposition floor until 9:00 AM. Posters that have not been taken down one-half hour after the designated time will be disposed of.

GC Methods and Developments

Monday Morning, Exposition Floor, Aisle 2500-2600

(490-1 P) **Optimization of GC Chromatography by Inlet Liner Selection** TIMOTHY ANDERSON, Phenomenex

(490-2 P) **Evaluation of Polycyclic Aromatic Hydrocarbon Standard Reference Material 2260a on Different Stationary Phases for Gas Chromatography** WALTER BRENT WILSON, National Institute of Standards and Technology (NIST), Lane C Sander, Leonard M Sidisky, Stephen A Wise

(490-3 P) **Fast GC: Good Separations in Less Than 10 Seconds** LEE N POLITE, Axion Analytical Labs Inc, Jackson O'Donnell, Nikolas L Polite, Theodore N Covello, Erick D Walts, Dennis L Polite, Mary Beth Smith

(490-4 P) **Optimize Productivity, Speed and Accuracy: ASTM Method D2887 Option B** LEE MAROTTA, PerkinElmer, Tom Kwoka, Leeman Bennington, Alan Gallaspy

(490-5 P) **New Diatomaceous Earth Materials for Packed Columns – Exploring Inertness of Solid Support and Effect of Particle Size (mesh) and Packed Column ID on Column Efficiency** ODEN KATARINA, Restek, Jaap de Zeeuw, Rebecca Stevens, Barry Burger, Scott Adams, Kristi Sellers

(490-6 P) **New ASTM Method Dissolved Gas Sampling Technique Comparison** ANNE JUREK, EST Analytical, Kelly Cravenor, Lindsey Pyron, Adam Guichard

(490-7 P) **A New Versatile Autosampler for Liquids to Increase Productivity and Selectivity Through Dual Injection Mode** MICHELA GASPERINI, DANI Instruments, Ornella Crispu, Roberto Taschini, Moira Zanaboni, Alessandro Casilli, Conor Sullivan

(490-8 P) **Gas Chromatography – Mass Spectrometry for Determination of Environmentally Important Phenols and Their Thio Analogs as Chemical Modification Products** ANZOR MIKAIA, National Institute of Standards and Technology (NIST), Levan A Megutnishvili, Nino G Todua, Stephen E Stein

(490-9 P) **The Continuing Story of the Unique Selectivity of Ionic Liquid GC Stationary Phases** LEONARD M SIDISKY, MilliporeSigma, Greg A Baney, James L Desorcie, Gustavo Serrano, Xin Zheng

(490-10 P) **A Novel Approach to Heating, Flow Path and Connection Technology for Gas Chromatography** MATTHEW GIARDINA, Agilent Technologies, Joseph L Hedrick, Thomas Szakas, Eric Denoyer

(490-11 P) **GC Column for Rapid Baseline Separation of Standard 37 FAMEs** YURI BELOV, InventX, Inc, Jim Archer

(490-12 P) **Branched Dicationic Ionic Liquids as Highly Polar GC Stationary Phases** MOHSEN TALEBI, University of Texas at Arlington, Daniel W Armstrong

(490-13 P) **Structure Property Relationship of Thermally Stable Dicationic Ionic Liquids and Their Evaluation as GC Stationary Phases** RAHUL AVINASH PATIL, University of Texas at Arlington, Daniel W Armstrong

POSTER SESSION — Session 500

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LC/MS

Monday Morning, Exposition Floor, Aisle 2500-2600

(500-1 P) **Identification of a Secondary Reaction In Pre-Column Amine-Derivatization of Samples for UHPLC Quantitative Methods** DIEP SAM, Abbott Laboratories, Tracey Rae, Richard Haack, Jeff Fishpaugh

(500-2 P) **"Dilute and Shoot" LC-MS/MS Analysis of Novel Psychoactive Substances: Kratom and Synthetic Cathinones** DEBASHISH ROY, Wake Forest University, Oneka Cummings, Allyson Mellinger, Gregory McIntire, Christa L Colyer

(500-3 P) **LC-MS-Based Screening of East Indian Sandalwood Oil (Eiso) for Antitubercuar and Antiplasmodial Mechanisms of Action** THANKHOE ABRAM RANTS'O, Auburn University, Angela I Calderon, Mansour Alturki, Corey Levenson

(500-4 P) **Deep and Reproducible Human Proteome Profiling with Novel Nano Flow LC Technology and HRAM Mass-Spectrometry** OLEKSANDR BOYCHENKO, Thermo Fisher Scientific, Stephan Meding, Wim Decrop, Mike Baynham, Martin Ruehl, Frank Steiner, Remco Swart

(500-5 P) **Quality Analysis of Polysorbate 80 by LC-MS** XIAODONG HUANG, Ecolab, Lan Xiao

(500-6 P) **Optimized UHPLC-MS Systems for Performance and Throughput: A Holistic Approach** MARKUS M MARTIN, Thermo Fisher Scientific, Matthias Krajewski, Martin Ruehl, Frank Steiner, Remco Swart

(500-7 P) **An LC-MS-TOF Method for Quantifying Components of Interest in Hemp Extract** SUE DANTONIO, Agilent Technologies, A Roth, Karen Kaikaris, Joan Stevens, Mike Adams

(500-8 P) **Simple and Efficient Method for the Extraction and LC/MS/MS Analysis of Vitamin B1 and B6 in Human Whole Blood** RAMKUMAR DHANDAPANI, Phenomenex, Jenny Wei, Sean Orlowicz

(500-9 P) **Tackling Fraud in Fish Global Supply Chains: Innovations in Detection Using Rapid Evaporative Ionization Mass Spectrometry (REIMS) Technology** OLIVIER PAUL CHEVALLIER, Queens University Belfast, Connor Black, Christopher Elliott, Zoltan Takats, Sara Stead, Julia Balog, Steven Pringle

(500-10 P) **Effects of Stationary Phase and Mobile Phase Modifiers on Reversed-Phase Polypeptide Selectivity** CORY E MURACO, MilliporeSigma, Hillel Brandes

TECHNICAL PROGRAM

(500-11 P) **Identification of Serum Biomarkers of Triple Negative Breast Cancer Using Ultra-High Performance Liquid Chromatography/Quadrupole Time-of-Flight Mass Spectrometry-Based Metabolomics Method** LIXIAN LI, Chongqing Cancer Hospital & Institute & Cancer Center, Weiqi Nian, Xiaodong Zheng, Haiwei Zhang, Lin Yi, Qi Zhou, Changhai Lin, Wanyan Tang N/A

(500-12 P) **Analysis of Ionophore Antimicrobial Occurrence in Livestock Water Recycling (LWR)-Treated Dairy Manure** JEROD HURST, University at Buffalo, The State University of New York, Josh Wallace, Diana S Aga

(500-13 P) **Comparative Study of ClO_2 and O_3 as Oxidants for Degrading Environmental Contaminants** MD ABDUL HOQIE, Middle Tennessee State University, Ngee Sing Chong, Sushma Appala

(500-14 P) **Efficient Adsorption of Hemoglobin from Aqueous Solutions by Hybrid Monolithic Cryogel Column** BURCU ÖNAL, Aksaray University, Nuray Yılmaz Baran, Özlem Arslan, Koray Çelik, Mehmet Odabaşı, Ömür Acet N/A

(500-15 P) **Method for Estimating Oxidative Stress by Quantifying 8-isoprostane in Urine Using UPLC-MS/MS** DEBI JO RHYNER, Oak Ridge Institute for Science and Education, James McGuffey, Lanqing Wang, Benjamin Blount

POSTER SESSION — Session 510

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Magnetic Resonance in Biological and Nano Materials

Monday Morning, Exposition Floor, Aisle 2500-2600

(510-1 P) **Structure and Membrane Contacts of HIV Fusion Peptide (HFP) Studied by Solid-State Nuclear Magnetic Resonance (NMR)** LIHUI JIA, Michigan State University

(510-2 P) **Probing Acyl Chain Protrusion of Membranes by Paramagnetic Enhancement of 2H Relaxation** SHUANG LIANG, Michigan State University, David Weliky

(510-3 P) **NMR Based Metabolic Profiling, Immunohistochemistry and Scanning and Transmission Electron Microscopy Analysis of Ischemia Reperfusion Injury Induced Acute Kidney Injury** TAFADZWA CHIHANGA, Miami University, Qing Ma, Prasad Devrajan, Michael Kennedy

(510-4 P) **Impact of As-Synthesized Ligands and Low-Oxygen Conditions on Silver Nanoparticle Surface Functionalization** KATHRYN JOHNSTON, University of Pittsburgh, Ashley Smith, Lauren Marbella, Jill Millstone

(510-5 P) **NMR and Mechanistic Analysis of Regioselective Synthesis of Novel Bi- and Tri-Heterocycles** MARTÍN S FAILLACE, INFIQC, Walter J Peláez, Noelia M Ceballos, Gustavo A Argüello

(510-6 P) **Compact NMR Spectroscopy and Chemometrics for Quality Control of Gasoline** MARIO HENRIQUE MONTAZZOLLI KILLNER, State University of Londrina, Jarbas J Rohwedder, Luiz A Colnago

POSTER SESSION — Session 520

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Pharmaceuticals

Monday Morning, Exposition Floor, Aisle 2500-2600

(520-1 P) **High Sensitivity CZE-ESI-MS Investigations and Applications** EMILY AMENSON, University of Notre Dame, Norman J Dovichi, Liangliang Sun

(520-2 P) **Selection of Aptamers for Microcystin Using Quantum Dot-Assisted Capillary Electrophoresis SELEX** JEFFREY GUTHRIE, Eastern Michigan University, Mariah Brito, Celeste Rousseau

(520-3 P) **Sensitive and Fast Characterization of Site-Specific Protein Glycosylation with Capillary Electrophoresis- Electrospray Ionization-Mass Spectrometry** YANYAN QU, University of Notre Dame, Liangliang Sun, Guijie Zhu, Zhenbin Zhang, Norman J Dovichi

(520-4 P) **Ultrafast Chiral Separations for High Throughput Enantiopurity Analysis of Pharmaceutical Drugs and Intermediates** CHANDAN BARHATE, University of Texas at Arlington, Erik Regalado, Christopher Welch, Daniel Armstrong

(520-5 P) **Differentiation of MabSelect SuRe Sepharose Resin from Other Resin Analytes by Near Infrared (NIR) and Visible Spectroscopy** ZHENG YANG, Pfizer

(520-6 P) **Hydrophilic Interaction Liquid Chromatographic Determination of Glimepiride in Pharmaceutical Formulations** YUEGANG ZUO, University of Massachusetts Dartmouth, Si Zhou, Pengxiao Zuo Zuo, Yiwei Deng

POSTER SESSION — Session 530

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Sampling and Sample Preparation: MS, SPE, and SPME

Monday Morning, Exposition Floor, Aisle 2500-2600

(530-1 P) **Optimization of an Innovative Sampling Method for Air Sampling of Semi Volatile Organic Compounds** ILARIA FERRANTE, Markes International, Boris Lazaroz, Marianne Stranger, Frederick Maes, Marc Lor, Eddy Goelen, Adrian Covaci, Massimo Santoro, Nicola Watson, Chris Hall

(530-2 P) **Method Validation for the Thermal Desorption (TD)–GC–MS Analysis of PAHs in Air** ILARIA FERRANTE, Markes International, Massimo Santoro, Caroline Widdowson, Nicola Watson, Chris Hall

(530-3 P) **Automated On-Line SPE-LC/MS/MS Method for Perfluorinated Compounds in Water Samples** FREDRICK D FOSTER, Gerstel, Inc., Jacqueline Whitecavage, John Stuff, Edward Pfannkoch

(530-4 P) **Dispersive Solid-Phase Extraction and In-Vial Filtration as a Simplified Clean-Up for Ethylphenols Determination in Red Wines** ARIEL R FONTANA, Instituto de Biología Agrícola Mendoza (IBAM) UNCuyo-CONICET, Rubén Bottini

(530-5 P) **Withdrawn**

(530-6 P) **Sampling and Analysis of Airborne Polar Compounds by Solid-phase Microextraction/fast Gas Chromatography** MICHELA GASPERINI, DANI Instruments, Stefano Dugheri, Alessandro Bonari, Ilenia Pompilio, Christian Sabatini, Giulio Arcangeli, Nicola Mucci, Alessandro Casilli, Conor Sullivan, Moira Zanaboni

(530-7 P) **Benefits of a Novel Automated SPME Technology for the Detection of Environmental Pollutants at Trace Level in Water** MANUELA BERGNA, Thermo Fisher Scientific, Giulia Riccardino, Tommaso Albertini, Flavio Bedini, Fausto Pigozzo, Jason Cole, Lori Dolata

(530-8 P) **Application of High Efficient Concentrator for Sample Preparation** GARY GU, LabTech, Inc., Xiaohui Zhang, Liping Su, Jianwei Guo, Xingang Xie

(530-9 P) **Automation of EPA Method 525.2 - Determination of Organic Compounds in Drinking Water** MICHAEL TANNER, J2 Scientific, Jeff Wiseman, Jennifer Salmons

(530-10 P) **Analysis of 25-Hydroxyvitamin D2/D3 in Serum by Cleanert SLE Plates Couple with LC-MS/MS** SUZI QIN, Bonna-Agela Technologies, Qun Wang , Wan Wang, Warren Chen

(530-11 P) **Reducing Run Time and Solvent Usage with EPA Method 3640A (Gel-Permeation Cleanup) Using a New Column Packing Material** JENNIFER SALMONS, J2 Scientific, Michael Tanner, Jeff Wiseman

(530-12 P) **Organochlorine-Pesticides, Polychlorinated Biphenyls, and Polybrominated Diphenyl Ethers: An Automated Approach to Sample Preparation with Aquatic Biological Tissue Matrices** MICHAEL TANNER, J2 Scientific, Leticia Brown, Jeff Wiseman, Jennifer Salmons

(530-13 P) **Analysis of 25-Hydroxyvitamin D2/D3 in Whole Blood Microsampling by Cleanert PEP MicroPlates Couple with LC-MS/MS** SIEN ZHAN, Beijing Obstetrics and Gynecology Hospital, Yanhong Zhai, Xiaomei Jiang, Yan Jia, Suzi Qin, Zzheng Cao

POSTER SESSION **Session 540**

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Separation Science
Monday Morning, Exposition Floor, Aisle 2500-2600

(540-1 P)	**Synthesis and Characterization of Hexafluoracetylacetonate-Based Magnetic Ionic Liquids** STEPHEN A PIERSON, Iowa State University, Jared L Anderson
(540-2 P)	**Rapid Extraction and Analysis of Living Bacterial Cells Using Magnetic Ionic Liquid Solvents** JEFFREY A PURSLOW, Iowa State University, Kevin D Clark, Jared L Anderson
(540-3 P)	**Modification of Core-Shell Silica Particles with a Carbonaceous Layer for HPLC** JOSEPH R EZZO, SUNY Buffalo, Luis A Colon
(540-4 P)	**Rejection of Commonly Used Electrolyte in Asymmetric Flow Filed Flow Fractionation: Effects of Membrane Molecular Weight Cutoff Size, Fluid Dynamics and Valance of Electrolytes** THILAK KUMARA MUDALIGE, US FDA, Sean W Linder, Haiou Qu
(540-5 P)	**Characterization of Biopolymers Using Microchannel Asymmetrical Flow FFF** ROBERT REED, Postnova Analytics Inc., Soheyl Tadjiki, Roland Welz, Tony Pfaffe, Florian Meier, Roland Drexel, Thorsten Klein
(540-6 P)	**Trace Metal Preconcentration in Urine Using Modified Rice Hull Adsorbents** KUN LIU, Missouri University of Science and Technology, Jesse Liu, Casey Burton, Ariel R Donovan, Yongbo Dan, Honglan Shi
(540-7 P)	**Development of a Novel Bipolar Electrochemically Generated Fluorescence Based Detection Method for Microchip Electrophoresis** MANJULA B WIJESINGHE, University of Kansas, Dulan B Gunasekara, Susan M Lunte
(540-8 P)	**In Situ Chitin Isolation from Body Parts of a Centipede and Lysozyme Adsorption Studies** ÖZLEM ARSLAN, Aksaray University, Esra Bulut, İhsan Alacabey, Murat Kaya, Mehmet Odabaşı N/A

MONDAY, MARCH 6, 2017 AFTERNOON

AWARDS **Session 550**

The LCGC Lifetime in Achievement and Emerging Leader in Chromatography Awards
arranged by Laura Bush, LCGC & Spectroscopy

Monday Afternoon, Room W183a
Laura Bush, LCGC & Spectroscopy, Presiding

1:30		**Introductory Remarks - Laura Bush**
1:35		**Presentation of the 2017 LCGC Lifetime Achievement in Chromatography Award to Pat Sandra, Research Institute for Chromatography, by Laura Bush, LCGC & Spectroscopy**
1:40	(550-1)	**Evolution of Peak Capacity in Liquid Chromatography** PAT SANDRA, Research Institute for Chromatography
2:15	(550-2)	**Capillary LC with Sub-2 Micron Particles: Effects of Column Packing Conditions on Column Morphology and Efficiency** JAMES WALLACE JORGENSON, University of North Carolina at Chapel Hill, Justin Godinho, Arved Reising, Ulrich Tallarek
2:50	(550-3)	**High-Resolution Capillary LC/MS-MS in Structural Elucidation and Measurements of Biologically Important Glycans** MILOS V NOVOTNY, Indiana University, John D Benktander, Stefan Gaunitz, Solomon T Gizaw, Guozhang Zou
3:25		**Recess**
3:40		**Presentation of the 2017 LCGC Emerging Leader in Chromatography Award to Deirdre Cabooter, KU of Leuven, by Laura Bush, LCGC & Spectroscopy**
3:45	(550-4)	**Selectivity and Efficiency in Liquid Chromatography: How To Get the Best of Both Worlds** DEIRDRE CABOOTER, KU Leuven
4:20	(550-5)	**Some Speculations on the Ideal Chromatography System: Quo Vadis HPLC?** GERT DESMET, Vrije Universiteit Brussel

AWARDS **Session 560**

The SEAC - Charles N Reilley Award and Royce W Murray Awards
arranged by Hector Abruna, Cornell University

Monday Afternoon, Room W183b
Shelley D Minteer, University of Utah, Presiding

1:30		**Introductory Remarks - Shelley D Minteer**
1:35		**Presentation of the 2017 SEAC -Charles N Reilley Award to Juan M Feliu, University of Alicante, by Shelley D Minteer, SEAC President**
1:40	(560-1)	**Single Crystal Reactivity as In-Situ Analytical Characterization Tool of Platinum Surfaces** JUAN M FELIU, University of Alicante
2:15	(560-2)	**New Views of Platinum Surface Electrochemistry** MARC KOPER, Leiden University
2:50	(560-3)	**Themodynamic Studies of Electrochemical Interphases: Application to Platinum Single Crystal Electrodes** VICTOR CLIMENT, University of Alicante, Ricardo Martinez-Hincapie, Paula Sebastian-Pascual, Juan M Feliu
3:25		**Recess**
3:40		**Presentation of the 2017 SEAC - Royce W Murray Award to Joaquin Rodriguez Lopez, University of Illinois at Urbana-Champaign, by Shelley D Minteer, SEAC President**
3:45	(560-4)	**Versatile Electrochemical Probes for Emerging Concepts in Energy Materials** JOAQUIN RODRIGUEZ LOPEZ, University of Illinois at Urbana-Champaign
4:20	(560-5)	**Electrochemistry of Nanobubbles** HENRY WHITE, University of Utah, Sean R German, Martin A Edwards, Qianjin Chen

SYMPOSIUM **Session 570**

ACS-DAC - Advances in Biomolecule Quantitation by Mass Spectrometry
arranged by Karen W Phinney, National Institute of Standards and Technology (NIST)

Monday Afternoon, Room W178b
Karen W Phinney, National Institute of Standards and Technology (NIST), Presiding

1:30		**Introductory Remarks - Karen W Phinney**
1:35	(570-1)	**Diagnostic Protein Quantitation in Patient Biopsies Using Mass Spectrometry** WEI-LI LIAO, NantOmics, Chao Gong, Fabiola Cecchi, Todd Hembrough
2:10	(570-2)	**Improving Our Understanding of Vitamin D Metabolism with LC-MS/MS: Unveiling Biology, Increasing Throughput** ANDY HOOFNAGLE, University of Washington
2:45	(570-3)	**High-Throughput, High-Precision Protein Assays Via Mass Spectrometry: Longitudinal Measurement of Protein Biomarker Panels in Dried Blood Spots** LEIGH ANDERSON, SISCAPA Assay Technologies, Morteza Razavi, Matt Pope, Terry W Pearson
3:20		**Recess**
3:35	(570-4)	**Trumping the Enzymes: Breaking Down Walls to Quantify Enzyme Activity for Patient Care** WILLIAM ORRIN SLADE, LabCorp, Christopher Shuford, Russell P Grant
4:10	(570-5)	**Strategies for Protein Biomarker Quantitation** KAREN W PHINNEY, National Institute of Standards and Technology (NIST), David Bunk, Eric Kilpatrick, Mark Lowenthal, Nicole Schneck, Illarion Turko

SYMPOSIUM **Session 580**

Cellular Respiration (Breath-Based) Metabolomics: In Vitro Links to Living Systems for Toxicology, Food Safety, Infection, Pharmaceutical Production and Metabolism Diagnostics
arranged by Joachim Dieter Pleil, US Environmental Protection Agency and Jane E Hill, Dartmouth College

Monday Afternoon, Room W179a
Joachim Dieter Pleil, US Environmental Protection Agency, Presiding

1:30		**Introductory Remarks - Joachim Dieter Pleil and Jane E Hill**
1:35	(580-1)	**Overview of In Vitro Cellular Respiration (Gas-Phase) Analysis as a Complement to Systemic In Vivo Human Metabolome Discovery** JOACHIM PLEIL, US Environmental Protection Agency
2:10	(580-2)	**New Technologies in Infection Diagnostics: Linking the Volatile Cell Metabolome to Breath-Based Diagnostics Using Innovative Analytical Tools** JANE HILL, Dartmouth University N/A
2:45	(580-3)	**Diagnostic Assessment for Food Safety: Detecting Adverse Changes in Packaged Meats and Perishable Products** JONATHAN BEAUCHAMP, Fraunhofer IVV

3:20		**Recess**
3:35	(580-4)	**Online Monitoring and Diagnostics of In Vitro Processes for Production of Pharmaceuticals** JENS HERBIG, IONICON Analytik, Rene Gutmann, Gerald Striedner, Markus Luchner
4:10	(580-5)	**In Vitro Toxicity Assessment Technique for Volatile Substances Using Cytochrome P450 Isozyme-Specific Metabolic Pathways** BRETT ROBERT WINTERS, University of North Carolina at Chapel Hill, Michelle M Angrish, Michael Madden, Ariel Wallace

SYMPOSIUM **Session 590**

Frontiers in Sensors: From Ultrasensitive to Single Molecule Devices
arranged by Justin Gooding, The University of New South Wales
and Antonella Mazur, American Chemical Society

Monday Afternoon, Room W179b
Justin Gooding, The University of New South Wales, Presiding

1:30		**Introductory Remarks - Justin Gooding and Antonella Mazur**
1:35	(590-1)	**Nanostructured Microelectrodes as Ultrasensitive Biomolecular Sensors** SHANA KELLEY, University of Toronto
2:10	(590-2)	**New Directions with Ultra-Small and Ultra-Thin Chemical Ion Sensors** ERIC BAKKER, University of Geneva
2:45	(590-3)	**Single Nucleotide Discrimination with a Novel Nanopore** YI-TAO LONG, East China University of Science and Technology
3:20		**Recess**
3:35	(590-4)	**Measuring Small Molecule Interactions with Membrane Proteins** NJ TAO, Arizona State University
4:10	(590-5)	**Towards Single Molecule Sensors** JUSTIN GOODING, The University of New South Wales

SYMPOSIUM **Session 600**

Integration of Liquid Chromatography and Mass Spectrometry in Proteomics
arranged by Ying Ge, University of Wisconsin-Madison and Amanda B Hummon, University of Notre Dame

Monday Afternoon, Room W181a
Ying Ge, University of Wisconsin-Madison, Presiding

1:30		**Introductory Remarks - Ying Ge and Amanda B Hummon**
1:35	(600-1)	**Submicrometer Particles in Top-Down Proteomics** MARY J WIRTH, Purdue University, Yiyang Zhou
2:10	(600-2)	**Direct HIC-MS Analysis of Antibodies and Antibody-Drug Conjugates** ANDREW ALPERT, PolyLC Inc.
2:45	(600-3)	**A Promising Alternative to SWATH: Ionstar for In-Depth, Large-Scale and Reproducible Quantification with High Accuracy/Precision and <1% Missing Data** JUN QU, SUNY-Buffalo
3:20		**Recess**
3:35	(600-4)	**Exploring the Proteomic Changes Resulting from Nutrient Restriction in Colorectal Cancer** AMANDA B HUMMON, University of Notre Dame
4:10	(600-5)	**Novel Multi-Dimensional LC/MS Developments in Top-Down Proteomics** YING GE, University of Wisconsin-Madison

SYMPOSIUM **Session 610**

It's Legal! Now What? The State of Sample Analysis in the Era of Legal Cannabis
arranged by Paul Winkler, Sciex

Monday Afternoon, Room W181b
Paul Winkler, Sciex, Presiding

1:30		**Introductory Remarks - Paul Winkler**
1:35	(610-1)	**The Rocky Mountain High Experience** HEATHER KRUG, Colorado Dept of Public Health and Environment
2:10	(610-2)	**Challenges, Gains, and Moving Forward to Competent Cannabis Testing** SUSAN AUDINO, SA Audino & Associates, LLC
2:45	(610-3)	**State Regulatory Laboratory Perspective** KEITH WEGNER, Colorado Department of Agriculture
3:20		**Recess**
3:35	(610-4)	**Establishing Quality Assurance in the Medical Cannabis Industry** ROBERT WILLIAM MARTIN, Association of Commercial Cannabis Laboratories
4:10	(610-5)	**Advanced Techniques for Unknown Screening of Cannabis Samples** PAUL WINKLER, Sciex

SYMPOSIUM **Session 620**

Method Development Strategies for Two-Dimensional Liquid Chromatography Separations – Small and Large Molecules
arranged by Dwight Stoll, Gustavus Adolphus College

Monday Afternoon, Room W181c
Dwight Stoll, Gustavus Adolphus College, Presiding

1:30		**Introductory Remarks - Dwight Stoll**
1:35	(620-1)	**Two Dimensional Liquid Chromatography Applied to the Characterization of Monoclonal Antibodies and Antibody-Drug Conjugates** KOEN SANDRA, Research Institute for Chromatography, Pat Sandra, Isabel Vandenheede, Gerd Vanhoenacker, Mieke Steenbeke
2:10	(620-2)	**Determination of Peak Purity for Therapeutic Peptides with Two-Dimensional Liquid Chromatography (2D-LC)** LIANJIA MA, Bristol-Myers Squibb, Bahar Demirdirek, George Wang, Landon Greene, William Fish
2:45	(620-3)	**Effects of Method Development Decisions on the Quantitative Performance of Two-Dimensional Liquid Chromatography** DWIGHT R STOLL, Gustavus Adolphus College, David C Harmes, Tyler Brau, Eli Larson, Ray Sajulga, Sarah C Rutan, Peter W Carr
3:20		**Recess**
3:35	(620-4)	**Two Dimensional Liquid Chromatography for mAb's: Expanding the Analytical Toolkit for Product and Process Characterization** DOUGLAS RICHARDSON, Merck, Jun Heo, Yuetian Chen, Shenjiang Yu, Daisy Richardson, David Pollard
4:10	(620-5)	**Method Validation and Robustness Assessment of a Two-Dimensional Liquid Chromatography Method for Pharmaceutical Materials: A Focus on Special Considerations Unique to 2D-LC from a Quality Control Perspective** SAMUEL H YANG, Genentech, Jenny Wang, Kelly Zhang

SYMPOSIUM **Session 630**

Nanomedicine, From Diagnostics to Large Animal Therapy
arranged by Weihong Tan, University of Florida and Raoul Kopelman, University of Michigan

Monday Afternoon, Room W184a
Raoul Kopelman, University of Michigan, Presiding

1:30		**Introductory Remarks - Raoul Kopelman and Weihong Tan**
1:35	(630-1)	**Spherical Nucleic Acids as Potent Immunomodulation Agents for Cancer Therapy** CHAD A MIRKIN, Northwestern University
2:10	(630-2)	**Graphitic Nanocapsules Based Raman Bioimaging and Analysis** ZHUO CHEN, Hunan University
2:45	(630-3)	**Nanotherapy and Nanodiagnostics: From Cancer to Heart Disease** RAOUL KOPELMAN, University of Michigan, Chang Heon Lee, Jeff Folz, Hyungki Yoon, Janggun Jo, Joel Tan, Uma Avula, Xueding Wang, Jerome Kalifa
3:20		**Recess**
3:35	(630-4)	**DNA Nanostructures and Logic Circuits: Biological Recognition and Function** WEIHONG TAN, University of Florida
4:10	(630-5)	**Nanomedicine for Functional Imaging and Therapy of Brain** PARAS PRASAD, SUNY at Buffalo

Author and presider lists are available at www.pittcon.org

SYMPOSIUM **Session 640**

Novel Approaches in Optical Biological Imaging and Bioanalytical Analysis
arranged by Stephane Petoud, University of Geneva

Monday Afternoon, Room W184bc
Stephane Petoud, University of Geneva, Presiding

1:30		**Introductory Remarks - Stephane Petoud**
1:35	(640-1)	**Ln3+ Based Nanoparticles and Near-Infrared (NIR) Quantum Dots for Optical Bioimaging** FRANK VAN VEGGEL, University of Victoria
2:10	(640-2)	**Near-Infrared Emitting Lanthanine-Containing Metallacrowns as Novel Imaging Agents for Optical Cellular Biological Imaging** STEPHANE PETOUD, University of Geneva, Svetlana V Eliseeva, Ivana Martinic, Tu N Nguyen, Evan R Trivedi, Chun Y Chow, Vincent L Pecoraro
2:45	(640-3)	**Optical Biological Imaging with Autophagic Silicon Nanoparticles** MICHAEL J SAILOR, University of California, San Diego
3:20		**Recess**
3:35	(640-4)	**Design of New Tunable MOF Platforms for NIR Lanthanide Luminescence** NATHANIEL L ROSI, University of Pittsburgh, Tianyi Luo, Chong Liu, Patrick Muldoon, Stephane Petoud, Svetlana Eliseeva
4:10	(640-5)	**Reactivity Approaches to Selective Molecular Imaging in Biological Systems** CHRISTOPHER J CHANG, University of California Berkeley

SYMPOSIUM **Session 650**

The Twenty-Eighth James L Waters Symposium on Genomic Analysis Technologies
arranged by Adrian C Michael, The Pittsburgh Conference and David R Walt, Tufts University

Monday Afternoon, Room W183c
Adrian C Michael, The Pittsburgh Conference, Presiding

1:30		**Introductory Remarks - Adrian C Michael and David R Walt**
1:35	(650-1)	**Taking a Discovery From an Academic Laboratory and Building a Transformative Company** DAVID R WALT, Tufts University
2:10	(650-2)	**Next-Generation Sequencing** JAY FLATLEY, Illumina
2:45	(650-3)	**Application of Next Generation Sequencing to Pan-Ethnic Carrier Screening** JIM GOLDBERG, Counsyl
3:20		**Recess**
3:35	(650-4)	**Non-Invasive Prenatal Testing as the First Major "Liquid Biopsy" Clinical Application** DANIEL S GROSU, LabCorp
4:10	(650-5)	**Circulating Cell-Free Nucleic Acids and Early Cancer Detection** ALEX M ARAVANIS, GRAIL

WORKSHOPS **Session 660**

The Current State of the Art in (U)HPLC Columns
arranged by Jason Anspach and Lawrence Loo, Phenomenex

Monday Afternoon, Room W176c
Jason Anspach, Phenomenex, Presiding

1:30		**Introductory Remarks - Jason Anspach and Lawrence Loo**
1:35	(660-1)	**Possibilities and Limitations of State-of-the-Art UHPLC Columns and Systems** KEN BROECKHOVEN, Vrije Universiteit Brussel, Sebastiaan Eeltink, Gert Desmet
2:05	(660-2)	**Optimum Experimental and Instrumental UHPLC Conditions for Real World Separation Challenges** A CARL SANCHEZ, Phenomenex, Inc., Jason Anspach, Tivadar Farkas
2:35	(660-3)	**Recent Trends in the Use of Superficially Porous Particle Technology** DAVID SCOTT BELL, MilliporeSigma
3:05		**Recess**
3:20	(660-4)	**The Recent Development of Superficially Porous Particles for Separation of Small Molecules and Large Biomolecules** WU CHEN, Agilent Technologies, Anne Mack
3:50	(660-5)	**Bridging the Gap Between Gas and Liquid Chromatography: Making Low-Density Fluid Chromatography Successful** FABRICE GRITTI, Waters Corporation

ORGANIZED CONTRIBUTED SESSIONS **Session 670**

A Symphony of Neurochemical Tools
arranged by Andrea Jaquins-Gerstl, University of Pittsburgh and Kathryn M Nesbitt, University of Michigan

Monday Afternoon, Room W184d
Andrea Jaquins-Gerstl, University of Pittsburgh, Presiding

1:30	(670-1)	**Investigation of Neurochemical Alterations in Obesity Prone Rats Using In Vivo Microdialysis Coupled with Benzoyl Chloride Derivatization and LC/MS** KATHRYN M NESBITT, University of Michigan, Carrie R Ferrario, Robert T Kennedy N/A
1:50	(670-2)	**Flexible Microelectrode Arrays for Monitoring and Manipulating Neuronal Dynamics** ANNA BELLE, Lawrence Livermore National Laboratory, Angela Tooker, Vanessa Tolosa, Allison M Yorita, Kye Lee, Jeanine Pebbles, Aaron Sperry
2:10	(670-3)	**Impaired Dopamine Release and Uptake in Chemotherapy-Treated Rats** SAM VINCENT KAPLAN, Pinnacle Technology Inc.
2:30	(670-4)	**Insulin Increases Striatal Cholinergic Interneuron Excitability and Enhances Dopamine Release via nAChRs: Implications for Food Reward** JYOTI C PATEL, NYU School of Medicine, Melissa A Stouffer, Christian R Lee, Paul Wikovsky, Robert P Machold, Catherine A Woods, Kenneth D Carr, Margaret E Rice
2:50		**Recess**
3:05	(670-5)	**Factors Affecting Chronic Intracortical Electrode Function** TARUN SAXENA, Duke University, Lohitash Karumbaiah, Ravi Bellamkonda
3:25	(670-6)	**Increasing the Speed and Sensitivity of Neurotransmitter Analysis by LC-MS** JAMES P GRINIAS, Rowan University, Jenny-Marie Wong, Robert T Kennedy
3:45	(670-7)	**New Tools for Rapid Clinical Neurochemical Monitoring** CHI LENG LEONG, Imperial College London, Michelle L Rogers, Sally A Gowers, Erika L Varner, Andrea Jaquins-Gerstl, Kathryn M Nesbitt, Adrian M Nightingale, Sharon L Jewell, Anthony J Strong, Adrian C Michael, Xize Niu, Martyn G Boutelle
4:05	(670-8)	**Striatal Mapping of High-Resolution Voltammetric Recording of Dopamine and μ-Opiate Receptors** ANDREA JAQUINS-GERSTL, University of Pittsburgh, Kathryn M Nesbitt, Seth Walters, Adrian C Michael

ORGANIZED CONTRIBUTED SESSIONS **Session 680**

Field Spectroscopic Analysis: Environmental, Pharmaceutical and Security Applications
arranged by Richard A Crocombe, PerkinElmer and Mark A Druy, Galvanic Applied Sciences

Monday Afternoon, Room W176a
Richard A Crocombe, PerkinElmer, Presiding

1:30	(680-1)	**Military Applications of Portable GC-MS** PAULINE E LEARY, Smiths Detection, Gary L Beals
1:50	(680-2)	**Field Analysis of Agricultural Commodities and Products** FRANKLIN ELLWOOD BARTON, LLS Instruments, Inc., James A de Haseth
2:10	(680-3)	**Deep-Ultraviolet (DUV) Raman Spectroscopy for the Standoff Detection of Threat Materials** LUISA THERESA MARIA PROFETA, Alakai Defense Systems, Kenneth R Pohl, Robert Babnick, Rob Waterbury
2:30	(680-4)	**Use of a Field Portable GC/MS with Solid Phase Microextraction and Needle Trap Sampling for VOC and SVOC Analysis** CHARLIE SCHMIDT, PerkinElmer, William Hahn
2:50		**Recess**
3:05	(680-5)	**A Novel FTIR / GC-FTIR Analyzer for Environmental Monitoring** MARTIN LEE SPARTZ, Prism Analytical Technologies, Inc., Charles M Phillips, Anthony S Bonanno, Peter P Behnke, Eddie D Wyatt
3:25	(680-6)	**Drug Detection Using Smartphones** TRAVIS KISNER, Detectachem
3:45	(680-7)	**Portable Forensic Mass Spectrometry** GLEN PAUL JACKSON, West Virginia University, Korina Menking-Hoggatt, Taylor Krivenki
4:05	(680-8)	**A New High Performance, Portable NIR Spectrometer - Design and Applications** RICHARD JACKSON, Galaxy Scientific Inc., Qian Wang

TECHNICAL PROGRAM

ORAL SESSIONS — Session 690

Environmental Analysis of Metals and Nanomaterials

Monday Afternoon, Room W175a
Denise Wilkins, Bechtel Bettis, Inc., Presiding

1:30	(690-1)	**Determination of Heavy Metals in Natural Water by Solid Phase Microextraction Coupled with Inductively Coupled Plasma Mass Spectrometry** AHMAD ROHANI FAR, The University of Toledo, Amila M Devasurendra, Lidia B Rodriguez, Niloofar Alipourasiabi, Jon R Kirchhoff
1:50	(690-2)	**Uptake of Nanoparticles by Fresh Water Algae Using Single Cell ICP-MS** CHADY STEPHAN, PerkinElmer, Ruth Merrifield, Jamie Lead
2:10	(690-3)	**Certification of a New Low-Level Hexavalent Chromium Standard Reference Material in a Soil Matrix** JAMES HENDERSON, Duquesne University, Patrick Benecewicz, Weier Hao, Logan Miller, Matt Pamuku, Jennifer Crawford, Sue Lu, Teressa Switzer, Vasile Furdui, Pam Wee, Francine Walker, Bob O'Brien, HM Skip Kingston
2:30	(690-4)	**Portable Low-Cost Instrumentation for Field-Ready Electrochemical Environmental Analysis** DREW FARRELL, University of Arizona, Michael L Heien
2:50		**Recess**
3:05	(690-5)	**Ionophore-Grafted Carbon Fiber Microelectrodes as On-Site Trace Metal Voltammetric Sensor** JORDAN HOLMES, University of South Carolina, Thushani Siriwardhane, Pavithra Pathirathna, Parastoo Hashemi
3:25	(690-6)	**Rapid Detection of Toxic Heavy Metals with Boron Doped Diamond Microelectrode Arrays** CORY ALLEN RUSINEK, Fraunhofer USA, Michael F Becker, Robert Rechenberg
3:45	(690-7)	**Ordered Gold Nanorod Assembly with Surface Plasmon Enhanced Fluorescence Manipulation** ZHONG MEI, University of Texas at San Antonio, Liang Tang N/A
4:05	(690-8)	**Sulfur Role in Atlantic Oysters and Mediterranean Mussels as Sea Pollutant Biomarkers. A XANES Based Study** MANUEL VALIENTE, Universitat Autonoma De Barcelona, Carlo Marini, Marta Avila, Maria A Subirana, Wojciech Olszewski, Montserrat Lopez-Mesas, Laura Simonelli

ORAL SESSIONS — Session 700

Environmental Analysis of Pesticides, Hydrocarbons, and Other Organics

Monday Afternoon, Room W175b
Paulina Piotrowski, The Pennsylvania State University, Presiding

1:30	(700-1)	**The Analysis of Polar Ionic Pesticides by Ion-exchange Chromatography Tandem Mass Spectrometry: The Possible Solution to a Longstanding Problematic Analysis?** JOHN EDWARD MADDEN, Thermo Fisher Scientific, Richard J Fussell, Stuart Adams, Jonathan Guest, Jonathan R Beck, Frans Schoutsen
1:50	(700-2)	**On-Site, Thin-Film Microextraction for the Quantitation of Anthropogenic Pollutants in Surface Waters Using Portable GC-MS Instrumentation Validated by Comparison to Benchtop Methods** JONATHAN J GRANDY, University of Waterloo, Hamed Piri-Moghadam, Fardin Ahmadi, Janusz Pawliszyn
2:10	(700-3)	**Direct Comparison of Atmospheric Pressure Ionization Gas Chromatography-Triple Quadrupole Mass Spectrometry, Electron Ionization-Triple Quadrupole Mass Spectrometry, and Atmospheric Pressure Ionization Gas Chromatography-Quadrupole Time of Flight Mass Spectrometry to High Resolution Mass Spectrometry** CONNER STULTZ, Penn State University, Frank Dorman, Eric Reiner, Liad Haimovici, Rhys Jones, Karl Jobst, Kari Organtini, Sladjana Besevic
2:30	(700-4)	**US EPA 625 Method Validation Study for Automated SPE Disk Application** ZOE GROSSER, Horizon Technology, Alicia Cannon, Michael Ebitson
2:50		**Recess**
3:05	(700-5)	**The Characterization of Flowback Hydrocarbons Towards the Fingerprinting of Environmental Contamination Events** PAULINA K PIOTROWSKI, Pennsylvania State University, Frank Dorman, Joseph E Binkley, Christina N Kelly, Jonathan Byer
3:25	(700-6)	**PAHs in Whole Water Using a New Method** MICHAEL EBITSON, Horizon Technology, Alicia Cannon, Zoe Grosser
3:45	(700-7)	**Analysis of 58 Volatile Organic Compounds in the Water Intake of the Panama Canal Using a Tandem GC System** SALLEY DARA, Inficon
4:05	(700-8)	**Measurement of Formaldehyde Pollution in Ambient Air** ISMO KAUPPINEN, Gasera Ltd., Sauli Sinisalo, Tuomas Hieta

ORAL SESSIONS — Session 710

GC/MS - Polymers, Plastics, and Environmental (Half Session)

Monday Afternoon, Room W175c
Barbara Manner, The Pittsburgh Conference, Presiding

1:30	(710-1)	**Selected Applications Reveal Strategies for Material and Polymer Characterization with Pyrolysis-Gas Chromatography/Mass Spectrometry (PY-GC/MS)** TERRY RAMUS, Diablo Analytical, Dave Randle, Itsuko Iwai, R R Freeman
1:50	(710-2)	**Failure Analysis of Rubber Materials Using Pyrolysis-Gas Chromatography-Mass Spectrometry-Nitrogen Phosphorus Detector (PY-GC/MS/NPD)** DAVE RANDLE, Diablo Analytical, Itsuko Iwai, Terry Ramus, R R Freeman
2:10	(710-3)	**Quantification of Persistent Organic Pollutants in Different Matrices Using Stir-Bar Sorptive Extraction and Isotope Dilution Mass Spectrometry** WEIER HAO, Duquesne University, HM Skip Kingston, Scott Faber, Anthony Macherone, Matt Pomuku, James Henderson
2:30	(710-4)	**Field Analysis of Semi-Volatile Organic Compounds in Waste Water Using Hand-Portable GC-MS and Novel Sampling/Extraction Techniques** TAI VAN TRUONG, Perkin Elmer, Edgar D Lee, Milton L Lee

ORAL SESSIONS — Session 720

Laboratory Management: Automation (Half Session)

Monday Afternoon, Room W175c
Barbara Manner, The Pittsburgh Conference, Presiding

3:05	(720-1)	**Not All Software as a Service (SaaS) is Created Equal: Why SLA Matters More Than Ever** STACEY BREWER, Accelerated Technology Laboratories, Ken Ochi
3:25	(720-2)	**Using a LIMS at a Corporate Food Processing Laboratory to Facilitate Rapid Turnaround and Regulatory Compliance** DUSTIN EBBING, Smithfield Foods, Gene Bartholomew, Sandra Moore, Laura L Williford
3:45	(720-3)	**LIMS: A Critical Tool for Achieving and Maintaining Regulatory Compliance** KEN OCHI, Accelerated Technology Laboratories, Mark Gray
4:05	(720-4)	**Real-Time Monitoring of in Process Laboratory Experimentation and Review of Laboratory Asset and Facility Management Systems** PETAR STOJADINOVIC, Automation Trainer LLC, John Coller, William Herms, Robert Dyer N/A

ORAL SESSIONS — Session 730

LC/MS - General Interest and Others

Monday Afternoon, Room W176b
Eduard Rogatsky, Wadsworth Center, DEHS, Presiding

1:30	(730-1)	**Development of High Throughput LC/MS/MS Method for Analysis of Perfluorooctanoic Acid from Serum, Suitable for Large-Scale Human Bio-Monitoring** EDUARD ROGATSKY, New York State Dept of Health, Colleen O'Hehir, James Daly, Amelie Tedesco, Richard Jenny, Kenneth Aldous
1:50	(730-2)	**Differentiation and Quantitation of Phosphonates Using Ion Chromatography and Triple Quadrupole Mass Spectrometry** LEI CHENG, Nalco Champion, An Ecolab Company, Christopher Durnell, Emerilis Casado-Rivera
2:10	(730-3)	**Clinical Isomer Analysis in Blood Plasma with Ion Mobility – Mass Spectrometry** ROBIN HENDRIKUS JOHANNES KEMPERMAN, University of Florida, Christopher D Chouinard, Nicholas R Oranzi, Allison J Levy, Richard A Yost
2:30	(730-4)	**Quantitative Study of microRNAs by Immobilized DNA-Peptide Probe and Liquid Chromatography-Tandem Mass Spectrometry-Based Quasi-Targeted Proteomics** YUN CHEN, Nanjing Medical University
2:50		**Recess**
3:05	(730-5)	**Separation of Metal Nanoparticles by Ultrathin Layer Chromatography Using Electrospun Nanofibers as the Stationary Phase** YANHUI WANG, The Ohio State University
3:25	(730-6)	**Sample Collection Tubes – A Preanalytical Factor that can Influence Laboratory Developed in Vitro Diagnostic Tests** JASON KIELTYKA, Abbott Laboratories, Maryanne Himmelsbach

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3:45 (730-7) **LC-MS with Cold EI – The New System and Recent Applications** AVIV AMIRAV, Tel Aviv University, Svetlana Tsizin, Boaz Seemann, Tal Alon, Alexander Fialkov

4:05 (730-8) **Agro-Industrial Residues from Physalis Peruviana Calyces as Natural Source of Phytoprostanes and Phenolic Compounds** SONIA MEDINA, Corporación Universitaria Lasallista, Jacinta Collado, Federico Ferreres, Julian Londoño-Londoño, Claudio Jimenez-Cartagena, Alexandre Guy, Thierry Durand, Jean-Marie Galano, Angel Gil-Izquierdo N/A

ORAL SESSIONS — Session 740

Pharmaceutical Analysis and Stability

Monday Afternoon, Room W177
Ashraf Khan, US Pharmacopeia, Presiding

1:30 (740-1) **Novel Method for Determining Shelf-Life Stability of Peptides** JENNIFER LEWIS, FreeThink Technologies, Kenneth C Waterman, Robin Waterman

1:50 (740-2) **A 24 Hour Study on the Stability of Dopamine and Dobutamine Under Laboratory Simulated Neonatal Ward Conditions** BHAVIK PATEL, University of Brighton, Katherine Kirupakaran, Liam Mahoney, Hieke Rabe

2:10 (740-3) **Development of A Stability Indicating RP-HPLC Method for ML-163 Topical Solution for Cats** NILUSHA LT PADIVITAGE, Merial, Abu Rustum

2:30 (740-4) **Adding Mass Detection as an Orthogonal Technique for Improved Confidence in the Analysis of Synthetic Peptides** BROOKE M KOSHEL, Waters Corporation, Robert E Birdsall, Ying Qing Yu, Asish Chakraborty, Joe Fredette, Scott Berger

2:50 **Recess**

3:05 (740-5) **Mass Spectral Accuracy for the Identification of Large Biomolecule Modifications or Adducts** YONGDONG WANG, Cerno Bioscience, Don Kuehl

3:25 (740-6) **Universal Headspace GC Method for the Analysis of Residual Solvents in Pharmaceuticals with Dual FID/NPD Detection** AMY F BIRCH, Boehringer Ingelheim Pharmaceuticals, Inc.

3:45 (740-7) **Analysis of Over-The-Counter Medications and Packaging Using Multi-Step Pyrolysis GC/MS** KAREN D SAM, CDS Analytical

4:05 (740-8) **Investigating the Application of Protein A Modified Capillary-Channel Polymer (C-CP) Polypropylene (PP) Fibers to the Quantitation of Immunoglobulin (IgG) in Complicated Matrices** HUNG TRANG, Clemson University

ORAL SESSIONS — Session 750

Pharmaceutical Characterization

Monday Afternoon, Room W475a
Rob Driscoll, Robatel, Inc., Presiding

1:30 (750-1) **Protein Protection Evaluation with Viscosity Measurement by Fluidicam** CHRISTELLE TISSERAND, Formulaction, Patricia Adamska, Yoann Lefeuvre, Patrick Abgraal, Jim Munhall

1:50 (750-2) **Imaging Cleaved Tablets to Determine API Size and Distribution Metrics From Coatings and Particles – A New Instrument** TIM SMITH, Renishaw, Tim Prusnick, Ken Smith

2:10 (750-3) **A Unifying, Informatics-Based Approach to Life Cycle Management of Impurity Data in Pharmaceutical Development** ALBERT VAN WYK, ACD/ Labs, Colin Read, Dmitry Mityushev, Petr Kandalov

2:30 (750-4) **Evaluation of the Nicotine Particle Size in an Aerosol Formed by an Electronic Cigarette** JESSE LEE PATTERSON, Virginia Commonwealth University, Justin Poklis, Michael Hindle, Joseph M Turner, Carl E Wolf, Alphonse Poklis, Michelle R Peace

2:50 **Recess**

3:05 (750-5) **Evaluation of Barcode Tracking System for Automated Sample Preparation and ICP/ICPSMS Analysis** KEVIN J HAHN, Elemental Scientific Inc., M Paul Field

3:25 (750-6) **Faster and Improved Ease-of-Use Citrate and Phosphate Assays of Pharmaceutical Products** HUA YANG, Thermo Fisher Scientific, Jeffrey Rohrer

3:45 (750-7) **Core-Shell vs. Fully-Porous Particles for High Throughput Analysis** LAWRENCE LOO, Phenomenex, Inc., Jason Anspach, Tivadar Farkas, Mike Chitty, Ismail Rustamov

4:05 (750-8) **Fast Centrifugal Partitioning Chromatography** ROBERT DRISCOLL, Robatel Inc.

ORAL SESSIONS — Session 760

Sampling and Sample Preparation - Liquid Extraction, SPE and Others

Monday Afternoon, Room W475b
Garry J Lynch, Bechtel Marine Propulsion Corporation, Presiding

1:30 (760-1) **Advances in the Development of a Universal Passive Dosimeter** MITCHELL RUBENSTEIN, USAF, Kim Anderson, Glenn Wilson, Kathy Fullerton

1:50 (760-2) **Design of Ni2+-attached O-Carboxymethyl Chitosan Schiff base Complexes for Lysozyme Purification** MEHMET ODABASI, Aksaray University, Omur Acet, Ayfer Menteş N/A

2:10 (760-3) **Development of a New Pressurized Liquid Extraction Method for Extracting Analytes from Fatty Matrices** DOUGLAS E RAYNIE, South Dakota State University, Alicia Douglas Stell, Brittany A Leffler, Shanmugapriya Dharmarajan

2:30 (760-4) **The Analysis of Water for Perfluorinated Compounds Using Automated Solid Phase Extraction** MICHAEL EBITSON, Horizon Technology, Alicia Cannon, William Jones

2:50 **Recess**

3:05 (760-5) **A Novel 3D-Printed IV Piggyback System to Improve Low Glucose Storage of Red Blood Cells** RUIPENG MU, Michigan State University, Dana Spence

3:25 (760-6) **Magnetic Ionic Liquids: Solvents for Nucleic Acid Extraction and Amplification from Nuclease-Rich Samples** KEVIN D CLARK, Iowa State University, Jared L Anderson

3:45 (760-7) **Inter-Laboratory Comparison of Two Thin Film Microextraction Devices as Green Alternatives to an EPA Certified Liquid-Liquid Extraction Method for the Determination of Pesticides in Surface Water Samples** JONATHAN J GRANDY, University of Waterloo, Hamed Piri-Moghadam, Emanuela Gionfriddo, Angel Rodriguez-Lafuente, Heather L Lord, Terry Obal, Janusz Pawliszyn

ORAL SESSIONS — Session 770

Sensors - Bioanalytical

Monday Afternoon, Room W476
Mukul Sonker, Brigham Young University, Presiding

1:30 (770-1) **Highly Sensitive Detection of Small Molecule Markers by Surface Plasmon Resonance Imaging Assisted by Chemical and Enzyme Indicators** GAYAN C PREMARATNE, Oklahoma State University, Zainab Hussain Al Mubarak, Cassandra Rodenbaugh, Lucy Lehoczky, Sadagopan Krishnan

1:50 (770-2) **2D Photonic Crystal Sensor for Phenylpyruvate, An Enzymatic By-Product of Phenylalanine** KYEONGWOO JANG, University of Pittsburgh, Sanford A Asher, W S Horne

2:10 (770-3) **MicroRNA Biosensor Design Strategies to Mitigate Off-Analyte Response** NICHOLAS E LARKEY, Oregon State University, Sean M Burrows

2:30 (770-4) **Development and Characterization of Thiol-Responsive Scintillation Proximity Assay Core-Shell Nanoparticles as Turn-On Biosensors** ZEINAB MOKHTARI, University of Arizona, Isen Andrew Chua Calderon, Colleen M Janczak, Craig A Aspinwall

2:50 **Recess**

3:05 (770-5) **Pi-Pi Stacking of Pyrenecarboxylic Acid with Carboxylated Multiwalled Carbon Nanotubes for Sensitivity Enhancement of Clinical Immunosensors** JINESH NIROULA, Oklahoma State University, Gayan C Premaratne, Seyyed A Shojaee, Don A Lucca, Sadagopan Krishnan

3:25 (770-6) **Development of a Nano-Biosensor for Detection of Methanol in Alcoholic Drinks** NAUMIH NOAH, United States International University-Africa N/A

3:45 (770-7) **A Novel Bioassay Platform Using Silica Core Liposome Shell Microparticles for Ligand Discovery** KENDALL ELIZABETH SANDY, University of Arizona, Jinyan Wang, Mark T Agasid, Craig A Aspinwall

4:05 (770-8) **Coupling of Electrochemical Reactions with Optical Readout at Closed Bipolar Electrode for Chemical Sensing** WEI XU, University of Notre Dame, Kaiyu Fu, Chaoxiong Ma, Paul W Bohn

TECHNICAL PROGRAM

POSTER SESSION — Session 780

All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 1:00 PM to 3:00 PM. Poster sessions are on the Exposition Floor, Aisle 2500-2600. PLEASE NOTE: You cannot get onto the exposition floor until 9:00 AM. Posters that have not been taken down one-half hour after the designated time will be disposed of.

Atomic Spectroscopy - Environmental, Food, Fuels, Metals
Monday Afternoon, Exposition Floor, Aisle 2500-2600

(780-1 P) **Determination of Aluminum, Iron, Calcium, Zinc, and Lead in Commercial Antiperspirants, Using Microwave Digestion and Flame Atomic Absorption Spectrometry (FAAS): Preliminary Results** MARK T STAUFFER, University of Pittsburgh - Greensburg, Elizabeth R Gerda N/A

(780-2 P) **In Search of a Mass Burial Site from the French and Indian War: Preliminary Results for Analysis of Soils for Selected Elements from an Archaeological Excavation near Ligonier, Pennsylvania** MARK T STAUFFER, University of Pittsburgh - Greensburg, Anthony T Boldurian, Justin McKeel, Michael F Jacobyansky, Morgan M Stetson, Samantha L Merz, Alicia Hruby N/A

(780-3 P) **Validation and Application of Online Isotopic Dilution ICPMS (OID-ICPMS) Method for Determination of Trace Elements in Herbal Supplements** OLUJIDE T AKINBO, Butler University, David Cho, Abua Ikem

(780-4 P) **Considerations for the Analysis of Cremated Remains by Inductively Coupled Plasma-Atomic Emission Spectrometry** WILLIAM C WETZEL, Thomas More College, Kelsey L Sparks, Christina A Farwick, Christa A Currie

(780-5 P) **Evaluation of Online Isotopic Dilution Analysis (OIDA) For Determination of Trace Elements in Shrimps** OLUJIDE T AKINBO, Butler University, Jordan Knotts, Abua Ikem

(780-6 P) **Qualitative Analysis of Mineral Elements in Milk Powders Using Laser-Induced Breakdown Spectroscopy (LIBS)** BADER ALFARRAJ, Mississippi State University, Herve K Sanghapi, Chet R Bhatt, Fang Y Yueh, Jagdish P Singh

(780-7 P) **Total Organic Carbon (TOC) Analysis of Soil and Rock Comparing Various Elemental Analysis Techniques** JEFFERY GAST, LECO Corporation, Adam Darling

(780-8 P) **How to Compromise Between ICP-OES Detection Limits and Speed of Analysis?** SANJA ASENDORF, Thermo Fisher Scientific, Nora Bartsch, Matthew Cassap, Maura Rury

(780-9 P) **Oxide Analysis by Pulsed Radio-Frequency Discharge Inductively Coupled Plasma Mass Spectrometry** WEIFENG LI, Xiamen University, Wei Hang

(780-10 P) **Laser Induced Spectroscopy for Quantitative Analysis of Trace Elements in High Pressure CO_2 Enriched Water: An Application to Carbon Sequestration** HERVE K SANGHAPI, Mississippi State University, Jagdish P Singh

(780-11 P) **Analysis of Micronutrients in Soils and Foods with ICP-OES** NICK SPIVEY, PerkinElmer Inc., Kenneth Neubauer, Stan Smith

(780-12 P) **CeO_2 and ZnO Removal from Surface Water Characterized by Single Particle ICP-MS** CHADY STEPHAN, PerkinElmer, Ariel R Donovan, Honglan Shi

(780-13 P) **Environmental Life Cycle of Metal-Based Nanoparticles Assessed by Single Particle - ICP-MS** CHADY STEPHAN, PerkinElmer

(780-14 P) **Gunshot Residue Analysis by Single Particle ICP-MS** CHADY STEPHAN, PerkinElmer, James Ramville, Rodrigo Heringer

(780-15 P) **Withdrawn**

(780-16 P) **Accurate Mercury Measurements in Condensate and Naphtha** JASON P GRAY, AGS Scientific, Inc., Naoko Hishida, Koji Tanida, Tomoaki Watanabe, Alvin Chua

(780-17 P) **Handheld Mercury Monitoring: Atomic Absorption vs Atomic Fluorescence** JASON P GRAY, AGS Scientific, Inc., Koji Tanida, Tomoaki Watanabe, Alvin Chua

(780-18 P) **Advantages of Discrete Technology for EPA 1631E** JASON P GRAY, AGS Scientific, Inc., Koji Tanida, Tomoaki Watanabe, Alvin Chua

(780-19 P) **Withdrawn**

(780-20 P) **Cyanide Analysis from Contaminated Blood Samples via the Indirect Analysis of Silver** JEFFREY ROSENTRETER, Idaho State University

(780-21 P) **Advantages of Flexible Autodilution Systems for ICP OES** NORA BARTSCH, Thermo Fisher Scientific, Sanja Asendorf, Matthew Cassap, Maura Rury

(780-22 P) **Fully Automated Double Channel Analysis for NC/S Determination of Soils and Plants Using an Elemental Analyzer** GUIDO GIAZZI, Thermo Fisher Scientific, Liliana Krotz, Francesco Leone

(780-23 P) **Optimized Helium Gas Consumption for an Elemental Analyzer** GUIDO GIAZZI, Thermo Fisher Scientific, Liliana Krotz, Francesco Leone

(780-24 P) **Improving the Elemental Analysis QC Activity by a Fully Automatic Method** GUIDO GIAZZI, Thermo Fisher Scientific, Liliana Krotz, Francesco Leone, Walter Galotta

(780-25 P) **Withdrawn**

(780-26 P) **High Purity Metal Analysis Using FAST-FIAS Sample Introduction Coupled to ICP-MS** KENNETH NEUBAUER, PerkinElmer Inc., Wim van Bussel, Stephen Mangum

(780-27 P) **AMS (All Matrix Solution) – Is This Technology Needed?** EWA PRUSZKOWSKI, PerkinElmer, Inc., Cynthia Bosnak

(780-28 P) **The Use of ICP-OES for Lubricant Analysis Following ASTM D4951 and D5185** DAVID HILLIGOSS, PerkinElmer, Stan Smith

(780-29 P) **Overcoming Difficult Interferences in Metallurgical Matrices with Reaction Mode ICP-MS** KENNETH NEUBAUER, PerkinElmer Inc., Wim van Bussel, Joerg Michel

(780-30 P) **The Use and Advantages of Attenuation Mode in ICP-OES Analyses** KENNETH NEUBAUER, PerkinElmer Inc., Nick Spivey, Lee Davidowski

(780-31 P) **What Levels of Contaminant Detection are Needed Today in Semiconductor Industry?** EWA PRUSZKOWSKI, PerkinElmer, Inc., Cynthia Bosnak

POSTER SESSION — Session 790

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Drug Discovery
Monday Afternoon, Exposition Floor, Aisle 2500-2600

(790-1 P) **GC-MS, GC-IRD and GC-MS/MS Studies on Functional Group Derivatives Related to 2,3-MDPV and 3,4-MDPV Designer Drugs** YOUNIS ABIEDALLA, Auburn University, Randall Clark, Jack DeRuiter

(790-2 P) **Development of GFC Column for Antibody Drug Analysis** LEAH BLOCK, Shodex, Showa Denko America, Junya Kato, Hirotsugu Nakanishi, Asuka Toda, Ron Benson

(790-3 P) **LC/MS Analysis of Various Compounds Having Amino or Ammonium Groups with Using a New Polymer-Based HILIC Column** LEAH BLOCK, Shodex, Showa Denko America, Junji Sasuga, Daisuke Maruyama, Ron Benson

(790-4 P) **Analytical Evaluation of Slow Sustained Release Copper Ions in Aqueous Media from the Prepared Natural Rubber Network Structure** FAHIMA MOSAAD HELALY, National Research Centre (NRC) N/A

(790-5 P) **Advanced Multipump Setups for LC-MS Applications in the Biopharma QC Environment** MARTIN SAMONIG, Thermo Fisher Scientific, Sabrina Patzelt, Martin Ruehl, Frank Steiner, Remco Swart

(790-6 P) **The Use of Orthogonal Methods to Monitor the Major Degradation Products of Cannabidiol (CBD)** CATHARINE LAYTON, Waters Corporation, Jacquelyn Runco, Andy Aubin

(790-7 P) **Vitreous In Vitro Model to Assess the Stability of Disulfides and Trisulfides in Ocular Antibody Fab Molecules** Y DIANA LIU, Genentech, George Tsui, Heidi Zhang, Yan Chen

POSTER SESSION — Session 800

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Environmental Air Quality
Monday Afternoon, Exposition Floor, Aisle 2500-2600

(800-1 P) **Effect of Smoking Cigarettes on PM2.5 Concentration and Distribution in Indoor Air** ZIPEI LIU, Tianjin Foreign Languages School, Ying Yang, Wen Gu, Yi He

(800-2 P) **What are the Best Sampling Techniques for the Analysis of VOCs and SVOCs in Air Using Thermal Desorption?** ILARIA FERRANTE, Markes International, Massimo Santoro, Caroline Widdowson, Nicola Watson, Chris Hall

(800-3 P) **Tracking the Distribution of Atmospheric PAHs within a North Patagonia Region, Argentina** ANDRÉS HUGO ARIAS, CONICET, Melina M Orazi, Ana L Oliva, Jorge E Marcovecchio N/A

(800-4 P) **Hydrogen vs. Helium: Evaluation of Carrier Gases for Chlorinated Contaminant Testing by GC/ECD** RAMKUMAR DHANDAPANI, Phenomenex, Matthew Trass, Kristen Parnell, Timothy Anderson, Sean Orlowicz

(800-5 P) **Biological and Chemical Characterization of Ship Diesel Engine- and Wood Combustion Aerosol Emissions: Multi-Omics Characterization of Aerosol-Exposed Lung Cells and Chemical Profile of the Emissions** RALF ZIMMERMANN, Joint MS Centre/HICE, Gunnar Dittmar, Tamara Kanashova, Jeroen Buters, Sebastian Öder, Hanns Paur, Marco Dilger, Carsten Weiss, Horst Harndorf, Benjamin Stengel, Karsten Hiller, Sean Sapcariu, Kelly BéruBé, Anna Wlodarcyzk, Bernhard Michalke, Tobias Krebs, Michael Kelbg, Thorsten Streibel, Erwin Karg, Jürgen Schnelle-Kreis, Martin Sklorz, Jürgen Orasche, Patrick Richthammer, Laarnie Müller, Johannes Passig, Christian Radischat, Suchi Smita, Heikki Lamberg, Maija-Riitta Hirvonen, Olli Sippula, Jorma Jokiniemi

POSTER SESSION — Session 810

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LC - Pharmaceutical

Monday Afternoon, Exposition Floor, Aisle 2500-2600

(810-1 P) **Maleate Salt Detection Using UV vs. CAD Detection** CHADWICK ADKINS, Mayne Pharma, Kimberly Tillapaugh, Jessica Netzer

(810-2 P) **Critical Comparison of Solute Focusing Methods in the Second Dimension of On- Line Two-Dimensional Liquid Chromatography** DWIGHT R STOLL, Gustavus Adolphus College, Eli Larson, Carston Dammann, Tyler Brau, Hayley Lhotka, Lena N Jeong, Ray Sajulga, Sarah C Rutan, Peter W Carr

(810-3 P) **A Fast On-Line Automatic Derivatiization Method for Determination of PB-1503 (A Drug Candidate) in Extended Release Capsule Formulation by HPLC** PENNY JIANG, Prinbury Biopharm Co., Ltd, David Cao, Terry Zheng, Yun Tian, David Zhao, Eric Tsai

(810-4 P) **Analytical Method Effectiveness** JIANHUA LI, Bayer Consumer Health, Lucy Zhao, Kangping Xiao

(810-5 P) **Analysis of the Conjugated Drug-Delivery Polymer, Polyglutamate-Doxorubicin by the Latest Advanced Multi-Detector GPC Systems** MARK R POTHECARY, Malvern Instruments, Wei Wong, Carrie Schindler

(810-6 P) **Simultaneous Analysis of Dual Active Ingredients in a Pharmaceutical Formulation Containing Metformin by a Single Ion Pair UPLC Method** JOSE G RIVERA, Merck, Brian Ferrer, Lisandra Santiago-Capeles, Wilfredo Maldonado, Lee Klein, Pedro L Lopez, Maria T Cruañes

(810-7 P) **A New Adsorbent for Solid Phase Extraction of Phthalates Based on Ionic Liquids Modified Graphene Oxide Composites** GUOYUE SHI, East China Normal University, Xinguang Zhou, Zhang Yinglu

(810-8 P) **A Rapid Novel HPLC Method for Estimation of Cobicistat and Identification of Degradation Compounds** RAJENDRA B KAKDE, Rashtrasant Tukadoji Maharaj Nagpur University, Rahul P Chilbule, Kamalesh Gadpayale N/A

POSTER SESSION — Session 820

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Proteomics and Metabolomics

Monday Afternoon, Exposition Floor, Aisle 2500-2600

(820-1 P) **Proteomic Analysis of Right-Side and Left-Side Colon Cancer Tumors** KATELYN R LUDWIG, University of Notre Dame, Amanda B Hummon

(820-2 P) **Investigating Aging and Ovarian Cancer Metastasis Sites with Quantitative Mass Spectrometry-Based Proteomics of Murine Adipose Tissue** PETER ETHAN FEIST, University of Notre Dame, Elizabeth Loughran, Sharon Stack, Amanda B Hummon

(820-3 P) **Enhanced Coverage of the Molecular Content of Selected Single Cells from Rat Islets of Langerhans by Combining MALDI MS and CE-MS** MARINA C PHILIP, University of Illinois at Urbana-Champaign, Meng Qi, Troy J Comi, Stanislav S Rubakhin, Jonathan V Sweedler

(820-4 P) **Integrated Miniaturized Device Coupled to MRM-MS for Fast Detection of Phosphopeptides from Biological Samples** JINGREN DENG, Virginia Tech, Lulia M Lazar

(820-5 P) **Adjustable In-Source Fragmentation of Metabolites and Lipids in Laser Desorption/Ionization from Silicon Nanopost Arrays** ANDREW KORTE, George Washington University, Akos Vertes

(820-6 P) **NOBCChE Poster Awardee - Novel Tags for Enhancing Sample Multiplexing** JASMINE DANIELS, Texas Southern University, Christina King, Rena AS Robinson

POSTER SESSION — Session 830

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Quality/QA/QC

Monday Afternoon, Exposition Floor, Aisle 2500-2600

(830-1 P) **Accurate and Precise Sulfur Analysis by Combustion Method** GUIDO GIAZZI, Thermo Fisher Scientific, Liliana Krotz, Francesco Leone

(830-2 P) **Evaluation of DART (Direct Analysis in Real Time), Coupled to a Portable Mass Detector for Rapid Cleaning Validation** CHRIS HENRY, Waters Corporation

(830-3 P) **Influence of Different Glass Types Upon the Recovery Rates of Different Analytes in LC and LC-MS** MATTHIAS KAMUF, Agilent Technologies, Adam Harder, Amanda Kaspick

(830-4 P) **Withdrawn**

(830-5 P) **Analytical Strategies for Inorganic Contamination Analysis in the Semiconductor Industry** CHADY STEPHAN, PerkinElmer, Ewa Pruszkowski, Kenneth Ong N/A

(830-6 P) **A Novel Gas Flow Meter Which Eliminates the Need for Recalibration Returns** PAUL TRIPP, Agilent Technologies

(830-7 P) **Study Conducted of Essential ISO Standards for Liquid Handling and Pipetting** PETAR STOJADINOVIC, Automation Trainer LLC, John Coller, William Herms, Robert Larkin, Robert Nugent

(830-8 P) **Overcome the Challenges to Implement IR/NIR Analytical Solutions** KANGMING MA, Eurofins QTA

POSTER SESSION — Session 840

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Sensors

Monday Afternoon, Exposition Floor, Aisle 2500-2600

(840-1 P) **Electrokinetic-Assisted SPR Sensing with Kretchmann-Configuration** KYOHEI TERAO, Kagawa University, Shohei Kondo, Nobumitsu Miyanishi, Hidekuni Takao, Fusao Shimokawa

(840-2 P) **Low Power Miniaturized Helium Discharge Photoionization Detectors for Highly Sensitive Vapor Detection** HONGBO ZHU, University of Michigan, Menglian Zhou, Jiwon Lee, Robert Nidetz, Katsuo Kurabayashi, Xudong Fan

(840-3 P) **Multiplexed, Flexible and Portable Plasmonic Biosensing On-Chip** LAURA SAGLE, University of Cincinnati, Jie He, Sarah Unser

TECHNICAL PROGRAM

POSTER SESSION **Session 850**

All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 1:00 PM to 3:00 PM. Poster sessions are on the Exposition Floor, Aisle 2500-2600. PLEASE NOTE: You cannot get onto the exposition floor until 9:00 AM. Posters that have not been taken down one-half hour after the designated time will be disposed of.

UV/VIS Applications
Monday Afternoon, Exposition Floor, Aisle 2500-2600

(850-1 P) **Micelles - Nanometric Containers for Extractions and Colorimetric Determination** KATARZYNA KŁUCIŃSKA, University of Warsaw, Emilia Stelmach, Paulina Bartosińska, Anna Kisiel, Krzysztof Maksymiuk, Agata Michalska

(850-2 P) **Photometric Study of Enzymatic Reaction by Glucose Oxidase Immobilized on Iron Oxide Fine Particles** MATASHIGE OYABU, Kanazawa Institute of Technology Math&Sci., Takeshi Chaki, Keisuke Itoh, Yu Hirose

(850-3 P) **Multianalyte Determination of Aluminum and Iron (and Other Metals) in Transparent Membranes, Using Visible Spectrophotometry and Chemometrics: Preliminary Attempts and Results** MARK T STAUFFER, University of Pittsburgh - Greensburg, Brandin M Adams, William E Weller N/A

(850-4 P) **Simultaneous Determination of Iron and Aluminum by Spectrophotometry and Partial Least Squares Regression (PLSR), PART 2: Investigations of Xylenol Orange, Chrome Azurol S, and Pyrocatechol Violet, as Potential Simultaneous Chelators** N/A MARK T STAUFFER, University of Pittsburgh - Greensburg, Danyaal Alam, Nicholas A Frankos

(850-5 P) **Syntheses, Characterization, Catalytic and Anti Microbial Study of Some Lanthanide Complexes with Kynurenic Acid** RASHMIKANT A PATEL, Mun. Arts & UB Science College

(850-6 P) **Alternative Optics for Standoff Spatial Heterodyne Raman Spectroscopy** ASHLEY N ALLEN, University of South Carolina Columbia, Kevin Dudley, Patrick Barnett, J Chance Carter, S Michael Angel

Monday Afternoon

Tuesday Morning

TUESDAY, MARCH 7, 2017 MORNING

AWARDS **Session 860**

The Coblentz Society/ABB - Bomem-Michelson Award
arranged by Yukihiro Ozaki, Kwansei Gakuin University

Tuesday Morning, Room W183a
Yukihiro Ozaki, Kwansei Gakuin University, Presiding

8:30 **Introductory Remarks - Yukihiro Ozaki**

8:35 **Presentation of the 2017 Coblentz Society/ABB - Bomem-Michelson Award to Keith A Nelson, Massachusetts Institute of Technology, by Henry L Buijs, ABB**

8:40 (860-1) **Terahertz Spectroscopy: New Nonlinear Effects and THz ESR** KEITH A NELSON, Massachusetts Institute of Technology

9:15 (860-2) **High-Throughput 2D IR Spectroscopy Platform Yields Insights into Solvent Dynamics in Solution Mixtures** AMBER KRUMMEL, Colorado State University

9:50 (860-3) **Nonlinear Spectroscopy with Shaped Femtosecond Pulses and Its Application to Biomedical Imaging** MARCOS DANTUS, Michigan State University

10:25 **Recess**

10:40 (860-4) **Two-Dimensional Coherent Photocurrent Excitation Spectroscopy in Perovskite Solar Cells** CARLOS SILVA, Université de Montréal

11:15 (860-5) **Chiral Detection and Manipulation of Cryogenically Buffered Polyatomic Molecules** DAVID PATTERSON, Harvard University

AWARDS **Session 870**

The Pittsburgh Analytical Chemistry Award
arranged by Fu-Tyan Lin, The Pittsburgh Conference

Tuesday Morning, Room W183b
Fu-Tyan Lin, The Pittsburgh Conference, Presiding

8:30 **Introductory Remarks - Fu-Tyan Lin**

8:35 **Presentation of the 2017 Pittsburgh Analytical Chemistry Award to Janusz Pawliszyn, University of Waterloo, by Melinda R Stephens, Chair, Society for Analytical Chemists of Pittsburgh**

8:40 (870-1) **Development of Analytical Devices and Procedures Consistent with Green Chemistry** JANUSZ PAWLISZYN, University of Waterloo

9:15 (870-2) **Revisiting Chromatographic Quantitation in a Digital Age** PURNENDU K DASGUPTA, University of Texas Arlington, Akinde F Kadjo

9:50 (870-3) **Capillary Zone Electrophoresis for Bottom-Up Proteomics** NORMAN J DOVICHI, University of Notre Dame, Xiaojing Yan, Liangliang Sun

10:25 **Recess**

10:40 (870-4) **Instrumentation and Mechanism of Rapid Evaporative Ionization Mass Spectrometry** ZOLTAN TAKATS, Imperial College London

11:15 (870-5) **Capillary Liquid Chromatography: Active Temperature Control and Neuroscience Applications** STEPHEN G WEBER, University of Pittsburgh, Stephen R Groskreutz, Yangguang Ou, Anthony R Horner, Erin P Shields, Khanh Thieu Ngo, Rachael E Wilson, Michael T Rerick, Jenna DeVivo

SYMPOSIUM **Session 880**

How Did That Get in My Food? Determination of Process Induced Food Contaminants
arranged by Wendy Young and Lowri deJager, FDA

Tuesday Morning, Room W178b
Wendy Young, FDA, Presiding

8:30 **Introductory Remarks - Wendy Young and Lowri deJager**

8:35 (880-1) **Overview of the Analysis and Detection of Process Induced Contaminants in Foods at the FDA** SUSAN GENUALDI, FDA, Lowri deJager

9:10 (880-2) **LC-MS/MS Detection of MCPD and Glycidyl Esters in Infant Formula and Other Complex Food Matrices** JESSICA KATHLEEN LEIGH, US Food & Drug Administration, Shaun MacMahon

9:45 (880-3) **"Desired and Undesired Molecules": Formation and Analysis of Aroma-Active Compounds and Food-Borne Toxicants During Food-Processing** MICHAEL GRANVOGL, TU Munich

10:20 **Recess**

10:35 (880-4) **Analysis of Furosine as a Processing Marker in Tomato Products by Ion-Pairing Sample Preparation with RP-LC-MS-MS** RIC R GONZALEZ, ConAgra Foods, Inc., Indarpal Singh

11:10 (880-5) **4-Methyl Imidazole - From Formation and Analysis to Toxicology and Regulatory Status** JENNIFER WEIST, The Hershey Company

SYMPOSIUM **Session 890**

In Vivo Neurochemistry: Faster, Smaller, More Sensitive Methods for Real-Time Neuroanalysis
arranged by B Jill Venton, University of Virginia and Andrew G Ewing, University of Gothenberg

Tuesday Morning, Room W179a
B Jill Venton, University of Virginia, Presiding

8:30 **Introductory Remarks - B Jill Venton and Andrew G Ewing**

8:35 (890-1) **Sensing Neurotransmitters with Electrochemical Tools** R MARK WIGHTMAN, University of North Carolina at Chapel Hill

9:10 (890-2) **Dopamine Storage, One Vesicle at a Time: Effects of Mind-Altering Drugs on Vesicle Content Inside Cells In Vitro and In Vivo** ANDREW G EWING, University of Gothenburg and Chalmers University, Xianchan Li, Jelena Lovric, Soodabeh Majdi, Lin Ren, Anna Larsson, Johan Dunevall, Neda Najafinobar, Amir Mohammadi, Daixin Ye

9:45	(890-3)	**Novel Carbon-Based Sensors for the Next Generation of In Vivo Voltammetric Measurements** LESLIE A SOMBERS, North Carolina State University
10:20		**Recess**
10:35	(890-4)	**New Insights into DA from New Kinetic Models** ADRIAN C MICHAEL, University of Pittsburgh, Elaine Marie Robbins, Rebecca Wu
11:10	(890-5)	**Tunable CNT Fiber and Yarn Microelectrodes** B JILL VENTON, University of Virginia, Cheng Yang

SYMPOSIUM **Session 900**

JAIMA - Analytical Solutions for Biopharma
arranged by Satoshi Nomura, Japan Analytical Instruments Manufacturers' Association (JAIMA)

Tuesday Morning, Room W183c
Satoshi Nomura, Japan Analytical Instruments Manufacturers' Association (JAIMA), Presiding

8:30		**Introductory Remarks - Satoshi Nomura**
8:35	(900-1)	**Luminescent Sensors and Imaging Technologies for Drug Discovery** TAKEAKI OZAWA, The University of Tokyo
9:10	(900-2)	**Workflow Solutions for the Analytical Separation of mAbs** ATIS CHAKRABARTI, Tosoh Bioscience LLC
9:45	(900-3)	**HPLC-MS/MS for Separation and Detection of Intact Proteins** KEVIN A SCHUG, University of Texas at Arlington
10:20		**Recess**
10:35	(900-4)	**Introducing the Latest Bio-Pharmaceutical Application by ICP-QQ** AMIR LIBA, Agilent Technologies
11:10	(900-5)	**Development of Innovative Supply System of Reliable Analytical Standards Purity Determined by AQARI (Accurate QuAntitative NMR with Internal Reference Substance)** MIURA TORU, Wako Pure Chemical Industries, Ltd., Naoki Sugimoto, Takako Suematsu, Kevin K Millis, Yuko Yamada

SYMPOSIUM **Session 910**

Multimodal Chemical Imaging Approaches
arranged by Jacob T Shelley, Rensselaer Polytechnic Institute

Tuesday Morning, Room W179b
Jacob T Shelley, Rensselaer Polytechnic Institute, Presiding

8:30		**Introductory Remarks - Jacob T Shelley**
8:35	(910-1)	**Intraoperative Tumor Boundary Monitoring by Multimodal Non-Linear Imaging** JUERGEN POPP, Leibniz Institute of Photonic Technology
9:10	(910-2)	**Multimodal Physical and Chemical Imaging Using an Atomic Force Microscopy/ Infrared Spectroscopy/Mass Spectrometry Platform** GARY J VAN BERKEL, Oak Ridge National Laboratory
9:45	(910-3)	**Correlated Chemical Imaging of Mechanisms of Spatiotemporal Organization in Communities of the Opportunistic Pathogen *Pseudomonas aeruginosa*** PAUL W BOHN, University of Notre Dame, Nameera Baig, Sneha Polisetti, Sage Dunham, Nydia Morales-Soto, Joshua Shrout, Jonathan V Sweedler
10:20		**Recess**
10:35	(910-4)	**New Approaches for Multimodal Ambient Imaging of Biological Samples** JULIA LASKIN, Pacific Northwest National Laboratory
11:10	(910-5)	**Towards Simultaneous Elemental and Molecular Chemical Imaging Through Optical and Mass Spectrometries** JACOB T SHELLEY, Rensselaer Polytechnic Institute, Courtney L Walton, Sunil P Badal

SYMPOSIUM **Session 920**

Novel Uses of Mass Spectrometry and Ion Mobility in Pharmaceuticals: From Small Molecules to Monoclonal Antibodies
arranged by Iain Campuzano, Amgen and Joseph A Loo, University of California, Los Angeles

Tuesday Morning, Room W181c
Iain Campuzano, Amgen, Presiding

8:30		**Introductory Remarks - Iain Campuzano and Joseph A Loo**
8:35	(920-1)	**MS and Ion Mobility to Characterize Protein-Ligand Interactions** JOSEPH A LOO, University of California Los Angeles
9:10	(920-2)	**Enhancing Metabolomic Analyses with Automated Solid Phase Extractions and Ion Mobility-Mass Spectrometry** ERIN S BAKER, Pacific Northwest National Laboratory, Xueyun Zheng, Noor Aly, Kristin Burnum-Johnson, Daniel Orton, Jennifer Kyle, Cameron Casey, Young-Mo Kim, Erika Zink, Matthew Monroe, Yehia Ibrahim, Justin Teeguarden, Thomas Metz, Richard D Smith
9:45	(920-3)	**The Use of Molecular Modelling for Ion Mobility Drift Time and Fragment Ion Prediction in Ion Mobility and Mass Spectrometry** CRIS LAPTHORN, University of Greenwich, Frank Pullen, Babur Chowdhry, Patricia Wright, Trevor Dines, George Perkins, Yanira Heredia
10:20		**Recess**
10:35	(920-4)	**Inhibition of Lactate Export Paradoxically Transforms Mitochondria from Synthesis Organelles to Oxidative Machines: Insights from a MIMOSA-Based Fluxomics Screen** DARREN S DUMLAO, Pfizer, John S Janiszewski, Richard G Kibbey, Tiago Alves, Mary A Piotrowski, Julie Keefer, Maggie A Basile, Peter Wells
11:10	(920-5)	**Native-MS and Ion Mobility to High-Throughput MS: From Diastereoisomers to Large Monoclonal Antibodies and Beyond** IAIN CAMPUZANO, Amgen

SYMPOSIUM **Session 930**

Single Nanoparticle Electrochemistry
arranged by Patrick Robert Unwin, University of Warwick and Henry White, University of Utah

Tuesday Morning, Room W181a
Patrick Robert Unwin, University of Warwick, Presiding

8:30		**Introductory Remarks - Patrick Robert Unwin and Henry White**
8:35	(930-1)	**Single-Particle Photoanode: Super-Resolution Reaction Imaging and Sub-Particle Photocurrent Mapping** PENG CHEN, Cornell University
9:10	(930-2)	**Optical Readouts of Nanoscale Electrochemistry** KATHERINE WILLETS, Temple University
9:45	(930-3)	**Collision Induced Single Nanoparticle Electro-Dissolution** BO ZHANG, University of Washington
10:20		**Recess**
10:35	(930-4)	**Spatio-Temporal Electrochemical Analysis of Single Nanoparticles** PATRICK ROBERT UNWIN, University of Warwick, Minkyung Kang, Cameron Bentley, Jon Ustarroz
11:10	(930-5)	**Resistive Pulse Delivery of Single Nanoparticles to Electrochemical Interfaces** HENRY WHITE, University of Utah, Kim McKelvey, Yulun Zhang, Martin A Edwards, Jeffrey E Dick, Allen J Bard

SYMPOSIUM **Session 940**

Terahertz Spectroscopy and Imaging for Biomedical and Pharmaceutical Applications
arranged by Katsuhiro Ajito, NTT Device Technology Labs
and Zachary Taylor, University of California, Los Angeles

Tuesday Morning, Room W181b
Katsuhiro Ajito, NTT Device Technology Labs, Presiding

8:30		**Introductory Remarks - Katsuhiro Ajito and Zachary Taylor**
8:35	(940-1)	**Intermolecular Fingerprint Imaging of Pharmaceutical Cocrystals Using Pulse and CW Terahertz Spectroscopy Systems** KATSUHIRO AJITO, Nippon Telegraph and Telephone Corporation, Masahito Nakamura, Takuro Tajima, Michko Seyama
9:10	(940-2)	**Application of Terahertz Time-Domain Polarimetry in Non-Destructive Evaluation (NDE) of Thin Films** M HASSAN ARBAB, SUNY, Stony Brook
9:45	(940-3)	**Advances in Terahertz Imaging of Human Breast Carcinomas and Tumor Phantoms** MAGDA EL-SHENAWEE, University of Arkansas, Tyler Bowman, Alec Walter, Yuhao Wu, John Gauch, Lucas Campbell, Narasimhan Rajaram, Keith Bailey

TECHNICAL PROGRAM

10:20		**Recess**
10:35	(940-4)	**Tissue Water Content Mapping Using THz Imaging** ZACHARY TAYLOR, University of California Los Angeles, Shijun Sung, Neha Bajwa, Skyler Selvin, Yong Hu, Sophie Deng, Maie St. John, Erik Dutson, Warren Grundfest
11:10		**Panel Discussion - Future Terahertz Spectroscopy and Imaging for Biomedical and Pharmaceutical Applications**

WORKSHOPS — Session 950

Analytical Information Markup Language (AnIML) Data Standard in Action
arranged by Burkhard Schaefer, BSSN Software GmbH

Tuesday Morning, Room W176c
Burkhard Schaefer, BSSN Software GmbH, Presiding

8:30		**Introductory Remarks - Burkhard Schaefer**
8:35	(950-1)	**Vendor-Neutral Analytical Data Exchange Using the AnIML Format** BURKHARD SCHAEFER, BSSN Software GmbH
9:05	(950-2)	**Analytical Data Longevity and Management for Regulatory Compliance Using AnIML Format and Cloud Technologies.** VIKTOR IASSINSKII, Sciex
9:35	(950-3)	**Withdrawn**
10:05		**Recess**
10:20	(950-4)	**MS Data, AnIML, and the Web: Migrating MS Data Curation, Searching, and Visualization** MICHAEL BRADEN, ChemAxon
10:50	(950-5)	**AnIML Empowers Long-Term Storage and Archiving of GC and LC Raw and Meta Data** PETER MAIER, Scion Instruments
11:20	(950-6)	**Filling the Automation and Enterprise Gap with Data and Device Standardization** CARMEN CONDRAU, SiLA Consortium, Devon L Johnston

ORGANIZED CONTRIBUTED SESSIONS — Session 960

Electrochemistry at Nanoscale Structures
arranged by Mei Shen, University of Illinois, Urbana-Champaign and Takashi Ito, Kansas State University

Tuesday Morning, Room W184a
Mei Shen, University of Illinois, Urbana-Champaign, Presiding

8:30	(960-1)	**Electrochemically-Assisted Click Reaction for Spatially-Controlled Functionalization of Cylindrical/Conical Pores in Track-Etched Poly(ethylene terephthalate) Membranes** TAKASHI ITO, Kansas State University, Herman Coceancigh, Gargi S Jagdale, Lane A Baker
8:50	(960-2)	**Microinjection into Microalgal Cells** HITOMI MUKAIBO, University of Rochester, Andrew R Durney, Leah C Frenette, Xuewen Zhou, Xixi Zhang, Todd D Krauss
9:10	(960-3)	**Suspended Nanoparticle Photocatalytic Activity and Their Colloidal Properties** MARIO ALPUCHE AVILES, University of Nevada, Reno, Krishna K Barakoti, Pushpa Chhetri
9:30	(960-4)	**Electroanalytical Characterization of Surface Properties and Reactivity of Engineered Nanoparticles by Collision Electrochemistry** SILVANA ANDREESCU, Clarkson University
9:50		**Recess**
10:05	(960-5)	**Stripping Analysis of Electrophoretically Deposited Nanoparticles and Nanoalloys** FRANCIS ZAMBORINI, University of Louisville, Stacy Allen, Dhruba K Pattadar
10:25	(960-6)	**Controlling Electron Transfer in Nanoparticles and Protein Complexes** DAVID E CLIFFEL, Vanderbilt University, David Crisostomo
10:45	(960-7)	**Scanning Electrochemical Microscopy (SECM): A Tool to Study Real-Time Microbial Metabolic Exchange** DIPANKAR KOLEY, Oregon State University
11:05	(960-8)	**Detection of Ionic Neurotransmitters at Biological Nanostructures via Nanopipet Electrode** MEI SHEN, University of Illinois at Urbana-Champaign, Zizheng Qu, Justin DesLaurier, Theresa M Welle

ORGANIZED CONTRIBUTED SESSIONS — Session 970

Quantum Cascade Lasers - A Different Approach to Infrared Spectroscopy?
arranged by Ellen Miseo, Hamamatsu and Don Kuehl, RedShift BioAnalytics

Tuesday Morning, Room W184bc
Ellen Miseo, Hamamatsu, Presiding

8:30	(970-1)	**Novel and Prospective Spectroscopic Applications for Quantum Cascade Lasers** DANIELA P MALDONADO, Hamamatsu
8:50	(970-2)	**Protein Characterization by Microfluidic Modulation Spectroscopy** DON KUEHL, RedShift BioAnalytics, Rick Sharp, Eugene Ma, Jinhong Kim, Chip Marshall
9:10	(970-3)	**Widely Tunable Quantum Cascade Lasers: Technology and Applications** ANISH GOYAL, Block Engineering/MEMS, Jeff Socha, Zhu Ninghui, David Kelley, Huwei Tan, Petros Kotidis
9:30	(970-4)	**Second Generation QCL Microscopy: Pushing the Limits of Infrared Chemical Imaging** JEREMY A ROWLETTE, Daylight Solutions, Edeline Fotheringham, David Nichols, Ben Bird, Miles Weida, Justin Kane, Allen Priest, David Arnone, William Chapman, David Caffey, Paul Larson, Tim Day
9:50		**Recess**
10:05	(970-5)	**Discrete Frequency Infrared Imaging Using Quantum Cascade Lasers** KEVIN YEH, University of Illinois at Urbana-Champaign, Rohit Bhargava
10:25	(970-6)	**Recent Advances in QCL Based Sensing of Liquids and Gases** BERNHARD LENDL, TU Wien
10:45	(970-7)	**Laser Direct IR Imaging - A New Paradigm for Mid-IR Spectroscopic Imaging** CHARLES HOKE, Agilent Technologies, Yuri Beregovski, Andrew Ghetler, Christopher Moon, Richard Tella, Zhen Zhang
11:05	(970-8)	**Ultra-High Resolution QCL Measurements in Under-Resolved Narrow Line Width Molecules** PETER G ZEMEK, MKS, Jim Y Hongke N/A

ORAL SESSIONS — Session 980

Advancements in Environmental Monitoring

Tuesday Morning, Room W175a
Mary Ellen McNally, EI DuPont de Nemours and Company, Presiding

8:30	(980-1)	**Open Source Instruments and Chemical Analysis Methods for a Citizen Science Based Environmental Monitoring Initiative** JAY M PATEL, MonitorPollution.org, Mayank Patel, Arno Bouwens, Jamie Isidro, Robert S Phillips
8:50	(980-2)	**Fieldwork Determination of Design Priorities for Point-of-Use Water Sensors for Use in Resource-Limited Environments** MICHAEL S BONO, Massachusetts Institute of Technology, Sydney B Beasley, Emily B Hanhauser, A John Hart, Rohit Karnik, Chintan Vaishnav
9:10	(980-3)	**Microcystins Release and Removal from Cyanobacteria During Oxidation Monitored by UFLC-MS/MS** HAITING ZHANG, Missouri University of Science and Technology, Yongbo Dan, Craig D Adams, Honglan Shi, Yinfa Ma, Todd Eichholz
9:30	(980-4)	**Towards an Automated Untargeted Method for Microcystins Analysis Using Two Dimensional Liquid Chromatography and Ion Mobility/Quadrupole Time of Flight Mass Spectrometry** KENNETH JOHN ROSNACK, Waters Corporation, Adam Ladak, Xavier Ortiz
9:50		**Recess**
10:05	(980-5)	**Measuring Ultrafines and Black Carbon- The Next Challenge in Air Quality** JOHN ROBERT SAFFELL, Alphasense Ltd., Simone Hochgreb, Boies Adam, Nishida Robert
10:25	(980-6)	**Comprehensive Two-Dimensional Gas Chromatography for Trace Analysis of Environmental Contaminants: Thermal- and Valve-based Approaches** HALEIGH BOSWELL, University of Waterloo, Matthew Edwards, Tadeusz Górecki
10:45	(980-7)	**Evaluation of a New Gas Chromatograph Incorporating a Novel Flow Path, Connection Technology, and Heating Approach for the Analysis of Semivolatile Organic Compounds** MATTHEW GIARDINA, Agilent Technologies, Joe Hedrick, Eric Denoyer, Thomas Szakas, Jim Gearing
11:05	(980-8)	**Practical Guidance to Increase Productivity, Reproducibility, and Efficiency with Microwave Extraction for Environmental Labs** AMIT JOSHI, Milestone

ORAL SESSIONS **Session 990**

Analysis of Drugs for Forensics Applications (Half Session)

Tuesday Morning, Room W175b
Gary W Yanik, PDR-Separations, Presiding

8:30 (990-1) **Portable Chromatography for Field Analysis of Suspicious Substances** RICH PAUL BUDEK, Cromite

8:50 (990-2) **Rapid and Robust Analysis of Counterfeit and Adulterated Pharmaceuticals Using a High Performance GC-TOFMS** JOHN RORABECK, Andrews University, David E Alonso, Kai Pham, Joseph E Binkley

9:10 (990-3) **What's Really in My Drug Sample? A Multiplatform Workflow for the War Against Synthetic Drugs of Abuse** DAVID E ALONSO, LECO Corporation, Joseph E Binkley

9:30 (990-4) **Modifications of DART-MS for Enhanced Detection of Forensic Compounds** EDWARD SISCO, National Institute of Standards and Technology (NIST), Thomas P Forbes

ORAL SESSIONS **Session 1000**

Analytical Education (Half Session)

Tuesday Morning, Room W175b
Gary W Yanik, PDR-Separations, Presiding

10:05 (1000-1) **MacGyver Chemistry** EUGENE SMITH, FAU-Honors College

10:25 (1000-2) **Development, Implementation, and Impact of the Scientific Reasoning Tool in an Instrumental Analysis Laboratory Course** ANNA M DONNELL, University of Cincinnati

10:45 (1000-3) **Creating Undergraduate Awareness About Analytical Chemistry Careers and Research** CHARLES A LUCY, University of Alberta

11:05 (1000-4) **E-Lab Script: An Approach to Enhance the Experience of Analytical Laboratory Classes** BHAVIK PATEL, University of Brighton, Charlotte Sarmouk, Christopher Baker

ORAL SESSIONS **Session 1010**

Applications of Microspectroscopy for Materials Characterization

Tuesday Morning, Room W175c
Cecil Dybowski, University of Delaware, Presiding

8:30 (1010-1) **Microspectroscopy of Nanoparticle Contaminants in Water** LINDSAY C ELLIOTT, NIST/UMD, Kuo-Tang Liao, Wenqi Zhu, Henri Lezec, Samuel M Stavis

8:50 (1010-2) **Imaging Carbon Dioxide Reduction on Single Nanoparticles** PRASHANT K JAIN, University of Illinois

9:10 (1010-3) **Nonlinear Optical Stokes Ellipsometric Microscopy: Imaging Local Orientation in Turbid Media** JAMES RW ULCICKAS, Purdue University, Fengyuang Deng, Changqin Ding, Garth J Simpson, Janny Dinh, Scott R Griffin

9:30 (1010-4) **Brain Image Fusion of IR Imaging and Microscopy for Molecular Histology** NICOLAS SPEGAZZINI, University of Illinois at Urbana-Champaign, Saumya Tiwari, Jennifer Mitchell, Martha Gillette, Rohit Bhargava

9:50 **Recess**

10:05 (1010-5) **Dynamic Sampling for Sparse Confocal Raman Imaging** SHIJIE ZHANG, Purdue University, Azhad U Chowdhury, Zhengtian Song, Dilshan Godaliyadda, Dong H Ye, Charles A Bouman, Garth J Simpson

10:25 (1010-6) **A Membrane-Based Biosensor Platform for Measuring Ligand-Receptor Interactions** MARLENE GUTIERREZ, University of Tennessee, Christopher A Baker

10:45 (1010-7) **Microlens Based Optical Microscopy** RAJESH PRABHU BALARAMAN, Southern Illinois University, Nathalie Becerra-Mora, Mayandi Sivaguru, Srinivasa R Raghavan, Punit Kohli

11:05 (1010-8) **A Microscopy Approach for Quantifying Second Harmonic Generation (SHG) Signal of Powders** AZHAD U CHOWDHURY, Purdue University, Shijie Zhang, Garth J Simpson

ORAL SESSIONS **Session 1020**

Biomedical - Sensors, Nanotechnology and Microfluidics

Tuesday Morning, Room W176a
Mallikarjunarao Ganesana, University of Virginia, Presiding

8:30 (1020-1) **Use of Electrospinning and Dynamic Air Focusing to Create Three-Dimensional Cell Culture Scaffolds in Fluidic Devices** CHENGPENG CHEN, Saint Louis University, R Scott Martin

8:50 (1020-2) **Traumatic Brain Injury Diagnostics Via Small RNA Sequencing of Brain-Derived Exosomal MicroRNA** JIN A KO, University of Pennsylvania, Matthew Hemphill, Youngji Na, Junhyong Kim, Dave Meaney, Dave Issadore

9:10 (1020-3) **Sequence-Specific 16S rRNA Detection at 1 A with a Glass Nanopore Sensor** ALLISON M YORITA, Lawrence Livermore National Laboratory, Bonhye Koo, Jacob J Schmidt, Harold G Monbouquette

9:30 (1020-4) **Fully Inkjet Printed Paper-Based Analytical Device for Potentiometric Ion Sensing** NIPAPAN RUECHA, Keio University, Koji Suzuki, Daniel Citterio

9:50 **Recess**

10:05 (1020-5) **Modular Assembly of Bio-Functionalized Core-Shell Nanoparticle Probes for Multimodal Imaging and Therapeutics Delivery** PRAKASH D NALLATHAMBY, University of Notre Dame, Ryan K Roeder, Karen Cowden-Dahl, Tyler E Curtis, Clodia Osipo, Alexander Bobbs

10:25 (1020-6) **Paper-Based Analytical Devices for Urine Analysis with Direct Text Display of Assay Results** KENTARO YAMADA, Keio University, Koji Suzuki, Daniel Citterio

10:45 (1020-7) **Transparent Carbon Ultramicroelectrode Arrays (T-CUAs) as Sensors for the Detection of Pathogenic Cellular Response Mechanisms** JANINE ELLIOTT, University of Texas at Austin, Keith J Stevenson

11:05 (1020-8) **Phyllanthus Embilica Leaves Extract: A Potential Amylase Enzyme Inhibitor with Antioxidant and Antimicrobial Activity** JAGDISH SINGH, Mata Gujri College Fatehgarh Sahib N/A

ORAL SESSIONS **Session 1030**

GC/MS - General Interest and Homeland Security

Tuesday Morning, Room W176b
Singh Manocha, The Pittsburgh Conference, Presiding

8:30 (1030-1) **GC-MS with Cold EI and Its Unexpected Benefits** AVIV AMIRAV, Tel Aviv University, Alexander Fialkov, Tal Alon, Uri Keshet

8:50 (1030-2) **New Innovations in Fieldable, Down-Range Portable Mass Spectrometers** PHILIP TACKETT, FLIR Systems, Inc.

9:10 (1030-3) **A Novel Benchtop GC-TOFMS for Improved Detection and Quantitation of Analytes in Complex Matrices** MATTHEW W SOYK, Leco Corporation, David Borton, Viatcheslav Artaev

9:30 (1030-4) **Trace Ammonia Vapor Analysis by GC/MS for the Detection of Ammonium Nitrate Explosives** CHRISTOPHER KATILIE, Nova Research Inc., Adam Lubrano, Lauryn DeGreeff

9:50 **Recess**

10:05 (1030-5) **Molecule Identifier Software for the Provision of Elemental Formula from Single Quadruple GC-MS Data** AVIV AMIRAV, Tel Aviv University, Tal Alon

10:25 (1030-6) **Evaluation of SPME and NTME for VOC Profiling in Bacterial Cultures** PETER OERTEL, Rostock University Medical Center, Andreas Bergmann, Phillip Trefz, Anne Kuentzel, Jochen K Schubert, Wolfram Miekisch

10:45 (1030-7) **Study of Urinary Volatile Organic Compounds for Diagnosis of Prostate Cancer by Gas Chromatography/Mass Spectrometry** QIN GAO, University of Texas at El Paso, Wen-Yee Lee

11:05 (1030-8) **Advanced Data Visualization: The Many Dimensions of Petroleomics Using High-Resolution Gas Chromatography and Time-of-Flight Mass Spectrometry** CHRISTINA N KELLY, LECO Corporation, David E Alonso, Joseph E Binkley, Lorne M Fell

TECHNICAL PROGRAM

ORAL SESSIONS **Session 1040**

LC - Environmental and Others

Tuesday Morning, Room W177
Kannan Srinivasan, Thermo Fisher Scientific, Presiding

8:30 (1040-1) **Recent Advances in Suppression Technology for Ion Chromatography** RONG LIN, Thermo Fisher Scientific, Sheetal Bhardwaj, Mrinal K Sengupta, Brittany Omphroy, Kannan Srinivasan

8:50 (1040-2) **Recent Advances in Suppressed Ion Chromatography Using Carbonate Eluents in Achieving Low Background and Noise Performance** MRINAL K SENGUPTA, Thermo Fisher Scientific, Kannan Srinivasan

9:10 (1040-3) **Optimizing LED-Based UV Absorption Detectors for On-Column Capillary Liquid Chromatography** THY X TRUONG, Brigham Young University, Xiaofeng Xie, Paul B Farnsworth, H Dennis Tolley, Luke T Tolley, Milton L Lee

9:30 (1040-4) **Realizing the Full Potential of High Efficiency Superficially Porous Particle Columns with a Correctly Configured LC System** ANNE MACK, Agilent Technologies, William J Long, Stephen J Luke, Jason J Link

9:50 **Recess**

10:05 (1040-5) **Polar Compound LC Method Development on Superficially Porous Particle Columns** ANNE MACK, Agilent Technologies, William J Long, Stephen J Luke, Jason J Link

10:25 (1040-6) **Multi-Component Stationary Phase Gradient on Silica Monoliths for Liquid Chromatography** ANNA FORZANO, Virginia Commonwealth University, Sarah C Rutan, Maryanne M Collinson

10:45 (1040-7) **Hydrophilic Interaction Liquid Chromatography: Fundamental Investigation of Column Equilibration for Polar Siliceous and Zwitterionic Stationary Phases** DANIEL SHOLLENBERGER, MilliporeSigma, Craig Aurand, David Scott Bell, Hugh Cramer

11:05 (1040-8) **Non-Traditional Chiral Separations with Polysaccharide HPLC Columns Using Atypical Solvents and High pH** MORGAN JACOB KRAMER, Phenomenex, J P Preston

ORAL SESSIONS **Session 1050**

LC - Pharmaceutical (Half Session)

Tuesday Morning, Room W476
Rose Ann Clark, Saint Francis University, Presiding

8:30 (1050-1) **Development and Validation of a Fast Reversed Phase Stability-Indicating Method for the Assay of 3,3'-Thiodipropionic acid (TDPA) and Estimation of its Related Compounds** PENG ZHANG, Merial, Nilusha LT Padivitage, Abu Rustum

8:50 (1050-2) **Developing HPLC Methods When C18 Columns Don't Work** RICHARD A HENRY, Penn State University

9:10 (1050-3) **HPLC Method Development for Identification and Assay of Praziquantel, Afoxolaner, Moxidectin, and BHT/BHA, and Estimation of Praziquantel, Afoxolaner, and Moxidectin Related Compounds in Topical Spot-on Products** JIANGTAO HE, Merial, Junmin Huang, Abu Rustum

9:30 (1050-4) **Advances in Bioanalysis Using On-Line SPE with Liquid Chromatography Mass Spectrometry** XIAONING JO LU, MilliporeSigma, Hillel Brandes, David Scott Bell, Candace Price

ORAL SESSIONS **Session 1060**

New Approaches to Understanding Brain Function

Tuesday Morning, Room W184d
Leslie Wilson, North Carolina State University, Presiding

8:30 (1060-1) **Dexamethasone Enhanced Microdialysis Sampling of Spreading Depolarization Waves in the Rat Cortex** ERIKA L VARNER, University of Pittsburgh, Andrea Jaquins-Gerstl, Chi Leng Leong, Kathryn M Nesbitt, David Fine, Amy K Wagner, Martyn G Boutelle, Adrian C Michael

8:50 (1060-2) **Comparing Spreading Depolarizations in the Nucleus Accumbens and Cortex** CADDY HOBBS, University of North Carolina at Chapel Hill, Justin Allen Johnson, R Mark Wightman

9:10 (1060-3) **In Situ Transient Adenosine Characterization with Fast-Scan Cyclic Voltammetry: Exploring Brain Regions and Release Mechanisms** SCOTT T LEE, University of Virginia, B Jill Venton

9:30 (1060-4) **Multiple Sources Contribute to Extracellular Hydrogen Peroxide Dynamics in the Striatum** LESLIE RAE WILSON, North Carolina State University, Sambit Panda, Andreas C Schmidt, Leslie A Sombers

9:50 **Recess**

10:05 (1060-5) **In Vivo Brain Analysis Using Solid Phase Microextraction** NATHALY REYES-GARCES, University of Waterloo, Ezel Boyaci, German Augusto Gomez-Rios, Barbara Bojko, Dajana Vuckovic, Clement Hamani, Janusz Pawliszyn

10:25 (1060-6) **Analyzing Single Vesicles in PC12 Cells Using Novel Pt Nanoelectrodes** SAMUEL BARLOW, University of Washington, Peter Defnet, Bo Zhang

10:45 (1060-7) **Monitoring Neurotransmitter Release In Vivo Via Fast-Scan Cyclic Voltammetry Following Pesticide Exposure** SHANE BERGER, University of South Carolina, Parastoo Hashemi

ORAL SESSIONS **Session 1070**

Pharmaceutical Characterization with Spectroscopy and Spectrometry

Tuesday Morning, Room W475a
Robert Lodder, University of Kentucky, Presiding

8:30 (1070-1) **Characterization of BSN 272: An NME for Prader Willi Syndrome** ROBERT LODDER, University of Kentucky

8:50 (1070-2) **Integrity Assessment of Therapeutic IgG2 Monoclonal Antibodies by Measuring Their Interaction with FCRL5 Using Surface Plasmon Resonance (SPR)** OYELEYE A ALABI, U.S. Food and Drug Administration, Mate Tolnay

9:10 (1070-3) **A Happy Marriage: Fluid Image Characterization and Raman Composition Analysis** OLGA LASKINA, rap.ID Inc., Oliver Valet, Markus Lankers

9:30 (1070-4) **Second Harmonic Generation Microscopy Guided Raman Spectroscopy for Rapid Qualitative and Quantitative Measurements of Active Pharmaceutical Ingredients in Excipients Matrix** ZHENGTIAN SONG, Purdue University, Azhad U Chowdhury, Shijie Zhang, Garth J Simpson

9:50 **Recess**

10:05 (1070-5) **The Development of Analytical Procedures for Analysis of Trace Metals in Pharmaceutical Formulations** SAMAR THIAB, Liverpool John Moores University, Phil Riby, Mark Wainwright

10:25 (1070-6) **Analysis of Arsenic and Other ICH Q3D Metals in Pharmaceutical Formulations** PHIL RIBY, Liverpool John Moores University, Phil Riby, Emily Westwood, Matt Roberts

10:45 (1070-7) **Testing and Validation of Various Antacids –Trace Elemental Impurities and Major Components in a Single Analysis** AARON HINEMAN, PerkinElmer Inc., Jon Sims

11:05 (1070-8) **Development of an Instrument for Rapid Characterization of Crystal Content in Pharmaceuticals Using Triboluminescence** GREGORY EAKINS, Purdue University, Garth J Simpson, Casey J Smith, Scott R Griffin, Jasmine Madison

ORAL SESSIONS **Session 1080**

Process Analytical Chemistry / Monitoring (Half Session)

Tuesday Morning, Room W476
Rose Ann Clark, Saint Francis University, Presiding

10:05 (1080-1) **Spectroscopic Purity Assessment of Early Stages of a Natural Product Isolation Reduces Excessive Costly Recovery Unit Processes** MARK BOATWRIGHT, Kansas State University, David Wetzel

10:25 (1080-2) **Effects of Optical Scattering on Representative Sampling in Solids or Turbid Media in Process Raman Spectroscopy** KAREN ESMONDE-WHITE, Kaiser Optical Systems Inc., Carsten Uerpmann, Sean Gilliam, Lisa Gilliam, Ian Lewis

10:45 (1080-3) **A Novel FTIR-GC/FTIR Detection Method as Applied to Process Monitoring of Carbon Dioxide Purity** CHARLES M PHILLIPS, Prism Analytical Technologies, Martin Lee Spartz, Anthony S Bonanno, Alexander T Steele, Peter P Behnke

11:05 (1080-4) **A Novel Approach for Accurate On-Line Capillary Column Heating Using Micro-Convection Oven Technology** JOHN WASSON, Wasson-ECE Instrumentation, David Cuthbert

Author and presider lists are available at www.pittcon.org

ORAL SESSIONS — Session 1090

Process Analytical Technologies and Methods

Tuesday Morning, Room W475b
Michael Woodman, Agilent Technologies, Presiding

8:30	(1090-1)	**Triboluminescence Instrumentation for Rapid Detection of Trace Residual Crystallinity in Amorphous Pharmaceutical Formulations** SCOTT R GRIFFIN, Purdue University, Casey J Smith, Jasmine Madison, Gregory Eakins, Garth J Simpson
8:50	(1090-2)	**Monitoring Changes in Protein Aggregation with Holographic Characterization** DAVID B RUFFNER, Spheryx, Inc., Jaroslaw M Blusewicz, Fook Chiong Cheong, Laura A Philips
9:10	(1090-3)	**A Simple and Fast Screening Method for the Identification of Male DNA in Forensically Relevant Samples** AN-CHI TSUEI, University of Virginia, James P Landers, Kimberly Jackson
9:30	(1090-4)	**Magnetite Nanoparticles for Scalable Enzyme-Catalyzed Reactions and Electrochemical Biosensing** SADAGOPAN KRISHNAN, Oklahoma State University, Gayan C Premaratne, Charuksha Walgama, Vini Singh, Jinesh Niroula, Rajasekhara Nerimetla
9:50		**Recess**
10:05	(1090-5)	**Low Level Product Off-Gassing by IR/GC-IR** MARTIN LEE SPARTZ, Prism Analytical Technologies, Inc., Charles M Phillips, Peter P Behnke, Kelly McPartland, Allan P Bohlke
10:25	(1090-6)	**Observation and Visualization of Process Streams in Real-Time with Direct Mass Spectrometry (RTGA-MS)** TERRY RAMUS, Diablo Analytical, Scott Hein, Dave Randle
10:45	(1090-7)	**Withdrawn**
11:05	(1090-8)	**Quality Control and Calibration Approaches for Determining Reproducible Results** PETAR STOJADINOVIC, Automation Trainer LLC, John Coller, William Herms N/A

POSTER SESSION — Session 1100

All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Poster sessions are on the Exposition Floor, Aisle 2500-2600. PLEASE NOTE: You cannot get onto the exposition floor until 9:00 AM. Posters that have not been taken down one-half hour after the designated time will be disposed of.

Bioanalytical - Electrochemistry
Tuesday Morning, Exposition Floor, Aisle 2500-2600

(1100-1 P)	**Electrochemiluminescent Array and Liquid Chromatography-Mass Spectroscopy Approaches for Sequential Detection of DNA Oxidation and Chemical DNA Damage** ITTI BIST, University of Connecticut, Snehasis Bhakta, Di Jiang, Tia E Keyes, Aaron Martin, Robert J Forster, James F Rusling N/A
(1100-2 P)	**Sensing Glucose in Urine and Serum and Hydrogen Peroxide in Living Cells Using a Novel Boronate Nanoprobe Based on Surface-Enhanced Raman Spectroscopy** XIN GU, University of Notre Dame N/A
(1100-3 P)	**In Vivo Hydrogen Peroxide Degradation Monitoring in Aspergillus Fumigatus Fungus** ALEX S LIMA, University of São Paulo, Carla S Santos, Renata B Fernandes, Luiz E Netto, Mauro Berotti
(1100-4 P)	**Effects of Mutation Sites on the Orientation and Activity of Surface-Tethered Enzymes** YAOXIN LI, University of Michigan, Ann Arbor, Tadeusz L Ogorzalek, Shuai Wei, Charles L Brooks III, E Neil G Marsh, Zhan Chen
(1100-5 P)	**Exploration of Ammonia Production in Blue Green Algae by Bioelectrocatalytic Methods** JACOB DANIEL LYON, University of Iowa, Tim Paschkewitz, Johna Leddy
(1100-6 P)	**Experimental Evaluation of Titanium Substrate Photofunctionalization Effect on Proliferation and Cell Differentiation of Fibroblasts** KINICHI MORITA, USHIO INC., Yuka Sonoda, Sae Iwata, Naho Watanabe, Masaki Kounoura, Yukihiro Yonemoto, Yuta Nakashima, Satoru Kuhara, Kosuke Tashiro
(1100-7 P)	**Spectroelectrochemistry of Iron Porphyrin Nitroxyls in the Presence of Weak Acids** MD H RAHMAN, Marquette University, Michael D Ryan
(1100-8 P)	**Combination of Capillary Electrophoresis and Sheath Flow SERS for Metabolite Detection in Biological Fluids** EMILY ANN SHANGLE, University of Notre Dame, Zachary D Schultz
(1100-9 P)	**Electrochemical Measurements of Dopamine in Chemotherapy-Treated Zebrafish** CHASE S STUCKY, Bethel College
(1100-10 P)	**A Novel Electrochemical Sensor Based on NiP-TiO_2sol-RGO Modified Electrode** NADTINAN PROMPHET, Chulalongkorn University, Pranee Rattanawaleedirojn, Nadnudda Rodthongkum
(1100-11 P)	**Electron Transfer in Electrochemical Systems Based on immobilized Glucose Oxidase** ARUNAS RAMANAVICIUS, Vilnius University, Natalija German, Asta Kausaite-Minkstimiene, Povilas Genys, Jurate Petroniene, Almira Ramanaviciene
(1100-12 P)	**Adenosine Monophosphate Capped Graphene Quantum Dots for Selective Detection of Dopamine** XIAO LIU, University of North Dakota, Xuefei Zhang, Yuqian Xing, Ying Zhang, Julia Zhao
(1100-13 P)	**Enzyme-Free and Label-Free Signal Amplification for MicroRNA Detection via Hybridization Chain Reaction based on dsDNA-Templated Formation of Copper Nanoparticles** YUQIAN XING, University of North Dakota, Xiao Liu, Xuefei Zhang, Ying Zhang, Julia Zhao
(1100-14 P)	**DNA Surface Hybridization: Electrochemical Investigation** SAIMON M MORAES SILVA, University of New South Wales, Roya Tavallaie, D Brynn Hibbert, J Justin Gooding

POSTER SESSION — Session 1110

All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Poster sessions are on the Exposition Floor, Aisle 2500-2600. PLEASE NOTE: You cannot get onto the exposition floor until 9:00 AM. Posters that have not been taken down one-half hour after the designated time will be disposed of.

Biomedical Analysis
Tuesday Morning, Exposition Floor, Aisle 2500-2600

(1110-1 P)	**Make a Deep Dive into a Cell-Based Potency Assay: Troubleshooting in a GMP Quality Control Environment** MIN S CHANG, Genentech/Validation Technology Institute, Maria Darlucio, Kaitlyn Lane-Rothermud, Nancy Nguyen Session, Daniel Rodbourn, Joseph Molon N/A
(1110-2 P)	**Tailoring Biopolymer Matrices to Stimulate Fibroblast Synthesis Toward Cell Therapeutic Treatment of POP** NAIWEI CHI, Illinois Institute of Technology
(1110-3 P)	**Label-Free Pathology by Spectrally Sliced Femtosecond Stimulated Raman Scattering (SRS) Microscopy** ANDREW FRANCIS, University of Washington N/A
(1110-4 P)	**Development of Aptamers Against Patient Pancreatic Adenocarcinoma for Personalized Precision Cancer Monitoring and Therapy** YIAN GUO, University of Florida N/A
(1110-5 P)	**Laminated Microfluidic Paper-Based Analytical Devices for Clinical Protein Assays** KEISUKE TENDA, Keio University, Riki Ota, Kentaro Yamda, Terence G Henares, Koji Suzuki, Daniel Citterio
(1110-6 P)	**Miniature Gas Chromatography Based Breath Analyzer for Non-Invasive Point-of-Care Diagnostics of Acute Lung Injury** MENGLIAN ZHOU, University of Michigan, Jiwon Lee, Hongbo Zhu, Kevin Ward, Carl Haas, Xudong Fan
(1110-7 P)	**The Potential Impact of Circulating miR-26a in a Rat Model of Non-Alcoholic Fatty Liver Disease Fed High Fat Diet: In Vivo and In Vitro Study** SAMY ABDEL AZIM, Cairo University, Abd El-Moneim Afify, Ahmed S Abdel Fatah
(1110-8 P)	**Comparative Study on the Efficacy of Formal Ether and Other Organic Solvents in Body Fluid Analysis** NKEMJIKA OSUJI, Diff Hospital N/A
(1110-9 P)	**Rapid and Sensitive Waveguide Biosensor for Detection of H5N1 Influenza A Virus** MONICA MORENO, University of Louisville, Jafar Ghithan, Martin O'Toole, Sergio B Mendes
(1110-10 P)	**Simultaneous Determination of Phthalates in Toys Marked in Brazil** JULIANA MARIA O SOUZA, University of São Paulo, Marília Cristina O Souza, Fernando Barbosa Junior
(1110-11 P)	**An Assessment of Drugs Other Than Nicotine (DOTNs) in Electronic Cigarette Products** MICHELLE R PEACE, Virginia Commonwealth University, Haley Mulder, Rose Krakowiak, Joseph B Turner, Justin Poklis, Matthew Halquist, Carl Wolf, Alphonse Poklis
(1110-12 P)	**Peroxidase-Like Activity of Nanocellulose and Its Analytical Application for Detection of Hydrogen Peroxide and Glucose** HAKAN CIFTCI, Kirikkale University, Unsal Uersoy N/A
(1110-13 P)	**Chronic Lymphocytic Leukemia Targeted with a Selective Kinase Inhibitor** NEUS GIMENEZ, IDIBAPS
(1110-14 P)	**Withdrawn**
(1110-15 P)	**Biomarkers Detection Released by Cancer Cells Using an Aptasensor** VALBER A PEDROSA, UNESP, Bruno P Crulhas, Agnieska E Karpik, Vanessa M Braite
(1110-16 P)	**Cross Link Hyaluronic Acid Structure Elucidation Applying Raman/Roa, and Infrared (IR) Spectroscopy** JUANITA LIZETH SANCHEZ, BioTools, Jordan Nafie, Rina Dukor

TECHNICAL PROGRAM

POSTER SESSION — Session 1120

All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Poster sessions are on the Exposition Floor, Aisle 2500-2600. PLEASE NOTE: You cannot get onto the exposition floor until 9:00 AM. Posters that have not been taken down one-half hour after the designated time will be disposed of.

Environmental Analysis of Pesticides, PPCPs, VOCs and other Organics

Tuesday Morning, Exposition Floor, Aisle 2500-2600

(1120-1 P) **Electrochemical Study and Quantification of Pirimicarb at Boron Doped Diamond Electrode** THIAGO MG SELVA, Universidade de São Paulo, Raphael B Prata, William R Araujo, Thiago Paixão

(1120-2 P) **Efficient Sample Workflow from Extraction to Analysis for Pesticides Using US EPA 608/8081** ZOE GROSSER, Horizon Technology, Michael Ebitson, Alicia Cannon, William Jones

(1120-3 P) **New Workflow for Identification of Multiclass Pesticides at <1 ppb Levels in Fish Samples by LC-MS/MS Using Enhanced Product Ion Spectrum** ANDRÉS PÉREZ-PARADA, UdelaR, Horacio Heinzen, Silvina Niell, Marcos Colazzo, Beatriz Alonso, Federico Ernst, Veronica Cesio, Lucia Pareja, Natalia Besil

(1120-4 P) **Solid-Phase Extraction Using Molecularly Imprinted Polymer for Selective Extraction of Natural and Synthetic Estrogens from Aqueous Samples** KAYNOUSH NARAGHI, AFFINISEP, Michel Arotçaréna, Sami Bayoudh N/A

(1120-5 P) **PPCPs Correlation Between Soils and Waterways of Southwest Illinois and St. Louis** KEVIN RYAN TUCKER, Southern Illinois University, Paisley Harper, Michael Lohman, Rachel Davis, John Little, Hannah Lupton

(1120-6 P) **A Rapid Extraction and Analysis of Steroid Hormones, PPCP's, and Pyrethroids From Sediments Using a Modified QuEChERS Procedure and Optimized LCMSMS Analysis** ALLEN MISA, Phenomenex, Scott Krepich, Matthew Trass

(1120-7 P) **Solutions for the Determination and Stability of Bromomethane by Purge and Trap** ANNE JUREK, EST Analytical, Kelly Cravenor, Lindsey Pyron, Adam Guichard

(1120-8 P) **Static Headspace Sampling of Volatile Organic Compounds While Maintaining 5030 Compliance** ANNE JUREK, EST Analytical, Kelly Cravenor, Lindsey Pyron, Adam Guichard

(1120-9 P) **A Purge & Trap Method 8260 by Day, Thermal Desorption EPA 325 by Night: A Look at a Unique Autosampler to Streamline the Labs Workload** STEPHEN D WESSON, CDS Analytical, Karen Sam, Jennifer Dowling

(1120-10 P) **A Fully Automated Portable Gas Chromatography for Sensitive and Rapid Quantification of Volatile Organic Compounds in Water** MENGLIAN ZHOU, University of Michigan, Jiwon Lee, Hongbo Zhu, Robert Nidetz, Katsuo Kurabayashi, Xudong Fan

(1120-11 P) **Critical Fractionation and Analysis of Water and Soil Matrices Using Tuned EPH Specific Silica Gel Cartridges** ALEXANDRIA PAVKOVICH, Restek, Jason Thomas

(1120-12 P) **Decomposition Kinetics of A-Pinene Via Ozone Oxidation Under Coexisting Nitrogen Monoxide** AKIHIRO YAMASAKI, Seikei University, Yasuzawa Satoshi, Miyuki Noguchi

(1120-13 P) **Construction of Advanced Biologging Systems for High Rate Data-Recovery from Marine Top Predators** TAKUJI NODA, The Institute of Statistical Mathematics, Yoshinori Miyamoto, Nobuaki Arai, Hiromichi Mitamura, Kotaro Ichikawa, Keiichi Uchida, Satoko S Kimura, Kazushi Miyashita, Hokuto Shirakawa, Yuichi Tsuda, Takashi Kitagawa

(1120-14 P) **Field Use Continuous Flow-Through Analyzer for Measurement of Seawater pH and Total Alkalinity Using ISFET and Leak-Free Reference Electrodes** SHOJI YAMAMOTO, The University of Tokyo, Hajime Kayanne, Yukari Sato, Akihide Hemmi

(1120-15 P) **Analytical Capabilities to Measure a TO-15 Subset of VOC Components Using Gas Chromatography-Mass Spectroscopy at the 1.00 ppm and 0.10 ppm Level for the Generation of Standards to be Used in the Analysis of These Components** DEDEEPYA PASUPULETI, Matheson Trigas, Inc., Joshua Cooper, Gregory Leggett N/A

POSTER SESSION — Session 1130

All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Poster sessions are on the Exposition Floor, Aisle 2500-2600. PLEASE NOTE: You cannot get onto the exposition floor until 9:00 AM. Posters that have not been taken down one-half hour after the designated time will be disposed of.

LC - Environmental and Others

Tuesday Morning, Exposition Floor, Aisle 2500-2600

(1130-1 P) **Determination Of Molecular Mass 302 Polycyclic Aromatic Hydrocarbons in Standard Reference Material 1597A by Reverse-Phase Liquid Chromatography Coupled with Fluorescence Detection** HUGH V HAYES, University of Central Florida, Walter Brent Wilson, Lane C Sander, Stephen A Wise, Andres D Campiglia

(1130-2 P) **Investigation of Retention Behavior of Polycyclic Aromatic Hydrocarbons and Polycyclic Aromatic Sulfur Heterocycles in Normal-Phase Liquid Chromatography** WALTER BRENT WILSON, National Institute of Standards and Technology (NIST), Hugh V Hayes, Lane C Sander, Andres D Campiglia, Stephen A Wise

(1130-3 P) **Improvement of Precision and Uptime in UHPLC by Intelligent SmartInject Technology** MARKUS M MARTIN, Thermo Fisher Scientific, Matthias Krajewski, Sabrina Patzelt, Frank Steiner

(1130-4 P) **Automated Pre-Column Derivatization of Amino Acids by HPLC** LEE N POLITE, Axion Analytical Labs Inc, Jackson O'Donnell, Nikolas L Polite, Theodore N Covello, Erick D Walts, Dennis L Polite, Mary Beth Smith

(1130-5 P) **Anion Exchange Chromatography of Sulfonated Compounds Using a Protamine Coated Column** ASHLEY E RICHARDSON, Miami University, Matthew T Webb, Neil D Danielson

(1130-6 P) **Development and Validation of a High-Performance Liquid Chromatographic Method for Therapeutic Drug Monitoring of Meropenem in Serum/Plasma** HUA TANG, Cincinnati Children's Hospital Medical Center N/A

(1130-7 P) **Introduction of No Pulsation Pump** KEN KITAMURA, FLOM Corporation N/A

(1130-8 P) **Liquid Feeding System Controlling the Pressure and Flow Rate Simultaneously** YOKO SEKIGUCHI, FLOM Corporation, Satoshi Motomiya, Shyoji Funakoshi, Satoshi Nakamura, Takafumi Shimizu

(1130-9 P) **High pH Chiral Separations of Amphetamine and Amphetamine Derivatives with a Polysaccharide HPLC Column** MORGAN JACOB KRAMER, Phenomenex, J P Preston, Abraham Becerra

(1130-10 P) **High Performance Low Volume Static Mixer for Tough HPLC Applications** JAMES STEELE, Mott Corporation, Kenneth L Rubow

(1130-11 P) **Purification and Characterization of Novel Endogenous Cardiotonic Steroids from Pig Skeletal Muscle** CORY A STINER, University of Cincinnati, Judith Heiny, Julio Landero, David Cowert N/A

(1130-12 P) **A Goal-Oriented Approach to the Quantitative Determination of Cannabinoids by HPLC** CRAIG STEVEN YOUNG, Shimadzu Scientific Instruments

(1130-13 P) **Development and Validation of an HPLC-DAD Method to Estimate Total Known and Unknown Furocoumarin Content** NICHOLAS HOUSEL, Inolex, Ivan Souza, Rocco Burgo

(1130-14 P) **Direct Large-Volume Injection LC-MS/MS for the Identification and Determination of Environmental Contaminants in Drinking Water** RONALD E HUNTER, The Coca-Cola Company, Farzaneh Maniei, James E Van Slate, Ian Isaacs

(1130-15 P) **Water ICE: Ion Exclusion Chromatography of Very Weak Acids with a Pure Water Eluent** HONGZHU LIAO, University of Texas at Arlington, Purnendu K Dasgupta, Charles P Shelor

(1130-16 P) **Permeative Amine Introduction for Very Weak Acid Detection in Anion Chromatography** HONGZHU LIAO, University of Texas at Arlington, Purnendu K Dasgupta

(1130-17 P) **Refractive Index Detector Kit that Fits** KATE MONKS, KNAUER Wissenschaftliche Geräte GmbH

(1130-18 P) **Multitasking Valves for Chromatography** STEPHANIE RUNDE, KNAUER Wissenschaftliche Geräte Gmbh

(1130-19 P) **Determination of Chelator and Cu2+ Concentration in Liposomal Formulations Using High Performance Liquid Chromatography with UV Absorbance Detection and Atomic Absorption Spectroscopy** TARA ELIZABETH SANSOM, Charles River

(1130-20 P) **Heart-Cutting Two-Dimensional HPLC for Separation of Stereoisomers and Structurally Similar Compounds** CHARLOTTE TSANG, Genentech, Kelly Zhang

POSTER SESSION — Session 1140

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Others

Tuesday Morning, Exposition Floor, Aisle 2500-2600

(1140-1 P) **Lyme Disease (and Co-Infections) Research and Education** BARBARA ADRIENNE ROSEN, Lyme Disease Research N/A

(1140-2 P) **Upcoming Trends in the Analytical Instrumentation Market** KIRAN UNNI, Frost & Sullivan, Prem Shanmugam, Sujan Sami N/A

(1140-3 P) **Ultra Strong Trapping of VEGF by Graphene Oxide: Anti-Angiogenesis Application** PEI-XIN LAI, National Taiwan Ocean University, Chih-Ching Huang, Chung-Wein Chen, Tzu-Yu Lin, Shih-Chun Wei, Hong-Jyuan Jian, Irving Po-Jung Lai, Ju-Yi Mao, Hsu Pang-Hung, Han-Jia Lin, Wen-Shyong Tzou, Shiow-Yi Chen, Scott G. Harroun, Jui-Yang Lai

(1140-4 P) **Is Tattoo Ink Safe? Analysis of Polycyclic Aromatic Hydrocarbons (PAHs) in Tattoo Ink by GC/MS** RAMKUMAR DHANDAPANI, Phenomenex, Timothy Anderson, Kristen Parnell, Matthew Trass, Sean Orlowicz

(1140-5 P) **A Simple Gaussian Derivative Method to Resolve Overlapping Peaks for Ion Mobility Spectrometry** HUAIWEN CANG, Dalian Institute of Chemical Physics

(1140-6 P) **The Design and Realization of Information System for Uncertainty Evaluation Information System in Chemical Measurement** BIN WANG, National Institute of Metrology, Xiaohua Lu

(1140-7 P) **Improving Identification of Compounds in Metabolomic Studies Through Correlation and Statistics** PABLO ARIEL HOIJEMBERG, CIBION, István Pelczer

(1140-8 P) **Near-Infrared Spectroscopy Prediction of Kappa Number and Other Parameters in Wood Pulps** KYLE HOLLISTER, Metrohm, Phillip Ruer, Keith Freel

(1140-9 P) **Introducing Undergraduate Chemists to Chemometrics, PART 2: Performing Outlier Rejection Tests, and Streamlining the NIPALS Algorithm** MARK T STAUFFER, University of Pittsburgh - Greensburg

(1140-10 P) **Fertilizer Analysis with ICP-OES** NICK SPIVEY, PerkinElmer Inc., Erica Cahoon, Stan Smith

(1140-11 P) **Characterization of Major Phytochemical Compounds in Moringa Oleifera Leaves Harvested From Trees Growing in Different Regions of South Africa Using Atomic and Vibrational Spectroscopy** NTEBOGENG SHARON MOKGALAKA-FLEISCHMANN, Tshwane University of Technology

(1140-12 P) **Gas Sorption Characterization of Powder and Porous Materials with Alternative Gases** TIANYING JIANG, 3M Company

(1140-13 P) **Caged Compounds as Light-Dependent Initiators for Enzyme Catalysis Reactions** EMMA CASTIGLIONI, Manchester institute of Biotechnology

(1140-14 P) **Affinity Binding of Functionalized Carbon Nanotubes with Peptide Probes: Asserting Physiological Characteristics** TYLER DAVIS, West Virginia University, Lisa A Holland

(1140-15 P) **Improved Method for Pu(VI) by Chemometric Analysis of High-Quality Absorbance Measurements** ROBERT LASCOLA, Savannah River National Laboratory, Patrick E O'Rourke, Edward A Kyser, Michael J Phillips, David Kruzner

(1140-16 P) **Electroplated Platinum Electrodes for Educational Purposes** SAYED A MARZOUK, United Arab Emirates University, Aisha R Yammahi, Al Ghoul J Sahar, Al Neyadi S Amna, Al Anood O Balabaid

(1140-17 P) **Laser-Induced Breakdown Spectroscopy Based Protein Assay for Cereal Samples** BANU SEZER, Hacettepe University, Gonca Bilge, Ismail H Boyaci

(1140-18 P) **Using Coffee Ring Effect as a Means of Improving Spectroscopic Discrimination of Sample Groups** DAUN SEOL, Hanyang University, Hoeil Chung N/A

(1140-19 P) **Get More Out of Your Methanizer** WILLIAM SULLIVAN, SUNY at Buffalo

(1140-20 P) **Performance of Xpert MTB/RIF Assay for Rapid Diagnosis of Extrapulmonary Tuberculosis in Selected Public Healthcare Facilities of Addis Ababa, Ethiopia** BIHIL SHEREFEDIN SEREMOLO, MSH N/A

(1140-21 P) **How Scientific Companies use the Talent Supply Chain Management Model to Link Human Capital to Business Needs to Increase Productivity and Efficiency** HARVEY YAU, KellyOCG, Mike Berich

(1140-22 P) **Reverse Intensity Correction for Raman Spectral Library Search** JUN ZHAO, B&W Tek, Jack Zhou

(1140-23 P) **Integration of Multiple Instruments in a Chemistry Studio Classroom** CHARLES ABRAMS, Truman College, Matthew Patterson

(1140-24 P) **Microcavity Raman Sensing: Improved System Stability for Quantitative Analysis** LUISA THERESA MARIA PROFETA, Alakai Defense Systems, Kumarasiri Konthasinghe, Benjamin Petrak, Andreas Muller

(1140-25 P) **The Color of STEM; One on One** JOHN D BLIZZARD, QuadSil Inc, Isaac J Hales

(1140-26 P) **Fabrication of Silver Coated Gold Nanorods Based Surface Enhanced Raman Scattering Substrates and Their Environmental Applications** SHUYU XU, University of Delaware, John F Rabolt, Bruce Chase

(1140-27 P) **Novel Calix[4]Pyrrole Assembly: Punctilious Recognition of F- and Cu+2 Ions** KEYUR DINESH BHATT, C.U. Shah University, Wadhwan, Hemangini Shah, Vinod Jain N/A

(1140-28 P) **The Detection of Catalytic Intermediates in [2+2+2] Cycloaddition Reactions by NMR and ESI-MS** DANIEL CASSÚ, Universitat de Girona, Anna Roglans, Anna Pla-Quintana

(1140-29 P) **Universal Detection of Body Fluid Traces In Situ with Raman Hyperspectroscopy for Forensic Purposes** MARISIA ANN FIKIET, University at Albany, The State University of New York, Gregory Mclaughlin, Igor K Lednev, Hiro-o Hamaguchi, Masahiro Ando

(1140-30 P) **Digital Electrode Array Mass Filter** JEROME MOORE, Robot Nose Corporation N/A

(1140-31 P) **Forensic Body Fluid Identification and Differentiation by Raman Spectroscopy** CLAIRE K MURO, University at Albany, The State University of New York, Igor K Lednev, Kyle C Doty, Luciana de Souza Fernandes

(1140-32 P) **Selected Ion Flow-Drift Tube Mass Spectrometry, SIFDT-MS, Technique for Trace Gas Analysis** PATRIK SPANEL, J. Heyrovsky Institute of Physical Chemistry, Michal Lacko, Anatolii Spesyvyi, Kristyna Sovova, David Smith

(1140-33 P) **Metabolic Analysis of Specific *Lymnaea Stagnalis* Neurons by Capillary Microsampling and Mass Spectrometry with Ion Mobility Separation** LINWEN ZHANG, The George Washington University, Nikkita Khattar, Zita Zrinyi, Zsolt Pirger, Akos Vertes

(1140-34 P) **Microfluidic Chemiluminescence Detection System for Determination of Chromium in Water** JAE-HOON AHN, Postech (Pohang University of Science & Technology), Kyoung Ho Jo, Jong Hoon Hahn

(1140-35 P) **Determination of Amino Acids in Supplements after Dansylation Using a LED Fluorimeter** ABD AL-KARIM ALI, Miami University, Andrew N Donahey, Neil D Danielson

(1140-36 P) **Selected Ion Flow-Drift Tube, SIFDT, Study of Reactions of H_3O^+ and NO^+ with Primary Alcohols in the Presence of Water Vapour under Variable Collisional Energies** MICHAL LACKO, J. Heyrovsky Institute of Physical Chemistry, Anatolii Spesyvyi, Patrik Španěl, David Smith

(1140-37 P) **Dry Reagent Chemistry for Homemade Explosives (HMEs)** A ROXANA NICOLAESCU, Serim Research Corporation, Monika Felten, Shane Graber

(1140-38 P) **Unattended Reaction Monitoring Using Automated Microfluidics Sampler and On-line Liquid Chromatography** DARSHAN C PATEL, University of Texas at Arlington, Yaqi (Fara) Lyu, Jorge Gandarilla, Daniel W Armstrong, Steven J Doherty

(1140-39 P) **Vapor Modified Transformation of Gas Ions of Small Molecules from a Range of Proton Affinities in Tandem Differential Mobility Spectrometry: Control of Quantitative Response Using Water Vapor** HOSSEIN SHOKRI, New Mexico State University, Gary A Eiceman

(1140-40 P) **Calibration Strategies for Quantitative Measurements of Fe, K, Mg, Mn, Na, and Zn in Pinus sp. Wood Samples by Laser Induced Breakdown Spectrometry** DANIEL SILVESTRE, University of Sao Paulo, Vinicius Montes, Lidiane Nunes, Flavio Leme, Francisco Krug, Cassiana Nomura

(1140-41 P) **Dependence of Mass Spectrometric Fragmentation of Polychlorinated Biphenyls on Chlorine Substitution Patten and Given Energy** QIAOZHI TANG, University of Illinois at Chicago, An Li, Wang Ying, Hua Wei

(1140-42 P) **Rapid Analysis of Residual Styrene Monomer and Oligomer in Polystyrene Using Fragmentless Ionization Mass Spectrometry** TAKAHISA TSUGOSHI, NMIJ/AIST, Yuji Mishima

(1140-43 P) **Effective STEAM Education Pedagogy for the Retention of Black Americans** ASHLEY WARFIELD-OYIRIFI, University of Illinois N/A

(1140-44 P) **Bipolymer Strips for Organic Vapor Sensing** YIMEI WEN, Clemson University, George Chumanov

(1140-45 P) **Peak Deconvolution Analysis with Photodiode Array Detector** TOSHINOBU YANAGISAWA, Shimadzu Corporation, Shuntaro Arase, Kanta Horie, Takashi Kato, Akira Noda, Masatoshi Takahashi, Yasuhiro Mito

TECHNICAL PROGRAM

POSTER SESSION **Session 1150**

All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Poster sessions are on the Exposition Floor, Aisle 2500-2600. PLEASE NOTE: You cannot get onto the exposition floor until 9:00 AM. Posters that have not been taken down one-half hour after the designated time will be disposed of.

Pharmaceutical - LC, MS, GC, and LC/MS
Tuesday Morning, Exposition Floor, Aisle 2500-2600

(1150-1 P) **Method Development and Validation for Separation of Ten Pharmaceutical Raw Materials Using Reversed-Phase Liquid Chromatography and Software Modeling** JOHN ALBAZI, Northeastern Illinois University, Rajwa J Alghareeb

(1150-2 P) **Realizing the Benefits of Solid-Core Particles in Small Molecule Pharmaceutical LC Applications** KENNETH BERTHELETTE, Waters Corporation, Thomas Swann, Jennifer Nguyen

(1150-3 P) **Extraction, Identification and Isolation of Isoflavones in the Roots of Mongolian Milkvetch** VALERIE DESYROY, SiliCycle, Xavier Pigeon, Adrian A Villanueva, Jasmin Douville N/A

(1150-4 P) **RP-HPLC of Linagliptin and Its Related Substance Along with Mass and NMR Characterization** FAIZAN IRFAN FAROOQUI, Rashtrasant Tukadoji Maharaj Nagpur University, Rajendra B Kakde, Rahul P Chilbule, Yogesh J Malkhede, Ishwar R Kakde

(1150-5 P) **Development of Novel Through-Porous Particles as a Separation Media for Chromatography** NORITAKA KURODA, YMC CO., LTD., Ryosuke Takahashi, Ryota Wada, Masatoshi Taniguchi, Takashi Yukiyama, Hiroki Kanezaki, Moemi Miyashita, Noriko Shoji, Ken Tsutsui, Naohiro Kuriyama, Norio Ishizuka N/A

(1150-6 P) **Extraction and Analysis of Albendazole from Suspect Pharmaceuticals** TAYLOR N LASHBROOK, Saint Mary's College, Gina C Pernesky, Christopher J Dunlap

(1150-7 P) **A Comparison of Preparative HPLC, Closed-Loop Recycling, and Simulated Moving Bed for Cost-Effective Separation of Enantiomers** TAKASHI SATO, YMC CO., LTD., Saoko Nozawa, Mai Sato, Akiko Matsui, Tom Seno, Noritaka Kuroda

(1150-8 P) **Robust and Efficient Purification of Enantiomers Using Novel Polysaccharides Type Chiral Stationary Phases** TAKASHI SATO, YMC CO., LTD., Saoko Nozawa, Mai Sato, Akiko Matsui, Tom Seno, Noritaka Kuroda

(1150-9 P) **Back to the Basic, Which UV Wavelength Should Be Selected for Quantitation** LUCY ZHAO, Bayer Consumer Health, Jianhua Li, Kangping Xiao

(1150-10 P) **Ensuring Quality Data for USP 232 Implementation with ICP-MS** SIMON NELMS, Thermo Fisher Scientific, Phil Riby, Shona McSheehy Ducos, Kyle D'Silva, Daniel Kutscher

(1150-11 P) **Extraction and Analysis of Ciprofloxacin from Suspect Pharmaceuticals** GINA C PERNESKY, Saint Mary's College, Taylor N Lashbrook, Christopher J Dunlap

(1150-12 P) **Analysis of Glucocorticoids by GC-VUV** ANUMEHA P MUTHAL, Seton Hall University, Nicholas H Snow

(1150-13 P) **Withdrawn**

(1150-14 P) **LC/MS Analysis of Opioids and Cannabis Using High pH Buffer** SUBHRA BHATTACHARYA, Thermo Fisher Scientific, Stephen Roemer

(1150-15 P) **Predicting Consumer Acceptance via GC/MS-Electronic Tongue Analysis** JONATHAN E CLARK, Procter & Gamble, Jayme Webb-Turbeville

(1150-16 P) **Determination of a Large Protein in Aqueous Formulations Using Size-Exclusion High Performance Liquid Chromatography with UV/VIS Detection and Using UV/VIS Spectrometry** JENA JENKINS, Charles River

(1150-17 P) **Evaluating the Benefits of LED Illumination During Manufacturing and Packaging of Pharmaceutical Products** BRITTANY PIERCE, Merck, Andreas Abend, Leonardo Allain, Adam Socia

POSTER SESSION **Session 1160**

All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Poster sessions are on the Exposition Floor, Aisle 2500-2600. PLEASE NOTE: You cannot get onto the exposition floor until 9:00 AM. Posters that have not been taken down one-half hour after the designated time will be disposed of.

The Versatile Use of Portable Instruments
Tuesday Morning, Exposition Floor, Aisle 2500-2600

(1160-1 P) **The Role of Spatial Orientation in FDM 3D Printing to Spatial Definition of Printed Slit and Optical Detection Performance** MIREK MACKA, University of Tasmania, Farhan Cecil, Michael C Breadmore, Rosanne M Guijt, Brett Paull, Pavel N Nesterenko, Alan Henderson, Andrew Cole

(1160-2 P) **Miniaturized HPLC Injection Valve with Potential for Portable Capillary LC** MIREK MACKA, University of Tasmania, Yan Li, Pavel N Nesterenko, Brett Paull, Roger Stanley

(1160-3 P) **Portable Spectroscopy for Teaching Engaging, Immediate and Interactive Science** KIMBERLEY RUSSELL, Bruker

(1160-4 P) **A Next Level in Taking Your Lab to the Sample - True Mobility in Gas Chromatographic Gas Analysis** REMKO VAN LOON, Agilent Technologies, Matthew Giardina, Thomas Szakas, Duvekot Coen

(1160-5 P) **GC Detector** HONGBO ZHU, University of Michigan

(1160-6 P) **Fully Automated Portable Comprehensive 2-Dimensional Gas Chromatography Device** JIWON LEE, University of Michigan, Menglian Zhou, Hongbo Zhu, Robert Nidetz, Katsuo Kurabayashi, Xudong Fan

(1160-7 P) **Handheld Backscatter X-Ray Instrument Enables Operators to Find Hidden Explosives, Narcotics and Other Contraband Behind >2 mm of Steel — Over Twice the Thickness of Motor Vehicle Body Panels** PETER ROTHSCHILD, Heuresis, Hal Grodzins, Jon Shein N/A

TUESDAY, MARCH 7, 2017 AFTERNOON

AWARDS **Session 1170**

The Pittsburgh Spectroscopy Award
arranged by Sanford Asher, The University of Pittsburgh

Tuesday Afternoon, Room W183a
Partha Basu, Indiana University - Purdue University Indianapolis, Presiding

1:30 **Introductory Remarks - Sanford Asher**

1:35 **Presentation of the 2017 Pittsburgh Spectroscopy Award to Edward I Solomon, Stanford University, by Karen L Johnson, Chair, Spectroscopy Society of Pittsburgh**

1:40 (1170-1) **Bioinorganic Spectroscopy: Activating Metal Sites for Biological Electron Transfer** EDWARD I SOLOMON, Stanford University

2:15 (1170-2) **Synchrotrons and X-Ray Free Electron Lasers in Structural Biology – From "Slow" to "Ultrafast"** KEITH O HODGSON, Stanford University, Britt Hedman

2:50 (1170-3) **Spectroscopic Insights into the BioSynthesis of Coenzyme B12** THOMAS C BRUNOLD, University of Wisconsin Madison

3:25 **Recess**

3:40 (1170-4) **Electron-Nuclear Double Resonance (ENDOR) in Metallobiochemistry** BRIAN HOFFMAN, Northwestern University

4:15 (1170-5) **Dynamics and Mechanisms of Copper-Responsive Regulators and Efflux Pumps in Living Cells Revealed by Single-Molecule Imaging** PENG CHEN, Cornell University

AWARDS **Session 1180**

The Royal Society of Chemistry's Joseph Black Award
arranged by Rebecca Brodie, Royal Society of Chemistry

Tuesday Afternoon, Room W183b
Rebecca Brodie, Royal Society of Chemistry, Presiding

1:30 **Introductory Remarks - Rebecca Brodie**

1:35 **Presentation of the 2017 Royal Society of Chemistry's Joseph Black Award to Kirsty Penkman, University of York, United Kingdom, by Rebecca Brodie, Royal Society of Chemistry**

1:40 (1180-1) **Through the Looking-Glass, and What Amino Acids Found There** KIRSTY PENKMAN, University of York

2:15 (1180-2) **Evolutionary Metallomics** ARIEL D ANBAR, Arizona State University

2:50 (1180-3) **Development of Targeted Metaproteomic Method for Studies of Ocean Metabolism and Change** MAK SAITO, Woods Hole Oceanographic Institution, Matthew McIlvin, Dawn Moran

3:25 **Recess**

3:40 (1180-4) **Interrogation of PTMs in C. Reinhardtii via MS-Based Proteomics Approaches** LESLIE HICKS, University of North Carolina at Chapel Hill

4:15 (1180-5) **Dissecting Protein Complexes in the Gas-Phase: From Top-Down Sequencing to Collision Induced Unfolding** BRANDON RUOTOLO, University of Michigan

SYMPOSIUM **Session 1190**

ACS-DAC - Ion Mobility: Adding New Dimensions
arranged by Matthew F Bush, University of Washington

Tuesday Afternoon, Room W184d
Matthew F Bush, University of Washington, Presiding

1:30 **Introductory Remarks - Matthew F Bush**

1:35 (1190-1) **Multidimensional Ion Mobility Analysis of Proteins and Protein Complexes** MATTHEW F BUSH, University of Washington

2:10 (1190-2) **Pathways and Thermodynamics of Polyproline Helix Formation in Solution from Measurements of Ions in the Gas Phase** DAVID E CLEMMER, Indiana University

2:45 (1190-3) **Tandem Differential Mobility Spectrometry and Addition of Ion Transformations for Improved Selectivity of Response** GARY ALAN EICEMAN, New Mexico State University

3:20 **Recess**

3:35 (1190-4) **Ion Mobility Spectrometry for Nanomaterials** CHRISTOPHER J HOGAN, University of Minnesota, Seongho Jeon, Vivek K Rawat, David T Buckely, Derek R Oberreit

4:10 (1190-5) **Coupling of Surface-Induced Dissociation with Ion Mobility or High Resolution MS** VICKI WYSOCKI, Ohio State University, Joshua Gilbert, Jing Yan, Zachary VanAernum, Florian Busch, Sophie Harvey, Aniruddhe Sahasrabuddhe, Alyssa Stiving, Akiko Tanimoto

SYMPOSIUM **Session 1200**

Advances in Real-Time Detection of Metal Ions for Bioimaging and Environmental Monitoring
arranged by Yi Lu, University of Illinois at Urbana-Champaign
and Daniela Buccella, New York University

Tuesday Afternoon, Room W184a
Yi Lu, University of Illinois at Urbana-Champaign, Presiding

1:30 **Introductory Remarks - Yi Lu and Daniela Buccella**

1:35 (1200-1) **New Targeted Fluorescent Probes for the Study of Intracellular Metal Distribution and Mobilization** DANIELA BUCCELLA, New York University

2:10 (1200-2) **Tracking Mobile Zinc in the Brain - New Probes, New Biology** STEPHEN J LIPPARD, Massachusetts Institute of Technology

2:45 (1200-3) **Molecular Imaging of Transition Metal Signaling in the Brain and Beyond** CHRISTOPHER J CHANG, University of California Berkeley

3:20 **Recess**

3:35 (1200-4) **Quantification of Zinc with Genetically Encoded FRET-Based sensors** AMY ELIZABETH PALMER, University of Colorado

4:10 (1200-5) **In Vitro Selection of DNAzymes that are Highly Selective for Metal Ions and Transforming Them Into Metal Ion Sensors for Environmental Monitoring and Biomedical Diagnostic and Imaging** YI LU, University of Illinois at Urbana-Champaign, JingJing Zhang, Claire McGhee, Ryan Lake

SYMPOSIUM **Session 1210**

Forensic Analysis in the Lab and Crime Scene
arranged by Igor K Lednev, University at Albany, SUNY

Tuesday Afternoon, Room W179a
Igor K Lednev, University at Albany, SUNY, Presiding

1:30 **Introductory Remarks - Igor K Lednev**

1:35 (1210-1) **Forensic Science Research and Development Funding Program at the National Institute of Justice: Opportunities in Analytical Chemistry, Applied Spectroscopy and Bioanalysis** GREGORY DUTTON, National Institute of Justice

2:10 (1210-2) **Discriminating Power of Volatiles from Forensic Specimens in the Field Using Innovative Sampling and Analysis** KENNETH G FURTON, Florida International University, Howard K Holness, Alison Simon, Lauren Colon-Crespo, Adhly Huertas, Vanquilla Shellman, Rodolfo Mesa, Abuzar Kabir

2:45 (1210-3) **Macro X-Ray Fluorescence (MA-XRF): A Powerful Tool for the Non-Invasive Detection, Analysis and Imaging of Biological Traces and Gun Shot Residues in Forensic Science** ARIAN C VAN ASTEN, Netherlands Forensic Institute, Kirsten Langstraat, Alwin Knijnenberg, Gerda Edelman, Annelies van Loon, Joris Dik

3:20 **Recess**

3:35 (1210-4) **Collection and Analysis of Breath Components for Marijuana Detection Using Capillary Microextraction of Volatiles (CMV)** JOSE R ALMIRALL, Florida International University

4:10 (1210-5) **Raman Microspectroscopy of Biological Stains and Advanced Statistics for Forensic Purposes** IGOR K LEDNEV, University at Albany, The State University of New York

SYMPOSIUM **Session 1220**

IAEAC - Novel Sensor Strategies for the Quantification of Biogenic Amines
arranged by Antje J Baeumner, University of Regensburg

Tuesday Afternoon, Room W181c
Antje J Baeumner, University of Regensburg, Presiding

1:30 **Introductory Remarks - Antje J Baeumner**

1:35 (1220-1) **Engineered Water Nanostructures (EWNS): A Chemical Free, Nanotechnology Based Antimicrobial Platform for Inactivation of Foodborne Microorganisms Across the "Farm to the Fork" Continuum** PHILIP DEMOKRITOU, Harvard T. H. Chan School of Public Heath N/A

2:10 (1220-2) **Novel Sensing Strategies for the Quantification of Biogenic Amines** AXEL DUERKOP, University of Regensburg

2:45 (1220-3) **Single-Walled Carbon Nanotube-Based Chemiresistive Sensors for Food Freshness Monitoring** JAN MARKUS SCHNORR, C2Sense, Inc., Timothy M Swager

3:20 **Recess**

3:35 (1220-4) **Seafood Decomposition, Biogenic Amines, and Associated Regulatory Applications** RONALD A BENNER, JR., U.S. Food and Drug Administration

4:10 (1220-5) **Stimulus-Response Biosensor for Determining Bacteria Viability Using Lectin-Glycoenzyme Nanobrushes** ERIC MCLAMORE, University of Florida

SYMPOSIUM **Session 1230**

JAIMA - Emerging Technologies for the Evaluation of Biotherapeutics
arranged by Satoshi Nomura, Japan Analytical Instruments Manufacturers' Association (JAIMA)

Tuesday Afternoon, Room W183c
Satoshi Nomura, Japan Analytical Instruments Manufacturers' Association (JAIMA), Presiding

1:30 **Introductory Remarks - Satoshi Nomura**

1:35 (1230-1) **Subvisible Particles in Therapeutic Protein Products: Causes, Consequences, Control and Challenges** JOHN CARPENTER, University of Colorado

2:10 (1230-2) **Raman Spectroscopy for Highly Concentrated Antibody Solution in Biopharmaceuticals** CHIKASHI OTA, Horiba, Ltd

2:45 (1230-3) **Recent Analytical Approach for Evaluating Protein Formulation in Biopharmaceuticals** KOHEI TSUMOTO, The University of Tokyo

3:20 **Recess**

3:35 (1230-4) **Resolving the Mega-Mysteries of Biologics: High Mass Analysis of Conjugated, PEGylated and Aggregated Proteins by MALDI-TOF MS** BRIAN FIELD, Shimadzu Scientific Instruments, Ryan Wenzel, Nazim Boutaghou, Scott Kuzdzal

4:10 (1230-5) **Mass Spectrometry-Based Clinical Proteogenomics for Personalized Medicine of Lung Cancer Subtypes** TOSHIHIDE NISHIMURA, St. Marianna University School of Medicine

TECHNICAL PROGRAM

SYMPOSIUM **Session 1240**

Microanalytical Methods for Immunology
arranged by Rebecca R Pompano, University of Virginia and J Christopher Love, Koch Institute at MIT

Tuesday Afternoon, Room W181b
Rebecca R Pompano, University of Virginia, Presiding

1:30		**Introductory Remarks - Rebecca R Pompano and J Christopher Love**
1:35	(1240-1)	**Single-Cell Technologies for Profiling Human Disease** J CHRISTOPHER LOVE, Koch Institute at MIT N/A
2:10	(1240-2)	**High-Throughput Affinity Electrophoresis Underpins Quantitative Characterization of Antibodies** AMY E HERR, University of California Berkeley
2:45	(1240-3)	**Microsystems and Materials for Capture, Analysis and Release of Immune Cells** ALEXANDER REVZIN, University of California, Davis, Kyungjin Son, Tam Vu, Judy van de Water, Gulnaz Stybayeva
3:20		**Recess**
3:35	(1240-4)	**Spatially Resolved Detection of Cytokines in Intact Tissue Ex Vivo** REBECCA R POMPANO, University of Virginia, Maura C Belanger, Andrew W Kinman, Benjamin D Groff
4:10	(1240-5)	**In Vivo Microdialysis Sampling for Observing Immune Cell Chemical Communication** JULIE A STENKEN, University of Arkansas, Kamel Alkhatib, Alda Diaz-Perez, Randy Espinal Cabrera, Sarah Phillips, Tina Poseno, Margaret Power, Thaddeus Vasicek, Patrick Pysz

SYMPOSIUM **Session 1250**

Process Analytical Technologies for Pharmaceutical and Biopharmaceutical Continuous Manufacturing
arranged by Todd D Maloney, Eli Lilly and Company

Tuesday Afternoon, Room W181a
Todd D Maloney, Eli Lilly and Company, Presiding

1:30		**Introductory Remarks - Todd D Maloney**
1:35	(1250-1)	**Process Analytical Technologies for Real-Time Monitoring of Small Volume Continuous Processes** TODD D MALONEY, Eli Lilly and Company, Gordon Lambertus, Adam McFarland, Brad Campbell, Mindy B Forst, Jon Dieringer
2:10	(1250-2)	**Process Analytical Technology (PAT) for Biologics: Case Studies in Online LC** DOUGLAS RICHARDSON, Merck, Bhumit Patel, Jun Heo, Kaiyan Tang, John P Higgins, David Pollard
2:45	(1250-3)	**Practical Applications of PAT and On-Line LC in Biopharmaceutical Process Development and Manufacturing** MARK T CHIPLEY, Pfizer, Inc, Jason A Starkey
3:20		**Recess**
3:35	(1250-4)	**On-Line HPLC and Vibrational Spectroscopy for Monitoring and Control of a Multi-Stage Continuous Flow Chemistry Process** ROBERT BONDI, GlaxoSmithKline
4:10	(1250-5)	**Process Analytical Technology Applications in Agricultural Processing** ERIN ROCKAFELLOW, ADM, Joshua Terrian, David Ejeh

SYMPOSIUM **Session 1260**

Recent Innovations in Nanosensing
arranged by Xiujun James Li, University of Texas at El Paso

Tuesday Afternoon, Room W178b
Xiujun James Li, University of Texas at El Paso, Presiding

1:30		**Introductory Remarks - Xiujun James Li**
1:35	(1260-1)	**Ion Channel Probes (ICPs) for Bio/Chemical Analysis** LANE A BAKER, Indiana University
2:10	(1260-2)	**Nano-Enabled *In Vitro* and *In Vivo* Diagnostic Tools for Tracking and Treating Disease** CHAD A MIRKIN, Northwestern University
2:45	(1260-3)	**Nanoparticle-Mediated Photothermal Immunosensing Using a Thermometer** XIUJUN JAMES LI, University of Texas at El Paso
3:20		**Recess**
3:35	(1260-4)	**Nanosensors for Direct Reading of DNA Damage** STEVEN SOPER, University of Kansas
4:10	(1260-5)	**Novel Plasmonic Nanostructures for Sensing and Imaging Applications** YOUNAN XIA, Georgia Institute of Technology

ORGANIZED CONTRIBUTED SESSIONS **Session 1270**

Current Trends in Pharmaceutical Dissolution Testing
arranged by Gregory K Webster, AbbVie and J Derek Jackson, Flexion Therapeutics

Tuesday Afternoon, Room W179b
Gregory K Webster, AbbVie, Presiding

1:30	(1270-1)	**Five Steps Required for Transition to Enhanced Mechanical Qualification of the Dissolution Apparatus** BRYAN CRIST, Agilent Technologies
1:50	(1270-2)	**Summary Report from the AAPS IVRDTG Instrumentation Sub-Team** GEOFFREY GROVE, Sotax Corporation
2:10	(1270-3)	**Cleaning Validations for App1/App2 Systems** GREGORY K WEBSTER, AbbVie, Xi Shao, Christian J Hansen
2:30	(1270-4)	**In Vitro Release Testing of Parenteral Suspensions** DEREK JACKSON, Flexion Therapeutics N/A
2:50		**Recess**
3:05	(1270-5)	**Novel Methods for Predictive Dissolution Measurements** KONSTANTIN TSINMAN, Pion Inc, Dave Kwajewski
3:25	(1270-6)	**Advanced Dissolution Technologies for Formulation Rapid Screening and Development** XUJIN LU, Bristol-Myers Squibb, Lili Lo, Pankaj Shah
3:45	(1270-7)	**Analyzing Multi Component Dissolution Samples Using In-Situ Fiber Optic UV Spectrophotometry** ANDREW KIELT, Distek, Inc., Guy Inman
4:05		**Panel Discussion**

ORGANIZED CONTRIBUTED SESSIONS **Session 1280**

From Discovery to Precision Medicine: Mass Spectrometry Through the Years and Beyond
arranged by Jody Roberts, Chemical Heritage Foundation

Tuesday Afternoon, Room W184bc
Jody Roberts, Chemical Heritage Foundation, Presiding

1:30		**Introductory Remarks - Jody Roberts**
1:35	(1280-1)	**The Commercialization of Quadrupole Mass Spectrometry and GC/MS/DS: An Historical View** DAVID C BROCK, Computer History Museum, Robert E Finnigan
2:10	(1280-2)	**A Brief History (1974-2016) of Mass Spectrometry Instrumentation Driving Cutting-Edge Biological Research that then Stimulates Development of New Mass Spectrometry Instrumentation** DONALD F HUNT, University of Virginia
2:45	(1280-3)	**Orbitrap Mass Spectrometry: Ultra-High Resolution for Post-Genomic World** ALEXANDER A MAKAROV, Thermo Fisher Scientific
3:20		**Recess**
3:35	(1280-4)	**Mass Spectrometry and Biomonitoring for Assessing Exposure to Environmental Chemicals** ANTONIA CALAFAT, CDC
4:10		**Panel Discussion - Continued Expansion of the Role of Mass Spectrometry in the Biomedical World of the Future**

ORGANIZED CONTRIBUTED SESSIONS **Session 1290**

SEAC: The Student Session in Electroanalysis
arranged by Stephen Maldonado, University of Michigan

Tuesday Afternoon, Room W176c
Stephen Maldonado, University of Michigan, Presiding

1:30	(1290-1)	**Nanogap Voltammetry of Highly Disordered Conductive Carbon** RAN CHEN, University of Pittsburgh, Amin M Najarian, Richard L McCreery, Shigeru Amemiya
1:50	(1290-2)	**Convolution-Based Removal of Non-Faradaic Background Current in Fast-Scan Cyclic Voltammetry Recordings** JUSTIN ALLEN JOHNSON, University of North Carolina at Chapel Hill, R Mark Wightman
2:10	(1290-3)	**Dual Function Ion Selective Microelectrodes for SECM** JYOTHIR GANESH UMMADI, Oregon State University, Dipankar Koley
2:30	(1290-4)	**Virus-Composite Films for Impedimetric Sensing of Human Serum Albumin** ALANA OGATA, University of California Irvine, Jeffrey Briggs, Shae Schlegel, Ming Tan, Sudipta Mujamdar, Gregory Weiss, Reginald Penner
2:50		**Recess**

Author and presider lists are available at www.pittcon.org

3:05 (1290-5) **Reaction Mechanism of Nickel Molybdate (NiMo04) Investigated via *Operando* Synchrotron X-Ray Techniques** JAMES P PASTORE, Cornell University, Peter M Csernica, Katharine E Silberstein, James R McKone, Francis J DiSalvo, Héctor D Abruña

3:25 (1290-6) **Electrolysis of Ammonia Using Earth-Abundant Materials** DANIEL J LITTLE, Michigan State University

3:45 (1290-7) **Probing the Unique Reactivity Modes of Redox Active Polymer Particles** MARK BURGESS, University of Illinois at Urbana-Champaign, Kenneth Hernandez-Burgos, Etienne Chenard, Jonathon Schuh, Jasmine Davila, Elena C Montoto, Randy H Ewoldt, Jeffrey S Moore, Joaquin Rodriguez Lopez

4:05 **Panel Discussion**

ORAL SESSIONS — Session 1300

Bioanalytical - Electrochemistry

Tuesday Afternoon, Room W175a
Srikanth Gattu, West Virginia University, Presiding

1:30 (1300-1) **The Electrochemical Characterization of Ink-Jet Printed Carbon Nanotubes Electrodes** ROMANA JAROSOVA, Michigan State University, Margaret Gajda, Greg Swain, Andreas Lesch

1:50 (1300-2) **Electroanalytical Measurements in Zebrafish** MICHAEL JOHNSON, University of Kansas, Mimi Shin, Thomas Field, Chase S Stucky

2:10 (1300-3) **Integration of Collagen Hydrogel Scaffold to Enhance Performance of RNA Electrochemical-Aptamer Based (E-AB) Sensors** MIRELIS SANTOS CANCEL, University of Maryland, Baltimore County, Ryan White

2:30 (1300-4) **Nanocomposite Microneedle Electrochemical Arrays for Non-Invasive Transdermal Sensing of Analytes** ELDHOSE SKARIA, University of Brighton, Melanie S Flint, Bhavik A Patel, Keng W Ng

2:50 **Recess**

3:05 (1300-5) **Applications of Different CNT Fibers and Novel Microelectrodes Design for Neurotransmitter Detection** YANG CHENG, University of Virginia, B Jill Venton, Christopher B Jacobs

3:25 (1300-6) **Measurement of Pyocyanin from *Pseudomonas Aeruginosa* in Polymicrobial Environments Using Electrochemical Sensors** EDGAR D GOLUCH, Northeastern University, Clara Romero Santiveri, Hunter Sismaet

3:45 (1300-7) **Bactosomal Cytochrome P450 Electrocatalysis** RAJASEKHARA NERIMETLA, Oklahoma State University, Sadagopan Krishnan

4:05 (1300-8) **Electrochemiluminescence-Based Detection of Bacteria** HENOK BAYE HABTAMU, Indiana University - Purdue University Indianapolis, Frederique Deiss

ORAL SESSIONS — Session 1310

Bioanalytical - Fluorescence/Luminescence, and Capillary Electrophoresis

Tuesday Afternoon, Room W175b
Jinesh N Jain, NETL - Department of Energy, Presiding

1:30 (1310-1) **A Cooperative-Binding Split Aptamer Assay for Rapid, Specific and Ultra-Sensitive Fluorescence Detection of Cocaine in Saliva** HAIXIANG YU, Florida International University, Juan Canoura, Bhargav Guntupalli, Yi Xiao

1:50 (1310-2) **Reversible Distribution of G Protein βU9 Based Assay for Real-Time Quantification of GPCR and G Protein Function in Living Cells** KANISHKA SENARATH, University of Toledo, Kasun Ratnayake, Praneeth Siripurapu, Ajith Karunarathne

2:10 (1310-3) **A Novel Fluorescent Ratiometric Nanosensor for Continuous Chloride Monitoring In Vivo** WENJUN DI, Northeastern University, Heather A Clark

2:30 (1310-4) **Development of Graphene Quantum Dots with Controllable Size and Composition** XUEFEI ZHANG, University of North Dakota, Xiao Liu, Yuqian Xing, Ying Zhang, Julia Zhao N/A

2:50 **Recess**

3:05 (1310-5) **Analyzing *Drosophila Melanogaster* Hemolymph with Different Sampling Techniques, Capillary Electrophoresis, and Fluorescence Cell Sorting** MARISSA R CABAY, University of Illinois at Chicago, Scott A Shippy

3:25 (1310-6) **The Role of Titanium Dioxide Nanoparticles in Endocrine Disruption Through Binding to Steroid Hormones** MARRIAH ELLINGTON, West Virginia University, Vincent Nyakubaya, Lisa A Holland N/A

3:45 (1310-7) **Assay Conditions and New Applications of a Peptide Substrate Reporter** MICHELLE L KOVARIK, Trinity College, Allison J Tierney, Kunwei Yang

4:05 (1310-8) **Optical Control and Real Time Mapping of Subcellular Signaling & Cell Behavior** AJITH KARUNARATHNE, University of Toledo, Kanishka Senarath, Dinesh Kankanamge, Kasun Ratnayake, Christine Dansak, Praneeth Siripurapu

ORAL SESSIONS — Session 1320

Bioanalytical - MS, GC/MS, and LC/MS

Tuesday Afternoon, Room W175c
Lingzi Sang, University of Illinois Urbana-Champaign, Presiding

1:30 (1320-1) **Metabolic Profiling Along the Segmentally Stratified Rat Colon** MEREDITH DINGES, University of California Riverside, Cynthia K Larive, Christian Lytle

1:50 (1320-2) **High-Throughput Mass Spectrometry for Bioanalytical Assays: Sub-Second Sample Processing via Acoustic Droplet Ejection** ERIC W HALL, Labcyte, Lucien Ghislain, Richard Ellson, Martin Bachmann, Ian Sinclair, Jonathan Wingfield, Rhys Jones, Sammy Datwani

2:10 (1320-3) **12-Time Point Proteomics of *Xenopus Laevis* Allows for Broad Understanding of Proteomic Expression File Emerging from a Mature Oocyte to Late Neurala Stage Embryo Quantifying More than 6,100 Protein Profiles** ELIZABETH H PEUCHEN, University of Notre Dame, Liangliang Sun, Matthew M Champion, Norman J Dovichi

2:30 (1320-4) **New Setup for Micro-Extraction Techniques and GC-MS Analysis of Biological Cultures** ANN-CHRISTIN BISCHOFF, Rostock University Medical Center, Peter Oertel, Pritam Sukul, Wolfram Miekisch, Jochen K Schubert

2:50 **Recess**

3:05 (1320-5) **Identification and Determination of Photosensitizing Porphyrins in Oral Bacteria** JONAS FYRESTAM, Stockholm University

3:25 (1320-6) **Selenium Accumulation and Metabolism in Supplemented Aquaponics Systems Using ICP-QQQ and HPLC** SKYLER W SMITH, University of Cincinnati, Julio A Landero-Figueroa, Christopher Yap, Megan Schmale

3:45 (1320-7) **The Impact of Glyphosate on the Artemia Metabolome Determined Using ^{1}H NMR and GC-MS** MELISSA A MORGAN, University of California Riverside, Cynthia K Larive, Corey M Griffith

4:05 (1320-8) **Universal Derivatization of Metabolites for Improved Sensitivity in Electrospray Ionization Mass Spectrometry** TIANJIAO HUANG, Saint Louis University, James Edwards

ORAL SESSIONS — Session 1330

Bioanalytical Application of Mass Spectrometry

Tuesday Afternoon, Room W176a
Yinfa Ma, Missouri University of Science and Technology, Presiding

1:30 (1330-1) **Controlled Protein Digestion in Membranes Containing Immobilized Enzymes** MERLIN BRUENING, University of Notre Dame, Yongle Pang, Wenjing Ning, Jinlan Dong

1:50 (1330-2) **Expanding the Capabilities of Microscopy-Guided MALDI MS Profiling to Enable Analysis of Biochemically and Structurally Heterogeneous Biological Samples Ranging from Individual Neurons to Bacterial Colonies** TROY J COMI, University of Illinois, Elizabeth K Neumann, Tong Si, Stanislav S Rubakhin, Jonathan V Sweedler

2:10 (1330-3) **Analysis of Trace Glycosylated Peptides *In Vivo* Using Mass Spectrometry** CATHERINE KRAMER, University of Arizona, Evan M Jones, Chris Stagg, Lajos Szabo, Robin Polt, Michael L Heien

2:30 (1330-4) **SILAC *In Vitro* Quantitative Profiling of Colon Cancer Spheroids Treated with Combination Chemotherapies in a 3D Printed Fluidic Device** GABRIEL J LABONIA, University of Notre Dame, Amanda B Hummon

2:50 **Recess**

3:05 (1330-5) **Tip Enhanced Laser Ablation for Genomics and Proteomics Analysis** KERMIT KING MURRAY, Louisiana State University, Fan Cao, Bijay Banstola, Fabrizio Donnarumma

3:25 (1330-6) **High-Throughput Screening and Quantitation of Prohibited Substances in Plasma and Urine Samples by Coated Blade Spray-Mass Spectrometry (CBS-MS)** MARCOS TASCON, University of Waterloo, German Augusto Gomez-Ríos, Nathaly Reyes-Garces, Ezel Boyaci, Justen J Poole, Janusz Pawliszyn

TECHNICAL PROGRAM

3:45 (1330-7) **Paper-Based Ion Concentration Polarization Within the Volume of a Paper Spray Ionization Emitter for Mass Spectrometric Detection of Biomolecules from Small Sample Volumes** LARRY G WARFIELD, University of Tennessee, Christopher A Baker

4:05 (1330-8) **Open Port Probe as a Robust Interface for the Direct Coupling of Biocompatible Solid-Phase Microextraction Fibers to Atmospheric Pressure Ionization Mass Spectrometry** GERMAN AUGUSTO GOMEZ-RIOS, University of Waterloo, Janusz Pawliszyn, Chang Liu, Nathaly Reyes-Garces, Thomas R Covey, Bradley Schneider, Don W Arnold

ORAL SESSIONS — Session 1340

Clinical Chemistry Aspects with Focus on Pathogens, Marijuana and Anti-Cancer Measurements (Half Session)

Tuesday Afternoon, Room W176b
Kimberley Frederick, Skidmore College, Presiding

1:30 (1340-1) **Medical Applications of GC-Ion Mobility Spectrometry** WOLFGANG VAUTZ, ISAS

1:50 (1340-2) **Electrochemical Measurement of Pyocyanin Production by Clinical *Pseudomonas Aeruginosa* Isolates** EDGAR D GOLUCH, Northeastern University N/A

2:10 (1340-3) **A Chemical Assessment of Marijuana by GC-FID with a Variety of Injection Techniques** REBECCA PLESSEL, Penn State University, Maura McGonigal, Frank Dorman

2:30 (1340-4) **Development, Validation and Comparative Analysis of HPLC and HPTLC Methods for Quantification of Capecitabine in Serum of Cancer Patients** MADHUKAR R TAJNE, Rashtrasant Tukadoji Maharaj Nagpur University, Sonali Gajanrao Thorat N/A

ORAL SESSIONS — Session 1350

Microfluidics Methods - Biomedical Applications

Tuesday Afternoon, Room W177
Abhijit Ghosh, Brigham Young University, Presiding

1:30 (1350-1) **Microfabricated Sampling Probes Coupled to Droplet Microfluidics for In Vivo Neurochemical Monitoring with High Spatiotemporal Resolution** THITAPHAT NGERNSUTIVORAKUL, University of Michigan, Alec C Valenta, Robert T Kennedy

1:50 (1350-2) **A New All-Polymer Microfluidic Chip to Measure Neurochemical Release from Single Cells** ADAM ROBERT MEIER, University of Arizona, Richard F Vreeland, Marco Matteucci, Rafael Taboryski, Michael L Heien

2:10 (1350-3) **Smart Hydrogel Integrated on Microfluidic Paper-Based Analytic Device for Point-of-Care Testing** ZHI ZHU, Xiamen University, Chaoyong Yang

2:30 (1350-4) **Development of Computer-Controlled Microfluidic Biosensing Systems for Tissue Viability Monitoring** SALLY A GOWERS, Imperial College London, Michelle L Rogers, Chi Leng Leong, Tonghathai Phairatana, Isabelle C Samper, Martyn G Boutelle

2:50 **Recess**

3:05 (1350-5) **A 3D Printed Device to Test Bacterial Susceptibility to Antibiotic Dosing** ANDREW HELLER, Michigan State University, Dana Spence

3:25 (1350-6) **Carbon-Based Sensors for Use in On-Line Microfluidic Carboplatin Detector** TONGHATHAI PHAIRATANA, Imperial College London, Martyn G Boutelle

3:45 (1350-7) **Inertial Microfluidic Device for Automated Adjustment of Cell Concentration** JIAN ZHOU, Zhejiang University, Chunlong Tu, Yitao Liang, Bobo Huang, Yifeng Fang, Xiao Liang, Xuesong Ye

4:05 (1350-8) **Portable High-Resolution 3D Printed Microfluidic Analyzer for Online Clinical Microdialysis Samples** ISABELLE C SAMPER, Imperial College London, Sally A Gowers, Bynvant K Sandhu, Chi Leng Leong, Michelle L Rogers, Carlo A Seneci, Vassilios Papalois, Martyn G Boutelle, Brook F Huxford

ORAL SESSIONS — Session 1360

Microfluidics Methods - Environmental Applications (Half Session)

Tuesday Afternoon, Room W176b
Kimberley Frederick, Skidmore College, Presiding

3:05 (1360-1) **Low Cost Microfluidics for Resource Limited Settings: Using 3D Printing and Microcontroller Technology to Increase the Reach of Cutting Edge Research** JASON M EMORY, Pfeiffer University, Micah E Bostian

3:25 (1360-2) **Fully Printable Optical System Oriented Micro/Nano Fabrication by Configuration of Polydimethylsiloxane and Gallium** KEISUKE NAKAKUBO, Kyushu University, Hiroaki Nomada, Hirokazu Higuchi, Hiroaki Yoshioka, Kinichi Morita, Yuji Oki

3:45 (1360-3) **A Novel Microfluidic Device for Fast Extraction of Polycyclic Aromatic Hydrocarbons (PAHs) from Environmental Waters** FLORENCE RICOUL, CEA/LETI, Louise Foan, Julien El Sabahy, Bertrand Bourlon, Séverine Vignoud

4:05 (1360-4) **A One-Step Surface Modification Method for Simple DNA Immobilization on Paper-Based Device and Its Application for DNA Detection** WAN ZHOU, University of Texas at El Paso, Mengli Feng, Alejandra Valadez Valadez, Xiujun Li

ORAL SESSIONS — Session 1370

Microfluidics Methods -Bioanalytical Applications

Tuesday Afternoon, Room W475a
Sam Subramaniam, Miles College, Presiding

1:30 (1370-1) **Microfluidic Protein-Based Separations with Phospholipid Nanogels** CASSANDRA CRIHFIELD, West Virginia University, Srikanth Gattu, Lisa A Holland N/A

1:50 (1370-2) **Enhancing the Information Content of Single Cell Analysis on Microfluidic Devices Using Optical Fiber Bridges for the Analysis of Kinases, Proteases, and Cytokines** CHRISTOPHER T CULBERTSON, Kansas State University

2:10 (1370-3) **Development of an On-Line Microdialysis Microchip Electrophoresis-Based Separation System for In Vivo Monitoring of Biomarkers in Traumatic Brain Injury** SHAMAL M GUNAWARDHANA, University of Kansas, Susan M Lunte

2:30 (1370-4) **Functional Screening of Membrane Proteins with Microfluidic Nanodisc Assembly** JAMES H WADE, University of Illinois at Urbana-Champaign, Ryan C Bailey, Josh D Jones

2:50 **Recess**

3:05 (1370-5) **An In Vitro Microfluidic Model of Endothelial Barrier Function** ALEXANDRA M ANDERSON, University of Tennessee, Christopher A Baker

3:25 (1370-6) **Electrokinetically Operated Integrated Microfluidic Platform for Immunoaffinity Extraction and Electrophoresis of Preterm Birth Biomarkers** MUKUL SONKER, Brigham Young University, Vishal Sahore, Ellen Parker, Adam T Woolley

3:45 (1370-7) **Microfluidic Separation of Lymphoblasts in Diagnosis of Acute Lymphoblastic Leukemia** WENJIE LI, Texas Tech University, Dimitri Pappas

4:05 (1370-8) **Separation of Biomolecules from Microdroplets to Nanodroplets** MAO FUKUYAMA, Kyoto Institute of Technology, Yumi Yoshida, Kohji Maeda

ORAL SESSIONS — Session 1380

Recent Developments in Portable Instruments

Tuesday Afternoon, Room W475b
Jane Chan, Bechtel Bettis, Inc., Presiding

1:30 (1380-1) **Printable Field Deployable Sensors Based on Functional Redox Active Nanoparticles** SILVANA ANDREESCU, Clarkson University, Gonca Bulbul, Ali Othman

1:50 (1380-2) **Novel Non-Radioactive Ion Source for Atmospheric Pressure Ionization (API)** BERT UNGETHUEM, Airsense Analytics, Andreas Walte

2:10 (1380-3) **Hand-Portable Nanoflow Liquid Chromatography System** LUKE T TOLLEY, Brigham Young University, Xiaofeng Xie, Truong X Thy, Paul B Farnsworth, H Dennis Tolley, Milton L Lee

2:30 (1380-4) **Dopant-Assisted Positive Photoionization Ion Mobility Spectrometry for On-Site Detection of Peroxide Explosives** HAIYANG LI, Dalian Institute of Chemical Physics, Dandan Jiang, Chuang Chen, Xin Wang

2:50 **Recess**

3:05 (1380-5) **Improving Worker Safety by the Measurement of Toxic Gases Inside Cargo Containers Using a Novel Hand-Held Photoacoustic Gas Analyzer** ARTO BRANDERS, Gasera Ltd., Ismo Kauppinen, Jaakko Lehtinen

3:25 (1380-6) **Reliable Measurements and Influence of Humidity in an Ion Mobility Spectrometer** BERT UNGETHUEM, Airsense Analytics, Andreas Walte

3:45 (1380-7) **Portable Gas Analyzer for Continuous Monitoring of Hydrogen Sulfide in Gas Streams** SAYED A MARZOUK, United Arab Emirates University, Mohamed A Alnaqbi, Mohamed H Al-Marzouqi, Muna S Bufaroosha

4:05 (1380-8) **Inexpensive Portable Raman with Superior Analysis Speed and Accuracy: Visible Excitation Revisited** ALEKSANDR V MIKHONIN, BioTools, Inc., Laurence A Nafie, Rina K Dukor

ORAL SESSIONS — Session 1390

Sensors - Bioanalytical, Biomedical, Pharmaceutical, and Clinical/Toxicology

Tuesday Afternoon, Room W476
Emil Ciurczak, Doramaxx Consulting, Presiding

1:30	(1390-1)	**Surface Plasmon Immunoarrays for Insulin Measurements with Binding Kinetics** VINI SINGH, Oklahoma State University, Sadagopan Krishnan
1:50	(1390-2)	**Generating Exosome-Specific DNA Aptamers for Cancer Detection** LIQIN ZHANG, University of Florida, Weihong Tan N/A
2:10	(1390-3)	**Nano-Assembly-Based Logic Sensor for In Situ Analysis of Small RNA Combinations** LULU ZHANG, Oregon State University, Sean M Burrows
2:30	(1390-4)	**Gold-Aptamer-Nanoconstructs Engineered to Diagnose the Common Cold** VEEREN CHAUHAN, University of Nottingham
2:50		**Recess**
3:05	(1390-5)	**Reversible Electrochemical Detection of Dextran Sulfate and Pentosan Polysulfate** KEBEDE L GEMENE, Northern Kentucky University, Emma Gordon, Simon Segal, Karina Sabou
3:25	(1390-6)	**In Acupoint Real Time Monitoring of Nitric Oxide by Graphene-Functionalized Acupuncture Needle** GUOJUN ZHANG, Hubei University of Chinese Medicine, Lina Tang, Yu-Tao Li
3:45	(1390-7)	**Creating Paper Analytical Devices to Screen for Low Quality Pharmaceuticals** TONI L BARSTIS, Saint Mary's College, Christopher J Dunlap
4:05	(1390-8)	**The Enumeration of E.Coli and Beta-Hemalytic Streptococcus by Paper-Based Membrane** UGUR TAMER, Gazi University, Merve Eryilmaz, Aysen Gumustas, Gokhan Caglayan, Esra Acar, Ismail H Boyacı, Demet Cetin, Zekiye Suluder

POSTER SESSION — Session 1400

All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 1:00 PM to 3:00 PM. Poster sessions are on the Exposition Floor, Aisle 2500-2600. PLEASE NOTE: You cannot get onto the exposition floor until 9:00 AM. Posters that have not been taken down one-half hour after the designated time will be disposed of.

Bioanalytical - Sensors and Lab-on-a-Chip
Tuesday Afternoon, Exposition Floor, Aisle 2500-2600

(1400-1 P)	**Acoustophoresis Based Method for Diagnostic Applications** GAYATRI P GAUTAM, New Mexico Institute of Mining and Technology, Scott Cox, Menake E Piyasena
(1400-2 P)	**Improved On-Chip Separation and Detection of Cellular Release from a 3-Dimensional Cell Culture Model** BENJAMIN TIMOTHY MEHL, Saint Louis University, R Scott Martin
(1400-3 P)	**Dual-Function Paper-Based Analytical Device for Cultivation and Screening of Escherichia Coli Infection** JULALUK NOIPHUNG, Chulalongkorn University, Wanida Laiwattanapaisal
(1400-4 P)	**A Reconfigurable Pipette for Customized, Cost-Effective Liquid Handling** DANIEL J WILSON, Tufts University, Syrena C Fernandes, Charles R Mace
(1400-5 P)	**Understanding Single-Cell Protein Dynamics Using Single Molecule Array (Simoa) Technology** SOYOON HWANG, Tufts University, Liangxia Xie, Shazia Baig, Stephanie Walter, David R Walt
(1400-6 P)	**Advanced Glucose Biosensors based on Dendritic Gold Nanostructures** ALMIRA RAMANAVICIENE, Vilnius University, Anton Popov, Ruta Aleknaite, Natalija German, Asta Kausaite-Minkstimiene, Arunas Ramanavicius
(1400-7 P)	**Human Immune Cytokines Analysis of Post-Influenza Vaccine Responses** TRINH L DINH, Tufts University, Danlu Wu, Bruce Bausk, David R Walt
(1400-8 P)	**Tuning the Orientation of Proteins on the Surface of Nanoparticles Through Genetic Engineering for Detection of HPV Virus** JU-YI MAO, National Taiwan Ocean University
(1400-9 P)	**An Isothermal, Label-Free, and Rapid One-Step RNA Amplification/Detection Assay for Diagnosis of Respiratory Viral Infections** YONG SHIN, University of Ulsan College of Medicine, Bonhan Koo, Tae Yoon Lee
(1400-10 P)	**Solid-State Synthesis of Self-Functional Carbon Quantum Dots For Detection of Bacteria and Tumor Cells** IRVING LAI, National Taiwan Ocean University, Scott G Harroun, Shiow-Yi Chen, Binesh Unnikrishnan, Yu-Jia Li, Chih-Ching Huang
(1400-11 P)	**Cell Based Biosensing on Micropatterned Porous Silicon Photonic Crystal: Towards Single Cell Sensing** RANJANA PIYA, University of New South Wales, Justin Gooding, Peter Reece, Alexander Soeriyadi
(1400-12 P)	**DNA Aligner-Mediated Cleavage and Extension for Isothermal Amplification of Nucleic Acids** TAO ZHANG, Zhejiang University N/A
(1400-13 P)	**Specific Detection of Biomolecules in Physiological Solutions Using Polymer Modified Transistor Biosensors** NING GAO, Harvard University, Teng Gao, Xiao Yang, Wei Zhou, Xiaochuan Dai, Anqi Zhang, Charles Lieber
(1400-14 P)	**Label-Free Detection of DNA Mutations by Nanopore Analysis** XIAOHAN CHEN, Illinois Institute of Technology, Xiyun Guan, Golbarg Mohamma, Youwen Zhang, Rui Ma, Ruiqi Xie
(1400-15 P)	**Nanopore Detection of Uranyl Ions Using a Peptide Probe** GOLBARG MOHAM-MADIROOZBAHANI, Illinois Institute of Technology, Xiyun Guan, Xiaohan Chen, Youwen Zhang, Ruiqi Xie, Rui Ma
(1400-16 P)	**Single Molecule Arrays for Ultra-Sensitive Direct Detection of Nucleic Acids** LIMOR COHEN, Tufts University, Mark Hartman, Myoyong Lee, Aaron Amardey-Wellington, Mark Xylas, David R Walt
(1400-17 P)	**Synthesis of Polyethylenimine-Protected Pt-nanoclusters and Its Application in Metronidazole Detection** YUQING WU, Jilin University, Na Xu, Hongwei Li N/A
(1400-18 P)	**Single Molecule Arrays (Simoa) for Improving Tuberculosis Diagnostics** LIANGXIA XIE, Tufts University, Rushdy Ahmad, Steven A Carr, David R Walt

POSTER SESSION — Session 1410

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Environmental Analysis of Water Quality
Tuesday Afternoon, Exposition Floor, Aisle 2500-2600

(1410-1 P)	**Evaluation of Drinking Water and Surface Water in Pennsylvania for Volatile Organic Compounds Determined by GC/MS with Purge and Trap Sample Concentration** CYNTHIA ELMORE, OI Analytical, Frank Dorman, Paulina K Piotrowski, Callan Glover
(1410-2 P)	**Withdrawn**
(1410-3 P)	**Determining Haloacetic Acids in Drinking Water Using Two-Dimensional Ion Chromatography** CARL A FISHER, Thermo Fisher Scientific, Rong Lin, Kannan Srinivasan
(1410-4 P)	**EPA Method 557 Quantitation of Haloacetic Acids, Bromate and Dalapon in Drinking Water Using Ion Chromatography and Tandem Mass Spectrometry** JOHN EDWARD MADDEN, Thermo Fisher Scientific, Jonathan R Beck, Charles T Yang, Hans Schweingruber, Terri Toyoko Christison
(1410-5 P)	**Determination of Toxins in Drinking Water by UHPLC/MS/MS** ALLEN MISA, Phenomenex, Scott Krepich
(1410-6 P)	**A Sensitive Colorimetric Method for Sulphonamides Detection in Seawater Using Solid Phase Extraction and Smart phone** AZIZ AMINE, Hassan II University of Casablanca, Sophia Ait Errayess, Laila Idrissi
(1410-7 P)	**Photochemical Synthesis, Biological and Environmental Applications of Anisotropic Gold Nanoparticles** FRANCIS JUMA OSONGA, SUNY Binghamton, Idris Yazgan, Omowunmi A Sadik
(1410-8 P)	**Arsenic Speciation in FGD Wastewater Samples Using Liquid Chromatography-Hydride Generation Atomic Fluorescence Spectrometry** WARREN T CORNS, P S Analytical, Jasmina Allen, Eva M Krupp, Joerg Feldmann, Shaun Lancester
(1410-9 P)	**Determination of Selenium Species in Bottled Mineral Water Causing Odour and Tainting** WARREN T CORNS, P S Analytical, Jasmina Allen, Eva M Krupp, Joerg Feldmann, Shaun Lancester

POSTER SESSION — Session 1420

All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 1:00 PM to 3:00 PM. Poster sessions are on the Exposition Floor, Aisle 2500-2600. PLEASE NOTE: You cannot get onto the exposition floor until 9:00 AM. Posters that have not been taken down one-half hour after the designated time will be disposed of.

Food Identification
Tuesday Afternoon, Exposition Floor, Aisle 2500-2600

(1420-1 P)	**New GC Column Selectivity for Characterization of Complex Fatty Acid Methyl Esters in Food** RAMKUMAR DHANDAPANI, Phenomenex, Marc Gregerson, A Carl Sanchez, Kristen Parnell, Timothy Anderson
(1420-2 P)	**Extending Inertness, Thermal Stability and Column Lifetime of WAX GC Columns** LAURA PROVOOST, Agilent Technologies, Kenneth G Lynam, Allen Vickers, Vanessa Abercrombie, Ngoc A Dang, John Oostdijk

(1420-3 P) **Butter-Beer - Detecting Diacetyl in Beer Brewing Using Thermal Desorption and GC-MS** NATHAN S PROVO, Central Michigan University, Andrew T McDonald, Dale J LeCaptain

(1420-4 P) **Analysis of Water-Soluble Vitamins in Infant Formula by UHPLC-MS/MS** WILHAD M REUTER, PerkinElmer Inc, Sharanya Reddy, Avinash Dalmia

(1420-5 P) **A Portable Optoelectronic Nose for Monitoring Meat Freshness** ZHENG LI, University of Illinois at Urbana-Champaign N/A

(1420-6 P) **Evaluation of Optimized C30 Phase for Separation of Structurally Related Isomers** TOMOYASU TSUKAMOTO, ChromaNik Technologies Inc., Norikazu Nagae, Shun Kojima

(1420-7 P) **Fast and Reliable Analysis of Isoflavones in Dietary Supplements** KENNETH JOHN ROSNACK, Waters Corporation, Jinchuan Yang, Mark Benvenuti, Joe Romano

(1420-8 P) **GC Analysis of E-Cigarette Juice** TIMOTHY ANDERSON, Phenomenex N/A

(1420-9 P) **Cannabinoid and Terpene Analysis in Food Products** TIMOTHY ANDERSON, Phenomenex N/A

(1420-10 P) **Fragrance and Flavor Screen by GC** TIMOTHY ANDERSON, Phenomenex N/A

(1420-11 P) **Discrimination of Cold-Pressed Oils Using Raman Spectroscopy** HASAN MURAT VELIOGLU, Namik Kemal University N/A

POSTER SESSION — Session 1430

All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 1:00 PM to 3:00 PM. Poster sessions are on the Exposition Floor, Aisle 2500-2600. PLEASE NOTE: You cannot get onto the exposition floor until 9:00 AM. Posters that have not been taken down one-half hour after the designated time will be disposed of.

Food Science

Tuesday Afternoon, Exposition Floor, Aisle 2500-2600

(1430-1 P) **Mapping Elemental Nutrient and Surface Treatment Distribution in Produce** KIMBERLEY RUSSELL, Bruker

(1430-2 P) **Optimizing a Total Protein Combustion Instrument for Lowest Cost-per-Analysis** MASON MARSH, Leco, Dennis Lawrenz, Fred Schultz, Adam Darling

(1430-3 P) **Texture Structuring of Meat Analogues with Moisture Extrusion: Application of Insect and Soy Proteins** NILOOFAR ASHTARI LARKI, Deutsches Institut für Lebensmitteltechnik e.V., Marc Birringer, Stefan Töpfl, Sergiy Smetana, Christoph Pernutz

(1430-4 P) **Thermally Activated Microrheology for Characterization of Microstructure Evolution** CHRISTELLE TISSERAND, Formulaction, Maxime Bazin, Giovanni Brambilla, Mathias Fleury, Matt Vanden Eynden, Gérard Meunier

(1430-5 P) **Synthesis and Analytics of the Nature Product Thujone and Its Metabolites** IRENE THAMM, TUM, Michael Rychlik, Konrad Tiefenbacher, Johannes Richers

(1430-6 P) **Determination of Sugar Alcohols, Monosaccharides, and Disaccharides in Juice and Juice Drinks Using Ion Exchange Chromatography with Pulsed Amperometric Detection** ANNE SHEARROW, Metrohm, Frederick Fiddler

(1430-7 P) **Illuminating Flavor with Vacuum Assisted Sorbent Extraction (VASE) and GC/MS Analysis** VICTORIA NOAD, Entech Instruments, Dan Cardin, Thomas Robinson, Jared Bossart, Brian Vogel

(1430-8 P) **The Effect of Redox Potential on Amino Acid Catabolism by Lactic Acid Bacteria** TUĞBA BULAT, Hacettepe University, Ali Topcu N/A

(1430-9 P) **Real-Time VOC Analysis of Manuka Honey Using PTR-TOFMS** LUKAS MÄRK, IONICON Analytik, Jens Herbig, Matteo Lanza, Simone Jürschik, Philipp Sulzer, Alfons Jordan, Eugen Hartungen, Gernot Hanel, Christopher A Mayhew

(1430-10 P) **Real-Time Quantification of Impurities in Food-Grade CO_2 with PTR-MS** JENS HERBIG, IONICON Analytik, Lukas Märk, Alfons Jordan, Gernot Hanel, Eugen Hartungen, Stefan Jaksch, Simone Jürschik, Philipp Sulzer

(1430-11 P) **The Comparison of Headspace and HS-SPME Sampling Techniques to Characterize Volatiles in Wine over an Extended Period of Time** ALAN OWENS, Shimadzu Scientific Instruments, Inc., Andy Sandy, Nicole Lock, Michelle Yang, Robert Clifford

(1430-12 P) **Applying High Speed Gas Chromatography for the Speciation of Fats in Foods and Edible Oils** REBECCA STEVENS, Restek Corporation, Jaap de Zeeuw, Jason S Herrington

(1430-13 P) **Quantitative Analysis of Virus Adhesion on Various Food-Processing Materials** AO GUO, Illinois Institute of Technology, Komal Sandal, Rutuja Khadye, Runan Yan, Carol Shieh, Rong Wang

(1430-14 P) **Analysis of Amino Acid Profiles in Eragrostis Teff Seeds by HPLC Coupled to CE LIF Detection System** JAQUELINE N PICADA, Lutheran University of Brazil, Carlos E Rodrigues, Maria C Goersch, Fernanda Boaretto, Cleonice Hoffmann, Juliana Bondan, Giancarlo Pasquali, Tarso Ledur Kist

(1430-15 P) **Exploiting the Outstanding Properties of Calixarenes for Direct Potentiometric Determination of Choline in Milk Powders and Infant Formula with Nanomolar Detection Limit** MOHAMED ABD EL-RAHMAN, Cairo University, Amr Mahmoud N/A

(1430-16 P) **Discovery of Internal Standard for the Determination of Limonene in Sweet Orange (Citus Sinensis) Oil by Gas Chromatography** LIGUO SONG, Western Illinois University, Wei Chean Chuah, Ravi Kiran Lella, Taylor Windbiel, Angel L Perez, Shaozong Zhang

(1430-17 P) **Enzymatic Determination of Total Polyphenol Content in Beverages Using Green Bean and Banana Crude Extracts** MARIA A MOROSANOVA, Moscow State University, Elena I Morosanova

(1430-18 P) **New Method for the Extraction of Polycyclic Aromatic Hydrocarbons (PAHs) from Edible Oils Using Molecularly Imprinted Polymers (MIP)** KAYNOUSH NARAGHI, AFFINISEP, Michel Arotçaréna, Sami Bayoudh N/A

(1430-19 P) **Flavors, Odors, and Contaminants in Alcoholic Beverages Using Vacuum Assisted Sorbent Extraction (VASE) and GC/MS Analysis** VICTORIA NOAD, Entech Instruments, Dan Cardin, Jared Bossart, Brian Vogel, Thomas Robinson

(1430-20 P) **Quantitative Extraction and Analysis of Sucralose in Food Matrices** SALMA SIRAJ, Tate and Lyle

(1430-21 P) **An Enhancing Device for Volatile Compounds Analysis** CHIKAKO TAKEI, BioChromato,Inc, Yasuo Shida, Michael Churchill

(1430-22 P) **Trace Detection and Classification of Food Contaminants Using Surface Enhanced Raman Spectroscopy (SERS) with Novel Sputtered Substrates and Multivariagte Analysis** ALEJANDRA BRANHAM, Ocean Optics Inc., Anne-Marie Dowgiallo

(1430-23 P) **Elimination of N, O-Bis(trimethylsilyl)trifluoroacetamide Interfer-ence by Base Treatment in Derivatization Gas Chromatography Mass Spectrometry Determination of Parts Per Billion of Alcohols in a Food Additive** KOUDI ZHU, Dow Chemical Company, Binghe Gu, Michael Kerry, Markus Mintert, Jim Luong, Matthias Pursch

(1430-24 P) **Proposal of a Linear Retention Index (LRI) System for Improving Identification Reliability of Triacylglycerol Profiles in Different Lipid Samples by Liquid Chromatography Methods** LUIGI MONDELLO, University of Messina, Francesca Rigano, Mariosimone Zoccali

(1430-25 P) **Effects of the Iron Enrichment of Adzuki Bean (*Vigna Angularis*) Sprouts on the Elemental Translocation and Distribution of Proteins and Fe-Metalloproteins** ALINE PEREIRA OLIVEIRA, Universidade Federal de Sao Paulo, Juliana Naozuka

POSTER SESSION — Session 1440

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GC/MS

Tuesday Afternoon, Exposition Floor, Aisle 2500-2600

(1440-1 P) **A Comprehensive Approach to Beer Analysis Using Thermal Desorption and Time-of-Flight Mass Spectrometry** LAURA MCGREGOR, Markes International, Lara Kelly, Ilaria Ferrante, Matthew Edwards, Nick Bukowski

(1440-2 P) **Headspace Method Comparison for GC/MS Food Analysis** ADAM PATKIN, PerkinElmer, Timothy Ruppel, Charlie Schmidt

(1440-3 P) **Novel Food Packaging Analysis by Extraction Cell Thermal Desorption GC/MS** RONALD EDWARD SHOMO, Scientific Instrument Services, Christopher Baker, John J Manura

(1440-4 P) **Advantages of SPME Analysis Using Multiple Fibers** ANNE JUREK, EST Analytical, Kelly Cravenor, Lindsey Pyron, Adam Guichard

(1440-5 P) **Fast Pesticide Residue Analysis Using a Novel Benchtop Time-of-Flight Mass Spectrometer** JONATHAN BYER, LECO Corporation, Jack Cochran, Joseph E Binkley

(1440-6 P) **EPA Method 8270 Semi Volatile Organic Compounds Analysis on the a New Benchtop Time-of-Flight Mass Spectrometer** JONATHAN BYER, LECO Corporation, Joseph E Binkley, Lorne M Fell

(1440-7 P) **Photolysis of Chorothalonil in the Presence and Absence of Oxygen** MARIA VICTORIA COOKE, National University of Cordoba, Walter J Peláez, Gustavo A Argüello N/A

(1440-8 P) **Recent Challenging Applications of GC-MS with Cold EI and Its Enhancement Technologies** AVIV AMIRAV, Tel Aviv University, Bogdan Belgorodsky, Alexander Fialkov, Uri Keshet, Tal Alon

(1440-9 P) **Parallel Detection GCxGC-TOF MS/FID for Routine Petrochemical Analyses** MATTHEW EDWARDS, Markes International, Laura McGregor, Dave Wevill, Chris Hall, Nick Bukowski

(1440-10 P) **A Solution for Determination of High-Concentration Aromatic Compounds in Finished Gasolines Satisfying ASTM D5769 Using a New Benchtop GC-TOF/MS** CHRISTINA N KELLY, LECO Corporation, David E Alonso, Joseph E Binkley, Lorne M Fell

(1440-11 P) **Enhanced Quality Control of E-Cigarettes and E-Liquids by TD-GC-TOF MS** LAURA MCGREGOR, Markes International, Massimo Santoro, Chris Hall, Ken Umbarger

(1440-12 P) **Automated Characterization of Organic Contamination in Plastic Bags by GC/MS** ADAM PATKIN, PerkinElmer, Lee Marotta, Alan Gallaspy

(1440-13 P) **Exploration of High-Temperature Petroleum Analysis Using Comprehensive Two-Dimensional Gas Chromatography and Time-of-Flight Mass Spectrometry** CHRISTINA N KELLY, LECO Corporation, Joseph E Binkley, Lorne M Fell, David E Alonso

(1440-14 P) **176% Increase in Throughput for Determination of Semi-Volatiles Using Narrow-Bore GC Columns and Rapid Data Acquisition with a Highly Sensitive Quadrupole GCMS System** BRAHM PRAKASH, Shimadzu Scientific Instruments, William Lipps, Andy Sandy, Alan Owens, Nicole Lock, Michelle Yang, Riki Kitano

(1440-15 P) **Development of a GC-MS Method for Quantifying Non-Polar and Polar Biogenic Terpenes from Plants** MASOUMEH DALILIAN, Middle Tennessee State University, Ngee Sing Chong

(1440-16 P) **Seasonal Effects on the Bioactive Constituents and Bioactivities Properties of Leaf Essential Oil from Searsia Chirindensis (Baker f.) Moffett** SUNDAY OKOH, University of Fort Hare, Omobola Okoh, Benson Iweriebor, Anthony Okoh

(1440-17 P) **Effects of Drying Methods on the Bioactive Constituents and Bioactives Properties of the Leaf, Stem and Stem-Bark Essential Oil from Azadirachta Indica A. Juss** SUNDAY OKOH, University of Fort Hare, Omobola Okoh, Chima Igwe, Gloria Elemo, Anthony Okoh

(1440-18 P) **Terpene Constituents of the Floral and Leaf Part of Callistemon Citrinus (Curtis) Skeels from Eastern Cape of South Africa** OMOBOLA OLURANTI OKOH, University of Fort Hare

(1440-19 P) **Aroma Analysis of Beverage Samples Using a Sequential Multi-Volatile (MVM) Dynamic Headspace GC-MS Technique** ANDREAS HOFFMANN, Gerstel GmbH & Co.KG, Jun Tsunokawa, Kikuo Sasamoto, Nobuo Ochiai

(1440-20 P) **2-Step Multi-Volatile Method (2-Step MVM) for Characterization of Aroma Compounds in Bread** ANDREAS HOFFMANN, Gerstel GmbH & Co.KG, Jun Tsunokawa, Nobuo Ochiai, Kikuo Sasamoto

(1440-21 P) **Application of a Novel Linear Retention Indices Database to a Complex Hop Essential Oil** ANDREAS HOFFMANN, Gerstel Gmbh & Co.KG, Nobuo Ochiai, Kikuo Sasamoto

(1440-22 P) **A Temperature-Regulated Thermal Desorption and Pyrolysis Device** CHIKAKO TAKEI, BioChromato,Inc, Haruo Shimada, Katsuyuki Maeno, Yasuo Shida, Michael Churchill

(1440-23 P) **New Opportunities for the Non-Targeted Analysis of Environmental Contaminants Using Gas Chromatography-Orbitrap Mass Spectrometry** JASON COLE, Thermo Fisher Scientific, Paul Silcock, Cristian Cojocariu, Flavio Bedini, Fausto Pigozzo

(1440-24 P) **Automation** YUNYUN NIE, Gerstel GmbH & Co. KG, Kurt Thaxton

POSTER SESSION — Session 1450

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Sampling and Sample Preparation - Liquid Extraction, and Others

Tuesday Afternoon, Exposition Floor, Aisle 2500-2600

(1450-1 P) **Study of Magnetic Ionic Liquids as Extraction Solvents and Their Selectivity Towards DNA** JIWOO AN, Iowa State University, Kevin D Clark, Jared L Anderson

(1450-2 P) **Examination of Extraction and Clean-Up Efficiencies of Multi-Residue Pesticides in Difficult Matrices Using a Combination of Heated Extraction Techniques and a Modified QuEChERS Method** PATRICIA L ATKINS, Spex CertiPrep, Alicia Douglas Stell, Taylor M Hostak, Brittany A Leffler

(1450-3 P) **The Use of Thermal Desorption for the Analysis of Stationary Source Emissions in Accordance with CEN/TS 13649: A Valid Alternative to Traditional Solvent-Extraction Methodology** ILARIA FERRANTE, Markes International, Massimo Santoro, Caroline Widdowson, Chris Hall, Nicola Watson

(1450-4 P) **Examination of a New Pressurized Liquid Extraction Method for the Extraction of Phthalates in Polyethylene** ALICIA DOUGLAS STELL, CEM, Brittany A Leffler, Taylor M Hostak

(1450-5 P) **Polydimethylsiloxane (PDMS) Surface Modifications for Enhancing Lipopolysaccharide Stimulation in Cell Studies** OLJA SIMOSKA, University of Texas at Austin, Jason B Shear

(1450-6 P) **Protein Precipitation and Separation without Pipetting** ROLF SCHLAKE, Applied Separations

(1450-7 P) **Simple Method for Isolation of Foreign Matter from Tissue Sections** MARY L STELLMACK, McCrone Associates, Anna S Teetsov

(1450-8 P) **Optimization of 1,4-Dioxane and Ethanol Detection Using USEPA Method 8260** ANNE JUREK, EST Analytical, Kelly Cravenor, Lindsey Pyron, Adam Guichard

(1450-9 P) **Extraction of Cannabis Infused Edible Products** TIMOTHY RUPPEL, PerkinElmer N/A

(1450-10 P) **Use of Homobifunctional Imidoesters for Nucleic Acids Extraction with a Thin Film Microfluidic Platform** YONG SHIN, University of Ulsan College of Medicine, Choong Eun Jin, Tae Yoon Lee

(1450-11 P) **Multi-Position Electric Borate Fusion Sample Preparation and Study of Bauxite Sample Analyzed by XRF** PHILIPPE DAIGLE, Claisse, John A Anzelmo, Janice Pitre, Mathieu Bouchard

POSTER SESSION — Session 1460

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Surface Analysis/Imaging

Tuesday Afternoon, Exposition Floor, Aisle 2500-2600

(1460-1 P) **Detection and Characterization of Microplastics in the Penn State Waste Water Treatment Facility and Analysis of Artificial Weathering on Microplastic Spheres** CHRISTINE GHETU, Pennsylvania State University

(1460-2 P) **Examining the Morphology of Native Urban Surface Films** JACOB S GRANT, University of Iowa, Scott K Shaw

(1460-3 P) **Combination of Surface Plasmon Resonance (SPR) and Surface Enhanced Raman Scattering Spectroscopy (SERS) for Elucidating Protein- Ligand Recognition** JU-YOUNG KIM, University of Notre Dame, Zachary D Schultz

(1460-4 P) **Advancing Tip-Enhanced Raman Spectroscopy in Ultrahigh Vacuum with Single-Molecule Resolution Scanning Tunneling Microscopy** PHILIP WHITEMAN, University of Illinois at Chicago, Zachary Porach, Nan Jiang

(1460-5 P) **Electrochemiluminescence Imaging for Fast Single Cell Analysis** JINGJING XU, Nanjing University

(1460-6 P) **Dynamic X-Ray Diffraction Sampling for Automated Protein Crystal Positioning** NICOLE M SCARBOROUGH, Purdue University, Dilshan Godaliyadda, Dong Hye Ye, Shijie Zhang, David J Kissick, Robert F Fischetti, Charles A Bouman, Garth J Simpson

(1460-7 P) **Investigation of Heavy Metal Deposition in Zebrafish by X-Ray Fluorescence Spectrometry** ELIZABETH ANN JAMKA, Loyola University Chicago, Martina Schmeling

TECHNICAL PROGRAM

WEDNESDAY, MARCH 8, 2017
MORNING

AWARDS **Session 1470**

The Satinder Ahuja Award for Young Investigators in Separation Science
arranged by Karen W Phinney, National Institute of Standards and Technology (NIST)

Wednesday Morning, Room W183a
Karen W Phinney, National Institute of Standards and Technology (NIST), Presiding

8:30		**Introductory Remarks - Karen W Phinney**
8:35		**Presentation of the 2017 Satinder Ahuja Award for Young Investigators in Separation Science Award to Omar K Farha, Northwestern University by Karen W Phinney, NIST**
8:40	(1470-1)	**Functional Metal-Organic Framework Materials** OMAR K FARHA, Northwestern University
9:15	(1470-2)	**Design and Fabrication of Fluorinated MOF Platforms for Gas Storage / Separation Applications** MOHAMED EDDAOUDI, King Abullah University of Science and Technology N/A
9:50	(1470-3)	**Xylene Isomer Separation via Organic Solvent Reverse Osmosis** RYAN P LIVELY, Georgia Institute of Technology
10:25		**Recess**
10:40	(1470-4)	**Insights into MOF Functionality from Advanced Synchrotron Characterization** KARENA CHAPMAN, Argonne National Laboratory
11:15	(1470-5)	**Mimicking Nature by Metal-Organic Frameworks: Perspective and Applications** NATALIA SHUSTOVA, University of South Carolina

SYMPOSIUM **Session 1480**

ACS-DAC - Mid-Scale Instrumentation Programs in the Chemical Sciences
arranged by Paul W Bohn, University of Notre Dame and Robert Hamers, University of Wisconsin-Madison

Wednesday Morning, Room W179b
Paul W Bohn, University of Notre Dame, Presiding

8:30		**Introductory Remarks - Paul W Bohn and Robert Hamers**
8:35	(1480-1)	**Mid-Scale Instrumentation: Needs and Opportunities** ROBERT HAMERS, University of Wisconsin-Madison
9:10	(1480-2)	**Mid-Scale Instrumentation: Broader Impacts** GRAHAM F PEASLEE, University of Notre Dame
9:45	(1480-3)	**Results from the Workshop on Chemical Sciences Needs for Mid-Scale Instrument Development** PAUL W BOHN, University of Notre Dame, Marcos Dantus

SYMPOSIUM **Session 1490**

Bioinformatics: Metabolite Identification and Quantification
arranged by Xiang Zhang, University of Louisville

Wednesday Morning, Room W179a
Xiang Zhang, University of Louisville, Presiding

8:30		**Introductory Remarks - Xiang Zhang**
8:35	(1490-1)	**Improving Metabolite Identification and Quantitation Using Novel NMR-MS Cross-Platform Approaches** DANIEL RAFTERY, University of Washington
9:10	(1490-2)	**Reconstruction of High-Dimensional Metabolic Association Networks** SEONGHO KIM, Wayne State University/Karmanos Cancer Institute
9:45	(1490-3)	**Structure Identification for Non-Targeted Metabolomics: Where Are We Headed, How Do We Get There?** DAVID GRANT, University of Connecticut
10:20		**Recess**
10:35	(1490-4)	**Mass Informatics of Stable Isotope Assisted Metabolomics** XIANG ZHANG, University of Louisville
11:10	(1490-5)	**Bioinformatics Tool Box for Mass Spectrometry Imaging of Metabolites** YOUNG JIN LEE, Iowa State University

SYMPOSIUM **Session 1500**

Innovations in the Analysis of Emerging Psychotropic and Synthetic Designer Drugs
arranged by Ruth Smith, Michigan State University

Wednesday Morning, Room W178b
Ruth Smith, Michigan State University, Presiding

8:30		**Introductory Remarks - Ruth Smith**
8:35	(1500-1)	**Ultrafast CE-MS Analysis of Control Substances** MEHDI MOINI, George Washington University
9:10	(1500-2)	**GC-MS, MS/MS and GC-IR Studies on Regioisomeric Substituted Indoles** RANDALL CLARK, Auburn University
9:45	(1500-3)	**Mass Spectral Tools for Characterization of Synthetic Phenethylamines** RUTH SMITH, Michigan State University, Alexandria Anstett, Fanny Chu, David E Alonso, A Daniel Jones
10:20		**Recess**
10:35	(1500-4)	**Application of Direct Analysis in Real Time-High Resolution Mass Spectrometry to the Identification of Psychotropic Plants** RABI ANN MUSAH, State University of New York at Albany
11:10	(1500-5)	**The Utility of Portable Mass Spectrometers Towards Novel Psychoactive Substance (NPS) Evidence Screening** CHRISTOPHER MULLIGAN, Illinois State University, Zachary E Lawton, Jamie R Wieland, Michael C Gizzi, Sabra R Botch

SYMPOSIUM **Session 1510**

Measuring the Brain: From the Synapse to Thought
arranged by Jonathan V Sweedler, University of Illinois at Urbana-Champaign

Wednesday Morning, Room W181a
Jonathan V Sweedler, University of Illinois at Urbana-Champaign, Presiding

8:30		**Introductory Remarks - Jonathan V Sweedler**
8:35	(1510-1)	**Emerging Optical Chemical Imaging Technology for Brain Histopathology** ROHIT BHARGAVA, University of Illinois at Urbana-Champaign
9:10	(1510-2)	**Live Single Human and Mouse Cell Transcriptome Variability: What Does it Mean?** JAMES EBERWINE, University of Pennsylvania
9:45	(1510-3)	**Enabling Large-Scale Discovery, Characterization and Quantitation of Neuropeptides via Multiple Tandem Mass Spectrometry Fragmentation Techniques** LINGJUN LI, University of Wisconsin
10:20		**Recess**
10:35	(1510-4)	**Functional Nanomaterials and Chemical Neurotransmission** ANNE M ANDREWS, University of California, Los Angeles
11:05	(1510-5)	**Analytical Tools for the Cell by Cell Characterization of the Brain** JONATHAN V SWEEDLER, University of Illinois at Urbana-Champaign

SYMPOSIUM **Session 1520**

Nanotechnology and Bioanalytical Chemistry
arranged by Xiaohong Fang, Chinese Academy of Sciences

Wednesday Morning, Room W181b
Xiaohong Fang, Chinese Academy of Sciences, Presiding

8:30		**Introductory Remarks - Xiaohong Fang and Weihong Tan**
8:35	(1520-1)	**Surface Modification with Functional Molecular Patterns Revealed by In-Situ STM** LIJUN WAN, Institute of Chemistry at CAS
9:10	(1520-2)	**Organometallic Single-Ion Magnets** SONG GAO, Peking University
9:45	(1520-3)	**3D Printing of Device for Analysis of Metalloproteins** GUIBIN JIANG, RCEES, CAS
10:20		**Recess**
10:35	(1520-4)	**Fluorescence Imaging Newly Synthesized Proteins in Cells** XINRONG ZHANG, Tsinghua University
11:10	(1520-5)	**Quantitative Characterization of Protein Dynamics in Living Cells by Single-Molecule Microscopy** XIAOHONG FANG, Chinese Academy of Sciences

SYMPOSIUM **Session 1530**

Pharmaceutical Applications of Microfluidics
arranged by Susan M Lunte, University of Kansas and Elisabeth Verpoorte, University of Groningen

Wednesday Morning, Room W181c
Susan M Lunte, University of Kansas, Presiding

8:30		**Introductory Remarks - Susan M Lunte and Elisabeth Verpoorte**
8:35	(1530-1)	**Organs-on-Chips: Pursuing Biological Insight In Vitro** ELISABETH VERPOORTE, University of Groningen, Pieter E Oomen, Maciej Grajewski, Maciej D Skolimowski, Viktoriia Starokozhko, Patty P Mulder, Marjolijn T Merema, Grietje Molema, Geny M Groothuis
9:10	(1530-2)	**New Methods for Integrating Cell Culture with Microchip-Based Analysis** R SCOTT MARTIN, Saint Louis University
9:45	(1530-3)	**Pharmacokinetics and Biorhythms in Organs-on-a-Chip Systems** SHUICHI TAKAYAMA, University of Michigan
10:20		**Recess**
10:35	(1530-4)	**3D-Printed Tools for In Vitro PK/PD** DANA SPENCE, Michigan State University
11:10	(1530-5)	**Microfluidic Methods for Measuring Oxidative Stress in Cells** SUSAN M LUNTE, University of Kansas

SYMPOSIUM **Session 1540**

Recent Developments in Mass Cytometry
arranged by Edgar Arriaga, University of Minnesota

Wednesday Morning, Room W183b
Edgar Arriaga, University of Minnesota, Presiding

8:30		**Introductory Remarks - Edgar Arriaga**
8:35	(1540-1)	**Metal-Chelating Polymers and Lanthanide Nanoparticles for Immunoassays by Mass Cytometry** MITCHELL WINNIK, University of Toronto
9:10	(1540-2)	**Multidimensional Profiling Using Mass Cytometry (CyTOF) Reveals Individual Variation in Immune Responses** RUTH R MONTGOMERY, Yale University School of Medicine
9:45	(1540-3)	**Mass Cytometry for the Quantification of Autophagy in Skeletal Muscle Cell Sub-Populations** EDGAR ARRIAGA, University of Minnesota, Heather Grundhofer, Michelle Kuhns, Sunny Chan, Michael Kyba, Genyun (Coco) Le, Dawn Lowe
10:20		**Recess**
10:35	(1540-4)	**Tracking Pluripotent Stem Cell Differentiation with Mass Cytometry and FLOW-MAP, A Force-Directed Layout Algorithm for Single-Cell, Time Course Datasets** ELI ZUNDER, University of Virginia
11:10	(1540-5)	**Diffusion-Based Representations for Revealing Progressions, Multi-Scale Clusters and Gene Interactions in Noisy Single Cell Data** KEVIN MOON, Yale School of Medicine

SYMPOSIUM **Session 1550**

Scalable Neuron-Based Cell Culture Assays for Drug Discovery and Toxicity Testing
arranged by Anne Marion Taylor, University of North Carolina at Chapel Hill

Wednesday Morning, Room W183c
Anne Marion Taylor, University of North Carolina at Chapel Hill, Presiding

8:30		**Introductory Remarks - Anne Marion Taylor**
8:35	(1550-1)	**Scalable Neuron-Based Cell Culture Assays** ANNE MARION TAYLOR, University of North Carolina at Chapel Hill
9:10	(1550-2)	**3D Neuron-Based Tissue Models for Functional Assessments** DAVID KAPLAN, Tufts University
9:45	(1550-3)	**Integration of CNS and PNS Cellular Components with BioMems Systems for Drug Discover and Toxicology** JAMES J HICKMAN, University of Central Florida
10:20		**Recess**
10:35	(1550-4)	**Applications of High-Throughput Longitudinal Single-Cell Analysis to Target Identification and Neurotherapeutics Discovery** STEVEN FINKBEINER, Gladstone Institute of Neurological Disease
11:10	(1550-5)	**In Vitro Approaches to Screening and Prioritization of Chemicals for Potential Developmental Neurotoxicity** TIMOTHY J SHAFER, US Environmental Protection Agency

SYMPOSIUM **Session 1560**

Wearable and Point-of-Care Sensor Technologies for Biomonitoring
arranged by Ian Papautsky, University of Illinois and William R Heineman, University of Cincinnati

Wednesday Morning, Room W184d
Ian Papautsky, University of Illinois, Presiding

8:30		**Introductory Remarks - Ian Papautsky and William R Heineman**
8:35	(1560-1)	**Wearable Sweat Sensors** JAVEY ALI, University of California Berkeley
9:10	(1560-2)	**Nanophotonic Point-of-Care Devices for Ultrasensitive Label-free Analysis** LAURA M LECHUGA, ICN2
9:45	(1560-3)	**Point-of-Care Determination of Manganese in Clinical Applications** IAN PAPAUTSKY, University of Illinois
10:20		**Recess**
10:35	(1560-4)	**A Field Test of a Personal Sensor for Ultrafine Particle Exposure in Children** PATRICK RYAN, Cincinnati Children's Hospital Medical Center
11:10	(1560-5)	**Monitoring Corrosion of Biodegradable Magnesium Implants with a Visual H_2 Sensor** WILLIAM R HEINEMAN, University of Cincinnati, Daoli Zhao, Zhongyun Dong, William Hoagland, David K Benson, Prashant Kumta

WORKSHOPS **Session 1570**

Analytical Methods and Reference Materials for Dietary Supplements
arranged by Stephen A Wise, National Institutes of Health, Office of Dietary Supplements (NIH-ODS) and Catherine A Rimmer, National Institute of Standards and Technology (NIST)

Wednesday Morning, Room W176c
Stephen A Wise, National Institutes of Health, Office of Dietary Supplements (NIH-ODS), Presiding

8:30		**Introductory Remarks - Stephen A Wise**
8:35	(1570-1)	**Critical Needs and Use of Reference Materials for Dietary Supplements** DARRYL SULLIVAN, Covance Laboratories
9:05	(1570-2)	**Beyond Compliance: Current Challenges in Quality Testing of Dietary Supplements** HOLLY E JOHNSON, Alkemist Labs
9:35	(1570-3)	**Spectral Correlation Method for Verifying the Presence of Botanical Ingredients in Supplements** JAMES HARNLY, US Department of Agriculture
10:05		**Recess**
10:20	(1570-4)	**Characterizing and Establishing Authenticity of Botanical Products** PAULA N BROWN, BC Institute of Technology
10:50	(1570-5)	**Accuracy of Reference Materials for Dietary Supplements** UMA SREENIVASAN, MilliporeSigma
11:20	(1570-6)	**Reference Materials for Dietary Supplements** CATHERINE A RIMMER, National Institute of Standards and Technology (NIST), Laura J Wood

ORGANIZED CONTRIBUTED SESSIONS **Session 1580**

Frontiers in Atomic Spectrometry: Isotopic Signatures for Novel Environmental Assessments of Non Conventional Isotopic Systems
arranged by Olivier FX Donard, MARSS-IPREM

Wednesday Morning, Room W184a
Olivier FX Donard, MARSS-IPREM, Presiding

8:30	(1580-1)	**High Precision, High Sensitivity and Speciation in Isotopic Analysis for Environmental and Food Research** OLIVIER FX DONARD, MARSS-IPREM, Sylvain Berail, Emmanuel Tessier, Oriol Baltrons, Christophe Pecheyran, David Amouroux
8:50	(1580-2)	**Copper Isotopic Composition as a Valuable Cancer Biomarker for Animals and Humans** PHILIPPE TELOUK, ENS-Lyon, Alexandra T Gourlan, Gabriel Chamel, Marie Laure Plissonnier, Victor Bondanese, Guillaume Douay, Frederique Ponce, Francis Albarede
9:10	(1580-3)	**The ICP TOF as Efficient Detector for Laser Ablation Imaging and Nanoparticle Detection** MARTIN TANNER, TOFWERK AG, Olga Borovinskaya, Joel Kimmel
9:30	(1580-4)	**Calcium Isotope Signatures and Kidney Function** THOMAS WALCZYK, National University of Singapore, Ye Zhao, Ian Bowen
9:50		**Recess**
10:05	(1580-5)	**The Coupling of the Liquid Sampling Atmospheric Pressure Glow Discharge (LS-APGD) with an Orbitrap Mass Analyzer: A Potential Paradigm Shift in Isotope Ratio Mass Spectrometry** R KENNETH MARCUS, Clemson University, Edward Dexter Hoegg, George Hager, Garret Hart, David W Koppenaal

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TECHNICAL PROGRAM

ORGANIZED CONTRIBUTED SESSIONS **Session 1590**

SFE/SFC: Current Trends for Pharmaceutical and Natural Products
arranged by Andy Miles and Ted Szczerba, Regis Technologies

Wednesday Morning, Room W184bc
Andy Miles, Regis Technologies, Presiding

8:30 (1590-1) **Evaluation of Novel Stationary Phases Optimized for Analytical and Preparative SFC-MS** CYNTHIA NARBAIS, Dart Neuroscience, Gerard Rosse

8:50 (1590-2) **Online Supercritical Fluid Extraction/Supercritical Fluid Chromatography (SFE/SFC) for Analysis of Pharmaceuticals and Food** MENGLING WONG, Genentech, Yoo Min Ko, Amber Guillen, Joseph Pease

9:10 (1590-3) **Preparative Supercritical Fluid Chromatography in Support of Drug Discovery and Development** MIRLINDA BIBA, Merck, Jinchu Liu, Jimmy DaSilva, Judy Morris

9:30 (1590-4) **What a Gas! Open Access Laboratory Usage of SFC Instruments** TOM HOLLENBECK, GNF

9:50 **Recess**

10:05 (1590-5) **Chiral Resolution of Acids, Amines, and Amino Acids with SFC** QI (TONY) YAN, Pfizer, Frank Riley

10:25 (1590-6) **Application of Supercritical Fluid Chromatography to the Analysis and Separation of Chiral Pharmaceutical Compounds** ERIN JORDAN, AbbVie, Philip Searle

ORAL SESSIONS **Session 1600**

Advances in Fuel and Petrochemical Analyses

Wednesday Morning, Room W175a
John Baltrus, US Dept of Energy - NETL, Presiding

8:30 (1600-1) **Direct-Insertion and Comprehensive Gas Chromatography Coupled Multi-Reflection Ultra-High Resolution Time-of-Flight Mass Spectrometry for Characterization of Petrochemical Fractions** RALF ZIMMERMANN, JMSC (Helmholtz Zentrum München/Uni Rostock), Jürgen Wendt, Maximilian Jennerwein, Uwe Käfer, Markus Eschner, Mohammad Saraji, Benedikt Weggler, Thomas Gröger

8:50 (1600-2) **Determination of Polycyclic Aromatic Compounds and Their Alkyl-Substituted Derivatives in Combustion-Related Standard Reference Materials** WALTER BRENT WILSON, National Institute of Standards and Technology (NIST), Hugh V Hayes, Lane C Sander, Andres D Campiglia, Stephen A Wise

9:10 (1600-3) **Automotive Gasoline Analysis by GC-VUV – A New ASTM Method** DAN WISPINSKI, Alberta Innovates Technology Futures, Chris Goss, Philip Walsh N/A

9:30 (1600-4) **Fast and Extended Refinery Gas Analysis with Temperature Programmable Micro GC** SHAWN WILSON, INFICOn

9:50 **Recess**

10:05 (1600-5) **Real-Time Mass Spectrometry for Oil Refinery Process Efficiency and Environmental Compliance** CHARLES DECARLO, Extrel CMS, Jim Brenner, Zbigniew Krieger

10:25 (1600-6) **Direct Microplasma Analysis of Coals and Sorbents for C, H, N, S and Mineral Element Concentrations** RANDY VANDER WAL, Penn State University, Chethan K Gaddam

10:45 (1600-7) **Improved Method for Determination of Biofuel Sugars by HPAE-PAD** SACHIN PATIL, Thermo Fisher Scientific, Jeffrey Rohrer

11:05 (1600-8) **Automated FT-IR Analysis of TAN/TBN in In-Service Lubricants** IAN ROBERTSON, PerkinElmer Limited, David Hilligoss, David Wooton

ORAL SESSIONS **Session 1610**

Analysis Methods for Polymers and Plastics (Half Session)

Wednesday Morning, Room W175b
Linda Rukavina, PPG Industries, Inc., Presiding

8:30 (1610-1) **The Use of Differential Scanning Calorimetry with Database Aided Classification for Quality Control of Recycled Polystyrene** DAVID SHEPARD, Netzsch Instruments North America, LLC

8:50 (1610-2) **Electrochemical Interrogation of Redox Active Polymer Particles for Energy Storage** KENNETH HERNANDEZ-BURGOS, University of Illinois at Urbana-Champaign, Jingshu Hui, Zachary T Gossage, Mark Burgess, Jeffrey S Moore, Joaquin Rodriguez Lopez

9:10 (1610-3) **Directional Templating Mechanisms of Anisotropic Nanoparticles Using Poly(pyromellitic dianhydride-p-phenylenediamine)** VICTOR KARIUKI, SUNY-Binghamton

9:30 (1610-4) **Application of Novel Synthesized Substituted Colored Poly(urea-urethanes)** SMITA MANISH JAUHARI, SVNIT, Medha Joshi, Kishor Desai

ORAL SESSIONS **Session 1620**

Bioanalytical - Microfluidics/Lab on-a-Chip

Wednesday Morning, Room W175c
Elizabeth Harris, Mannkind Corporation, Presiding

8:30 (1620-1) **Using Paper-Based Microfluidics to Measure the Hematocrit** SYRENA C FERNANDES, Tufts University, Samuel Berry, Nicholas DeChiara, Anjali Rajaratnam, Charles R Mace

8:50 (1620-2) **Facile Hydrothermal Method for Synthesis of Fluorescent Carbon Dots Derived from Carrot Juice and Their Application for Mytomycin Drug Delivery** SURESH KUMAR KAILASA, Sardar Vallabhbhai National Institute of Technology, Stephanie L Souza, Shiva Shankaran Chettiar, Karuna A Rawat

9:10 (1620-3) **Paper-Based Tumor Models: Quantifying the Role of Oxygen in Drug Metabolism** MATTHEW RYEN LOCKETT, University of North Carolina at Chapel Hill

9:30 (1620-4) **Fabrication and Characterization of Transmembrane Protein Functionalized-Phospholipid Nanoshell Microarrays** DIEM P NGUYEN, University of Arizona, Jinyang Wang, Xuemin Wang, Craig A Aspinwall

9:50 **Recess**

10:05 (1620-5) **Scanning Microfluidic System for Chromatographic-Based Binding Assays with Near-Infrared Fluorescence Detection** ELLIOTT LEONCIO RODRIGUEZ, University of Nebraska-Lincoln, Saumen Poddar, John Vargas, Ryan Matsuda, Benjamin Hage, Michael Stoller, Stephen Morrin, David S Hage

10:25 (1620-6) **Diffusional Analysis of Cytokines in Lymph Node Tissue on a Microfluidic Chip** ASHLEY E ROSS, University of Virginia, Rebecca R Pompano

10:45 (1620-7) **Pressure-Actuated Microfluidic Devices Integrating Solid Phase Extraction, Fluorescent Labeling, and Microchip Electrophoresis for Pre-Term Birth Biomarker Analysis** VISHAL SAHORE, Brigham Young University, Mukul Sonker, Suresh Kumar, Adam T Woolley

11:05 (1620-8) **Investigating Reactive Nitrogen Species Using Microchip Electrophoresis with Electrochemical Detection** KELCI M SCHILLY, University of Kansas, Joseph M Siegel, Susan M Lunte

ORAL SESSIONS **Session 1630**

Capillary Electrophoresis - New Technology

Wednesday Morning, Room W176a
Maojun Gong, Wichita State University, Presiding

8:30 (1630-1) **Flow-Gated Capillary Electrophoresis Coupled with Alternate Injections for Rapid Quantitation of Biological Samples** MAOJUN GONG, Wichita State University, Qingfu Zhu

8:50 (1630-2) **Microscale Enzymatic Reactions Using Phospholipid Assisted Capillary Separation** SRIKANTH GATTU, West Virginia University, Cassandra Crihfield, Lisa A Holland

9:10 (1630-3) **Nonaqueous Microchip Capillary Electrophoresis with ESI-MS for the Detection of Lipid Disease Biomarkers** ERICK FOSTER, University of Notre Dame, Paul W Bohn

9:30 (1630-4) **Simple Techniques to Preconcentrate Samples for Capillary Electrophoresis/Mass Spectrometry** DOO SOO CHUNG, Seoul National University, Kihwan Choi, Joon Yup Kwon, Jihye Kim

9:50 **Recess**

10:05 (1630-5) **Increasing Plate Number and Resolution in CE: The TCE Platform and Some Resulting Capabilities** TARSO LEDUR KIST, Federal University of Rio Grande do Sul

10:25 (1630-6) **Capillary Zone Electrophoresis Automated Fraction Collection for the Forensic Analysis of Sexual Assault Evidence** SARAH N LUM, University of Notre Dame, Norman J Dovichi, Bonnie Jaskowski-Huge, Carlos Gusti Gartner

10:45 (1630-7) **Development and Use of Lectin Affinity Chromatography and Immunoextraction to Study the Effects of Glycosylation on Drug Binding Properties of α1-Acid Glycoprotein** CHENHUA ZHANG, University of Nebraska-Lincoln, Kenan Dzide, Cong Bi, David S Hage

11:05 (1630-8) **Modified Silica Nanoparticles for Molecular Recognition and Fluorescent Labeling** WALID ABDELWAHAB, Georgia State University, Gabor Patonay, Ramzia El-Bagary

Author and presider lists are available at www.pittcon.org

ORAL SESSIONS **Session 1640**

Consumer Products (Half Session)

Wednesday Morning, Room W175b
Linda Rukavina, PPG Industries, Inc., Presiding

10:05 (1640-1) **Analysis of Cosmetic Allergens Using Ultra Performance Convergence Chromatography (UPC_2) with MS Detection** JANE ALLISON COOPER, Waters Corporation

10:25 (1640-2) **Reversed-Phase Separation of Six Sunscreen Actives Through Analyte Behavior Study and Software Modeling** HUGO CORDOVA, Northeastern Illinois University, John Albazi

10:45 (1640-3) **Method Development and Validation for the Determination of Nicotine Enantiomers in Electronic Cigarette Liquids Using Reversed-Phase and Chiral Phase High Performance Liquid Chromatography** NORBERTO GONZALEZ, Northeastern Illinois University, John Albazi

11:05 (1640-4) **A Comprehensive Solution for the Analysis of Fragrance Allergens Using Tandem Ionization GC×GC-TOF MS** LAURA MCGREGOR, Markes International, Matthew Edwards, Nick Bukowski, Massimo Santoro, Chris Hall, Pete Grosshans

ORAL SESSIONS **Session 1650**

Environmental Analysis for Air Quality and Atmospheric Conditions

Wednesday Morning, Room W176b
David Benanou, Veolia, Presiding

8:30 (1650-1) **Detection of Toxic Chemicals in the Workplace by GC/PID** JENNIFER MACLACHLAN, PID Analyzers, LLC, John N Driscoll

8:50 (1650-2) **Determination of Thermal Oxidizer Destruction and Removal Efficiency with an Innovative FTIR / GC-FTIR Analyzer** ALLAN P BOHLKE, Prism Analytical Technologies, Martin Lee Spartz, Joseph J Gregoria, Peter P Behnke

9:10 (1650-3) **Characterizing of Emissions from Open Burning of Electronic Waste Using TG-GC-MS** ENDALKACHEW SAHLE-DEMESSIE, US Environmental Protection Agency, Changseok Han, Joushua Deitrich, Teri Richardson, Jun Wang

9:30 (1650-4) **Development of On-Line and Field Dual TD-GC-FID-MS for Automatic and Continuous Ambient Air Monitoring** FRANCK AMIET, Chromatotec Inc., Louis Vivola, Seth Cloran, Damien Bazin

9:50 **Recess**

10:05 (1650-5) **Measurement of VOCs for Air Quality Using Widely Tunable Mid-Infrared Laser Source Combined with Cantilever Enhanced Photoacoustic Detection** JUSSI RAITTILA, Gasera Ltd, Ismo Kauppinen, Sauli Sinisalo

10:25 (1650-6) **The Best Technique for the Analysis of Volatile and Semi-Volatile Organic Compounds (VOCs and SVOCs) in Air** LEE MAROTTA, PerkinElmer, Roberta Provost

10:45 (1650-7) **Ship Emissions Monitoring with Laser-Based Cantilever-Enhanced Photoacoustic Detection: Feasibility with Laboratory and Field Measurements** SAULI SINISALO, Gasera Ltd., Jaakko Lehtinen

11:05 (1650-8) **Measuring Surface Tension from Sub- to Super-Saturated Regimes of Submicrometer Single Particles Using AFM** HANSOL D LEE, University of Iowa, Holly S Morris, Armando D Estillore, Vicki H Grassian, Alexei V Tivanski

ORAL SESSIONS **Session 1660**

Food Science

Wednesday Morning, Room W177
Joan Stevens, Agilent Technologies, Presiding

8:30 (1660-1) **Development of a New High Performance Anion Exchange Column for Mono- to Tetra-Saccharide Analysis in Foods and Beverages** JIM R THAYER, Thermo Fisher Scientific, Andy Woodruff, Charanjit Saini

8:50 (1660-2) **Thermal Analysis Coupled to On-Line Ultrafast-Cycling Gas Chromatography-Photo Ionization Mass Spectrometry to Study the Flavor Formation During the Roasting Process of Coffee Beans and Nuts** RALF ZIMMERMANN, JMSC HelmholtzZentr. München & University Rostock, Hendryk Czech, Ehlert Sven, Michael Fischer

9:10 (1660-3) **Investigation of Aging in Beer Using Gas Chromatography with Time-of-Flight Mass Spectrometry** ELIZABETH HUMSTON-FULMER, LECO, Joseph E Binkley N/A

9:30 (1660-4) **Chemical Marker Profiling of Borututu Bark - An Emerging Antioxidant Herbal Dietary Supplement** EHAB A ABOURASHED, Chicago State University, Hao Wen Fu

9:50 **Recess**

10:05 (1660-5) **HPAE-PAD Determination of Carbohydrates in Honey** MANALI AGGRAWAL, Thermo Fisher Scientific, Jeffrey Rohrer

10:25 (1660-6) **Method Development in the Use of an Overcoated Fiber for the Solid Phase Microextraction of Pesticide Residues from Baby Food** ROBERT E SHIREY, MilliporeSigma, Katherine K Stenerson, Leonard M Sidisky, Yong Chen, Tyler Young

10:45 (1660-7) **Protein Evaluation in Food Formulations by Passive Microrheology** CHRISTELLE TISSERAND, Formulaction, Roland Ramsch, Giovanni Brambilla, Matt Vanden Eynden

11:05 (1660-8) **Investigation of Aging in Beer Using Gas Chromatography with Time-of-Flight Mass Spectrometry** ELIZABETH HUMSTON-FULMER, LECO, Joseph E Binkley N/A

ORAL SESSIONS **Session 1670**

LC - Bioanalytical

Wednesday Morning, Room W475a
Jason Anspach, Phenomenex, Presiding

8:30 (1670-1) **Practical Considerations when Transferring Methods to Sub 2 µm GFC Columns for Bioanalysis** JASON ANSPACH, Phenomenex, Brian Rivera, Lawrence Loo, Ismail Rustamov, Tivadar Farkas

8:50 (1670-2) **Solving the Volume Overload Problem in Analytical Scale Liquid Chromatography: Design and Application of a 1.0 mm ID Temperature-Assisted Solute Focusing Precolumn** STEPHEN R GROSKREUTZ, University of Pittsburgh, Dwight R Stoll, Anthony R Horner, Stephen G Weber

9:10 (1670-3) **Two-Stage Temperature-Assisted On-Column Solute Focusing: Enhancing Concentration Sensitivity in Capillary High Performance Liquid Chromatography** MICHAEL T RERICK, University of Pittsburgh, Stephen R Groskreutz, Stephen G Weber

9:30 (1670-4) **Development and Optimization Protein Entrapment in Monolithic Supports for High Performance Affinity Chromatography** ELLIOTT LEONCIO RODRIGUEZ, University of Nebraska-Lincoln, Shiden Azaria, David S Hage

9:50 **Recess**

10:05 (1670-5) **Leveraging the Power of Spatial Temperature Gradients in Capillary Liquid Chromatography with Active Temperature Control** STEPHEN R GROSKREUTZ, University of Pittsburgh, Michael T Rerick, Stephen G Weber

10:25 (1670-6) **A Cation Exchange Chromatography-Based Immunoassay to Measure ß-endorphin** AMIRUS SALEHEEN, University of Tennessee, Christopher A Baker

10:45 (1670-7) **Development of Pillar Array Columns with Low Dispersion and Low Pressure Drop Turns** MAKOTO TSUNODA, University of Tokyo

11:05 (1670-8) **In Vivo Measurement of Neuropeptidase Activity Using Electroosmotic Perfusion – Microdialysis (EOP-MD)** RACHAEL E WILSON, University of Pittsburgh, Yangguang Ou, Bart Degreef, Stephen G Weber

ORAL SESSIONS **Session 1680**

Sensors - Environmental, Nanotechnology, and Food Safety

Wednesday Morning, Room W475b
Parastoo Hashemi, University of South Carolina, Presiding

8:30 (1680-1) **Determination of Pharmacologically Active Compounds in Wastewater by a Bead-based Flow-Cytometric Immunoarray** PETER CARL, Bundesanstalt für Materialforschung und -prüfung, Rudolf Schneider, Dominik Sarma, Knut Rurack

8:50 (1680-2) **New Hyperspectral Imager for Environmental Monitoring with Use of Optical Fiber Bundle and Ultra-Compact Spectrometers for Unmanned Aerial Vehicles (UAVs)** KUNIAKI UTO, Tokyo Institute of Technology, Haruyuki Seki, Genya Saito, Yukio Kosugi, Shuji Sasa, Shuhei Sawayama, Minami Asada, Teruhisa Komatsu

9:10 (1680-3) **Molecularly Imprinted Polyvinylidene Difluoride (PVDF) Sensor for the Detection of Hydrophobic Parathion Methyl Pesticide Molecules Using Quartz Crystal Microbalance** LI SAM, NUS, Xuan Hao Lin

9:30 (1680-4) **Optical Sensors and Nanoprobes for Antioxidant Assessment** MUSTAFA RESAT APAK, Istanbul University, Erol Erçağ, Sema Cekic, Ayşem Arda, Esin Celik, Mustafa Bener, Burcu Bekdeser, Ziya Can, Sener Saglam, Aysenur Tufan

9:50 **Recess**

Author and presider lists are available at www.pittcon.org

TECHNICAL PROGRAM

10:05 (1680-5) **Quantitative Comparison of Enzyme Immobilization Strategies for Glucose Biosensing in Real-Time** SAMANTHA SMITH, North Carolina State University, Leyda Lugo-Morales, Saahj Gosrani, Gregory S McCarty, Leslie A Sombers

10:25 (1680-6) **Strategy to the PPQ Level-Detection of SPR Immunosensing** TOSHIKAZU KAWAGUCHI, Hokkaido University, Dual C Kabiraz, Kinichi Morita

10:45 (1680-7) **TBAF and Its Spectral Interferences** IAN BRETTELL-ADAMS, The University of Alabama, Paul Rupar, Alexandra Andreen

11:05 (1680-8) **Examination of Cannabis and Hemp Products for Heavy Metal Contamination** PATRICIA L ATKINS, SPEX CertiPrep

ORAL SESSIONS — Session 1690

Spectroscopic Applications in Materials Science

Wednesday Morning, Room W476
Joel M Harris, University of Utah, Presiding

8:30 (1690-1) **Forensic Application of Laser Induced Breakdown Spectroscopy for Paint Analysis and Stainless Steel Inclusions** OLGA LASKINA, rap.ID Inc., Oliver Valet, Markus Lankers

8:50 (1690-2) **Study of Rare Earth Elements by Laser Induced Breakdown Spectroscopy (LIBS)** CHET R BHATT, Mississippi State University, Ayed Binzowaimil, Jagdish P Singh

9:10 (1690-3) **Determining Physical and Optical Properties of Thin Mixed Block Copolymer Waveguide Films by Scanning Angle Raman Spectroscopy** JONATHAN MICHAEL BOBBITT, Iowa State University, Ames Laboratory DOE, Deyny Mendivelso-Perez, Emily A Smith

9:30 (1690-4) **Nano Scale Sub-Surface Metrology Via Terahertz Time-Domain Scanning Spectrometry** JOSEPH E SABOL, Chemical Consultant, Anis Rahman, Aunik K Rahman

9:50 **Recess**

10:05 (1690-5) **Graphene Oxide-Nanocarrier for Systematic In-Vitro Delivery of Antitumor Agents and FRET Based Detection of Ion Induced Enzymatic Activity** PETER SHANTA, University of California Riverside, Quan Cheng

10:25 (1690-6) **New Polyelectrolyte Multilayer Films for Capture of Tagged Proteins in Porous Membranes** WEIJING LIU, Michigan State University, Salinda Wijeratne, Merlin Bruening

10:45 (1690-7) **Production and Characterization of Highly-Loaded Hollow Thermoplastic Microballoon Epoxy Syntactic Foams** KERRICK DANDO, Composite and Polymer Engineering Laboratory, SDSM&T

11:05 (1690-8) **Modification of Silicon Particles for Liquid Chromatography** AMARIS C BORGES-MUÑOZ, University at Buffalo, The State University of New York, Luis A Colon

POSTER SESSION — Session 1700

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Analytical Education

Wednesday Morning, Exposition Floor, Aisle 2500-2600

(1700-1 P) **Analysis of Iceland Spar: A Quantitative Inorganic Analysis Laboratory Experiment** RICHARD B KEITHLEY, Roanoke College

(1700-2 P) **Monitoring Water Quality of Abandoned Mine Drainage from a Passive Treatment Facility in Southwestern Pennsylvania: Getting High School Students Involved in the Research** MARK T STAUFFER, University of Pittsburgh - Greensburg, Shreya Gulati

(1700-3 P) **Comparison of "Weird and Wild" Jelly Bean Flavors Using HS SPME - Gas Chromatography - Mass Spectrometry** JOSEPH E BINKLEY, Leco Corporation, Elizabeth Humston-Fulmer, Christina N Kelly, Lorne M Fell

(1700-4 P) **Microcontrolled and 3D Printed: Low Cost Space Resolved Electrochemistry** GABRIEL NEGRÃO MELONI, Institute of Chemistry USP

(1700-5 P) **Teaching Students the Proper Use of the GHS System for Fostering a Safety Culture in the Chemistry Laboratory** ENRIQUE ARCE-MEDINA, ESIQIE, Irma P Flores-Allier N/A

(1700-6 P) **Including Broader Impacts in Your NSF-CHE Proposals** LIN HE, National Science Foundation, Michelle Bushey, Kelsey D Cook, Marsha Y Hawkins

(1700-7 P) **National Science Foundation (NSF) Division of Chemistry Programs and Funding Opportunities** LIN HE, National Science Foundation, Michelle Bushey, Kelsey D Cook, Marsha Y Hawkins

POSTER SESSION — Session 1710

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Applications of Mass Spectrometry

Wednesday Morning, Exposition Floor, Aisle 2500-2600

(1710-1 P) **Magnetic Bead-Based Peptide Extraction Methodology for Tissue Imaging** WILLIAM TEMPLE ANDREWS, University of Notre Dame, Amanda B Hummon, Susan B Skube

(1710-2 P) **Investigations into Radiative Ion-Ion Neutralization as a Gas-Phase Ion Transduction and Spectroscopy Mechanism.** ERIC DAVIS, Azusa Pacific University, Brian H Clowers, Carolyn Saba, Gabriella Manocchio

(1710-3 P) **Analytical Validation of a Portable Mass Spectrometer Coupled with Ambient Ionization Sources for Forensics Applications** WILLIAM LEE FATIGANTE, Illinois State University, Zachary E Lawton, Angelica R Traub, Jamie R Wieland, Michael C Gizzi, Herbert Oberacher, Christopher Mulligan

(1710-4 P) **Automatized Measurement Both Recovery Rate and Quantification of Radioactive Strontium-90 Utilizing a Split Flow Connecting into Online Solid Phase Extraction System Prior to ICP-MS** MAKOTO FURUKAWA, PerkinElmer Japan, Yoshitaka Takagai

(1710-5 P) **Screening for Dioxin-Like Compounds in Sediment Using Modified QuEChERS and a GC-TOF Mass Spectrometer with Atmospheric Pressure Chemical Ionization** LIAD HAIMOVICI, Ontario Ministry of the Environment and Climate Change

(1710-6 P) **VUV Lamp Based Chemical Ionization Ion Trap Mass Spectrometry for On-Situ Analysis of Drugs and Explosives** KEYONG HOU, Dalian Institute of Chemical Physics, Shuang Wang, Haiyang Li

(1710-7 P) **The Development of High-Pressure Photon Ionization Mass Spectrometry for Online Analysis of Trace Volatile Organic Compounds** LEI HUA, Dalian Institute of Chemical Physics, Keyong Hou, Yan Wang, Jichun Jiang, Ping Chen, Haiyang Li

(1710-8 P) **Direct Analysis in Real Time (DART) Mass Spectrometry for Analysis of Quaternary Ammonium Surfactants in Low Density Polyethylene (LDPE) Films** JOSEPH JABLONSKI, U.S. Food and Drug Administration, Suriyaprakaash L Balasubraman, Longjiao Yu, Timothy Duncan

(1710-9 P) **Leveraging Self-Cleaning Laminar Flow Tandem Mass Spectrometers for the Detection of Low Level Pesticide and Glyphosate Residues in Wine and Beer** FRANK A KERO, PerkinElmer, Matteo Meglioli, Josh Ye, Jason Weisenseel, Craig Young, Feng Qin

(1710-10 P) **Improved Instrument Robustness via a Hot Source Induced Desolvation (HSID) Interface for Tandem Mass Spectrometry Instrumentation** FRANK A KERO, PerkinElmer, Josh Ye

(1710-11 P) **A D-Amino Acid-Containing Neuropeptide Discovery Funnel and Its Application in A. Californica** ITAMAR LIVNAT, University of Illinois at Urbana-Champaign, Hua-Chia Tai, Erik T Jansson, Elena V Romanova, Jonathan V Sweedler, Jian Jing

(1710-12 P) **High-Throughput Single Cell MALDI MS with Follow-Up Immunofluorescence for Direct Profiling and Classification of Rodent Astrocytes** ELIZABETH K NEUMANN, University of Illinois at Urbana-Champaign, Jonathan V Sweedler, Troy J Comi, Stanislav S Rubakhin

(1710-13 P) **Consideration in Sample Preparation and ICP-MS Analysis of Biological Samples** EWA PRUSZKOWSKI, PerkinElmer, Inc., Cynthia Bosnak

(1710-14 P) **Determining the Dissociation Pathways of Gas-Phase Complexes Composed of Alkaline Earth Metals Coordinated by Alcohol Ligands** SARAH SHEFFIELD, Duquesne University, Susan Kline, Michael J Van Stipdonk

(1710-15 P) **Simultaneous Determination of Immunosuppressive Drugs from Whole Blood by Coated Blade Spray Ionization-Mass Spectrometry** MARCOS TASCON, University of Waterloo, German Augusto Gomez-Ríos, Nathaly Reyes-Garces, Ezel Boyaci, Justen J Poole, Janusz Pawliszyn

(1710-16 P) **Targeted Screening for 75 PDE-5 Inhibitors and Analogs Using Three Different Analytical Approaches** VALERIE M TOOMEY, US Food and Drug Administration, Forensic Chemistry Center, Sara E Kern

(1710-17 P) **High-Throughput Mass Spectrometry Analysis of Sulfa Drugs in Honey** BRIAN VEACH, Food and Drug Administration, Peter Rye

(1710-18 P) **Enhanced Isotope Ratio Accuracy and Precision Using the Liquid Sampling Atmospheric Pressure Glow Discharge with a Quadrupole Exactive Orbitrap Instrument** EDWARD DEXTER HOEGG, Clemson University, Garret Hart, David W Koppenaal, George Hager, R Kenneth Marcus

(1710-19 P) **Pulse Laser-Induced Fragmentation of Carbon Quantum Dots: Structure Analysis** HAN-WEI CHU, National Taiwan Ocean University, Chih-Ching Huang

POSTER SESSION **Session 1720**

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Chemical Analysis of Art and Archaeological Objects
Wednesday Morning, Exposition Floor, Aisle 2500-2600

(1720-1 P) **Ambient Mass Spectrometric Characterization of South American Dyes from the Saltzman Collection** RUTH ANN ARMITAGE, Eastern Michigan University, Daniel Fraser

(1720-2 P) **Further Studies of Glue Residues on Mended Ceramics from George Washington's Boyhood Home** RUTH ANN ARMITAGE, Eastern Michigan University, Daniel Fraser, Mara Kaktins

(1720-3 P) **Identification of the Contents of a Civil War-Era Bottle** RUTH ANN ARMITAGE, Eastern Michigan University, Mishka Repaska, Kerry Gonzales, Brad Hatch

(1720-4 P) **X-Ray Fluorescence Analysis of Mill Creek Pottery Fragments** CYNTHIA STRONG, Cornell College, Elizabeth Davidson

(1720-5 P) **Historical Wax Cylinders from Chemical and Materials Science Perspectives** ERIC B MONROE, Library of Congress

POSTER SESSION **Session 1730**

All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Poster sessions are on the Exposition Floor, Aisle 2500-2600. PLEASE NOTE: You cannot get onto the exposition floor until 9:00 AM. Posters that have not been taken down one-half hour after the designated time will be disposed of.

Environmental Analysis of Metals
Wednesday Morning, Exposition Floor, Aisle 2500-2600

(1730-1 P) **Spatial and Temporal Study of Lead, Arsenic, Uranium, and Manganese in Sediment Collected from the San Juan River on the Navajo Nation After the Gold King Mine Spill** ADAM KEHAR SETTIMO, Northern Arizona University, Jani C Ingram

(1730-2 P) **Studies of Metal Concentration in Bayous in Southwest Louisiana** CAREY HARDAWAY, McNeese State University, Joseph Sneddon

(1730-3 P) **Environmental Studies in Southwest Louisiana** JOSEPH SNEDDON, McNeese State University, Carey Hardaway

(1730-4 P) **Comprehensive Water Survey of the State of Pennsylvania** CALLAN GLOVER, Penn State University, Frank Dorman

(1730-5 P) **Improving Data Quality for ICP-MS in High Throughput Environmental Laboratories** CHRISTOPH WEHE, Thermo Fisher Scientific, Shona McSheehy Ducos, Wei Liu, Lothar Rottmann, Julian Wills, Adrian Holley N/A

(1730-6 P) **Simple Radiometric Quantification for Strontium-90 Using Iron–Barium Coprecipitation Following Gross Beta Measurement and the Application to Sea Water Around Fukushima** MITSUYUKI KONNO, Fukushima University, Takagai Yoshitaka

(1730-7 P) **Advances in Electrochemical Instrumentation for the Continuous, On-Site Monitoring of Trace Metals in Water** KELSEY L SPARKS, University of Louisville, Marcus A Jeffries, Thomas J Roussel, Robert S Keynton, Richard P Baldwin

(1730-8 P) **3D Elemental Imaging Using Femtosecond Laser Ionization Orthogonal Time-of-Flight Mass Spectrometry** MIAOHONG HE, Xiamen University, Wei Hang N/A

(1730-9 P) **Integration of Artificial Neural Network and Field Portable Metals Analyzers (FP-XRF) in Forecasting Organic Micropollutants on Agricultural Soils** MARIA GRAZIA BONELLI, University of Rome "La Sapienza", Andrea Manni

POSTER SESSION **Session 1740**

All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Poster sessions are on the Exposition Floor, Aisle 2500-2600. PLEASE NOTE: You cannot get onto the exposition floor until 9:00 AM. Posters that have not been taken down one-half hour after the designated time will be disposed of.

Forensics and Homeland Security
Wednesday Morning, Exposition Floor, Aisle 2500-2600

(1740-1 P) **Portable and Low-Cost Colorimetric Paper-Based Device for Phenacetin Detection in Seized Cocaine Samples** WILLIAM R ARAUJO, Universidade de São Paulo, Gabriela O Silva, Thiago Paixão

(1740-2 P) **Identification of Fentanyl and Other Synthetic Opiates in Seized Street Drugs Using Ambient Ionization High Resolution Time-of-Flight Mass Spectrometry** JAMIE FOSS, PerkinElmer, Amanda Moore, Frank A Kero, Charlie Schmidt, Tom Jacobs, Sabra R Botch-Jones

(1740-3 P) **Feasibility of FTIR Chemical Imaging for Forensic Analysis of Suspected Illicit Materials on Blotter Papers: LSD vs. 25-C-NBOMe** FRANK A KERO, PerkinElmer, Sabra R Botch, Christopher Mulligan, Alessandra Bruno, Jamie Foss, Zachary E Lawton, David Barajas, Raquel LeBlanc, Jill Koepke, Ryan Smith

(1740-4 P) **Identification of Volatile Organic Compounds Present within a C4 Storage Magazine and Emitted by C4: Using High-Volume Sampling (HVS) Traps that are Extracted into Thermal Desorption (TD) Tubes for TD-GC/MS Analysis** INHO CHO, TSA

(1740-5 P) **Development of Paper Microfluidic Devices for the Detection of Organic and Inorganic Low Explosives Residue** KATHRYN CHABAUD, Florida International University, Bruce McCord, Ilaria Pirazzini, Michelle Torres, Sheila Oliveira

(1740-6 P) **Handheld High Pressure Mass Spectrometry with a Novel APCI Dual-Polarity Source for Threat Detection** MATTHEW AERNECKE, 908 Devices, Kerin E Gregory, Luc Davidson, Christopher David Brown

(1740-7 P) **Implications of the Daubert Standard on Field-Based, Forensic Applications of Portable Mass Spectrometers** ANGELICA R TRAUB, Illinois State University, Christopher Mulligan, Zachary E Lawton, Michael C Gizzi, Jamie R Wieland

(1740-8 P) **On-Site Determination of Chemical Warfare Agents by Handheld Raman Analyzer with 1064 nm Excitation Laser** YASUO SETO, National Research Institute of Police Science, Yasuhiko Ohrui, Takeshi Ohmori, Kouichiro Tsuge, Mai Ohtsuka, Fumihito Muta, Taro Nigami, Bree Allen

(1740-9 P) **Comparison of Ion Mobility Behaviors of Chemical Warfare Agents Between Two Portable Instruments of 63Ni Ionization-No Dopant System and Corona Discharge Ionization-Ammonia Dopant System** YASUO SETO, National Research Institute of Police Science, Yasuhiko Ohrui, Hisayuki Nagashima, Tomoki Nagoya, Takeshi Ohmori, Kouichiro Tsuge, Mai Ohtsuka, Takao Nakagawa, Nobuyoshi Kitagawa, Kenichi Tokita, Souichiro Yamamoto

(1740-10 P) **Forensic Discrimination of Glass Fragments by Elemental Analysis of Ti and Fe Using Reaction Cell ICP-MS/MS** TAKAO IGAWA, National Research Institute of Police Science, Yasuhiro Suzuki, Masaaki Kasamatsu, Daisuke Kokubu, Atsushi Funatsuki, Yuko Kazui, Ritsuko Sugita, Shinichi Suzuki, Yasuo Seto

(1740-11 P) **AuNPs/Aptamer Based Paper Microfluidic Devices for the Detection of Cocaine** LING WANG, Florida International University, Bruce McCord

(1740-12 P) **A Universal Battery-Powered Vapor Preconcentrator** LEONID KRASNOBAEV, Triton Systems Inc.

(1740-13 P) **Withdrawn**

(1740-14 P) **Photothermal Speckle Modulation for Spectroscopic Chemical Detection Applications** ERIK DAVID EMMONS, U.S. Army ECBC

TECHNICAL PROGRAM

POSTER SESSION — Session 1750

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Fuels, Energy and Petrochemical Analyses

Wednesday Morning, Exposition Floor, Aisle 2500-2600

(1750-1 P) **The Use of Both Thermaldesorption and GC-MS to Access an Expanded Characterization of Trace Compounds in Biomethane** ETIENNE BASSET, Engie, Ony Rabetsimamanga, Amélie Louvat

(1750-2 P) **Two Dimensional Gas Chromatography (2D GC): A New Tool for Fast and Enhanced Diagnostics Applied to Gas and Biomethane Industries** ETIENNE BASSET, Engie, Marianne Gallardo

(1750-3 P) **Battling Fuel-Washing: Identification of Accutrace S10 in Diesel Samples Using a New Benchtop GC-TOF MS System** CHRISTINA N KELLY, LECO Corporation, David E Alonso, Joseph E Binkley, Lorne M Fell

(1750-4 P) **Rapid Fuel Type Analysis and Fuel Cross Contamination Analysis for In-Service Engines** TIMOTHY RUPPEL, PerkinElmer

(1750-5 P) **Analysis of Sulfur Compounds in Light Petroleum Liquids by Gas Chromatography and Pulsed Flame Photometric Detection (PFPD) Using ASTM Method D5623** CYNTHIA ELMORE, OI Analytical, Michael Duffy

(1750-6 P) **A Simple Solution for Permanent Gas Analysis by Gas Chromatography Using Dual Column System and a FID/Methanizer Detection** JAAP DE ZEEUW, Restek, Katarina Oden, Mark Badger, Barry Burger, Rebecca Stevens

(1750-7 P) **Rapid Analysis of Liquefied Petroleum Gas Using Micro GC Technology** SHAWN WILSON, INFICON

(1750-8 P) **In Situ Raman and XPS Characterization of MnCoCeOx Catalysts Active for the Purification of H2 Rich Stream** LETICIA ESTER GOMEZ, Chemical Engineering School, FIQ-UNL-INCAPE-CONICET, John F Munera, Eduardo E Miro, Alicia V Boix N/A

(1750-9 P) **Real-Time Monitoring of Natural Gas (NG) Composition with Raman Spectroscopy** SZYMON KUCZYNSKI, AGH University of Science and Technology, Stanislaw Nagy, Tomasz Wlodek, Karol Dabrowski, Jan Barbacki

(1750-10 P) **Differential Scanning Calorimetry (DSC) Oxidation Studies to Determine the Useful Life of Lubricants** IAN ROBERTSON, PerkinElmer Limited, David Hilligoss, Cory Schomburg

(1750-11 P) **Easy and Accurate FT-IR Studies of the Degradation of Greases Using a Novel Fixed Pathlength Transmission Cell** IAN ROBERTSON, PerkinElmer Limited, David Hilligoss, David Wooton

(1750-12 P) **Withdrawn**

(1750-13 P) **Pair Distribution Function Insights into Energy Storage Materials** KAMILA M WIADEREK, Argonne National Laboratory, Borkiewicz Olaf, Karena Chapman

(1750-14 P) **Electrocatalytic Functional Materials for Carbon Dioxide Reduction and Photochemical Energy Conversion** PAWEL J KULESZA, University of Warsaw, Iwona Rutkowska, James A Cox

(1750-15 P) **In-Situ Mid-Infrared Spectroscopic Monitoring of Carbon Dioxide Conversion** CHRISTINE KRANZ, Ulm University, Sven Daboss, Fang Gao, Christoph Nebel

(1750-16 P) **Analysis of Engine Emissions from Biodiesel Prepared by Using Calcined Egg Shell Powder as a Heterogeneous Catalyst** FRANCIS U OKEJIRI, Middle Tennessee State University, Murfreesboro, Ngee-Sing Chong

(1750-17 P) **New Lab Tool to Measure Very Low Sulfur in Gasoline Exceeding EPA Tier 3 Specifications** CINDY KLAGER, Koehler Instrument Company, Raj Shah, Scott Fess

(1750-18 P) **Development of an Analytical Laboratory Apparatus / Protocol to Study Pipeline Corrosion in Various Fuels** CINDY KLAGER, Koehler Instrument Company, Raj Shah, Vincent Colantuoni

(1750-19 P) **Evaluating Engine Oil Degradation based on Infrared Spectroscopy Analysis** TORREY HOLLAND, Southern Illinois University Carbondale, Ali Mazin Abdul-Munaim, Dennis Watson, Sivakumar Poopalasingam

(1750-20 P) **Binder Free Platinum Decorated Graphene-Polyaniline Composite for High Performance Supercapacitor Application** RINKY SHA, Indian Institute of Technology, Sushmee Badhulika N/A

POSTER SESSION — Session 1760

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Pharmaceutical - Vibrational, Raman, Microscopy, and Others

Wednesday Morning, Exposition Floor, Aisle 2500-2600

(1760-1 P) **Phonon and Molecular Vibration Analysis on Photocatalytic Reaction of Anatase-Type Titanium Dioxide (IV) Against Hydrate Active Pharmaceutical Ingredients Using Terahertz and Raman Spectroscopy** TOMOAKI SAKAMOTO, National Institute of Health Sciences, Tetsuo Sasaki, Toshiyuki Chikuma, Noriko Katori, Yukihiro Goda

(1760-2 P) **Continuous Wave Terahertz Laser Spectrometer and Its Applications for Pharmaceuticals** SASAKI TETSUO, Shizuoka University, Tomoaki Sakamoto, Tadao Tanabe, Jun-ichi Nishizawa

(1760-3 P) **Ingredient-Specific Particle Size Characterization for Ophthalmic Ointments Using Morphology Directed Raman Spectroscopy (MDRS)** BRANDON JUARON THOMAS, Food and Drug Administration, Changning Guo

(1760-4 P) **Giant Lipobeads as a Tool to Optimize the Number of Steps in Preparation of a New Smart Drug Delivery System** SERGEY V KAZAKOV, Pace University, Sarah Rahni, Donald J Stone

(1760-5 P) **Evaluation of the Polymorphic Forms of Mometasone Furoate in Nasal Spray Formulations Using Morphology Directed Raman Spectroscopy (MDRS)** BRANDON JUARON THOMAS, Food and Drug Administration, Changning Guo

(1760-6 P) **Using Graphite Furnace Atomic Absorption to Meet the Requirements of Elemental Impurity Analysis in Pharmaceutical Products as Required in USP 232/233 for Cadmium, Lead, Arsenic and Mercury** JIANFENG CUI, Thermo Fisher Scientific, Matthew Cassap, Maura Rury

(1760-7 P) **Advantages of On-Line React IR and Quick UHPLC Analysis in Synthetic Reaction Monitoring** YASMIN ALAEE, Amgen, Tawnya Flick, Matthew Beaver, Ayman Allian, Jiemin Bao, Albert Shi, Wendy Chen, Sheng Cui, Matt Eitner, John Huckins, Kyle Nichols, Kumar Ranganathan

(1760-8 P) **Quantitative Determination of Crystalline and Amorphous Content in Drug Product by Vibrational Spectroscopy and Chemometrics Analysis** YAOXIN LI, University of Michigan, Ann Arbor, Shengli Ma, Priscilla Mantik

(1760-9 P) **Micellization and Interaction of Cationic Surfactants in Polar Organic Solvent** OLUBUNMI M OSUNDIYA, Lagos State University, Esan S Olaseni, Christopher O Aboluwoye, Olanrewaju Owoyomi, Agbeke O Bamgboye N/A

(1760-10 P) **Resonance Raman Interrogation of Enzymatic Intermediates of Cytochromes P450 (CYP119)** REMIGIO USAI, Marquette University, Daniel Kaluka, Mak Piotr, James R Kincaid

(1760-11 P) **Quantitative Analysis of Ibuprofen in Commercial Forms Through FT-IR and Raman Spectroscopy** JUANITA LIZETH SANCHEZ, BioTools, Rina Dukor

SEAC POSTER SESSION — Session 1770

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SEAC Poster Session

Wednesday Morning, Exposition Floor, Aisle 2500-2600

(1770-1 P) **A Universal and Highly Selective Four-Way Junction Electrochemical Nucleic Acid Sensor** DAWN M MILLS, University of Central Florida, Dmitry M Kolpashchikov, Karin Y Chumbimuni-Torres, Percy Calvo-Marzal

(1770-2 P) **Electrochemical Biosensors and Spectral Study on the Interaction of the New Acridine-Thiophene Cancer Drug with dsDNA and ssDNA** KATHERINE LOZANO UNTIVEROS, University of Central Florida, Karin Y Chumbimuni-Torres, Fabiane Caxico de Abreu Galdino

(1770-3 P) **Tuning pKa of Merocyanine Metastable-State Photoacids for Ion Sensing Membranes Operational at Physiological Conditions** RENÁN SANTIAGO GÓNGORA, University of Central Florida, Parth K Patel, Karin Y Chumbimuni-Torres, Juan E Arias

(1770-4 P) **The Clover Sensor: A Multiplexed Ion-Selective Platform for Detection of Sodium, Potassium, Iodine and Calcium Ions** STEPHANIE M ARMAS, University of Central Florida, Mohammad Rostampour Kakroudi, Percy Calvo-Marzal, Karin Y Chumbimuni-Torres

(1770-5 P) **Inkjet Generated Ion-Selective Optode Particles for Calibration-Free Sensing on Paper-Based Analytical Devices** YOSHIKI SODA, Keio University, Hiroyuki Shibata, Kentaro Yamada, Koji Suzuki, Daniel Citterio

(1770-6 P) **pH-Buffer-Integrated Ion-Selective Optodes on Printed Microfluidic Paper-Based Analytical Devices (microPADs)** HIROYUKI SHIBATA, Keio University, Terence G Henares, Kentaro Yamada, Koji Suzuki, Daniel Citterio

(1770-7 P) **Coulometric Determination of an Ion Using Thin-Layer Electrolysis Cell for Ion Transfer at the Liquid Interface** YUMI YOSHIDA, Kyoto Institute of Chemistry, Mao Fukuyama, Kohji Maeda

(1770-8 P) **Probing Ion Intercalation in Next-Generation Battery Interfaces Using Coupled Electrochemistry and In Situ Raman Spectroscopy** NOAH B SCHORR, University of Illinois at Urbana-Champaign, Jingshu Hui, Joaquin Rodriguez Lopez

(1770-9 P) **Charge Transfer in Soluble Crosslinked Polymers for Energy Storage** ELENA C MONTOTO, University of Illinois at Urbana-Champaign, Kenneth Hernandez-Burgos, Nagarjun Gavvalapalli, Jeffrey S Moore, Joaquín Rodríguez López

(1770-10 P) **Investigation of Photoanodic Water Oxidation Surface Species on Hematite Using SI-SECM** MIHAIL R KRUMOV, University of Illinois at Urbana-Champaign, Burton H Simpson, Joaquín Rodriguez Lopez

(1770-11 P) **Interrogation of Single Photocatalytic Nanoparticles Using Scanning Electrochemical Microscopy** MATTHEW KROMER, University of Illinois at Urbana-Champaign, Zachary T Gossage, Burton H Simpson, Rodríguez Paramaconi, Joaquín Rodriguez Lopez

(1770-12 P) **Interrogation of Charge Transport Within Redox Active Polymer Layers and Particles** ZACHARY T GOSSAGE, University of Illinois at Urbana-Champaign, Jingshu Hui, Kenneth Hernandez-Burgos, Jeffrey S Moore, Joaquin Rodriguez Lopez

(1770-13 P) **Stripping-Based Positioning of Mercury Sphere-Cap Ultramicroelectrodes (UMEs) for Scanning Electrochemical Microscopy (SECM) of Operating Battery Interfaces** ZACHARY BARTON, University of Illinois at Urbana-Champaign, Joaquín Rodriguez Lopez

(1770-14 P) **Ion-Transfer Voltammetry in Perfluorinated Matrices: Detection of Perfluorooctanesulfonate and Perfluorooctanoate in Clinical Samples** EVAN L. ANDERSON, University of Minnesota, Philippe Buhlman

(1770-15 P) **Development of Calibration-Free Electrochemical Sensors Using Redox Buffer Polymers** XUE ZHEN, University of Minnesota, Philippe Buhlmann

(1770-16 P) **All-Solid-State Redox Buffer Attached to Mesoporous Carbon** JINBO HU, University of Minnesota, Andreas Stein, Philippe Buhlmann

(1770-17 P) **New Fluorous-Phase Ion-Selective pH Electrode for the Physiological pH Range** XIN V CHEN, University of Minnesota, Philippe Buhlmann, Maral P Mousavi

(1770-18 P) **Improving the Sensitivity of Electrochemical Sensing for In-Line Monitoring of Bacterial Contamination** EDGAR D GOLUCH, Northeastern University, Martin Kimani, Hunter J Sismaet

(1770-19 P) **Dual Function Solid State pH Sensor as a SECM Probe for Local pH Mapping above Hydrogel-Biofilm** PARTHA S SHEET, Oregon State University, Vrushali S Joshi, Karyna Flocker, Dipankar Koley

(1770-20 P) **Ultrasensitive Enzymatic Biosensor for Small Molecule Biomarkers in Urine** GAYAN C PREMARATNE, Oklahoma State University, Sadagopan Krishnan, Sabrina I Farias

(1770-21 P) **Real-Time Monitoring of Bacterial Metabolites By Scanning Electrochemical Microscopy (SECM)** VRUSHALI S JOSHI, Oregon State University, Partha S Sheet, Jens Kreth, Dipankar Koley

(1770-22 P) **Electrochemical Detection of Optogenetically Evoked Dopamine Release in Adult Drosophila Melanogaster Brain** MIMI SHIN, University of Virginia, B Jill Venton

(1770-23 P) **Voltammetric Determination of Diffusion and Partition Coefficients in Plasticized Polymer Membranes** BRADLEY PEARCE HAMBLY, University of Memphis, James B Sheppard, Erno Lindner, Bradford Pendley

AWARDS — Session 1780

The Coblentz Society - Williams-Wright Award
arranged by Woody Barton, Light Light Solutions

Wednesday Afternoon, Room W183a
Woody Barton, Light Light Solutions, Presiding

1:30 **Introductory Remarks - Woody Barton**

1:35 **Presentation of the 2017 Coblentz Society - Williams-Wright Award to Slobodan Sasic, SSCI/AMRI, by Woody Barton, Light Light Solutions**

1:40 (1780-1) **Diverse Applications of Vibrational Spectroscopy in Pharmaceutical Industry** SLOBODAN SASIC, SSCI/AMRI

2:15 (1780-2) **Chemometrics for Raman Imaging of Cancer Tissue** YUKIHIRO OZAKI, Kwansei Gakuin University

2:50 (1780-3) **Characterization of API Crystalline Forms Using Low Frequency Raman Spectroscopy** PETER JOHN LARKIN, Cytec-Solvay

3:25 **Recess**

3:40 (1780-4) **"Smart" Chemical Imaging Sensors: Making Our World Healthier and Safer** MATTHEW P NELSON, ChemImage Corporation, Nathaniel R Gomer, Charles W Gardner, Patrick J Treado

4:15 (1780-5) **Raman, Mid-Infrared and Near-Infrared Spectroscopy with Handheld Instruments: Instrumentation, Applications and Future Aspects** HEINZ W SIESLER, University of Duisburg-Essen

AWARDS — Session 1790

The Ralph N Adams Award
arranged by Jonathan V Sweedler, University of Illinois at Urbana-Champaign

Wednesday Afternoon, Room W183b
Jonathan V Sweedler, University of Illinois at Urbana-Champaign, Presiding

1:30 **Introductory Remarks - Jonathan V Sweedler**

1:35 **Presentation of the 2017 Ralph N Adams Award to Robert T Kennedy, University of Michigan, by Jonathan V Sweedler, University of Illinois at Urbana-Champaign**

1:40 (1790-1) **"Chip in Body" and "Body on Chip" Tools for Investigating Neurotransmitters and Hormones** ROBERT T KENNEDY, University of Michigan

2:15 (1790-2) **Chemical and Electrochemical Nitric Oxide Release/Generation: Applications to Intravascular Chemical Sensors and Other Biomedical Devices** MARK E MEYERHOFF, University of Michigan

2:50 (1790-3) **D-Amino Acids and D-Amino Acid Containing Neuropeptides as Cell-Cell Signaling Molecules** JONATHAN V SWEEDLER, University of Illinois at Urbana-Champaign

3:25 **Recess**

3:40 (1790-4) **The Rise (and Fall) of Hormone Secretion from Islets of Langerhans** MICHAEL G ROPER, Florida State University

4:15 (1790-5) **Deciphering Neuropeptide Signaling via Mass Spectrometry-Based Peptidomic Approaches: From Discovery to Function** LINGJUN LI, University of Wisconsin

TECHNICAL PROGRAM

SYMPOSIUM **Session 1800**

ACS-DAC - Analyzing Chemical Signals Across Biological Kingdoms
arranged by Ashleigh B Theberge, University of Washington

Wednesday Afternoon, Room W181a
Ashleigh B Theberge, University of Washington, Presiding

1:30		**Introductory Remarks - Ashleigh B Theberge**
1:35	(1800-1)	**Integrative 'Omics to Study Human-Associated Microbial Communities** KATRINE WHITESON, University of California Irvine
2:10	(1800-2)	**Microengineered Systems for Recapitulating Intestinal Function** NANCY ALLBRITTON, University of North Carolina Chapel Hill
2:45	(1800-3)	**Systems Ecology of Human-Microbe Interactions** PAUL WILMES, University of Luxembourg
3:20		**Recess**
3:35	(1800-4)	**Plant-Like Alkaloid Biosynthesis in Filamentous Fungi** FRANK SCHROEDER, Cornell University
4:10	(1800-5)	**Multikingdom Metabolomics: Studying Bacterial-Fungal-Human Interactions with Open Microfluidic Platforms** ASHLEIGH B THEBERGE, University of Washington

SYMPOSIUM **Session 1810**

Advances in Raman Spectroscopy
arranged by Sanford Asher, The University of Pittsburgh

Wednesday Afternoon, Room W183c
Sanford Asher, The University of Pittsburgh, Presiding

1:30		**Introductory Remarks - Sanford Asher**
1:35	(1810-1)	**Eye-Safe Near-Infrared Trace Explosives Detection and Imaging** MARCOS DANTUS, Michigan State University, Gennady Rasskazov, Anton Ryabtsev
2:10	(1810-2)	**What the Low Frequency Region of the Raman Spectrum Reveals about Chemical Bonding and Structure of Solid State Materials** DAVID TUSCHEL, HORIBA Scientific
2:45	(1810-3)	**UV Raman Spectroscopy Using a Spatial Heterodyne Raman Spectrometer: Miniature Raman Instruments for SmallSat-Size Planetary Landers** S MICHAEL ANGEL, University of South Carolina Columbia, Nirmal Lamsal, Patrick Barnett, Alicia Strange Fessler
3:20		**Recess**
3:35	(1810-4)	**Recent Advances in SERS and TERS** RICHARD VAN DUYNE, Northwestern University
4:10	(1810-5)	**ROA and Raman for Characterization of Biopharmaceuticals: Innovators and Counterfeits** RINA K DUKOR, BioTools, Inc., Alexander Mikhonin, Sanchez L Juanita, Carolina Carballo, Laurence A Nafie

SYMPOSIUM **Session 1820**

Frontiers in Metabolomics: Analytical Challenges and Advances
arranged by Dajana Vuckovic, Concordia University

Wednesday Afternoon, Room W178b
Dajana Vuckovic, Concordia University, Presiding

1:30		**Introductory Remarks - Dajana Vuckovic**
1:35	(1820-1)	**Expanding Coverage in "Omics" Technologies for Small Samples Within Vial Extraction** CORAL BARBAS, Universidad San Pablo CEU, Joanna B Godzien
2:10	(1820-2)	**Increasing Metabolite Coverage in Untargeted Metabolomic Profiling of Human Plasma** DAJANA VUCKOVIC, Concordia University, Dmitri Sitnikov, Cian Monnin, Hanieh Peyman, Parsram Ramrup
2:45	(1820-3)	**Metabolomics for Early Detection of Cystic Fibrosis in Affected Infants: Population-Based Screening Without Widespread Genetic Testing** PHILIP BRITZ-MCKIBBIN, McMaster University, Alicia DiBattista, Osama Aldrbashi, Pranesh Chakraborty, Nathan Macintosh
3:20		**Recess**
3:35	(1820-4)	**Recent Advances in High-Performance Chemical Isotope Labeling LC-MS for Comprehensive and Quantitative Metabolomics** LIANG LI, University of Alberta
4:10	(1820-5)	**Data Processing and Compound Identification in Untargeted Metabolomics and Exposome Research** IVANA BLAZENOVIC, University of California Davis, Oliver Fiehn, Arpana Vaniya, Tobias Kind

SYMPOSIUM **Session 1830**

Integrated Microscale Chemical Analyzers
arranged by J Michael Ramsey, University of North Carolina at Chapel Hill

Wednesday Afternoon, Room W179a
J Michael Ramsey, University of North Carolina at Chapel Hill, Presiding

1:30		**Introductory Remarks - J Michael Ramsey**
1:35	(1830-1)	**Multi-Vapor Determinations with a Belt-Mountable Gas Chromatograph** EDWARD T ZELLERS, University of Michigan, Junqi Wang, Nicolas Nunovero, Zhijin Lin, Robert Nidetz, Katsuo Kurabayashi, William H Steinecker, Sanketh Buggaveeti
2:10	(1830-2)	**Hand-Portable Liquid Chromatography for Target Chemical Analysis** MILTON L LEE, Brigham Young University, Luke T Tolley, Xiaofeng Xie, Thy X Truong, Paul B Farnsworth, H Dennis Tolley
2:45	(1830-3)	**Mid-Infrared Lab-on-Chip: Progress and Perspectives** BORIS MIZAIKOFF, Ulm University
3:20		**Recess**
3:35	(1830-4)	**Integrated Microfabricated Systems for Performing Capillary Electrophoresis – Mass Spectrometry** J MICHAEL RAMSEY, University of North Carolina at Chapel Hill
4:10	(1830-5)	**Embedded Analytics and Automation Challenges and Opportunities with Miniature Field Analyzers** CHRISTOPHER DAVID BROWN, 908 Devices

SYMPOSIUM **Session 1840**

Measurement at the Speed of Thought – New Analytical Approaches for Monitoring the Brain
arranged by Martyn G Boutelle, Imperial College London

Wednesday Afternoon, Room W179b
Martyn G Boutelle, Imperial College London, Presiding

1:30		**Introductory Remarks - Martyn G Boutelle**
1:35	(1840-1)	**Microelectrode Array Biosensors for Neurotransmitter Detection During Motivated Behavior in Rats** KATE M WASSUM, University of California Los Angeles, Melissa Malvaez, Lili Feng, Harold G Monbouquette
2:10	(1840-2)	**Expanding Fast Scan Cyclic Voltammetry to New Molecular Targets: Opioid Neuropeptides** LESLIE A SOMBERS, North Carolina State University
2:45	(1840-3)	**Using Voltammetry to Decipher the Fundamental Mechanisms that Regulate *In Vivo* Extracellular Serotonin** PARASTOO HASHEMI, University of South Carolina
3:20		**Recess**
3:35	(1840-4)	**Tracking the Dynamics of Oxygen Fluctuations in the Brain** R MARK WIGHTMAN, University of North Carolina at Chapel Hill
4:10	(1840-5)	**Platinized Carbon Fibers as an Electrochemical Substrate to Obtain Minimally Invasive Microelectrode Biosensors for Brain Monitoring** STEPHANE MARINESCO, University of Lyon, Charles Chatard, Anne Meiller, Andrei Sabac

SYMPOSIUM **Session 1850**

Plasmonic Toolbox for Chemical Analysis
arranged by Jean-Francois Masson, Universite de Montreal and Emilie Ringe, Rice University

Wednesday Afternoon, Room W181b
Jean-Francois Masson, Universite de Montreal, Presiding

1:30		**Introductory Remarks - Jean-Francois Masson and Emilie Ringe**
1:35	(1850-1)	**Confining Light to the Single Atom Scale for Sensing** JEREMY J BAUMBERG, University of Cambridge
2:10	(1850-2)	**Super-Resolution Imaging of Plasmonic Nanostructures: From Ligand Binding to Plasmon Coupling** KATHERINE WILLETS, Temple University
2:45	(1850-3)	**High Resolution Studies of Shape-Dependent Plasmonic Near-Field in Metal Nanoparticles** EMILIE RINGE, Rice University
3:20		**Recess**
3:35	(1850-4)	**Engineering High Refractive Index Sensitivity Through the Internal and External Composition of Bimetallic Nanocrystals** SARA E SKRABALAK, Indiana University Bloomington
4:10	(1850-5)	**Nanoplasmonics Sensors for Clinical Analysis** JEAN-FRANCOIS MASSON, Universite de Montreal

Author and presider lists are available at www.pittcon.org

SYMPOSIUM **Session 1860**

Sampling and Sample Preparation for Direct Introduction Mass Spectrometry
arranged by Janusz Pawliszyn, University of Waterloo

Wednesday Afternoon, Room W181c
Janusz Pawliszyn, University of Waterloo, Presiding

1:30		**Introductory Remarks - Janusz Pawliszyn**
1:35	(1860-1)	**Cartridge-Based Sampling Ionization Methods for Miniature POC Mass Spectrometry Analysis Systems** ZHENG OUYANG, Purdue University, Wenpeng Zhang, Fan Pu, Pengqing Yu, Ran Zou, Yu Xia
2:10	(1860-2)	**Digital Microfluidic Sample Processing for Direct-Injection Mass Spectrometry** AARON WHEELER, University of Toronto
2:45	(1860-3)	**Open-Port Probe Sampling Interface for Mass Spectrometry** CHANG LIU, Sciex, Don W Arnold, Thomas R Covey
3:20		**Recess**
3:35	(1860-4)	**Functionalized Medical Swabs Suitable for Monitoring Allergic Responses in Atopic Patient Using DESI MS** PAMELA PRUSKI, Imperial College London, Trevor Hansel, Zoltan Takats
4:10	(1860-5)	**Solid Phase Microextraction-Mass Spectrometry (SPME-MS): Recent Developments and Applications** GERMAN AUGUSTO GOMEZ-RIOS, University of Waterloo

SYMPOSIUM **Session 1870**

Single Cell Analysis for Precision Medicine
arranged by Chaoyong Yang, Xiamen University

Wednesday Afternoon, Room W184a
Chaoyong Yang, Xiamen University, Presiding

1:30		**Introductory Remarks - Chaoyong Yang**
1:35	(1870-1)	**Single Cell Analysis with Drop-Based Microfluidics** DAVID WEITZ, Harvard University
2:10	(1870-2)	**Single Molecule Arrays (Simoa) for Single Cell Analysis** DAVID R WALT, Tufts University, Liangxia Xie, Soyoon Hwang
2:45	(1870-3)	**Droplet Microfluidics for High Throughput Single-Cell Analysis** CHAOYONG YANG, Xiamen University
3:20		**Recess**
3:35	(1870-4)	**Single-Cell Manipulation, Sample Preparation, and Analysis for Precision Medicine** DANIEL T CHIU, University of Washington
4:10	(1870-5)	**Single-Cell 42-Plex Protein Secretion Analysis: From Immune Defense to Immuno Pathogenesis** RONG FAN, Yale University

SYMPOSIUM **Session 1880**

The Power of Column Technology in Liquid Chromatography
arranged by Luis A Colon, University at Buffalo

Wednesday Afternoon, Room W184bc
Luis A Colon, University at Buffalo, Presiding

1:30		**Introductory Remarks - Luis A Colon**
1:35	(1880-1)	**Surface Modification of Packing Materials for Liquid Chromatography** LUIS A COLON, University at Buffalo, The State University of New York, Karina M Tirado-González, Amaris C Borges-Muñoz, Joseph R Ezzo
2:10	(1880-2)	**Effects of Loop Filling and Precision of Retention Time and Valve Actuation on the Precision of Quantitation in Two-Dimensional Liquid Chromatography** PETER W CARR, University of Minnesota, Dwight R Stoll
2:45	(1880-3)	**Prospects for Submicrometer Particles in Protein Chromatography** MARY J WIRTH, Purdue University
3:20		**Recess**
3:35	(1880-4)	**Metal-Organic Frameworks, Monolithic Columns, and Liquid Chromatography: What a Powerful Mix** FRANTISEK SVEC, The Molecular Foundry, LBNL
4:10	(1880-5)	**Insights into Chromatographic Enantiomeric Separation of Allenes On Cellulose Carbamate Stationary Phase** NELU GRINBERG, Boehringer Ingelheim Pharmaceuticals, Inc.

WORKSHOPS **Session 1885**

Food Safety and Quality: Emerging Challenges
arranged by Alfredo Marcial Montes Nino, Microbioticos and Rajendra Kumar Patel, Runnemede BioScience

Wednesday Afternoon, Room W475b
Alfredo Marcial Montes Nino, Microbioticos, Presiding

1:30		**Introductory Remarks - Alfredo Marcial Montes Nino**
1:35	(1885-1)	**Development of Methodology for the Determination of Chlorate Residues in Milk and Dairy Products Using LC-MS/MS** MARTIN DANAHER, Teagasc
2:05	(1885-2)	**The World Bank Led Global Food Safety Partnership (GFSP): A Scalable, Sustainable Approach to Laboratory Capacity Building** PAUL B YOUNG, Waters Corporation
2:35	(1885-3)	**Withdrawn**
3:05		**Recess**
3:20	(1885-4)	**Food Safety and Food Control in the European Union: Case Studies** RAJENDRA PATEL, Runnemede BioScience, Thomas W Kuhm
3:50	(1885-5)	**Discrimination of Honey of Different Botanical Origins Using an Untargeted High-Definition Metabolomic Workflow** KENNETH JOHN ROSNACK, Waters Corporation, Sara Stead, Antonietta Wallace, Joanne Connolly, Michael Dickinson
4:20	(1885-6)	**Brazil Food Control Challenges - Ivermectin Residues Crisis in Brazil** ALFREDO MARCIAL MONTES NIÑO, Microbióticos, Rodrigo H Granja

ORGANIZED CONTRIBUTED SESSIONS **Session 1890**

Bioanalytical Methods to Study Neurological Disorders
arranged by Thomas Field and Joseph M Siegel, University of Kansas

Wednesday Afternoon, Room W184d
Thomas Field, University of Kansas, Presiding

1:30	(1890-1)	**Widely Targeted Metabolomics Using Derivatization and LC-MS for Neurochemical Study and Biomarker Discovery** PAIGE A MALEC, University of Michigan, Jenny-Marie Wong, Omar Mabrouk, Robert T Kennedy
1:50	(1890-2)	**Online Sample Preconcentration Approaches for Small Molecule Analysis by Capillary Electrophoresis** AMIT V PATEL, University of Illinois Urbana-Champaign, Marina C Philip, Stanislav S Rubakhin, Jonathan V Sweedler
2:10	(1890-3)	**Development of a Microfluidic-Based Method to Study the Redox Balance in Cell Lysates** JOSEPH M SIEGEL, University of Kansas, Patabadige E Damith, Christopher T Culbertson, Susan M Lunte
2:30	(1890-4)	**The Development of Continuous Online Microdialysis (coMD): A Bedside Analysis System Providing Real-Time Analysis of Neurochemicals in High Time Resolution** MICHELLE L ROGERS, Imperial College London, Chi Leng Leong, Sally A Gowers, Isabelle C Samper, Sharon L Jewell, Shumaila Khan, Anthony J Strong, Martyn G Boutelle
2:50		**Recess**
3:05	(1890-5)	**Zebrafish as a Model of Chemotherapy Induced Cognitive Impairment** THOMAS FIELD, University of Kansas, Mimi Shin, Chase S Stucky, Joseph Loomis, Michael Johnson
3:25	(1890-6)	**Longitudinal Studies of Tonic Dopamine for Investigation of Neural Disorders** KATE L PARENT, University of Arizona, Mitchel J Bartlett, Lindsey M Crown, Kathleen F Gies, Michael Miller, Torsten Falk, Stephen L Cowen, Michael L Heien
3:45	(1890-7)	**Transient Adenosine Release Changes During the Progression of Ischemic Brain Injury** MALLIKARJUNARAO GANESANA, University of Virginia, B Jill Venton
4:05	(1890-8)	**Determination of Dopamine Response to K+ Stimulations and Dexamethasone Treatment with One-Minute Time Resolution Online Microdialysis-High Performance Liquid Chromatography** KHANH THIEU NGO, University of Pittsburgh, Erika L Varner, Adrian C Michael, Stephen G Weber

TECHNICAL PROGRAM

ORGANIZED CONTRIBUTED SESSIONS **Session 1900**

PAI-NET - Highly Sensitive Detection of Biomolecules and Its Related Techniques
arranged by Manabu Tokeshi, Hokkaido University and Kenji Kojima, PAI-NET

Wednesday Afternoon, Room W176c
Manabu Tokeshi, Hokkaido University, Presiding

1:30 (1900-1) **Microfluidic-Based POCT** MANABU TOKESHI, Hokkaido University

1:50 (1900-2) **Multi-Electrode Array Device for Electrochemical Imaging of Cell Activity** KOSUKE INO, Tohoku University, Hitoshi Shiku, Tomokazu Matsue

2:10 (1900-3) **Development of Electrochemical Detecting Platform for Paper-Based Microfluidics** WATARU IWASAKI, National Institute of Advanced Industrial Science and Technology, Ryoji Kurita, Osamu Niwa, Masaya Miyasaki

2:30 (1900-4) **Nanowires for Early Disease Diagnosis** TAKAO YASUI, Nagoya University

2:50 **Recess**

3:05 (1900-5) **Development of High Resolution Scanning Electrochemical Microscopy for Single Cell Analysis** YASUFUMI TAKAHASHI, Kanazawa University

3:25 (1900-6) **Ultra-Sensitive Capillary Electrophoresis for Single Cell Omics Research** TAKAYUKI KAWAI, Riken

3:45 (1900-7) **Ghost Cytometry** SADAO OTA, Thinkcyte Inc.

4:05 (1900-8) **Selective Concentration of Microdroplet Content Utilizing Nanodroplet Formation** AKIHIDE HIBARA, Tohoku University

ORAL SESSIONS **Session 1910**

Analysis of Explosives and Chemical Weapons for Forensics Applications (Half Session)

Wednesday Afternoon, Room W476
David N Rahni, Pace University, Presiding

1:30 (1910-1) **Centrifugal Microfluidic Device with On-Board Reagents and Smartphone Colorimetric Detection for Explosives Identification** SHANNON T KRAUSS, University of Virginia, Victoria C Holt, Brian E Root, James P Landers

1:50 (1910-2) **Improved Field Results Using Thermal Desorption with a 3-Point Stable- Isotope Curve Incorporated Prior to Sampling** MITCHELL RUBENSTEIN, USAF, Darrin K Ott, Claude C Grigsby, Kathy Fullerton, Garrett W Fisher

2:10 (1910-3) **Real-Time Mass Spectrometry Detection of Remotely Sampled Vapors and Aerosols by Venturi-Assisted Entrainment and Ionization** THOMAS P FORBES, National Institute of Standards and Technology (NIST), Matthew Staymates, Edward Sisco

2:30 (1910-4) **Non-Spectroscopic Biomimetic Optical Sensing of Chemical Vapors in the Mid-Infrared** KEVIN J MAJOR, Sotera Defense Solutions, Menelaos K Poutous, Ishwar D Aggarwal, Jasbinder S Sanghera, Kenneth J Ewing

ORAL SESSIONS **Session 1920**

Developments in Forensics and Homeland Security Analyses (Half Session)

Wednesday Afternoon, Room W476
David N Rahni, Pace University, Presiding

3:05 (1920-1) **Sexual Offender Nodal Isolation of Cells (SONIC): Acoustophoretic Separation of Sperm Cells from Mock Sexual Assault Samples** CHARLES CLARK, University of Virginia, James P Landers

3:25 (1920-2) **Spectroscopic Characterization and Comparison Between Biologics, Organics and Mineral Compounds Using a Pulsed Micro-Hollow Glow Discharge** RANDY VANDER WAL, Penn State University, Chethan K Gaddam N/A

3:45 (1920-3) **Chirp Delay Heterodyne Infrared Spectroscopy with Pulsed Distributed Feedback Quantum Cascade Lasers** ROMAIN BLANCHARD, Pendar Technologies

4:05 (1920-4) **Ethanol Concentration in 63 Refillable Electronic Cigarettes Liquid Formulations Determined by Headspace Gas Chromatography with Flame Ionization Detector (HS-GC-FID)** JUSTIN L POKLIS, Virginia Commonwealth University, Carl E Wolf, Michelle R Peace

ORAL SESSIONS **Session 1930**

ICP-MS as an Universal Tool (Half Session)

Wednesday Afternoon, Room W175a
Allen Sharkins, The Pittsburgh Conference, Presiding

1:30 (1930-1) **An Evaluation of Unit and ½ Mass Correction Approaches as a Means of Minimizing the False Positives Produced by M^{+2} Species in US EPA Method 200.8 Using ICP-MS** SKYLER W SMITH, University of Cincinnati, Julio A Landero-Figueroa, Patricia A Creed, John T Creed, Kevin M Kubachka, Robert A Wilson

1:50 (1930-2) **SP-ICP-MS Analysis of Size and Number Concentration in Mixtures of Monometallic and Bimetallic (Core- Shell) Nanoparticles** CHADY STEPHAN, PerkinElmer, Ruth Merrifield, Jamie Lead

2:10 (1930-3) **Single Cell ICP-MS Method Development for Studying Interaction of Nanoparticles and Heavy Metals with Yeast Cells** KE LI, Missouri University of Science and Technology, Honglan Shi, Wenya Liu, Yinfa Ma, Chady Stephan

2:30 (1930-4) **The Preparation and Analysis of Mineral Based Excipients for ICH Q3D/USP <232> Elemental Impurities by ICP-MS** JON SIMS, PerkinElmer Inc., Aaron Hineman

ORAL SESSIONS **Session 1940**

LC - General Interest and Food Science

Wednesday Afternoon, Room W175b
William J Long, Agilent Technologies, Presiding

1:30 (1940-1) **Considerations for Quantitative Method Transfer Across Chromatographic Systems** PAULA HONG, Waters Corporation, Patricia R McConville

1:50 (1940-2) **Maximizing the Effect of Temperature on Retention of Ionogenic Solutes Through Buffer Selection in Liquid Chromatography** ANTHONY R HORNER, University of Pittsburgh, Stephen R Groskreutz, Stephen G Weber

2:10 (1940-3) **Convolution Approach to Speed Up Simulation for Various Conditions of Liquid Chromatography Including Volume Overload and Solvent Mismatch** LENA N JEONG, Virginia Commonwealth University, Sarah C Rutan, Dwight R Stoll, Peter W Carr

2:30 (1940-4) **Evaluation of Alternative Methods for Amino Acid Analysis** THOMAS EDWARD WHEAT, Waters Corporation, Patricia R McConville

2:50 **Recess**

3:05 (1940-5) **Fabrication of Fused-Silica Capillary Columns for On-Column UV-Absorption Detection in Capillary Liquid Chromatography** XIAOFENG XIE, Brigham Young University, Milton L Lee, Luke T Tolley, H Dennis Tolley

3:25 (1940-6) **Custom Liquid Chromatography Stationary Phases Synthesized Using the Thiol-yne Reaction** ERIN P SHIELDS, University of Pittsburgh, Stephen G Weber

3:45 (1940-7) **Hydrophilic Interaction Liquid Chromatography of Phenolic Acids with UV and MS Detection** ASHLEY E RICHARDSON, Miami University, Neil D Danielson

4:05 (1940-8) **Following the Fermentation Process of Beer by HPLC** WILLIAM J LONG, Agilent Technologies, Anne Mack, Robert E Cook, Jason J Link, Stephen J Luke

ORAL SESSIONS **Session 1950**

Molecular Spectroscopy Special Analytical Techniques

Wednesday Afternoon, Room W175c
Timothy A Policke, BWXT Nuclear Operations Group-Lynchburg, Presiding

1:30 (1950-1) **Nonlinear and Ultrafast Spectroscopy of Hybrid Plasmonic Nanoparticles** LOUIS HABER, Louisiana State University

1:50 (1950-2) **Charge-Induced Long Range Order in a Room Temperature Ionic Liquid** KE MA, Michigan State University, Romana Jarosova, Greg Swain, Gary Blanchard

2:10 (1950-3) **Plasmon Waveguide Raman Spectroscopy for Thin Film and Monolayer Analyses** EMILY A SMITH, Iowa State University, Charles Nyamekye, Qiaochu Zhu, Stephen C Weibel, Jonathan Michael Bobbitt

2:30 (1950-4) **Polarizability of Pharmaceutical Cocrystal Assemblies Based on Terahertz Time-Domain Spectroscopy** TIANYAO ZHANG, University of Iowa, Mark A Arnold

2:50 **Recess**

3:05 (1950-5) **Near Infrared Quantitative Chemical Imaging Reveals Purity of Flour from Laboratory Scale vs. Production Scale Wheat Milling** MARK BOATWRIGHT, Kansas State University, David Wetzel

Author and presider lists are available at www.pittcon.org

3:25 (1950-6) **Confocal Raman Microscopy Detection of Specific Lectin Protein Binding to Carbohydrates at Supported Phospholipid Bilayers** DAVID A BRYCE, University of Utah, Jay P Kitt, Joel M Harris

3:45 (1950-7) **Application of In Situ Raman Spectroscopy to Support Root Cause Investigation of Particulate Matter in Parenterals** OLGA LASKINA, rap.ID Inc., Oliver Valet, Markus Lankers

4:05 (1950-8) **Accurate Molecular Orientation Analysis by IR pMAIRS Considering the Refractive Index of the Thin Film Sample** TAKESHI HASEGAWA, Kyoto University, Nobutaka Shioya, Takafumi Shimoaka, Richard Murdey

ORAL SESSIONS — Session 1960

Nano-Electrochemistry

Wednesday Afternoon, Room W176a
Bo Zhang, University of Washington, Presiding

1:30 (1960-1) **MnO2 Nanofluid Electrode for Nanoelectrofuels - Enhanced Stability, Viscosity and Electrochemical Performance** ELAHE MOAZZEN, Illinois Institute of Technology, Elena Timofeeva, Carlo Sege N/A

1:50 (1960-2) **Electrodeposition with Nano-Bipolar Electrodes in 2D and 3D Geometries** GARRISON M CROUCH, University of Notre Dame, Donghoon Han, Paul W Bohn

2:10 (1960-3) **Ion Selectivity Induced by Redox Cycling Within Nanopore Electrode Arrays at Weakly Supported Solution** KAIYU FU, University of Notre Dame, Donghoon Han, Chaoxiong Ma, Paul W Bohn

2:30 (1960-4) **Hydrazine Decomposition and Hydrogen Nanobubbles in Single Particle Collision** YUNSHAN FAN, University of Washington, Bo Zhang

2:50 **Recess**

3:05 (1960-5) **Electrochemical Characterization of Ultrathin Cross-Linked Metal Nanoparticle Films** CHU HAN, University of Washington, Stephen J Percival

3:25 (1960-6) **Platinum Closed Bipolar Nanoelectrodes** RUI HAO, University of Washington, Bo Zhang

3:45 (1960-7) **Enabling Nanotitrations for In Situ Imaging of Reactive Adsorbed Species on Heterogeneous Catalysts Using Surface Interrogation Scanning Electrochemical Microscopy** BURTON H SIMPSON, University of Illinois at Urbana-Champaign, Mihail R Krumov, Matthew Kromer, Joaquín Rodriguez Lopez

4:05 (1960-8) **Electrospun Iridium-Iridium Oxide Nanofibers as an Enhanced Electrocatalyst for Hydrogen Evolution Reaction** SU-JIN KIM, Ewha Womans University, Hyeseung Jung, Myung Hwa Kim, Youngmi Lee

ORAL SESSIONS — Session 1970

Novel Applications of Vibrational Spectroscopy (Half Session)

Wednesday Afternoon, Room W175a
Allen Sharkins, The Pittsburgh Conference, Presiding

3:05 (1970-1) **Optimization of Cumulative Industrial Individual Unit Process Efficiencies** DAVID WETZEL, Kansas State University, Mark Boatwright

3:25 (1970-2) **Novel and Fast Mixture Analysis Application based on MIR or Raman Spectra and Spectral Databases to Identify Ingredients and Their Quantities** KATJA HOLLAND-MORITZ, S.T.Japan-Europe GmbH, Klaus Schürmann

3:45 (1970-3) **In Situ Studies of Ethylene Epoxidation on Individual Ag Nanocatalysts** XUEQIANG ZHANG, University of Illinois at Urbana-Champaign, Gayatri Kumari, Prashant K Jain

4:05 (1970-4) **Application Specific SERS Substrates** HIROYUKI TAKEI, Tokyo University, Junichiro Saito, Keiko Kato, Kosuke Watanabe, Takayuki Okamoto, Armin Goelzhaeuser

ORAL SESSIONS — Session 1980

Pharmaceutical Analysis by Liquid Chromatography

Wednesday Afternoon, Room W475a
Alice Chen, The Pittsburgh Conference, Presiding

1:30 (1980-1) **Direct and Simultaneous LC/MS Quantitation of Multiple Labelled and Unlabelled Ions Species** YONGDONG WANG, Cerno Bioscience, Don Kuehl

1:50 (1980-2) **Two Dimensional (2D) Liquid Chromatography for Impurity Analysis** ZHIMIN LI, Waters Corporation, Paula Hong, Patricia R McConville

2:10 (1980-3) **Enantioresolution of Several Amino Alcohol Drugs Containing Multiple Stereogenic Centers Using Immobilized Polysaccharide-Based HPLC Chiral Stationary Phases** MOHAMED HEFNAWY, King Saud University N/A

2:30 (1980-4) **UPLC-UV Method for Identification and Assay of Imidacloprid, Fipronil, s-Methoprene and BHT and Estimation of Imidacloprid, Fipronil and s-Methoprene Related Compounds in Next Generation Topical Spot-on Product** JINGZHI TIAN, Merial, Abu Rustum

2:50 **Recess**

3:05 (1980-5) **Development of a RP-HPLC Method for Assay of Delmopinol Using Alkaline Mobile Phase and a Stable C18 Column** QINGLIN TANG, Merial, Jinyou Zhuang, Abu Rustum

3:25 (1980-6) **Analysis of Aminoglycosides Using High Performance Liquid Chromatography with Electrochemical Detection** JUN CHENG, Thermo Fisher Scientific, Yan Liu

3:45 (1980-7) **Development of a RP-UPLC Method for Determination of Assay and Related Compounds of Betamethasone Valerate and Clotrimazole in a Topical Veterinary Drug Formulation** RALF DOLFINGER, Merial, Qinglin Tang

4:05 (1980-8) **Development of a Stability Indicating RP-HPLC Method for Firocoxib Oral Suspension Solution** SIRANTHA PERERA, Merial, Abu Rustum

ORAL SESSIONS — Session 1990

SERS UVRR Applications

Wednesday Afternoon, Room W177
Mustafa Culha, Yeditepe University, Presiding

1:30 (1990-1) **Surface-Enhanced Raman Scattering of Uranyl in Aqueous Samples: Implications for Nuclear Forensics and Groundwater Testing** MICHAEL TRUJILLO, University of Notre Dame, Jon Camden, James Bradshaw, David Jenkins

1:50 (1990-2) **Biocompatible, Liposome-Based Surface Enhanced Raman Spectroscopy (SERS) Substrates** LAURA SAGLE, University of Cincinnati, William Lum, Ian Bruzas, Sarah Unser

2:10 (1990-3) **Tailored SERS-Active Substrate for Forensic Trace Detection** CHIARA DERIU, Florida International University, Bruce McCord

2:30 (1990-4) **UV Resonance Raman Investigation of the Solution-State Structures of Polyglutamine** RYAN S JAKUBEK, University of Pittsburgh, David Punihaole, Riley J Workman, Jeffry Madura, Sanford A Asher

2:50 **Recess**

3:05 (1990-5) **UV Raman Wide-Field Hyperspectral Imaging Spectrometer for Standoff Trace Explosive Detection** KYLE HUFZIGER, University of Pittsburgh, Sergei V Bykov, Sanford A Asher

3:25 (1990-6) **Effect of Metal Types and Geometries on Planar Array Substrates Based Surface Enhanced Raman Spectroscopy** ASHISH TRIPATHI, US Army ECBC, Erik David Emmons, Augustus W Fountain, Jason Guicheteau, Steven D Christesen

3:45 (1990-7) **Nanoporous Silver Film Fabricated by Oxygen Plasma: A Facile Approach for SERS Substrates** CHAOXIONG MA, University of Notre Dame, Jon Camden

4:05 (1990-8) **Understanding SERS of Blood Serum for Cancer Diagnosis** MUSTAFA CULHA, Yeditepe University, Ertug Avci, Soner Dogan

ORAL SESSIONS — Session 2000

Solving Biomedical Issues with Mass Spectrometry (Half Session)

Wednesday Afternoon, Room W176b
Abd Elmoneim Afify, Cairo University, Presiding

1:30 (2000-1) **Plasma-Based Ambient Mass Spectrometry for Exhaled Breath Analysis** XIAOXIA GONG, Texas Tech University, Songyue Shi, Gerardo Gamez

1:50 (2000-2) **Direct Picosecond Infrared Laser (PIRL) Extraction of Highly Charged Biomolecules, Native Proteins and Non-Covalently Bound Protein Ligand Complexes from Bulk Water** YINFEI LU, Max Planck Institute for the Structure and Dynamics of Matter, Cornelius L Pieterse, Jean-Michel Boudreau, Frederik Busse, Wesley D Robertson, RJ Dwayne Miller

2:10 (2000-3) **TOF-SIMS Imaging and 13C NMR at Natural Isotopic Abundance to Investigate the Biosynthetic Pathways of Bioactive Metabolites in the Amazonian Tree Species Sextonia Rubra (Lauraceae)** CHRISTOPHE DUPLAIS, CNRS, Tingting Fu, Nadine Amusant, Emeline Houël, David Touboul, Serge Della-Negra, Richard J Robins, Gérald S Rémaud, Alain Brunelle N/A

2:30 (2000-4) **Direct MS Analysis of Drugs of Abuse in Urine Using Biocompatible Solid Phase Microextraction (BioSPME)** EMILY R BARREY, MilliporeSigma, Craig Aurand, Candace Price, Sara E Smith

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TECHNICAL PROGRAM

POSTER SESSION — Session 2010

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Bioanalytical - Others

Wednesday Afternoon, Exposition Floor, Aisle 2500-2600

(2010-1 P) **Protecting -Crystallin and Inhibiting Protein Aggregation to Delay Disease** MICHAEL MCCLAIN, Westminster College, Erin Wilson

(2010-2 P) **The Effect of Tubang-Bakod (Jatropha Curcas L.) Latex in the Physiochemical Quality of Contaminated Water** VENCHIE CAGOROL BADONG, University of the Immaculate Conception N/A

(2010-3 P) **Three Dimensional Multipod Superstructures Based on Cu(OH)2 as a Highly Efficient Nanozyme** REN CAI, University of Florida, Weihong Tan N/A

(2010-4 P) **Impact of Polyphenolic Compounds on the Structure and Aggregation of the Amyloid-β Peptide** BRITTANY HAGENHOFF, University of Missouri

(2010-5 P) **Spectroscopic Monitoring of Alpha Helical Uniformity** ANAHITA ZARE, University of Missouri

(2010-6 P) **A New Strategy in Building Keypad Lock based on SERS** JIMING HU, Wuhan University, Boran Dong, Xiaodong Zhou

(2010-7 P) **Surface-Enhanced Raman Scattering of Bacteria on Silver Nanodomes** AYSUN KORKMAZ, Gaziantep University, Handan Yuksel, Ramazan Solmaz, Mehmet Kahraman

(2010-8 P) **Long-Term Reliability of an Aseptic Online Glucose Monitoring & Control System in Perfusion CHO Cell Cultures** WILLIAM MILLER, YSI, Inc.

(2010-9 P) **Surface-Enhanced Raman Spectroscopy Detection of Biomolecules Using AgNPs Attached Filter Paper Substrates Array** RAJA PANDIYAN PANNEER SELVAM, University of Alabama at Birmingham, Richard A Dluhy

(2010-10 P) **Influence of Brain Gangliosides on Vesicle Adsorption, Rupture, and Supported Bilayer Formation** NATHAN J WITTENBERG, Lehigh University, Luke R Jordan

(2010-11 P) **Discrimination of Human and Animal Blood Traces Via Raman Spectroscopy** KYLE DOTY, University at Albany, The State University of New York, Gregory McLaughlin, Igor Lednev

(2010-12 P) **Investigation of Fluidity and Phase Segregation of Polymerized Mixed Planar Supported Lipid Bilayers for Biosensor Applications** N MALITHI FONSEKA, University of Arizona, Boying Liang, Kristina S Orosz, Craig A Aspinwall, S Scott Saavedra

(2010-13 P) **Microchip Electrophoresis with Laser Induced Fluorescence to Detect Carnosine Uptake in Macrophage Cells** MICHAEL L HOGARD, University of Kansas, Claudia G Fresta, Giuseppe Caruso, Susan M Lunte

(2010-14 P) **Electrochemical Synthesis of Surface Enhanced Raman Scattering Spectroscopy Microfluidic Paper-Based Device (SERS-μPADs)** RAFAEL MASITAS, University of Notre Dame, Zachary D Schultz

(2010-15 P) **Graphene Oxide-Based biosensor for Rapid and Sensitive Detection of HIV-1 Protease** YOUWEN ZHANG, Illinois Institute of Technology

(2010-16 P) **Albumin Removal from Human Serum Using Selective Nanopockets on Silica-Coated Magnetic Nanoparticles** SNEHASIS BHAKTA, University of Connecticut, Chandra K Dixit, Itti Bist, John Macharia, Steven L Suib, James F Rusling

(2010-17 P) **Lipid-DNA Micelles for Protein Detection and Drug Screening for Cancer Cells** YANYUE WANG, University of Florida, Weihong Tan N/A

(2010-18 P) **Ligand-Receptor Binding Investigated by Tip-enhanced Raman Spectroscopy** LIFU XIAO, University of Notre Dame, Zachary Schultz

POSTER SESSION — Session 2020

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Bioanalytical - Sampling

Wednesday Afternoon, Exposition Floor, Aisle 2500-2600

(2020-1 P) **Isolation of Intact Microbial Populations by Preparative Capillary Zone Electrophoresis** BONNIE LYNN JASKOWSKI HUGE, University of Notre Dame, Andrew Schmudlach, Matthew M Champion, Norman J Dovichi

(2020-2 P) **A Method for Development of Aptamer by Using Asymmetrical Flow-Field Flow Fractionation** JUYONG LEE, University of California Riverside, Wenwan Zhong, Luis Armando Jimenez N/A

(2020-3 P) **Ultrasound-Assisted Microemulsion Electrokinetic Chromatography** AHMAD ROHANI FAR, The University of Toledo, Amila M Devasurendra, Jon R Kirchhoff

(2020-4 P) **MALDI Imaging Mass Spectrometry Combined with Laser Ablation Sampling for Multi-Omics Tissue Analysis** FABRIZIO DONNARUMMA, Louisiana State University, Kelin Wang, Kermit King Murray

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POSTER SESSION — Session 2030

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Characterization of Polymers and Plastics

Wednesday Afternoon, Exposition Floor, Aisle 2500-2600

(2030-1 P) **Determining the Release of Carbon Nanotubes from Polymer-Carbon Nanotube Composites during Accelerated Weathering** ENDALKACHEW SAHLE-DEMESSIE, US Environmental Protection Agency, Changseok Han, Heidi Grecsek, Wang Jun

(2030-2 P) **Rapid Measurement of Molecular Weight by a Novel GPC Column** LEAH BLOCK, Shodex, Showa Denko America, Junya Kato, Hideyuki Kondo, Naoko Maruoka, Ritsuko Wakayama, Ron Benson

(2030-3 P) **Application of ATR-FTIR Microspectroscopy in Understanding Interlayer Migration of Automotive Coatings** CHEN LING, Axalta Coating Systems, Anna Nelson, Jun Lin

(2030-4 P) **Residual Monomers in Polymer Samples: High-Throughput Analysis with Automated SIFT-MS** VAUGHAN S LANGFORD, Syft Technologies, Daniel B Milligan, Barry J Prince, Murray J McEwan, Doug M Hastie, Mark Perkins, Terry Wilks N/A

(2030-5 P) **New Techniques for Preparing Plastics and Polymers by Microwave Sample Preparation** TINA A RESTIVO, CEM, Austin Thornton, Robert L Lockerman, Michael Howe

(2030-6 P) **Synthesis and Characterization of an Acetophenone Derived Resin and Its Lanthanide (III) Polychelates** VIJAYKUMAR R PATEL, Shri R.K.Parikh Arts and Science College N/A

(2030-7 P) **In Situ Evolved Gas Analysis During the 3D Printing Process by TG-GC-MS** ADAM PATKIN, PerkinElmer, Peter Hua N/A

(2030-8 P) **Determination of Molar Mass Averages and Polydispersity of Polypropylene Random Copolymers Using High Temperature GPC System** REZA FARASAT, Tosoh Bioscience LLC

(2030-9 P) **Molecular Weight Determination of Ultra-High Molecular Weight Polymers Using Automatic Batch Mode Multi-Angle Light Scattering** JINFENG WANG, Nalco, an Ecolab Company, Wang Jing, Heqing Huang, Xinyu Huang

(2030-10 P) **Complete Characterization of Food Packaging Materials Using a Hyphenated Thermal Analysis – FT-IR System** IAN ROBERTSON, PerkinElmer Limited, Peter Muller, Jun Wang N/A

(2030-11 P) **Using Time Resolved FT-IR-ATR to Study Fuel Diffusion Through Polymer Membranes** JAMES M SLOAN, US Army Research Laboratory, Macromolecular Science

POSTER SESSION — Session 2040

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Consumer Products

Wednesday Afternoon, Exposition Floor, Aisle 2500-2600

(2040-1 P) **Supplements and Nutraceutical Screen by GC** TIMOTHY ANDERSON, Phenomenex, Brian Rivera N/A

(2040-2 P) **GC-TOFMS for Fast Targeted Allergen Screening and Non-Targeted Characterization of Personal Care Products** ELIZABETH HUMSTON-FULMER, LECO, Joseph E Binkley

(2040-3 P) **Determination of Formaldehyde by Automatic On-Line Derivatization with Pentafluorbenzylhydroxylamine in Cosmetic Products by Static Headspace GC/TOF-MS** MOIRA ZANABONI, DANI Instruments, Michela Gasperini, Alessandro Casilli, Conor Sullivan

(2040-4 P) **Green Synthesis of Coumarin-3-Carboxylic Acids and Complexation with Eu(III)** SAMANTHA TOWER, Westminster College, Peter Smith

POSTER SESSION **Session 2050**

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Food Safety

Wednesday Afternoon, Exposition Floor, Aisle 2500-2600

(2050-1 P) **Accessible and Efficient Screening of Multiclass Contaminants in Food** KENNETH JOHN ROSNACK, Waters Corporation, Eimear McCall, Jinchuan Yang, Joe Romano

(2050-2 P) **Analysis of Boiler Water Additives in Fuel Ethanol Distiller's Dried Grains** JAMES J MICHELS, Nalco Water

(2050-3 P) **Fast Screening of Alcohol in Juice/Beverage** JUN ZHU, Coca-Cola, Zhixiu Xu

(2050-4 P) **Optimal Water Quality for Ion Chromatography Analyses of Foods and Beverages** ESTELLE RICHE, Millipore SAS, Beatrice Frocrain, Gabriela Dima, Cecilia Devaux, Stephane Mabic

(2050-5 P) **UV-C Irradiation on the Quality of Green Tea: LC-MS/MS Quantitation of Catechins** MATTHEW JAY VERGNE, Lipscomb University, Kevin Flatt, Lincoln Shade, Ankit Patras

(2050-6 P) **Advanced Application of Speciation Analysis Using ICP-MS Detection** JOHN EDWARD MADDEN, Thermo Fisher Scientific, Daniel Kutscher, Shona McSheehy Ducos

(2050-7 P) **Physico-Chemical Characterization, Hygienic Practices and Sanitary Conditions of Street Vended Foods in Davao Del Sur** VENCHIE CAGOROL BADONG, University of the Immaculate Conception N/A

(2050-8 P) **Novel Electrochemical Biosensors for Assessing Food Safety** JING ZHANG, SUNY at Binghamton N/A

(2050-9 P) **Pesticide Analysis in Agricultural Products Using QuEChERS and SFC/MS** KENICHIRO TANAKA, Shimadzu Scientific Instruments, Inc., Yuka Fujito, Yoshihiro Hayakawa, Yoshihiro Izumi, Takeshi Bamba

(2050-10 P) **Mycotoxin Analysis in Foods by SFE-SFC-MS** KENICHIRO TANAKA, Shimadzu Scientific Instruments, Inc., William A Hedgepath, Tairo Ogura

(2050-11 P) **Robust LC-MS Analysis of Pesticides with 1.0 mm ID Columns Using State of the Art UHPLC Instrumentation** MARKUS M MARTIN, Thermo Fisher Scientific, Giorgia Greco, Oleksandr Boychenko, Remco Swart

(2050-12 P) **Analysis of Aflatoxin M1 in Raw Milk by HPLC with Fluorescence Detection** WILHAD M REUTER, PerkinElmer Inc, Charlie Schmidt, Jason Weisenseel

(2050-13 P) **Cannabis Analysis Overview** TIMOTHY RUPPEL, PerkinElmer

(2050-14 P) **Use of Liver Homogenates for Rapid Generation of Phase I Metabolites to Facilitate Characterization of Emerging Drugs of Abuse by High Resolution Liquid Chromatography-Mass Spectrometry** ANNA HOLDERBAUM, Queen's University Belfast, Elliott T Chris, Tom Buckley, Mooney H Mark

(2050-15 P) **Investigation of the Primary Plasticizers Present in Polyvinyl Chloride (PVC) Products Currently Authorized as Food Contact Materials** KATHERINE S CARLOS, US FDA, Lowri deJager, Timothy H Begley

(2050-16 P) **The Development and Implementation of an Internal Quality Control Material for Liothyronine and Levothyroxine** JANA LEE BRUEGGEMEYER, US Food and Drug Administration, Robert A Wilson, Enrique G Yanes, James A Turner, Ryan Saadawi

(2050-17 P) **Rapid Identification of Foreign Materials in Food Products** MICHAEL STEVEN BRADLEY, Thermo Scientific, Steve Lowry, Stephan Woods

(2050-18 P) **Critical Considerations when Performing Confirmatory Analysis of Maximum Levels for PCDD/Fs and dl-PCBs in Food and Feed Based Sample Extracts by GC-MS/MS** JASON COLE, Thermo Fisher Scientific, Richard Law, Paul Silcock, Tommaso Albertini, Flavio Bedini

(2050-19 P) **Greenhouse Evaluations of Volatile Plant Defense Against an Invasive Agricultural and Environmental Biothreat Agent, Raffaelea lauricola, and Possible Implications for Canine Detection** ALISON G SIMON, Florida International University, Kenneth G Furton

POSTER SESSION **Session 2060**

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High-Throughput Chemical Analysis

Wednesday Afternoon, Exposition Floor, Aisle 2500-2600

(2060-1 P) **Titration for Faster, Safer and Easier Analysis** LORI CAREY, Metrohm, Frederick Fiddler

(2060-2 P) **Simple High-Throughput Formaldehyde Analysis Using Automated SIFT-MS** VAUGHAN S LANGFORD, Syft Technologies, Daniel B Milligan, Barry J Prince, Murray J McEwan, Doug M Hastie, Mark Perkins, Terry Wilks N/A

(2060-3 P) **Rapid and High Efficiency Chiral Liquid Chromatography Using Superficially Porous Particles** DARSHAN PATEL, University of Texas at Arlington, JeongJae Yu, Zachary S Breitbach, Daniel W Armstrong

(2060-4 P) **Development of an Improved Microspectrophotometer for Quantitative Bio-Applications** THOMAS SPUDICH, Maryville University, Nate Rodriguez, Bradley Postier

(2060-5 P) **A Paper Based Disposable Well-Plate for Cyanide Detection Incorporating a Fluorescent Chitosan-CdTe Quantum Dot Nanoparticle** SUMATE PENGPUMKIAT, Oregon State University, Yuanyuan Wu, Wei Xu, Saichon Sumantakul, Vincent T Remcho

POSTER SESSION **Session 2070**

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LC - General Interest

Wednesday Afternoon, Exposition Floor, Aisle 2500-2600

(2070-1 P) **Evaluating Mass Overload on Superficially Porous Particles** PAUL CONNOLLY, Restek Corporation, Ed Franklin, Justin V Steimling, Ty Kahler, Becky Wittrig, Susan Steinike, Rob Freeman

(2070-2 P) **The Potential of Under 250 nm Deep UV-LEDs in Chemical Analysis: 235 nm UV-LED Photometric Detection in Capillary Liquid Chromatography** MIREK MACKA, University of Tasmania, Yan Li, Pavel N Nesterenko, Brett Paull, Roger Stanley

(2070-3 P) **Evaluation of 5 Kinds of 2 µm and Sub 2 µm C18 Columns Based on Separation Behavior** NORIKAZU NAGAE, ChromaNik Technologies Inc., Tomoyasu Tsukamoto, Shun Kojima

(2070-4 P) **From Booze to Mobile Phase: Ethanol Leads the Way to a Chemical Free HPLC** LEE N POLITE, Axion Analytical Labs Inc, Jackson O'Donnell, Nikolas L Polite, Theodore N Covello, Erick D Walts, Dennis L Polite, Mary Beth Smith

(2070-5 P) **A Rugged C18 Stationary Phase for Accelerated Analysis** CARRIE SPROUT, Restek, Paul Connolly, Frances Carroll, Sharon Lupo, Rob Freeman, Susan Steinike, Rick Lake

(2070-6 P) **HILIC, Polar, and Shape Selectivity of a FluoroPhenyl Phase** SUSAN STEINIKE, Restek, Frances Carroll, Paul Connolly, Rob Freeman, Becky Wittrig

(2070-7 P) **Influencing the Selectivity of Small Proteins and Peptides** KIM SHAFFER, Restek Corporation, Susan Steinike, Paul Connolly, Rick Lake, Rob Freeman

POSTER SESSION **Session 2080**

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Material Science

Wednesday Afternoon, Exposition Floor, Aisle 2500-2600

(2080-1 P) **Spectral Solvatochromic Shifts and Dielectric Behavior of Styrene-Alcohol Systems** EDGAR CORONEL, Universidad Mayor de San Andrés N/A

(2080-2 P) **Graphene Characterization Using an Elemental Analyzer** GUIDO GIAZZI, Thermo Fisher Scientific, Liliana Krotz, Francesco Leone

(2080-3 P) **Characterization of Carbon Fibers Using an Elemental Analyzer** GUIDO GIAZZI, Thermo Fisher Scientific, Liliana Krotz, Francesco Leone

TECHNICAL PROGRAM

(2080-4 P) **Reaction of Phosphonium Phosphate Ionic Liquids with Iron Substrates** DAVID W JOHNSON, University of Dayton, Joseph Hancock

(2080-5 P) **Raman Spectroscopy as a Probe of Stacking Order in Carbonized Metal-Organic Frameworks** SZETSEN LEE, Chung Yuan Christian University, Pei Tsung, Li Bing-Han, Chia-Her Lin

(2080-6 P) **Fabrication of an Edge-on Oriented ZnTPP Thin Film Studied by Using the pMAIRS Technique** NOBUTAKA SHIOYA, Kyoto University, Miyako Hada, Takafumi Shimoaka, Richard Murdey, Kazuo Eda, Takeshi Hasegawa

(2080-7 P) **Quantum Dot Dispersed Polydimethylsiloxane as Wavelength Shifting Light Source for Optical Analysis** JUNFENG ZHU, Kyushu University, Higuchi Hirokazu, Nomada Hiroaki, Yoshioka Hiroaki, Kinichi Morita, Oki Yuji

(2080-8 P) **Utilization of Zwitterionic Thermoresponsive Surfactants for the Synthesis and In Situ Preconcentration of Monodispersed Spherical Gold Nanoparticles** ARATA ENDO, Fukushima University, Ryo Miura, Takagai Yoshitaka, Willie Hinze

(2080-9 P) **Effect of Magic Angle Spinning Rate on Deuterium NMR Spin-Lattice Relaxation of (Propylazanediyl)Bis(Methylene-d)Dibenzoic Acid Hydrochloride: Enhanced Spin-Lattice-Relaxation Due to Rotational Resonance** MAHINDA E GANGODA, Kent State University

(2080-10 P) **Strategy for Determining Depth-Dependent Penetration into Porous Silicon** CRYSTAL MARIA COLLADO, University at Buffalo, The State University of New York, Frank V Bright N/A

(2080-11 P) **Unraveling the Growth Mechanism of Perovskite Nanocrystals by Time-Dependent Spectroscopy Characterization** MEGHAN TEUNIS, Indiana University - Purdue University Indianapolis, Rajesh Sardar

(2080-12 P) **Molecular Orientations in Materials Using Polarized Raman Imaging** MICHAEL STEVEN BRADLEY, Thermo Scientific, Robert Heintz, Amir Mashal

(2080-13 P) **Direct Analysis of Hyperspectral Images (DAHI)** SHILADITYA CHATTERJEE, Brigham Young University, Bhupinder Singh, Matthew R Linford

(2080-14 P) **Hydrophobization of Inorganic Oxide Surfaces via Siloxane Equilibration** JOSEPH W KRUMPFER, Pace University, Ryan M Kaleigh

(2080-15 P) **Withdrawn**

(2080-16 P) **Novel Three-Dimensional Cellulose Produced from Trunk of Astragalus Gummifer (Fabaceae) Tested for Protein Adsorption Performance** MIREN SEN, Aksaray University, Demet Erdönmez, Neşe Hayat Aksoy, Murat Kaya, Mehmet Odabaşı N/A

POSTER SESSION — Session 2090

All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 1:00 PM to 3:00 PM. Poster sessions are on the Exposition Floor, Aisle 2500-2600. PLEASE NOTE: You cannot get onto the exposition floor until 9:00 AM. Posters that have not been taken down one-half hour after the designated time will be disposed of.

Microscopy

Wednesday Afternoon, Exposition Floor, Aisle 2500-2600

(2090-1 P) **Holographic Characterization of Large Particle Contaminants in Chemical Mechanical Planarization Slurries** DAVID B RUFFNER, Spheryx, Inc., Priya Kasimbeg, Jaroslaw M Blusewicz, Fook Chiong Cheong, Priya A Philips

(2090-2 P) **Lipobeads' Preparation and Imagining Using High Pressure Scanning Electron Microscopy** SERGEY V KAZAKOV, Pace University, Sarah Rahni, Shinsuke Kawanishi, Evan Slow, Robert J Gordon, Justin Rack

(2090-3 P) **Imaging Dynamics of Single Cells During Adhesion, Migration, and Invasion** JENNA WALZ, Tufts University, Charles R Mace

(2090-4 P) **Withdrawn**

(2090-5 P) **Second Harmonic Generation-Guided Powder X-Ray Diffraction** DENG FENGYUAN, Purdue University, Justin A Newman, Paul D Schimitt, Shijie Zhang, Scott J Toth, Garth J Simpson

(2090-6 P) **Metal Composition of Electronic Cigarette Coils Pre- and Post-Heating by Scanning Electron Microscopy** JAMES STEWART, Virginia Commonwealth University, Joseph M Turner, Justin L Poklis, Alphonse Poklis, Michelle R Peace

POSTER SESSION — Session 2100

All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 1:00 PM to 3:00 PM. Poster sessions are on the Exposition Floor, Aisle 2500-2600. PLEASE NOTE: You cannot get onto the exposition floor until 9:00 AM. Posters that have not been taken down one-half hour after the designated time will be disposed of.

Supercritical Fluid Chromatography

Wednesday Afternoon, Exposition Floor, Aisle 2500-2600

(2100-1 P) **Improvement of Total Analytical Work Flow by Using Online SFE-SFC** KENICHIRO TANAKA, Shimadzu Scientific Instruments, Inc., Keiko Matsumoto, Hidetoshi Terada, Takato Uchikata, Yasuhiro Funada

(2100-2 P) **Supercritical Fluid Extraction at 1000 Bar** ROLF SCHLAKE, Applied Separations

(2100-3 P) **Achiral SFC: No C18 Equivalent, No Problem** J P PRESTON, Phenomenex, Morgan Jacob Kramer

POSTER SESSION — Session 2110

All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 1:00 PM to 3:00 PM. Poster sessions are on the Exposition Floor, Aisle 2500-2600. PLEASE NOTE: You cannot get onto the exposition floor until 9:00 AM. Posters that have not been taken down one-half hour after the designated time will be disposed of.

Thermal Analysis

Wednesday Afternoon, Exposition Floor, Aisle 2500-2600

(2110-1 P) **Calorimetry Studies of High Temperature Thermal Storage Materials used in Concentrated Solar Power (CSP) Systems** KRISTINA LILOVA, Setaram, Inc.

(2110-2 P) **Thermal Analysis and Calorimetry in Process Safety Applications** KRISTINA LILOVA, Setaram, Inc.

(2110-3 P) **Thermal Analysis and Calorimetry Applied to the Studies of 2D Carbon-Based Nanomaterials** KRISTINA LILOVA, Setaram, Inc.

(2110-4 P) **New Software Advances for the Automatic Evaluation of Thermogravimetric Analysis Data** DAVID SHEPARD, Netzsch Instruments North America, LLC

UNDERGRADUATE POSTER SESSION — Session 2120

All Undergraduate posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 1:00 PM to 3:00 PM. The poster session is on the Exposition Floor, Aisle 2500-2600. PLEASE NOTE: You cannot get onto the exposition floor until 9:00 AM. Posters that have not been taken down one-half hour after the designated time will be disposed of.

Undergraduate Poster Session

Wednesday Afternoon, Exposition Floor, Aisle 2500-2600

(2120-1 P) **Degradation of Sertraline in Space** VIRGINIA JAMES, College of Charleston, Wendy C Cory

(2120-2 P) **Investigating the Potential Degradation of Levofloxacin Following Exposure to Space** ALISHA LAMAS, College of Charleston, Wendy C Cory

(2120-3 P) **Investigation into the Stability and Potency of Ibuprofen Stored Aboard the International Space Station** KATRINA MANGIARACINA, College of Charleston, Wendy C Cory

(2120-4 P) **Chemical Analysis of Potency and Purity of Phenytoin Capsules Stored on the International Space Station** JESSICA MOON, College of Charleston, Wendy C Cory

(2120-5 P) **Quantification of Adsorption of Organic Compounds by Silver Nanoparticles** KATHERINE MARIE MULLAUGH, College of Charleston, Sondrica Goines

(2120-6 P) **Gas Separations by Mixed-Matrix Membranes and High Surface Area Carbons** ZOE MANN, Cornell College, Shannon M Mahurin, Jennifer A Schott, Sheng Dai

(2120-7 P) **Ionic Liquid Membranes and Adsorbents Derived from Carbonated Beverages for Gas Separations** CAITLIN STIEBER, Cornell College and Oak Ridge National Laboratory, Shannon M Mahurin, Sheng Dai, Jennifer A Schott

(2120-8 P) **Advancements Toward Fabrication of a Modified Carbon Quantum Dot as a Biocompatible Real-Time pH Sensor** ALEXANDER P FLUGEL, Colorado College, Murphy Brasuel

(2120-9 P) **Investigating the Fe(II)-Binding Antioxidant Activity of Thione and Selone Complexes Utilizing Gel Electrophoresis, Polymerase Chain Reaction and HPLC** EMILY KURFMAN, Furman University, Julia L Brumaghim, Sandra K Wheeler, John F Wheeler

(2120-10 P) **Analysis of the Molecular Weight Distribution of Polyhexamethylene Biguanide Using Equilibrium Dialysis, Size-Exclusion Chromatography, Dynamic Light Scattering, and Ultra-Performance Liquid Chromatography-Mass Spectrometry** RADHIKA J PANDYA, Furman University, Ashley S Thompson, Frederic D David, Sandra K Wheeler, John F Wheeler

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(2120-11 P) **Identification of Cr: DNA Adducts Utilizing UPLC-ESI-MS** JOHN J CORDOBA, Furman University, Andrew G Kantor, James H Wade, Noel A Kane-Maguire, Sandra K Wheeler, John F Wheeler

(2120-12 P) **Sensitive Pesticide Detection in Drinking Water and Georgia Lake Waters Using HPLC-UV** YASMEANA DOGHAIMAT, Georgia Gwinnett College, Xiaoping Li, Sharon Guan, Michelle Huang

(2120-13 P) **Evaluation of Aqueous Organic Electrolytes for Redox Flow Cells** JOSHUA DO, Grand Valley State University, Andrew Lantz, Emily Peters, William Schroeder, Richard Lawton, Paul Rasmussen N/A

(2120-14 P) **Chiral Separation of Silanes via Capillary Micellar Electrokinetic Chromatography** SYDNEY SHAVALIER, Grand Valley State University, Andrew Lantz, Connor Radecki, Randy Winchester

(2120-15 P) **Catching Single Pd Nanoparticles in the Act of Catalysis Using Electrochemistry** AARON J CAPPS, Grand Valley State University N/A

(2120-16 P) **Real-Time Detection of Neurotransmitter Release from Live Cells Using Liquid Interface Nanoprobes** THERESA M WELLE, University of Illinois at Urbana-Champaign, Mei Shen

(2120-17 P) **Observing Discrete Neurotransmission Events Using Versatile Electrochemical Nanoprobes** JUSTIN DESLAURIER, University of Illinois at Urbana-Champaign, Zizheng Qu, Mei Shen

(2120-18 P) **High-Throughput Qualitative and Quantitative Analysis of Drugs in Human Urine** KHAI PHAM, Indiana University, David E Alonso, Christina N Kelly, Joseph E Binkley

(2120-19 P) **Determining the Metal Content in Paper Using Inductively Coupled Plasma-Optical Emission Spectroscopy** KATLYNN AGOSTA, Maryville University, Kelsey Kloeppel, Thomas Spudich

(2120-20 P) **Quantitative Determination of Zinc in Equilibrium Dialysis Binding Experiments** SCOT STANULIS, University of Notre Dame, Cody Pinger, Dana Spence

(2120-21 P) **Characterization of Size and Composition of Indoor Air Pollution Particulate Matter** KRISTIN DIMONTE, Seton Hill University, Miriam A Freedman, Joseph Dawson

(2120-22 P) **Real-Time Striatal Measurements of Oxidative Stress and Dopamine in the Dyskinetic Rat During Chronic L-DOPA Treatment for Parkinson's Disease** CATHERINE F MASON, North Carolina State University, Leslie Rae Wilson, Christie A Lee, Xiaohu Xie, Leslie A Sombers

(2120-23 P) **Detection of Sulfated Polysaccharides Using Reversible Pulsed Chronopotentiometry with Polyion-Selective Electrodes** EMMA GORDON, Northern Kentucky University

(2120-24 P) **Evaluating the Susceptibility of the Aromatic Amino Acids to Chlorine Dioxide Degradation** HEATHER G DEAL, Middle Tennessee State University, Beng G Ooi

(2120-25 P) **Development of a Bacterial Biosensor for the Detection of Heavy Metals in Solution** MICHELLE D HOFFMAN, Rose-Hulman Institute of Technology, Brooks Rodibaugh, Kendall Ryan

(2120-26 P) **Functional Polymer Coatings on Glass Surfaces Through Thermal Vapor Deposition (TVD)** TARYN WEATHERLY, Southern Illinois University Carbondale, Nathalie Becerra-Mora, Kexin Jiao, Punit Kohli

(2120-27 P) **Hanging Drop Culture Modification Utilizing Biofunctionalized PDMS Ribbons** ALEXUS RUSK, Southern Illinois University - Carbondale, Katie Flynn, Kexin Jiao, Sukesh Bhaumik, Punit Kohli

(2120-28 P) **Elemental Profiles of Brood V Periodical Cicadas** THOMAS A PAYNE, Thomas More College, William C Wetzel, Amberlie A Clutterbuck

(2120-29 P) **Mathematical Strategies for Identifying Cremated Remains** CHRISTINA A FARWICK, Thomas More College, Kelsey L Sparks, William C Wetzel, Christa A Currie

(2120-30 P) **Preconcentration of Lead and Copper Ions with Carboxylate-Modified Nonporous Graphitic Carbon** RILEY M ALEXANDER, Wittenberg University, Braden A Crouse, Kristin K Cline

(2120-31 P) **Use of Naturally-Existing Nanostructures as a Model Template for SERS Detection** KAZUKI NAGATA, Toyo University, Hiroyuki Takei

(2120-32 P) **Stabilization of Surface-Adsorbed Gold Nanoparticles for LSPR Sensing in the Near IR Regime** HAZUKI HARAGUCHI, Toyo University, Hiroyuki Takei

(2120-33 P) **Synthesis and Evaluation of Desferrioxamine B-Modified Acrylic Resins and Its Adsorbability of Uranium(VI) Ion** MIKI ABE, Fukushima University, Yoshitaka Takagai, Michio Butsugan, Shukuro Igarashi

(2120-34 P) **Quantitation of Formaldehyde Produced from E-Cigarettes by Different E-Juices** KRISTA M GARDNER, Cumberland University, Sarah S Pierce

(2120-35 P) **Distance Dependence of the Photoreduction of 4-Nitrobenzenethiol on Ag Nanoparticles Studied Using Surface-Enhanced Raman Spectroscopy and Atomic Layer Deposition** MATTHEW A YOUNG, Hillsdale College, Xiaoqi Tang

(2120-36 P) **Size Reduction Thresholds in Paper-Based Analytical Devices (µPADs)** EDWARD BRANDON STRONG, California Polytechnic State University, Nathaniel W Martinez, Andres Wilde Martinez

(2120-37 P) **Application of Metal Oxide Fibers for High Recovery of Small RNA Cancer Biomarkers** SABRINA SEDANO, University of California, Riverside, Luis A Jimenez, Wenwan Zhong

(2120-38 P) **Surface Modification of Titanium and Titanium Aluminum Vanadium Using Octadecylphosphonic Acid and Stearic Acid** MARGARET GERTHOFFER, Seton Hill University, Ellen Gawalt, Ashley Blystone, Nina Reger

(2120-39 P) **Analysis of Pet Food by LIBS, ICP-OES, and Chemometric Methods** STEPHANIE HOMITZ, Westminster College, Helen Boylan

(2120-40 P) **Separation of Samarium from Cobalt Using Water-Immiscible Deep Eutectic Solvents (DESs)** BRENDAN MESSNER, Westminster College , Peter Smith

(2120-41 P) **Analysis of Manganese Oxides Recovered from Abandoned Mine Drainage Passive Treatment Sites** BRITTANY SLUPE, Westminster College, Helen M Boylan

(2120-42 P) **Bacteria Adhesion Quantification Using Microscopy and ImageJ Analysis** MATHILDA WILLOUGHBY, Westminster College, Erin Wilson

(2120-43 P) **Analysis of Commercially Available Solar Cells and Applications to Tiny Living** CAMERON WORTHING, Westminster College, Helen Boylan

(2120-44 P) **Heavy Metal Analysis of Manure and Feed Samples from Local Farmland in Northwestern Pennsylvania** DANIEL OWOC, Westminster College, Diana Ortiz, Erin Wilson

(2120-45 P) **The Efficacy of Using Liquid Foundation as a Primary Source of UV Protection** MELINDA PREAUX, California University of Pennsylvania, Kimberly Woznack, Gregg Gould

(2120-46 P) **Analysis of the Effect of Alkaline Hydrolysis Cremation on Minerals and Trace Metals in Bone** REBEKAH QUICKEL, California University of Pennsylvania, Kimberly Woznack, Gregg Gould

(2120-47 P) **Development of a Paper-Based Microfluidic Device for the Quantification of Aqueous Nitrite, Nitrate, and Phosphate** CIARA WITT, Truman State University, Christopher Culbertson, Jay Sibbitts

(2120-48 P) **Synthesis of 2-phenylimidazo [1,2-α] Pyridine: A Development in Medical Chemistry** ERIK WILLIAM DINARDO, California University of Pennsylvania, Matthew Price

(2120-49 P) **Immobilized Cytochrome *c* Electrochemistry on Peptide Self-Assembled Monolayers** BENJAMIN JONES, Saint Francis University, Tanner Yawitz, Rose Ann Clark, Bryant Onkst

THURSDAY, MARCH 9, 2017
MORNING

SYMPOSIUM **Session 2130**

ACS-DAC - Unconventional Pipetting for Bio/Chem Analysis
arranged by Lane A Baker, Indiana University

Thursday Morning, Room W178b
Lane A Baker, Indiana University, Presiding

8:30 **Introductory Remarks - Lane A Baker**

8:35 (2130-1) **Nanoscale Scanning Electrochemical Microscopy of Clean Graphite Surfaces** SHIGERU AMEMIYA, University of Pittsburgh

9:10 (2130-2) **Multifunctional Scanning Ion Conductance Microscopy** PATRICK ROBERT UNWIN, University of Warwick, David Perry, Ashley Page, Minkyung Kang, Dmitry Momotenko

9:45 (2130-3) **Carbon Nanopipettes: From Sensors to Single Nanoparticle Collisions** MICHAEL V MIRKIN, Queens College - CUNY, Min Zhou, Keke Hu, Dengchao Wang, Huolin Xin, Yun Yu

10:20 **Recess**

10:35 (2130-4) **Towards Coupling Mass Spectrometry Imaging and Electrochemical Microscopy for Imaging of Live Biological Systems** JULIA LASKIN, Pacific Northwest National Laboratory, Son Nguyen, Venky Prabhakaran, Ruichian Yin, Andrey Liyu

11:10 (2130-5) **Imaging via Electrospray** LANE A BAKER, Indiana University

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TECHNICAL PROGRAM

SYMPOSIUM **Session 2140**

Analytical Cannabis I
arranged by Joshua M Crossney, jCanna, Inc.

Thursday Morning, Room W183a
Joshua M Crossney, jCanna, Inc., Presiding

8:30		**Introductory Remarks - Joshua M Crossney**
8:35	(2140-1)	**Bridging the Gap Between Analytical Technologies and Medical Cannabis Science** JOSHUA M CROSSNEY, jCanna, Inc.
9:10	(2140-2)	**Research and Development of Cannabis Through Optimized Indoor Environments** AUTUMN R KARCEY, Cultivo, Inc
9:45	(2140-3)	**Batch Sample Preparation of Dried Cannabis Flowers and Trim** BARRY SCHUBMEHL, Fritsch Milling and Sizing, Inc.
10:20		**Recess**
10:35	(2140-4)	**Pesticide Residue Analysis in Cannabis Using Modified QuEChERS and LC-MS/MS** JULIE KOWALSKI, Restek Corporation, Jeff Dahl, Derek Laine, Jack Cochran
11:10	(2140-5)	**The Analytical Potential of a Compact Mass Spectrometer (CMS) for the Analysis of Cannabis-Related Samples for Composition and Adulteration** JACK HENION, Advion, Inc., Nigel Sousou, Changtong Hao, Daniel Eikel, Simon Prosser

SYMPOSIUM **Session 2150**

Analytical Techniques for Probing Neurochemistry
arranged by Rachel A Saylor, University of South Carolina and Thomas H Linz, Wayne State University

Thursday Morning, Room W179a
Rachel A Saylor, University of South Carolina, Presiding

8:30		**Introductory Remarks - Rachel A Saylor and Thomas H Linz**
8:35	(2150-1)	**Microdialysis-Microchip Electrophoresis for Continuous Monitoring of Neuroactive Substances in the Brain** SUSAN M LUNTE, University of Kansas
9:10	(2150-2)	**Neurochemistry in the Intensive Therapy Unit – Faster, On-Line Multi-Analyte Analysis for Traumatic Brain Injury Patients** MARTYN G BOUTELLE, Imperial College London, Michelle L Rogers, Chi Leng Leong, Isabelle C Samper, Sally A Gowers, Sharon L Jewell, Anthony J Strong
9:45	(2150-3)	**Enhancements for Intracranial Microdialysis** ADRIAN C MICHAEL, University of Pittsburgh, Andrea Jaquins-Gerstl, Erika L Varner
10:20		**Recess**
10:35	(2150-4)	**A Voltammetric and Behavioral Characterization of the Involvement of Serotonin in Depression** RACHEL A SAYLOR, University of South Carolina, Parastoo Hashemi
11:10	(2150-5)	**Prefrontal Ortical Network Dynamics in Chronic Stress and Hyperexcitable States** CONOR LISTON, Weill Cornell Medical College

SYMPOSIUM **Session 2160**

Evolving Spectroscopic Technologies for Point-of-Origin Detection of Diseases and Environmental Toxins
arranged by John F Rabolt, University of Delaware

Thursday Morning, Room W179b
John F Rabolt, University of Delaware, Presiding

8:30		**Introductory Remarks - John F Rabolt**
8:35	(2160-1)	**Point-of-Need Diagnostic Testing for Infectious Diseases Using Surface-Enhanced Raman Scattering** MARC D PORTER, University of Utah, Nicholas A Owens, Lars B Laurentius
9:10	(2160-2)	**Metabolic Profiling by SERS: A Diagnostic for Bacterial Infections** LAWRENCE ZIEGLER, Boston University
9:45	(2160-3)	**Measuring Mineral Deficiency in Human Tissue with a Handheld LIBS Spectrometer** KATHERINE A BAKEEV, B&W Tek, Qun Li, Sean Wang
10:20		**Recess**
10:35	(2160-4)	**Detection of Mycoplasma with SERS: Current Laboratory Results and Progress Towards Clinical Applications** RICHARD DLUHY, University of Alabama at Birmingham
11:10	(2160-5)	**Structure and Morphology of Biosynthesized and Biodegradable Polymer Nanofibers, Ultrathin Films and Single Crystals Using AFM-IR and Selected Area Electron Diffraction (SAED)** JOHN F RABOLT, University of Delaware, Liang Gong, Changhao Liu, Bruce Chase, Isao Noda, Curt Marcott

Author and presider lists are available at www.pittcon.org

SYMPOSIUM **Session 2170**

Impacts of Single Cell Analysis on Biology and Medicine
arranged by X Nancy Xu, Old Dominion University

Thursday Morning, Room W181a
X Nancy Xu, Old Dominion University, Presiding

8:30		**Introductory Remarks - X Nancy Xu**
8:35	(2170-1)	**Examining Alzheimer's Disease at Single Cell Resolution** TRACY YOUNG-PEARSE, BWH, Meichen Liao, J Christopher Love
9:10	(2170-2)	**Tracking Single Cells In Vivo: The Emerging Role of Positron Emission Tomography** GUILLEM PRATX, Stanford University
9:45	(2170-3)	**New Nano Tools for Real-Time Imaging of Single Cancer Stem Cells** X NANCY XU, Old Dominion University, Preeyaporn Songkiatisak, Pavan K Cherukuri, Asia Poudel, Sang Phan
10:20		**Recess**
10:35	(2170-4)	**Imaging Transcription Dynamics in Single Cancer Cells** ROBERT A COLEMAN, Albert Einstein College of Medicine, Adrien Senecal, Charles Kenworthy, Robert H Singer
11:10	(2170-5)	**Single Cell mRNA Profiling In Situ by Sequential FISH (seqFISH)** LONG CAI, Caltech

SYMPOSIUM **Session 2180**

Recognizing Cutting-Edge Chemistry from the National Organization for the Professional Advancement of Black Chemists and Chemical Engineers (NOBCChe)
arranged by Renā A S Robinson, University of Pittsburgh and Kemal Catalan, 4iNNO

Thursday Morning, Room W181b
Renā A S Robinson, University of Pittsburgh, Presiding

8:30		**Introductory Remarks - Renā A S Robinson and Kemal Catalan**
8:35	(2180-1)	**Applications of Mass Spectrometry for an Aging Population** RENĀ A S ROBINSON, University of Pittsburgh
9:10	(2180-2)	**Metrology for "Stuff" – and Its Impact on Innovation, Our Economic Security, and Quality of Life** MARLON WALKER, National Institute of Standards and Technology (NIST), Willie E May
9:45	(2180-3)	**The Path Toward Urine Albumin Standardization** ASHLEY BEASLEY GREEN, National Institute of Standards and Technology (NIST), Karen W Phinney
10:20		**Recess**
10:35	(2180-4)	**Recognizing Cutting-Edge Chemistry from NOBCChE** JUDSON L HAYNES, P&G
11:10		**Open Discussion**

SYMPOSIUM **Session 2190**

SAS - Metallomics
arranged by Greg Klunder, Lawrence Livermore National Laboratory

Thursday Morning, Room W181c
Greg Klunder, Lawrence Livermore National Laboratory, Presiding

8:30		**Introductory Remarks - Greg Klunder**
8:35	(2190-1)	**Advanced Metallomics Characterization with Ultra-High Resolution FTICR MS** DAVID W KOPPENAAL, Pacific Northwest National Laboratory, Lawrence Walker, Malak Tfaily, Jared B Shaw, Nancy J Hess, Ljiljana Pasa-Tolic
9:10	(2190-2)	**Metal Detection at Cellular Levels by Use of Laser Ablation ICP-MS** NORBERT JAKUBOWSKI, Federal Institute for Materials Research and Testing, Heike Traub
9:45	(2190-3)	**Bio-LIBS and the Role of Trace Metals When Laser-Induced Breakdown Spectroscopy is Used to Study Biological or Biomedical Systems** STEVEN JAMES REHSE, University of Windsor, Dylan J Malenfant, Vlora A Riberdy, Alexandra E Paulick, Siddharth Doshi, Christopher J Frederickson
10:20		**Recess**
10:35	(2190-4)	**The Development and Application of Imaging Mass Cytometry** SCOTT TANNER, York University
11:10	(2190-5)	**Powerful Tools, Tricks, and Techniques for Metallomic Analysis** GARY MARTIN HIEFTJE, Indiana University, Andrew J Schwartz, Jacob T Shelley, Courtney L Walton, Kelsey L Williams

SYMPOSIUM — Session 2200

UHPLC Method Development in Pharmaceutical Analysis
arranged by Michael W Dong, MWD Consulting

Thursday Morning, Room W183b
Michael W Dong, MWD Consulting, Presiding

8:30 **Introductory Remarks - Michael W Dong**

8:35 (2200-1) **Newer Approaches to UHPLC Pharmaceutical Separations: Core-Shell, HILIC to SFC** DAVY GUILLARME, University of Geneva, Vincent Desfontaine, Szabolcs Fekete, Jean-Luc Veuthey

9:10 (2200-2) **New UHPLC Columns for Pharmaceutical Applications** THOMAS H WALTER, Waters Corporation, Jacob Fairchild, Matthew A Lauber, Stephan M Koza, Bonnie Alden, Thomas Swann, Jennifer Nguyen

9:45 (2200-3) **Method Development for Pharmaceutical Analysis Using Ion-Exchange, Mixed-Mode and Size-Exclusion Phases** CHRISTOPHER POHL, Thermo Fisher Scientific, Xiaodong Liu, Shanhua Lin

10:20 **Recess**

10:35 (2200-4) **UHPLC in Quality Control of Monoclonal Antibody Therapeutics** TAYLOR ZHANG, Genentech

11:10 (2200-5) **UHPLC Method Development of New Drug Molecules with Multiple Chiral Centers** MICHAEL W DONG, MWD Consulting

WORKSHOPS — Session 2210

Light Sources in Analytical Chemistry: Solid State Light Sources and Beyond
arranged by Mirek Macka, University of Tasmania

Thursday Morning, Room W176c
Mirek Macka, University of Tasmania, Presiding

8:30 **Introductory Remarks - Mirek Macka**

8:35 (2210-1) **Structured Light from LEDs Enables Unique Spectrometer Design** ALEXANDER SCHEELINE, SpectroClick

9:05 (2210-2) **Light Emitting Diodes: New Developments in Detection and Analytical Use Beyond Optical Detection** MIREK MACKA, University of Tasmania

9:35 (2210-3) **Quantum Cascade and Interband Cascade Lasers: Changing the Game in Mid-Infrared Diagnostics** BORIS MIZAIKOFF, Ulm University

10:05 **Recess**

10:20 (2210-4) **Solid State Light Sources in Capillary Electrophoresis** DAN XIAO, Sichuan University, Hongyun Ji N/A

10:50 (2210-5) **Detectors Interrogated by Light: Optical Fiber Strain Sensors in (Photo-) Acoustic Measurements** HANS-PETER LOOCK, Queen's University

11:20 **Open Discussion**

ORGANIZED CONTRIBUTED SESSIONS — Session 2220

SFC Chromatography for Food Analysis
arranged by David Kohler, ES Industries and Robert Clifford, Shimadzu Scientific Instruments

Thursday Morning, Room W183c
David Kohler, ES Industries, Presiding

8:30 (2220-1) **Strategies for Stationary Phase Selection for the Optimized SFC Separation of Agricultural Products, Foods, Beverages and Nutritional Supplements** MATTHEW PRZYBYCIEL, ES Industries

8:50 (2220-2) **Analysis of Omega 3 Fatty Acids in Fish Oil Capsules via SFE/SFC/MS** THOMAS ANDREW RUSSELL, Shimadzu, Todd Anderson

9:10 (2220-3) **Pesticide Analysis of Commercial Spices via SFE/SFC/MS** TODD ANDERSON, Shimadzu, Thomas Andrew Russell, William A Hedgepath

9:30 (2220-4) **The Use of Online SFE-SFC-MS-MS for the Analysis of Numerous Fat-Soluble Micronutrients in Food** RIC R GONZALEZ, ConAgra Foods, Inc., Indarpal Singh, Kenichiro Tanaka

9:50 **Recess**

10:05 (2220-5) **Comparison of LC-MS/MS to SFC-MS/MS for the Analysis of Multiple Water-Soluble Micronutrients in Various Food Matrices** INDARPAL SINGH, ConAgra Foods, Inc., Ric R Gonzalez, Kenichiro Tanaka

10:25 (2220-6) **On-Line Extraction and Determination of Targeted Carotenoids from Habanero Rad (Capsicum Chinese)** LUIGI MONDELLO, University of Messina, Mariosimone Zoccali, Daniele Giuffrida, Paola Dugo

ORAL SESSIONS — Session 2230

Bioanalytical - Fluorescence/Luminescence Techniques

Thursday Morning, Room W175a
Christina Henson, Buckman International, Presiding

8:30 (2230-1) **Development of High-Throughput Instrumentation for Single-Cell Viscometric Analysis Via Fluorescence Anisotropy** VERONICA J LYONS, Texas Tech University, Dimitri Pappas

8:50 (2230-2) **Structural Modified Firefly Luciferin Analogues for Bioluminescence Assays** YUMA IKEDA, Keio University, Daniel Citterio, Shigeru Nishiyama, Koji Suzuki

9:10 (2230-3) **Fluorescence Optical Rotary Dispersion (FORD): A Method to Probe Interfacial Chirality** JAMES RW ULCICKAS, Purdue University, Fengyuang Deng, Garth J Simpson

9:30 (2230-4) **The Enhanced Biosensing Performance of Surface Plasmon Coupled Emission Assisted by Graphene Oxide** YAO-QUN LI, Xiamen University, Kai-Xin Xie, Shuo-Hui Cao

9:50 **Recess**

10:05 (2230-5) **A Label-Free Aptamer-Fluorophore Assembly for Highly Sensitive and Specific Detection of Cocaine** DANIEL RONCANCIO, Florida International University, Haixiang Yu, Xu Xiaowen, Yi Xiao

10:25 (2230-6) **Graphene Oxide-Based and Proflavine-Indicated Fluorescence Polarization Model for Ligand-HIV RRE RNA Interaction Assay** ZHI-QI ZHANG, Shaanxi Normal University, Liang Qi, Dan Zhang, Jing Zhang, Han-Ying Zhan N/A

10:45 (2230-7) **Developing a Universal Steric Trapping Strategy for Studying Folding and Stability of Helical Membrane Proteins in Native Environment** RUIQIONG GUO, Michigan State University, Kristen Gaffney, Heeceok Hong

11:05 (2230-8) **Glass Capillary Based Microfluidic ELISA** XIAOTIAN TAN, University of Michigan, Maung Kyaw Khaing Oo, Xudong Fan

ORAL SESSIONS — Session 2240

Bioanalytical - Microfluidics/Lab on-a-Chip and Others

Thursday Morning, Room W175b
Bhavya Sharma, University of Tennessee at Knoxville, Presiding

8:30 (2240-1) **Surface Modified Glass/PDMS Pneumatic Valve for Electrophysiological Microfluidic Array** XUEMIN WANG, University of Arizona, Christopher A Baker, Craig A Aspinwall

8:50 (2240-2) **Effects of Confinement on Glucose Oxidase and Horseradish Peroxidase Kinetics Simulated in a Glass Nanofluidic Device** WILLIAM R A WICHERT, University of Notre Dame, Paul W Bohn

9:10 (2240-3) **Analysis of Drug Binding with Soluble Proteins by Using Ultrafast Affinity Extraction and Alpha1-Acid Glycoprotein Microcolumns** SANDYA RANI BEERAM, University of Nebraska, Lincoln, Zheng Xiwei, David S Hage

9:30 (2240-4) **Impact of Non-Glucose Spectral Variance on Noninvasive Glucose Predictions Over Near-Infrared Wavelengths** ARIEL BOHMAN, University of Iowa, Mark A Arnold, Gary W Small, Michael J Miller

9:50 **Recess**

10:05 (2240-5) **High-Throughput Bioanalysis Using Supercritical Fluid Chromatography Tandem Mass Spectrometry (SFC-MS/MS) for Drug Discovery Support** XIAO DING, Genentech, Xiaolin Zhang

10:25 (2240-6) **Microfluidic-Based Distribution Profiling of Circulation MiRNAs and Its Potential in Cancer Diagnosis** LUIS ARMANDO JIMENEZ, University of California Riverside, Kenneth Flack, Wenwan Zhong

10:45 (2240-7) **Developments Toward Low Error and High Throughput Surface-Enhanced Raman Scattering Immunoassays** MARC D PORTER, University of Utah, Aleksander Skuratovslky, Lars Laurentius, Jennifer H Granger, China Y Lim, Sean Wang, Jun Zhao, Qun Li

11:05 (2240-8) **SERS Sensors for Detection of Neurological Conditions** BHAVYA SHARMA, University of Tennessee

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TECHNICAL PROGRAM

ORAL SESSIONS **Session 2250**

Bioanalytical Electrochemistry

Thursday Morning, Room W175c
Ryan J White, University of Maryland Baltimore County, Presiding

8:30 (2250-1) **Noise Reduction in DNA Hybridization Assays on Gold Electrodes Using a Differential Working Electrode Potentiostat** MARK D HOLTAN, Auburn University, Subramaniam Somasundaram, Christopher J Easley

8:50 (2250-2) **Measurement of the Open Circuit Potential of Blood Using Nanoporous Metal Electrodes** MARYANNE M COLLINSON, Virginia Commonwealth University

9:10 (2250-3) **Plasma-Etched Cavity Carbon-Fiber Microelectrodes for Improved Sensitivity at Single Cells** LARS DUNAWAY, North Carolina State University, Andreas C Schmidt, James G Roberts, Gregory S McCarty, Leslie A Sombers

9:30 (2250-4) **Pulsed Chronopotentiometry with Asymmetric Cellulose Triacetate Based Ion-Selective Electrodes for the Measurement of Physiologically Relative Hydrophilic Ions Via Kinetic Discrimination of Lipophilic Ions** SIMON SEGAL, Northern Kentucky University, Kebede L Gemene

9:50 **Recess**

10:05 (2250-5) **Quantitative, Simultaneous Stochastic Sensing with Multiple Protein Channels** RYAN WHITE, University of Maryland Baltimore County, Florika C Macazo

10:25 (2250-6) **Real-Time Electrochemical Monitoring of the Controlled Release of Cargo from Nanoparticle Carriers** MARSILEA ADELA BOOTH, Imperial College London, Lucia Massi, Molly M Stevens, Martyn G Boutelle

10:45 (2250-7) **Carbon-Pyrenyl Nanostructures for Biosensing and Enzyme Electrocatalysis** SADAGOPAN KRISHNAN, Oklahoma State University, Vini Singh, Gayan C Premaratne, Jinesh Niroula, James (Tom) Moulton, Asantha C Dharmaratne, Charuksha Walgama, K Sudhakaraprasad, Nicolas Means

11:05 (2250-8) **Label-Free Potentiometric Detection of DNA Hybridization Using Polyaniline Composite Materials** ZHANNA A BOEVA, Åbo Akad University, Vladimir G Sergeev, Kalle Levon

ORAL SESSIONS **Session 2260**

Bio/Pharma Electrochemistry

Thursday Morning, Room W176a
Samantha K Smith, North Carolina State University, Presiding

8:30 (2260-1) **Single Drop Electroanalysis for Low Cost Quality Control Testing of Oxidative Pharmaceuticals** CHARUKSHA WALGAMA, Oklahoma State University, Matthew Gallman, Sadagopan Krishnan

8:50 (2260-2) **Rapid and Selective Determination of Acetaminophen in Serum Via Novel Single Molecule Recognition Based on Multi Hydrogen Bonding** ZHE WANG, Xavier University of Louisiana

9:10 (2260-3) **Method to Monitor and Regulate Nucleation and Crystal Growth In-Situ at Individual Level** GANGLI WANG, Georgia State University N/A

9:30 (2260-4) **Peptide Mimotopes as Sensing Platforms for Label Free Biosensors** XIANGQUN ZENG, Oakland University, Norman Leo, Juan Liu, Ian Archbold

9:50 **Recess**

10:05 (2260-5) **Probing the Dose-Dependent Effects of Methamphetamine on Extracellular Catecholamine Concentrations in Behaving Rats with In Vivo Fast-Scan Cyclic Voltammetry** ROHAN BHIMANI, The State University of New York at Buffalo, Jinwoo Park

10:25 (2260-6) **A Voltammetric Analysis of Amphetamine's Influence on Cortical Serotonin Neurotransmission** RHIANNON ROBKE, University of South Carolina, Parastoo Hashemi

10:45 (2260-7) **Two-Electron Oxidation of Trolox in Phosphate Buffered Solutions** KEJIE MENG, Virginia Commonwealth University, Julio C Alvarez, Lauren Lieske

11:05 (2260-8) **Nanoelectrochemical and Mass Spectrometry Imaging of How Zinc Effects Neurotransmitter Storage and Release** LIN REN, Chalmers University of Technology, Masoumeh Dowlatshahi Pour, Soodabeh Majdi, Xianchan Li, Per Malmberg, Andrew Ewing

ORAL SESSIONS **Session 2270**

Capillary Electrophoresis of Proteins, Peptides, and Metabolites

Thursday Morning, Room W176b
Doo Soo Chung, Seoul National University, Presiding

8:30 (2270-1) **Enhanced Capillary Electrophoresis Separations to Characterize Biopharmaceuticals** LISA A HOLLAND, West Virginia University, Srikanth Gattu, Cassandra Crihfield, Grace Ellen Candler, Lloyd Bwanali

8:50 (2270-2) **Capillary Electrophoresis/Electrochromatography-Mass Spectrometry for Pharmaceutical Analysis** ZILIN CHEN, Wuhan University

9:10 (2270-3) **Separation of Methylation via Host-Assisted Capillary Electrophoresis** JIWON LEE, University of California Riverside, Wenwan Zhong

9:30 (2270-4) **Size-Based Capillary Electrophoresis Separations of Proteins with Biocompatible Gels** GRACE ELLEN CANDLER, West Virginia University, Cassandra Crihfield, Srikanth Gattu, Lloyd Bwanali, Lisa A Holland N/A

9:50 **Recess**

10:05 (2270-5) **Application of Protein Cross-Linking Capillary Electrophoresis to Diverse Protein-Protein Interactions** CLAIRE OUIMET, University of Michigan, Cara D'Amico, Mohamed Dawod, Robert T Kennedy

10:25 (2270-6) **Development of a Capillary Microsampling Workflow for Mass Spectrometry Analysis of Single Embryonic Cells from Frogs and Zebrafish** CAMILLE LOMBARD-BANEK, George Washington University, Reem Q Al-Shabeeb, Sally A Moody, Peter Nemes

10:45 (2270-7) **Capillary Electrophoresis Techniques for Highly Sensitive and Selective Assays of β-Endorphin and Oxytocin** LAURA CASTO, University of Tennessee, Christopher A Baker

11:05 (2270-8) **Discovery Metabolomic Investigation of Cell Clones in the Developing Vertebrate (Frog) Embryo** ROSEMARY MASU ONJIKO, George Washington University, Erika P Portero, Sally A Moody, Peter Nemes

ORAL SESSIONS **Session 2280**

Chemometrics (Half Session)

Thursday Morning, Room W177
Richard A Henry, Technical Consultant, Presiding

8:30 (2280-1) **Analysis of Liquid Chromatography-High Resolution Mass Spectrometric Data Utilizing a Sparse Multivariate Curve Resolution Approach** DANIEL W COOK, Virginia Commonwealth University, Sarah C Rutan

8:50 (2280-2) **Airborne Remote Detection of Targeted Radioisotopes by Pattern Recognition Analysis of Gamma-Ray Spectra** BRIAN WILLIAM DESS, Kalman & Company, Inc., Gary W Small, Robert Kroutil, Jeff Stapleton

9:10 (2280-3) **Cluster Resolution-Guided Feature Selection – Where to Start?** JAMES HARYNUK, University of Alberta, Lawrence A Adutwum, Amelia I Hall N/A

ORAL SESSIONS **Session 2290**

Drug Discovery (Half Session)

Thursday Morning, Room W177
Richard A Henry, Technical Consultant, Presiding

10:05 (2290-1) **Evaluation of Procaine Liver Esterase and Sublingual Matrix Effects on Dipivefrin. HCL Using HILIC Reversed-Phase Liquid Chromatography Coupled with Photo Diode Array Detection (PDA)** LINA ALAYDI, NSU/K Abdualaziz University, Mutasem Qalaji N/A

10:25 (2290-2) **High-Throughput Mass Spectrometric Analysis of Monoclonal Antibodies and Antibody Drug Conjugates** IAIN CAMPUZANO, Amgen, Tisha San Miguel, Chawita Netirojjanakul

10:45 (2290-3) **High-Throughput Screening Platform for Endocrine Disruptor Discovery with 3D Liver Cultures** MATTHEW RYEN LOCKETT, University of North Carolina at Chapel Hill

ORAL SESSIONS **Session 2300**

Electrochemical Characterization of Corrosion and Water Oxidation (Half Session)

Thursday Morning, Room W184a
Maria Ferguson, PA Department of Environmental Protection, Presiding

8:30 (2300-1) **Electrochemical Impedance Spectroscopy of Ion-Selective Membranes: Artifacts in Two-, Three-, and Four-Electrode Measurements** EVAN LEIGH ANDERSON, University of Minnesota, Philippe Buhlmann

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8:50 (2300-2) **Electrochemical Studies of Carbon Fiber Epoxy Composites: Effect of Galvanic Corrosion with Aluminum Alloys** BRANDON WAYNE WHITMAN, Michigan State University, Greg Swain

9:10 (2300-3) **Withdrawn**

9:30 (2300-4) **Investigations of Charge Transfer at $CuWO_4$ Electrode Surface in Water Oxidation by Electrochemical and Photoelectrochemical Methods** YUAN GAO, Michigan State University, Thomas Hamann

ORAL SESSIONS — Session 2310

Electrochemical Investigations of Energy Storage Materials

Thursday Morning, Room W184bc
Lingzi Sang, University of Illinois Urbana-Champaign, Presiding

8:30 (2310-1) **Mercury Disc-Well Ultramicroelectrodes (UMEs) for Stripping-Based Scanning Electrochemical Microscopy (SECM) of Energy Storage Materials** ZACHARY BARTON, University of Illinois at Urbana-Champaign, Jingshu Hui, Joaquín Rodriguez Lopez

8:50 (2310-2) **Alkali Ions Intercalation on Few Layer Graphene – Mechanistic Study and *In Situ* Electrochemical Imaging *via* SECM** JINGSHU HUI, University of Illinois at Urbana-Champaign, Mark Burgess, Zachary Barton, Jiarui Zhang

9:10 (2310-3) **Multimodal Characterization of Energy Storage Material Stability and Elucidation of Complex Reaction Mechanisms Using a Combined Computational and Spectroelectrochemical Approach** EMILY CARINO, Argonne National Laboratory, Rajeev Assary, Fikile Brushett, Larry Curtiss, Nenad Markovic

9:30 (2310-4) **The Chemical Nature of Electron Transfer at Sulfur Based Solid Electrolyte (-Li_3PS_4, 70Li_2S-30P_2S_5 Glass Ceramic (LPS-GS), $Li_{10}GeP_2S_{12}$ (LGPS)) and Au Electrode Interface During Lithium Deposition and Stripping Processes - An in Operando Observation** LINGZI SANG, University of Illinois at Urbana-Champaign, Andrew Gewirth, Ralph Nuzzo

9:50 **Recess**

10:05 (2310-5) **Withdrawn**

10:25 (2310-6) **Unique Electrochemical Double Layer Response in Ionic Liquids from Large Amplitude Fourier Transformed ac Voltammetry** ANTHONY JOSEPH LUCIO, University of Iowa, Scott K Shaw, Jie Zhang, Alan M Bond

10:45 (2310-7) **Direct Comparison of Carboxylic Acid Functionalized Electrodes Toward Oxygen Reduction** ASANTHA C DHARMARATNE, Oklahoma State University

11:05 (2310-8) **Hybrid Nanostructured Materials for Electrocatalytic Oxidation of Fuels and Determination of Inert Analytes** IWONA RUTKOWSKA, University of Warsaw, Weronika Ozimek, Pawel J Kulesza, James A Cox

ORAL SESSIONS — Session 2320

Environmental Applications of Electrochemistry (Half Session)

Thursday Morning, Room W184a
Maria Ferguson, PA Department of Environmental Protection, Presiding

10:05 (2320-1) **Highly Sensitive Capacitive Gas Sensing at Ionic Liquid–Electrode Interfaces** ZHE WANG, Xavier University of Louisiana

10:25 (2320-2) **A Microfluidic Paper-Based Electrochemical Sensor for Bisphenol A Detection** JUTIPORN YUKIRD, Chulalongkorn University, Veasna Soum, Oh-Sun Kwon, Kwanwoo Shin, Orawon Chailapakul, Nadnudda Rodthongkum

10:45 (2320-3) **Optimized Determination of Hydrogen Peroxide by Using High Performance Anion Exchange Chromatography with Pulsed Amperometric Detection** JUN CHENG, Thermo Fisher Scientific, Yan Liu

11:05 (2320-4) **Controlled sp2 Addition to Boron-Doped Diamond: Development of an Oxygen Insensitive Voltammetric pH Sensor** ZOE J AYRES, University of Warwick, Alexandra J Borrill, Jonathan C Newland, Mark E Newton, Julie V Macpherson

ORAL SESSIONS — Session 2330

In-Vivo and Neuro Electrochemistry

Thursday Morning, Room W184d
Gregory McCarty, North Carolina State University, Presiding

8:30 (2330-1) **Real-Time Measurement of Small Molecules Directly in Living Subjects** NETZAHUALCOYOTL ARROYO CURRAS, University of California Santa Barbara, Jacob Somerson, Philip A Vieira, Kyle L Ploense, Tod E Kippin, Kevin W Plaxco

8:50 (2330-2) **Predictive Model to Improve Training Set Selection for Principle Component Analysis of *In Vivo* Data** CARL J MEUNIER, North Carolina State University, James G Roberts, Gregory S McCarty, Leslie A Sombers

9:10 (2330-3) **Comparison of Acute and Chronic Electrodes for Fast-Scan Cyclic Voltammetry in Awake Animals** NATHAN T RODEBERG, University of North Carolina at Chapel Hill, R Mark Wightman

9:30 (2330-4) **PEDOT-Based Electrode Coatings for the High Sensitivity Detection of Dopamine In Vivo** I MITCH TAYLOR, University of Pittsburgh, X Tracy Cui

9:50 **Recess**

10:05 (2330-5) **Electrochemical Detection of Opioid Neuropeptides-Key Molecules Underlying Pleasure and Pain** SARAH E CALHOUN, North Carolina State University, Carl J Meunier, James G Roberts, Gregory S McCarty, Leslie A Sombers

10:25 (2330-6) **Electroanaytical Measurements of Tyrosine-Containing Neuropeptides: Chasing the Enkephalins** GREGORY S MCCARTY, North Carolina State University, Leslie A Sombers, Christie A Lee, Sarah E Calhoun, Carl J Meunier

10:45 (2330-7) **Using Micro-Conductivity Measurements to Study Heterogenous Porous Media** YANGGUANG OU, University of Pittsburgh, Elaine Marie Robbins, Andrea Jaquins-Gerstl, Jenna DeVivo, Adrian C Michael, Stephen G Weber

11:05 (2330-8) **Spontaneous, Correlated Adenosine and Oxygen Release During Ischemia-Reperfusion Injury** YING WANG, University of Virginia

POSTER SESSION — Session 2340

Thursday posters are to be mounted by 10:00 AM and remain on display until 2:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Poster sessions are on the Exposition Floor, Aisle 2500-2600. PLEASE NOTE: You cannot get onto the exposition floor until 9:00 AM. Posters that have not been taken down one-half hour after the designated time will be disposed of.

Chemical Methods
Thursday Morning, Exposition Floor, Aisle 2500-2600

(2340-1 P) **The Mystery of Cercospora Control** ISAAC J HALES, Valley Lutheran High School

(2340-2 P) **Withdrawn**

(2340-3 P) **Comparison of Two Strategies for the Synthesis of Fluorescent Carbon Nanoparticles** QIN HU, University at Buffalo, The State University of New York, Zuqin Xue, Karina M Tirado-Gonzalez, Luis A Colon

(2340-4 P) **Withdrawn**

(2340-5 P) **A New Method for the Analysis of Total Nitrogen in Aqueous Samples** WILLIAM LIPPS, Shimadzu

(2340-6 P) **Comparison of Different Soluble Fraction on Antioxidant Activity of Colorful Beans and Soybeans** LARISSA AKARI MIURA, Toyko University, Yumiko Yoshie-Stark

(2340-7 P) **QuEChERS and Olive Oil: An Extraction Procedure for Determination of Minor Phenolic Compounds by Liquid Chromatography Determination** ROMINA MONASTERIO, Agricultural Biology Institute of Mendoza (UBAM), Roxana Velazco, Lucía Olmo-García, Aadil Bajoub, Alegría Carrasco Pancorbo, Fernanda Silva, Veronica Manrique

(2340-8 P) **Withdrawn**

(2340-9 P) **Withdrawn**

(2340-10 P) **Withdrawn**

(2340-11 P) **Synthesis and Study of Superparamagnetic Cobalt Ferrite Nanoparticles** SIMONAS RAMANAVICIUS, Vilnius University/SRI Center for Physical Science, Arunas Jagminas

(2340-12 P) **Microwave Assisted Synthesis of Novel Imidazopyridines Compounds for its Biological Applications** IDRIS JAQUEZ WAZEERUD-DIN, Clark Atlanta University, Demasio Timmons, Xiu R Bu, Jaqwonna Sawyer N/A

POSTER SESSION — Session 2350

Thursday posters are to be mounted by 10:00 AM and remain on display until 2:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Poster sessions are on the Exposition Floor, Aisle 2500-2600. PLEASE NOTE: You cannot get onto the exposition floor until 9:00 AM. Posters that have not been taken down one-half hour after the designated time will be disposed of.

Fluorescence and Luminescence
Thursday Morning, Exposition Floor, Aisle 2500-2600

(2350-1 P) **Case Study of Nanoparticle-Protein Interaction: Conformation and Activity of Catalase can be Changed by Nanoparticles** YAOKAI DUAN, University of California Riverside, Wenwan Zhong

Author and presider lists are available at www.pittcon.org

(2350-2 P) **Flow Cytometric Analysis of Heavy Metals Toxicity on Fresh Water Algae** RUBI GURUNG, New Mexico Tech, Menake E Piyasena

(2350-3 P) **Spyrolactum Capped Cyanine Dyes for Designing NIR Probes to Target Multiple Metal Ions** CHIRANTAN KAR, Keio University, Shigeru Nishiyama, Daniel Citterio, Koji Suzuki

(2350-4 P) **Fluorimetric Water Sensing in Aprotic Solvents with Fluorophore/Dye System** KATARZYNA KŁUCIŃSKA, University of Warsaw, Patryk Rzepinski, Michal Cyranski, Maciej Mazur, Krzysztof Maksymiuk, Agata Michalska

(2350-5 P) **A Deep Cavitand Acts as a Fluorescence Displacement Sensor for Lysine Methylation** YANG LIU, University of California Riverside, Wenwan Zhong, Richard J Hooley, Lizeth Perez

(2350-6 P) **Hybrid Micro/Nanogel Particles for Cellular ROS Measurement** YANG LIU, University of California Riverside, Wenwan Zhong

(2350-7 P) **Strategy of Aptamer-Guided Click Chemistry for Glycoprotein Elucidation and Biomarker Discovery** LONG LI, University of Florida

(2350-8 P) **Fluorescent Probes Based on Boron Dipyrromethene Structures and the Applications in Bioanalysis** YU LI, Nanjing University

(2350-9 P) **High Frequency Single Particle Electrophoresis** ARIELLE LOPEZ, University of Notre Dame, Aaron Timperman, Kenneth Christensen, Yaofa Li, Daniel M Regiart

(2350-10 P) **Quick Evaluation of Organic Substances in Environmental Water and Tap Water Using Fluorescence and Absorption Spectroscopy** KAZUKI SOBUE, Shimadzu Corporation, Masaki Ishigaki, Hirokazu Taniguchi, Sachio Murakami

(2350-11 P) **Electrochemiluminescence Imaging of Single Living Cells** JUNYU ZHOU, Nanjing University N/A

(2350-12 P) **Investigation of Some Novel Benzophenoxazine Dyes for the Detection of Latent Fingermarks on Porous Surfaces** EMAN ALSOLMY, Georgia State University, Vincent Martinez, Walid Abdelwahab, Carl Kananda, Maged Henary, Gabor Patonay

(2350-13 P) **Multiplex Immunoassay Analysis of Food Allergen Cross Reactivity in Botanical Spices and Dietary Supplements** RONNIE O PEDERSEN, FDA, Eric AE Garber

POSTER SESSION — Session 2360

Thursday posters are to be mounted by 10:00 AM and remain on display until 2:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Poster sessions are on the Exposition Floor, Aisle 2500-2600. PLEASE NOTE: You cannot get onto the exposition floor until 9:00 AM. Posters that have not been taken down one-half hour after the designated time will be disposed of.

Microfluidic Methods

Thursday Morning, Exposition Floor, Aisle 2500-2600

(2360-1 P) **Increasing the Throughput of Immunoassay Techniques for Microfluidic Western Blotting System** NATALIE ELIZABETH ARVIN, University of Michigan

(2360-2 P) **Simulation Study on Double-Stacking Lipid Bilayer Formation by Microchannels** KAN SHOJI, Tokyo University of Agriculture and Technology, Ryuji Kawano

(2360-3 P) **A Precise Bead-Based Glutamate Quantification System Using Chip-Based Microfluidic Cytometry** WOOHYUK JANG, Seoul National University, Chung Mu Kang, Inseong Hwang, Taek Dong Chung

(2360-4 P) **Sequence Specific Hybridization Capture and Fluorescent Labeling for Detecting Drug Resistance Genes Related to Sepsis** ROBERT HANSON, Brigham Young University, Radim Knob, Brian Peine, Janice Darko, Adam T Woolley

(2360-5 P) **Low Cost and Sensitive Lab-on-Paper-Based Devices for Measurement of CYP3A4 Activity** NANTANA NUCHTAVORN, Mahidol University, Mananya Laosuksakul, Jiraporn Leanpolchareanchai, Leena Suntornsuk

(2360-6 P) **Microfluidic Particle Separation via Acoustic Focusing Integrated with Acoustic Flow Switching** MENAKE E PIYASENA, New Mexico Institute of Mining and Technology, Gayatri P Gautam

(2360-7 P) **Digital Microfluidic Immuno-Chip for Single-Exosome Analysis of Circulating Exosomes in Ovarian Cancer** YUQIN SHANG, University of Kansas, Yong Zeng N/A

(2360-8 P) **A Simple, Multilayer PET Microfluidic Device to Reduce Hydrophobic Molecule Absorption** ABHINAV BHUSHAN, Illinois Institute of Technology, Tung Nguyen

(2360-9 P) **Validation of a Low Cost Lab-on-a-Chip Platform for Enzyme-Linked Immunosorbent Assay (ELISA)** AMERICA PADILLA, Cinvestav, Itzel Quintas, Rossana Arroyo N/A

(2360-10 P) **A Microfluidic Cell Culture Device for Automated Sample Preparation and Improved Biomimetic Modeling in Diabetes Metabolomics** KATHERINE SANDERS, Saint Louis University

(2360-11 P) **Droplet-Based Microfluidic Device for Automated Nucleosome Preparation and Chromatin Immuno Capture** YI XU, University of Michigan, Ann Arbor, Joshua Tice, Steven R Doonan, Richard Graybill, Ordog Tamas, Jeong-Heon Lee, Ryan C Bailey

(2360-12 P) **Continuous In-Droplet Sample Washing: An Emerging Tool for Chemistry in Picoliter Droplets** STEVEN R DOONAN, University of Michigan, Ryan C Bailey

(2360-13 P) **On Drastic Sensing Enhancement of Surface-Based Microfluidic Sensors with Acoustic Bubbles** JIE XU, University of Illinois, Andrea De Vellis, Dmitry Gritsenko, Wei Xue N/A

(2360-14 P) **Droplet Microfluidics for Single Molecule Digital Detection** JAMY LEE, University of Michigan

(2360-15 P) **Simple Surface Modification of PMMA for Highly Sensitive Multiplexed Detection of Infectious Disease Biomarkers** SANJAY SHARMA TIMILSINA, University of Texas at El Paso, Maowei Dou, XiuJun Li

(2360-16 P) **Microwell Device Development for the Transfer, Isolation, and PCR Validation of Whole Cells** DAVEY LEE WEST, University of North Carolina at Chapel Hill, William H Henley, John M Ramsey

(2360-17 P) **Nanoelectrospray Ionization-Mass Spectrometry Analysis of Droplets Containing Ion Suppressing Matrices** DANIEL JORDAN STEYER, University of Michigan, Robert T Kennedy

(2360-18 P) **Development of Image Diagnostic System for Absorption Measurement on Lab on a Tablet Concept** YUYA MIKAMI, Kyushu University, Hiroaki Nomada, Hiroaki Yoshioka, Kinichi Morita, Yuji Oki

(2360-19 P) **A Customizable 3D-Printed Equilibrium-Dialysis Device for Enhanced Binding Studies** CODY PINGER, Michigan State University, Andrew Heller, John Buhl, Scot Stanulis, Dana Spence

(2360-20 P) **Counting the Dots: A Novel Approach to Quantitative Data Acquisition in Wicking Microfluidic Analytical Devices** GAYAN C BANDARA, Oregon State University, Christopher A Heist, Vincent T Remcho

(2360-21 P) **Co-Culture of Primary Pancreatic Islets and Adipose Tissue on Microfluidic Platform** JUAN HU, Auburn University, Jessica Brooks, Christopher J Easley

(2360-22 P) **A Paper-Based Diagnostic Device for Monitoring Chronic Kidney Disease** MARAL PS MOUSAVI, Harvard University, Chien-Chung Wang, Alar Ainla, Yumi Yoshida, George M Whitesides

POSTER SESSION — Session 2370

Thursday posters are to be mounted by 10:00 AM and remain on display until 2:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Poster sessions are on the Exposition Floor, Aisle 2500-2600. PLEASE NOTE: You cannot get onto the exposition floor until 9:00 AM. Posters that have not been taken down one-half hour after the designated time will be disposed of.

Molecular Spectroscopy Advances: Raman and Infrared

Thursday Morning, Exposition Floor, Aisle 2500-2600

(2370-1 P) **Exploring Energy Transfer in Pt Decorated Au Nanoprisms via Electron Energy-Loss Spectroscopy** SARAH GRIFFIN, University of Notre Dame, Nicholas Montoni, Guoliang Li, Patrick Straney, Jill Millstone, David Masiello, Jon Camden

(2370-2 P) **Chemometric Analysis Towards the Determination of Isotopic Detection of ^{90}Zr and ^{94}Zr Generated by Zirconium Metallic Particles on Silica Substrates Via Laser Ablation Molecular Isotopic Spectroscopy (LAMIS)** CANDACE DAMARIS HARRIS, Florida A&M University, Codjo Akpovo, Lewis Johnson, Ashley Stowe

(2370-3 P) **Electrochemical Tip-Enhanced Raman Spectroscopy on AFM Platform** GYEONGWON KANG, Northwestern University, Michael Mattei, Guillaume Goubert

(2370-4 P) **Decoration of Silver Nanoparticles on Porous Polymer Substrate as a Sensing Medium for Raman Optical Probe Application** JYISY YANG, National Chung Hsing University, Chien–Yu Chen Chen

(2370-5 P) **Quantitative Analysis of Methylated Sugar Alcohols in Extracts of *Mesembryanthemum Crystallinum* by Surface-Enhanced Raman Spectroscopy** HUNGCHEN EMILIE YEN, National Chung Hsing University, Rui-Gang Chang, Jyisy Yang

(2370-6 P) **In Situ Vibrational Spectroscopy at the Nanoscale with Electrochemical STM TERS** GUILLAUME GOUBERT, Northwestern University, Xu Chen, Song Jiang, Richard Van Duyne

(2370-7 P) **Highly Resolved Sub-Terahertz Vibrational Spectroscopy of Biological Macromolecules and Bacteria Cells** WALEED MASWADEH, US Army, ECBC, Raphael Moon, Ashish Tripathi, Richard Vanderbeek

(2370-8 P) **Quantitative Online Sheath-Flow Surface Enhanced Raman Spectroscopy Detection for Liquid Chromatography** ANH H NGUYEN, University of Notre Dame, Zachary D Schultz

(2370-9 P) **Nonresonant Detection and Reliable Proofs in Single Molecule SERS** NOLAN L WONG, Northwestern University, Alyssa B Zrimsek, Richard Van Duyne

(2370-10 P) **Integrating Surface-Enhanced Raman Scattering Substrate with the Raman Spectrograph** WEIQING XU, Jilin University, Hailong Wang, Haibo Li, Shuping Xu N/A

(2370-11 P) **Development of Analytical Methods for Hydrogen Purity Analysis** ANNARITA BALDAN, VSL, Janneke van Wijk, Stefan Persijn, Hugo Ent

(2370-12 P) **Substrate Effects on Chemical Vapor Sensing with Single- and Few-Layer WS_2** SAMANTHA MATTHEWS, University at Buffalo, The State University of New York, Chuan Zhao, Hao Zeng, Frank V Bright

(2370-13 P) **Using Stark Shifts to Understand the Driving Forces in Plasmonic Catalysis** DARBY NELSON, University of Notre Dame, Zachary D Schultz

POSTER SESSION — Session 2380

Thursday posters are to be mounted by 10:00 AM and remain on display until 2:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Poster sessions are on the Exposition Floor, Aisle 2500-2600. PLEASE NOTE: You cannot get onto the exposition floor until 9:00 AM. Posters that have not been taken down one-half hour after the designated time will be disposed of.

Nanotechnology Applications

Thursday Morning, Exposition Floor, Aisle 2500-2600

(2380-1 P) **One-Pot Size-Controllable Synthesis with In Situ Preconcentration of Calcium Sulfate Nanorods via Use of Thermoresponsive Nonionic Surfactants** TAICHI NAKAGAWA, Fukushima University, Willie Hinze, Yoshitaka Takagai

(2380-2 P) **Comprehensive Characterization of TiO_2-Nanoparticles Using State-of-the-Art Asymmetrical Flow Field-Flow Fractionation Coupled with MALS and DLS Detection** ROBERT REED, Postnova Analytics Inc., Florian Meier, Thorsten Klein

(2380-3 P) **Self Assembly and Molecular Clusters Formation of L-Serine Adsorbed on Cu(111) Studied by Scanning Tunneling Microscopy** SWAMINATHAN SUBRAMANIAM, Miles College, Andrew J Mannix, Nathan P Guisinger

(2380-4 P) **Graphene Quantum Dots-Doped Mesoporous Silica Nanoparticles for Near Infrared Imaging and Drug Delivery** YING ZHANG, University of North Dakota, Xuefei Zhang, Xiao Liu, Julia Zhao, Diane Darland

(2380-5 P) **Spectroscopic Determination of Nitroaromatic Energetic Materials with the Aid of Modified Gold Nanoparticles** AYŞEM ARDA, Istanbul University, Neşe Ular, Erol Erçağ, Mustafa Resat Apak

(2380-6 P) **Determination of Triacetone Triperoxide (TATP) with Titanium Dioxide Nanoparticle-Based Fiber Optic Reflectometric Sensor** EROL ERÇAĞ, Istanbul University, Ayşem Arda, Bahar Gökdere, Mustafa Resat Apak N/A

(2380-7 P) **Super-Resolution Imaging in a Cell-Like Structure** NATHALIE BECERRA MORA, Southern Illinois University Carbondale, Kexin Jiao, Balamaran Rajesh, Zhou Chuanhong, Punit Kohli

(2380-8 P) **Fabrication of SERS Active Gold Nanorod Using Benzalkonium Chloride** MEHMET GOKHAN CAGLAYAN, Ankara University, Esin Kasap, Demet Cetin, Zekiye Suludere, Ugur Tamer

(2380-9 P) **Flow-Injection Mass Spectrometry for Analysis of Surfactants from Polymer Clay Nano-Composite Films** JOSEPH JABLONSKI, U.S. Food and Drug Administration, Longjiao Yu, Suriyaprakaash L Balasubraman, Timothy Duncan

(2380-10 P) **Platform of Immobilized Polydiacetylene Liposomes PVA Matrix for Use as Temperature Sensor During the Pollen Drying Operation** YURI MORENO, Pedagogical and Technologic University of Colombia, Jonathan López, Julia Reyes N/A

(2380-11 P) **Massive Bipolar Nanoelectrode Arrays for the Study of Dopamine Exocytosis via Fluorescence-Enabled Electrochemical Microscopy** TODD J ANDERSON, University of Washington, Bo Zhang, Chris Gunderson

(2380-12 P) **Tunable Plasmonic Nanostructures for Surface-Enhanced Raman Scattering** MEHMET KAHRAMAN, Gaziantep University, Aysun Korkmaz, Ayse Ozbay, Handan Yuksel, Ramazan Solmaz, Humeyra Caglayan

(2380-13 P) **Rapid Detection of Enterovirus 71 by Functional Gold Nanoparticles Coupled with Cellulose Acetate Membranes and LDI-MS** JO-YUN KO, National Taiwan Ocean University

(2380-14 P) **Quantitative Measurement of Total Octopamine Content in *Drosophila* Larvae Varicosities with Nanotip Electrodes** ANNA LARSSON, University of Gothenburg, Soodabeh Majdi, Andrew Ewing

(2380-15 P) **A Flexible SERS Substrate for Ultra-Sensitive Explosive Detection** THAKSHILA U LIYANAGE, Indiana University - Purdue University Indianapolis, Andeep Sangha, John V Goodpaster, Rajesh Sardar

(2380-16 P) **Characterizing Surface Structure of Semiconductor Nanocrystals by Combined Mass Spectrometry and Molecular Spectroscopy** MEGHAN TEUNIS, Indiana University - Purdue University Indianapolis, Sukanta Dolai, Rajesh Sardar

(2380-17 P) **Fabrication and Characterization of Alloy Nanodomes** GAMZE YAMAN, Gaziantep University, Aysun Korkmaz, Handan Yuksel, Ramazan Solmaz, Mehmet Kahraman

(2380-18 P) **Heterostructures Built with Graphene, MoS_2, and Nanoparticles: A Perspective by GISAXS and TERS Techniques** MARÍA CELESTE DALFOVO, National Scientific and Technical Council (CONICET), Cristián Huck-Iriart, Lisandro Giovanetti, Luis Pérez, Gabriela Lacconi, Francisco Ibañez

(2380-19 P) **Tunneling Mode of Scanning Electrochemical Microscopy (SECM)** TONG SUN, Queens College, Dengchao Wang, Michael V Mirkin

(2380-20 P) **Rapid Structural Characterization of Carbon Nanotubes Using Portable Raman: 532 Versus 785 nm Laser Excitation** ALEKSANDR V MIKHONIN, BioTools, Inc., Anna Nisnevich, Laurence Nafie, Rina Dukor

(2380-21 P) **Electrochemical Determination of Surface-to-Volume Ratio for Metal Nanoparticle Size Analysis** DHRUBA KUMAR PATTADAR, University of Louisville, Jay Sharma

(2380-22 P) **Preparation, Characterization and Antibacterial Properties of Silver Nanomaterials-Modified Reduced Graphene Oxide** ONNICA G PINO, New Mexico Highlands University

POSTER SESSION — Session 2390

Thursday posters are to be mounted by 10:00 AM and remain on display until 2:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Poster sessions are on the Exposition Floor, Aisle 2500-2600. PLEASE NOTE: You cannot get onto the exposition floor until 9:00 AM. Posters that have not been taken down one-half hour after the designated time will be disposed of.

New Methods

Thursday Morning, Exposition Floor, Aisle 2500-2600

(2390-1 P) **Acid Number of Crude Oils and Petroleum Products by Catalytic Thermometric Titration Using ASTM D8045** LORI CAREY, Metrohm, Kerri-Ann Blake

(2390-2 P) **Analysis of Ephedrine Alkaloids in Dietary Supplements Using a Fully Integrated GC/FT-IR/MS** LISA LORENZ, Food & Drug Administration, Adam Lanzarotta, Sarah Voelker

(2390-3 P) **Development of Novel Colorimetric Analyzer for Water Quality Using Smart Device** ATSUSHI MANAKA, Toyama College, Shoichi Furuyama, Masamoto Tafu

(2390-4 P) **Kolanut Pod Husk, A Potential Biosorbent for Cd(II), Ni(II) and Pb(II)** FELICIA U OKWUNODULU, Michael Okpara University of Agriculture, Stevens A Odoemelam, Eddy O Nnabuk N/A

(2390-5 P) **Real-Time In-Situ Monitoring of Materials Movements at a Vicinity of an Aquatic Plant by Deflection of a Probe Beam** XING-ZHENG WU, Fukuoka Institute of Technology, Xiaoyan Wu Wu

(2390-6 P) **A Reconfigurable Pipette for Customized, Cost-Effective Liquid Handling** DANIEL J WILSON, Tufts University, Syrena C Fernandes, Charles R Mace

(2390-7 P) **Improvement of Mineral Oil Saturated and Aromatic Hydrocarbons Determination in Edible Oil by Liquid-Liquid-Gas Chromatography with Dual Detection** LUIGI MONDELLO, University of Messina, Mariosimone Zoccali, Francesca Rigano N/A

POSTER SESSION — Session 2400

Thursday posters are to be mounted by 10:00 AM and remain on display until 2:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Poster sessions are on the Exposition Floor, Aisle 2500-2600. PLEASE NOTE: You cannot get onto the exposition floor until 9:00 AM. Posters that have not been taken down one-half hour after the designated time will be disposed of.

Process Analytical Chemistry

Thursday Morning, Exposition Floor, Aisle 2500-2600

(2400-1 P) **Analysis of Radiolytic Gasses Generated from the Production of Fission-Product Molybdinum-99 Using an Electron Accelerator** JOHN F SCHNEIDER, Argonne National Laboratory, Michael Kalensky, Thad A Heltemes, James Jerden, Tom Brossard, Serget D Chemerisov, George F Vandegrift N/A

(2400-2 P) **Determination of Volatile Impurities in Semiconductor Grade Isopropyl Alcohol** ADAM PATKIN, PerkinElmer, Leo Chou

(2400-3 P) **Dissolution Method Development for a Controlled-Release Potent API Bound to a Resin** NICK A BECKMAN, Mayne Pharma, Amy N Gladson, Michael DeHart, Kyle Fugit

(2400-4 P) **Revisiting Chromatographic Quantitation in a Digital Age** AKINDE F KADJO, University of Texas Arlington, Purnendu K Dasgupta

(2400-5 P) **Modified GC for Real-Time Analysis of Ethanol in Fermentor Off-Gas** LEE N POLITE, Axion Analytical Labs Inc, Jackson O'Donnell, Nikolas L Polite, Theodore N Covello, Erick D Walts, Dennis L Polite, Mary Beth Smith

TECHNICAL PROGRAM

THURSDAY, MARCH 9, 2017
AFTERNOON

SYMPOSIUM **Session 2410**

Analytical Cannabis II
arranged by Joshua M Crossney, jCanna, Inc.

Thursday Afternoon, Room W183a
Joshua M Crossney, jCanna, Inc., Presiding

1:30		**Introductory Remarks - Joshua M Crossney**
1:35	(2410-1)	**Contaminants Testing in Marijuana: Pesticides, Mycotoxins and Residual Solvents** OLGA I SHIMELIS, MilliporeSigma, Katherine K Stenerson, Michael Halpenny, Michael Ye, Jennifer E Claus
2:10	(2410-2)	**Current and Future Analytical Technologies for Cannabis Testing and Research** SCOTT KUZDZAL, Shimadzu Scientific Instruments
2:45	(2410-3)	**Cannabis for Pediatric Disease** TRACY RYAN, CannaKids
3:20		**Recess**
3:35	(2410-4)	**Moving Beyond the Stigmas Associated with THC Towards Total Health Care: A Physician's View on Medical Cannabis** UMA DHANABALAN, Uplifting Health & Wellness
4:10	(2410-5)	**Pharmacogenomics and Therapeutic Drug Monitoring-Guided Treatment for Personalized Cannabis Therapies** KEVIN P ROSENBLATT, Integrated Biosource/Cannabis Labs

N/A

SYMPOSIUM **Session 2420**

Atomic Spectroscopy Instrumentation Development: A Disconnect Between the Research Laboratories and the Pittcon Floor
arranged by R Kenneth Marcus, Clemson University

Thursday Afternoon, Room W178b
R Kenneth Marcus, Clemson University, Presiding

1:30		**Introductory Remarks - R Kenneth Marcus**
1:35	(2420-1)	**Academic Research to Marketplace: Can a Better Link be Forged?** GARY MARTIN HIEFTJE, Indiana University
2:10	(2420-2)	**A View of the Future Needs of Atomic Spectroscopy and the Role of Industry/University Relationships in Product Development** DENNIS YATES, Perkin-Elmer (retired)
2:45	(2420-3)	**Working with the Analytical Industry - A Case Study Success Story** DAVID W KOPPENAAL, Pacific Northwest National Laboratory
3:20		**Recess**
3:35	(2420-4)	**Thirty Years of Glow Discharge Instrumentation Development: Commercial Successes and (Perhaps) an Untapped Pipeline** R KENNETH MARCUS, Clemson University
4:10	(2420-5)	**The Evolution of Mass Cytometry from Conception to the Global Market** SCOTT TANNER, York University

SYMPOSIUM **Session 2430**

In Vivo Neurochemistry: Applications from Single Cells to Behavior
arranged by B Jill Venton, University of Virginia and Robert T Kennedy, University of Michigan

Thursday Afternoon, Room W179a
B Jill Venton, University of Virginia, Presiding

1:30		**Introductory Remarks - B Jill Venton and Robert T Kennedy**
1:35	(2430-1)	**Vesicular Exocytosis of Neurotransmitters by Endocrine Cells: The End to the "Full Fusion" Paradigm?** CHRISTIAN ANDRE AMATORE, CNRS-ENS-UPMC
2:10	(2430-2)	**Real-Time Measurement of Tonic Dopamine Fluctuations in Freely Moving Rats** MICHAEL L HEIEN, University of Arizona
2:45	(2430-3)	**Advances in Microdialysis with LC-MS to Determine Chemistry Underlying Behavior** ROBERT T KENNEDY, University of Michigan
3:20		**Recess**
3:35	(2430-4)	**A Voltammetric Analysis of Serotonin's Roles in Depression** PARASTOO HASHEMI, University of South Carolina
4:10	(2430-5)	**The Unique Contribution of In Vivo Neurochemistry to Our Understanding of the Role of Dopamine in Brain Reward Processing and Addiction** REGINA CARELLI, The University of North Carolina at Chapel Hill

Author and presider lists are available at www.pittcon.org

SYMPOSIUM **Session 2440**

Metabolomics: Breath as a Sample for Clinical Analysis
arranged by Richard A Yost, University of Florida and Michael T Costanzo, Breathtec Biomedical

Thursday Afternoon, Room W179b
Richard A Yost, University of Florida, Presiding

1:30		**Introductory Remarks - Richard A Yost and Michael T Costanzo**
1:35	(2440-1)	**Critical Issues in Clinical Breath Analysis: Challenges and Opportunities** TERENCE H RISBY, Johns Hopkins University
2:10	(2440-2)	**Breath Metabolomics in Lung and Systemic Disease** RAED A DWEIK, Cleveland Clinic
2:45	(2440-3)	**Pitfalls in the Analysis of Volatile Breath Biomarkers: The Need for Quantification of Single Metabolites** PATRIK SPANEL, J Heyrovsky Institute of CAS, David Smith
3:20		**Recess**
3:35	(2440-4)	**Breath Biomarkers: Non-Targeted (Discovery) Measurements for Environmental and Clinical Applications** JOACHIM PLEIL, US Environmental Protection Agency, Ariel Wallace, Brett Robert Winters, Michael Madden
4:10	(2440-5)	**Towards Point-of-Care Diagnostic Screening for Breath Analysis Using FAIMS and FAIMS/MS** MICHAEL T COSTANZO, Breathtec Biomedical, Michael S Wei, Jared J Boock, Richard A Yost

SYMPOSIUM **Session 2450**

Native Analysis of Biomolecules by Mass Spectrometry
arranged by Christian Bleiholder, Florida State University

Thursday Afternoon, Room W181a
Christian Bleiholder, Florida State University, Presiding

1:30		**Introductory Remarks - Christian Bleiholder**
1:35	(2450-1)	**The Transition of Native Biomolecules From Solution into the Gas Phase** EVAN R WILLIAMS, University of California Berkeley
2:10	(2450-2)	**Assembly of Amino Acid and Peptide Systems: Structures, Mechanisms and Applications** MICHAEL THOMAS BOWERS, University of California Santa Barbara, Thanh Do, Michael Tro, Gert von Helden, Steven Buratto
2:45	(2450-3)	**Molecular Microscopy: Employing Mass Spectrometry to Image Biomolecules in Their Native State** RICHARD M CAPRIOLI, Vanderbilt University
3:20		**Recess**
3:35	(2450-4)	**Top-Down Native Mass Spectrometry as a Tool for Structural Biology** JOSEPH A LOO, University of California Los Angeles
4:10	(2450-5)	**Ion Mobility Spectrometry – Mass Spectrometry for De Novo Protein Structure Elucidation** CHRISTIAN BLEIHOLDER, Florida State University, F Caroline Liu, Samuel Kirk, Mengqi Chai

SYMPOSIUM **Session 2460**

Pharmaceutical Applications of Electrochemistry
arranged by Gregory K Webster, AbbVie

Thursday Afternoon, Room W181b
Gregory K Webster, AbbVie, Presiding

1:30		**Introductory Remarks - Gregory K Webster**
1:35	(2460-1)	**Miniaturized Electrochemistry for Pharmaceutical Applications** PABLO FANJUL, DropSens S.L., Maria Gonzalez, David Hernández, Laura Fernández, Carla Navarro, Alejandro Pérez-Junquera
2:10	(2460-2)	**Application of Voltammetry Techniques for Pharmaceutical Analysis** RITESH N VYAS, Metrohm
2:45	(2460-3)	**Optogenetics and Biosensing Applications** SAM VINCENT KAPLAN, Pinnacle Technology Inc., Seth Gabbert, Erik Naylor, Daniel V Aillon, Donna A Johnson, David A Johnson
3:20		**Recess**
3:35	(2460-4)	**Electrochemistry for Detection, Reaction and Synthesis in Pharmaceutical Research** MARTIN EYSBERG, ANTEC Leyden BV
4:10	(2460-5)	**Development of Electrochemical Paper-Based Devices for Diagnostics and Preventive Care** FREDERIQUE DEISS, Indiana University - Purdue University Indianapolis

N/A

SYMPOSIUM **Session 2470**

SAS - Molecular Spectroscopy for Disease Detection
arranged by Greg Klunder, Lawrence Livermore National Laboratory

Thursday Afternoon, Room W181c
Greg Klunder, Lawrence Livermore National Laboratory, Presiding

1:30 **Introductory Remarks - Greg Klunder**

1:35 (2470-1) **Rapid, High Quality Infrared Spectroscopic Imaging for Clinical Translation** ROHIT BHARGAVA, University of Illinois at Urbana-Champaign, Shachi Mittal, Kevin Yeh, Tomasz Wrobel, Saumya Tiwari

2:10 (2470-2) **Predicting Organ Transplant Outcome Using IR Imaging** MICHAEL JOHN WALSH, University of Illinois at Chicago, Vishal Varma, Sreedhar Hari, Suman Setty, Grace Guzman, Aliya Husain

2:45 (2470-3) **Probing Molecular Signals of Disease Using Raman Spectroscopy** NICHOLAS STONE, University of Exeter

3:20 **Recess**

3:35 (2470-4) **SERS Opto-Physiology for Monitoring Cell Secretion Events** JEAN-FRANCOIS MASSON, Universite de Montreal

4:10 (2470-5) **Recent Advances in Surface-Enhanced Raman Spectroscopy for Point-of-Care Diagnostics** CHRISTA BROSSEAU, Saint Mary's University, Reem Karaballi, Lili Zhao, Dalal Alhatab

ORGANIZED CONTRIBUTED SESSIONS **Session 2500**

Chiral Method Development
arranged by Tivadar Farkas, Phenomenex, Inc. and Bezhan G Chankvetadze, Tbilisi State University

Thursday Afternoon, Room W183c
Tivadar Farkas, Phenomenex, Inc., Presiding

1:30 (2500-1) **Development and Optimization of a Method for HPLC-Separation of Enantiomers with Polysaccharide-Based Chiral Columns** BEZHAN G CHANKVETADZE, Tbilisi State University

1:50 (2500-2) **Improving our Understanding of Enantioseparation in Supercritical Fluid Chromatography** CAROLINE WEST, University of Orleans, Syame Khater, Elise Lemasson

2:10 (2500-3) **Enantioseparation of Compounds with Multiple Chiral Centers by 2D-LC** KELLY ZHANG, Genentech, Midco Tsang

2:30 (2500-4) **New Chiral Polysaccharide Phases for Supercritical Fluid Chromatography** WILLIAM FARRELL, Pfizer Inc., Matthew Przybyciel, Christine Aurigemma, Jeffrey Elleraas

2:50 **Recess**

3:05 (2500-5) **Chiral HILIC? Unique Enantioselectivity Between HILIC and RP Mode Separations with Polysaccharide-Based Chiral Selectors** TIVADAR FARKAS, Phenomenex, Inc., Bezhan G Chankvetadze

3:25 (2500-6) **Chiral Separation Screening, Optimization and New Technology – An Ongoing Chiral Method Development Process** DONALD S RISLEY, Eli Lilly and Company, V Scott Sharp, Megan A Gokey

3:45 (2500-7) **Using Blends of Solvents and Additives to Enhance SFC Chiral Method Development Screening** THOMAS SWANN, Waters Corporation, Kenneth Berthelette, Jacob Fairchild, Jason Hill

4:05 (2500-8) **Chiral Method Development for Small Scale Preparative Chromatography** J P PRESTON, Phenomenex

ORGANIZED CONTRIBUTED SESSIONS **Session 2510**

Modified Carbon-Based Materials for Sensors, Arrays, and Catalysis
arranged by Matthew Ryen Lockett, University of North Carolina at Chapel Hill

Thursday Afternoon, Room W184a
Matthew Ryen Lockett, University of North Carolina at Chapel Hill, Presiding

1:30 (2510-1) **Applications of Diamond Electrodes in Electroanalysis and Spectroelectrochemistry** GREG SWAIN, Michigan State University

1:50 (2510-2) **Stimuli-Responsive Metal Organic Frameworks** KATHERINE A MIRICA, Dartmouth College

2:10 (2510-3) **Fluorescent Nanodiamonds Containing Color Centers** OLGA SHENDEROVA, Adámas Nanotechnologies, Inc., Nicholas Nunn, Marco Torelli, Gary McGuire

2:30 (2510-4) **Chemically Modified Amorphous Carbon Electrodes: New Chemistries and Applications** MATTHEW RYEN LOCKETT, University of North Carolina at Chapel Hill

2:50 **Recess**

3:05 (2510-5) **Model Carbon Materials with Activity in the Oxygen Reduction Reaction for Fundamental Studies and Applications** PAULA E COLAVITA, Trinity College Dublin

3:25 (2510-6) **Development of Microfabricated Thin Layer Chromatography Plates from Carbon Scaffolds** MATTHEW RICHARD LINFORD, Brigham Young University, Shiladitya Chatterjee, Cody V Cushman, George H Major

3:45 (2510-7) **Nanodiamond as a Probe of Nanoparticle Transformation and Biological Impact** ROBERT HAMERS, University of Wisconsin-Madison

4:05 (2510-8) **Impact of Thickness and Short-Range Interactions on the Electrochemical Response of Ultra-Thin Graphene Interfaces** JOAQUIN RODRIGUEZ LOPEZ, University of Illinois at Urbana-Champaign, Jingshu Hui

ORAL SESSIONS **Session 2520**

Bioanalytical - LC, Sensors, and Microscopy

Thursday Afternoon, Room W175a
Erik D Emmons, Dept of the Army/ECBC, Presiding

1:30 (2520-1) **Characterization of New Mobile Phases and Solid Phase Extractions for the High Performance Liquid Chromatography Separations of Signaling Species in Non-mammalian Systems** NICHOLAS JOHN KUKLINSKI, Furman University, Matthew H Stodghill, Kirtan D Kumar, S Kathleen Mowery, Sydney M Wright, Alison M Roark

1:50 (2520-2) **Analysis of Glycans Relevant to Antibody-Therapeutics** LLOYD BWANALI, West Virginia University, Srikanth Gattu, Cassandra Crihfield, Lisa A Holland

2:10 (2520-3) **Radioisotope-Responsive Polystyrene-Core Silica-Shell Nanoparticles Used in Scintillation Proximity Assay** ISEN ANDREW CHUA CALDERON, University of Arizona, Colleen M Janczak, Zeinab Mokhtari, Craig A Aspinwall

2:30 (2520-4) **Silicon Photonic Microring Resonators for the Multiplex Detection and Quantification of Non-Coding RNA** MARIA DE LA CRUZ CARDENOSA RUBIO, University of Michigan, Richard Graybill, Ryan C Bailey

2:50 **Recess**

3:05 (2520-5) **Characterization of Liposomal Loading for Biosensor Development Using Tethered Small Unilamellar Vesicles** SURAJIT GHOSH, University of Arizona, Jinyan Wang, Xuemin Wang, Nelusha Malithi Fonseka, Craig A Aspinwall

3:25 (2520-6) **Multiplexed Microring Resonator Arrays to Characterize Biological-Based Therapeutic Agents** HEATHER ROBISON, University of Illinois at Urbana-Champaign, Ryan C Bailey

3:45 (2520-7) **Development of a pH Sensor for Non-Invasive In Vivo Detection and Imaging of Implant Associated Infection** UNAIZA UZAIR, Clemson University, Jeffrey Anker

4:05 (2520-8) **The Thioredoxin System Plays a Heavy Weight on Causing the Differential Redox Response to Oxidative Stress in Two Distinct Cornu Ammonius Regions in Rat Organotypic Hippocampal Cultures** BOCHENG YIN, University of Pittsburgh, Germán Barrionuevo, Ine Bainic-Haberle, Mats Sandberg, Stephen G Weber

ORAL SESSIONS **Session 2530**

Chemical Methods (Half Session)

Thursday Afternoon, Room W177
Samy Mohamed, Cairo University, Presiding

1:30 (2530-1) **Site-Selective Protein Conjugation for Cancer Cell Selective Marking** CHENG CUI, University of Florida, Weihong Tan N/A

1:50 (2530-2) **Optimization of Durum Milling Leading to Pasta Production Benefits from Monitoring Key Unit Processes with Quantitative Chemical Imaging** DAVID WETZEL, Kansas State University, Mark Boatwright N/A

2:10 (2530-3) **Microfluidic Cell Surface Antigen Analysis as A New Method to Detect Sepsis Development** YE ZHANG, Texas Tech University, Dimitri Pappas

2:30 (2530-4) **Selenophene with a Basic Side Chain: A New Core Structure for Subtype-Selective Estrogen Receptor Ligands** HAIBING ZHOU, Wuhan University

ORAL SESSIONS **Session 2540**

Data Analysis and Manipulation, Computer Modeling and Simulation

Thursday Afternoon, Room W175b
Manuel R Miller, The Pittsburgh Conference, Presiding

1:30 (2540-1) **Effects of Blood Lipid Concentration on VOC Levels in Human Blood** JESSICA RAFSON, CDC (ORISE), Lydia G Thornburg, Eduardo Sanchez, Christopher M Reese, David M Chambers

1:50 (2540-2) **Wearable Instrumentation to Assess the Progression of Amyotrophic Lateral Sclerosis** AIDAN P WICKHAM, Imperial College London, Christopher E Shaw, Kerry R Mills, James Bashford, E M Drakakis, Martyn G Boutelle

Author and presider lists are available at www.pittcon.org

TECHNICAL PROGRAM

2:10 (2540-3) **Statistical Shape Analysis of Particle Profiles and Their Sets** WADE HENNING, Themos Technologies N/A

2:30 (2540-4) **Think Outside the Cone** DANIEL L SWEENEY, MathSpec, Inc.

2:50 **Recess**

3:05 (2540-5) **Development of a Predictive Model from a Simulated Artificial Clostridium Fermentation Towards Real-Time Culture Monitoring** THERESAH K ZU, ARL

3:25 (2540-6) **New Approach to Computerizing Instrumentation and Processes** SCOT DAVID ABBOTT, Phoenix, Ryan Taylor, David Faries

3:45 (2540-7) **Development of Benzothiazoloquinazolinones as a New Class of DprE1 Inhibitors of Replicating and Dormant Mycobacterium Tuberculosis** RUPESH VITTHAL CHIKHALE, The Maharaja Sayajirao University of Baroda, Rajan K Choudhry, Pramod B Khedekar, Ananat Paradkar, Nazira Karodia, Prashant Murumkar, MangeRam Yadav N/A

ORAL SESSIONS — Session 2550

Nanotechnology Applications

Thursday Afternoon, Room W175c
Qingbo Yang, Missouri University of Science and Technology, Presiding

1:30 (2550-1) **Scaling the Aqueous Two-Phase Separation of Carbon Nanotubes Through Countercurrent Chromatography** JASON STREIT, National Institute of Standards and Technology (NIST), Jeffrey Fagan, Ming Zheng

1:50 (2550-2) **Plasmon-Driven Reduction of CO_2 on Bimetallic Au/Cu Nanoparticle Surfaces** SUNGJU YU, University of Illinois at Urbana-Champaign, Prashant K Jain N/A

2:10 (2550-3) **Static Multiple Light Scattering to Monitor Protein Aggregation and Pigments Dispersibility** CHRISTELLE TISSERAND, Formulaction, Giovanni Brambilla, Gérard Meunier, Jim Munhall

2:30 (2550-4) **Modular Assembly of Surface Functionalized Core-Shell Nanoparticles as Novel Targeted Image Contrast Agents of Ovarian Cancer and Breast Cancer Cells** PRAKASH D NALLATHAMBY, University of Notre Dame, Ryan K Roeder, Tracy Vargo-Gogola, Karen Cowden-Dahl, Alexander Bobbs, Clodia Osipo, Tyler E Curtis, Lisa Irimata

2:50 **Recess**

3:05 (2550-5) **A Nanoparticle Enhanced SPRi Platform for Multiplexed Analysis of Internal Organ Injury Biomarkers in Complex Matrices** KRISTY S MCKEATING, University of California Riverside, Samuel S Hinman, Zhiguo Zhou, Quan Cheng

3:25 (2550-6) **DNA-Based Nanosensors for Sensing Light-Evoked Acetylcholine Release in the Axolotl Retina** JENNIFER M MORALES, Northeastern University, James Monaghan, Heather A Clark

3:45 (2550-7) **Nanotoxicity Study on a Single Cell Scale Using a Novel Micro-pH Probe** QINGBO ROGER YANG, Missouri University of Science and Technology, Alexandre Cristea, Charles Roberts, Hai Xiao, Honglan Shi, Yinfa Ma

4:05 (2550-8) **Density Functional Theory Study of Exchange and Transport of Cations in Crystalline Solids** DANIEL DUMETT TORRES, University of Illinois, Prashant K Jain

ORAL SESSIONS — Session 2560

New Methods

Thursday Afternoon, Room W176a
Dean Tzeng, The Pittsburgh Conference, Presiding

1:30 (2560-1) **Comprehensive Two-Dimensional GC Modulator - Next Generation** ALESSANDRO CASILLI, DANI Instruments, Michela Gasperini, Alberto Crotti, William W Carson, Conor Sullivan N/A

1:50 (2560-2) **Quantitative Analysis of Therapeutic Drugs in Blood/plasma Spot Samples by Coated Blade Spray Ionization-Mass Spectrometry (CBS-MS)** GERMAN AUGUSTO GOMEZ-RIOS, University of Waterloo, Marcos Tascon, Nathaly Reyes-Garces, Ezel Boyaci, Justen J Poole, Janusz Pawliszyn

2:10 (2560-3) **High-Throughput Surface-Enhanced Raman Spectroscopy Immunoassay for the Detection of Category A Pathogens** JENNIFER H GRANGER, University of Utah, China Y Lim, Marc D Porter, Jun Zhao, Qun Li, Sean Wang, Angelo J Madonna, Brian K Bennett N/A

2:30 (2560-4) **A New Home-Made Generation System for VOC and Semi-VOC Gas Standards in Air** ANNARITA BALDAN, VSL, Dita Heikens, Stefan Persijn, Hugo Ent, Janneke van Wijk

2:50 **Recess**

3:05 (2560-5) **Novel High-Throughout Glass Surface Modification Method for Cell Attachment and Proliferation** CHARLES ROBERTS, Missouri University of Science and Technology, Yang Song, Alexandre Cristea, Qingbo Roger Yang, Hai Xiao, Yinfa Ma

3:25 (2560-6) **Evaluation of Different Extraction Methodologies for the Simultaneous Determination of Pesticides and Veterinary Drugs in Bovine Milk and Kidney** MARIA LUCIA PAREJA, Universidad de la República, Rodrigo Souza, Agustina Muela, Maria Verónica Cesio, Horacio Heinzen

3:45 (2560-7) **Preservation of the Morphology of Plasmonic Nano-Additives in Polymer Nano-composites (PNCs) by Extrusion and Injection Molding** DEVON A BOYNE, U.S. Army Research Laboratory, Alice M Savage, Frederick M Beyer, Mark H Griep, Josh A Orlicki N/A

4:05 (2560-8) **Enhanced Fluidity Liquid Chromatography Performed with Alcohol/Water/CO_2 Gradients** RAFFEAL BENNETT, The Ohio State University, Susan Olesik

ORAL SESSIONS — Session 2570

Novel Applications of Surface Analysis/Imaging

Thursday Afternoon, Room W176b
Sam Subramaniam, Miles College, Presiding

1:30 (2570-1) **Mass Spectrometry Imaging of the Human Pancreas Lipidome** GRANT EDWARD BARRY, University of Illinois at Chicago, Daniel Cavazos, Igor Veryovkin, Manami Hara, Grame Bell, Luke Hanley

1:50 (2570-2) **Fast Relaxation Imaging of Protein Structure, Stability, and Folding in Biomaterial Environments with Variable Crowding** LYDIA KISLEY, University of Illinois at Urbana-Champaign

2:10 (2570-3) **Single Molecule Detection of Plasmid DNA Adsorption at Chemical Gradient Modified Electrode Surfaces under Potential Control** ZI LI, Kansas State University, Kayesh Ashraf, Jun Li, Maryanne M Collinson, Daniel Higgins

2:30 (2570-4) **Analysis of Fluid Slip at the Fluid-Solid Interface: Wetting Velocity Dependence** SAMANTHA L NANIA, University of Iowa, Scott K Shaw

2:50 **Recess**

3:05 (2570-5) **Calibration-Free SHG Image Analysis for Quantification of Trace Crystallinity within Final Dosage Forms of ASDs** CASEY J SMITH, Purdue University, Garth J Simpson, Janny Dinh, Paul D Schmitt

3:25 (2570-6) **Evaluation of X-Ray Fluorescence for the Quantification of Elemental Impurities in a Continuous Processing Environment** MINDY B FORST, Eli Lilly and Company

3:45 (2570-7) **Atomistic Dynamics of an Order-Disorder Phase Transition in Cu_2Se Nanocrystals** JAEYOUNG HEO, University of Illinois at Urbana-Champaign, Sungju Yu, Prashant K Jain

4:05 (2570-8) **Urban Films as Active Environmental Interfaces** SCOTT K SHAW, University of Iowa, Jacob S Grant

ORAL SESSIONS — Session 2580

Surface Modification/Imaging Developments

Thursday Afternoon, Room W184d
Joachim Koenen, WITec Wissenschaftliche Instrumente und Technologie GmbH, Presiding

1:30 (2580-1) **Extended Ordering of Ionic Liquid Films at Solid-Liquid Interface** RADHIKA S ANAREDY, University of Iowa, Robert Specht, Scott K Shaw

1:50 (2580-2) **Structural Hierarchical Modified Micro Spherical Surfaces (SHiMMS)** KATHERINE THERESE FLYNN, Southern Illinois University, Michael D Tustison, Rajesh Prabhu Balaraman, Kexin Jiao, Chuanhong Zhou, Kiah S Kirkwood, Punit Kohli

2:10 (2580-3) **Siloxane-Bound Ultra-Thin Coatings Through Vapor-Enhanced Deposition: A Complement to Self-Assembled Monolayers** KEXIN JIAO, Southern Illinois University, Nathalie Beverra-Mora, Chuanhong Zhou, Jared Fiske, Punit Kohli

2:30 (2580-4) **A New Approach for High Speed, High Lateral and Spectral Resolution in Raman Imaging** THOMAS DIEING, WITec GmbH, Joachim Koenen, Harald Fischer, Liu Wei, Ute Schmidt, Olaf Hollricher

2:50 **Recess**

3:05 (2580-5) **The Role of Electrostatic Repulsions in the Self-Assembly of Two Dimensional Photonic Crystal Arrays** NATASHA LYNN SMITH, University of Pittsburgh, Andrew E Coukouma, Sanford A Asher

3:25 (2580-6) **Assembling Nanoparticle Contrast Agents for Spectral (Color) X-Ray Imaging** PRAKASH D NALLATHAMBY, University of Notre Dame, Ryan K Roeder, Tyler E Curtis, Tracy Vargo-Gogola, Karen Cowden-Dahl, Clodia Osipo, Lisa Irimata

3:45 (2580-7) **Sub-Molecular Resolution Interrogation of a Surface-Mediated Conformational Switch by Ultrahigh Vacuum Tip-Enhanced Raman Spectroscopy** NAIHAO CHIANG, Northwestern University, Xing Chen, Guillaume Goubert, Xu Chen, Dhabih V Chulhai, Eric A Pozzi, Nan Jiang, Tamar Seideman, Mark C Hersam, Richard Van Duyne

4:05 (2580-8) **RISE Microscopy: Correlative Raman and SEM Imaging** HARALD FISCHER, WITec GmbH, Joachim Koenen, Harald Schmidt, Wei Liu, Philippe Ayasse, Thomas Dieing, Olaf Hollricher

Author and presider lists are available at www.pittcon.org