



PITTCON 2025

TECHNICAL PROGRAM

AGENDA OF SESSIONS

March 1 – March 5, 2025

Boston, Massachusetts, USA

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Award

AW-07-00 *The Satinder Ahuja Award for Young Investigators in Separation Science*

Instrumentation & Nanoscience

Organizer James Grinias - Rowan University

Sunday, March 2, 2025
Morning 8:30 AM-11:40 AM
Room 104A

Oral

OR-07-00 *Advancements in Applications of GC/MS*

Environment & Energy

Sunday, March 2, 2025
Morning 9:30 AM-12:00 PM
Room 109A

9:30 AM OR-07-01 **Degradation of Biodiesel as a Function of Feedstock, Blend Level, and Environmental Conditions**
William Shirley - Michigan State University

9:50 AM OR-07-02 **Determining the Purity of Hydrogen Using Gas Chromatography (GC) and Infrared Spectroscopy (IR) Techniques**
chris goss - InnotechAlberta

10:10 AM OR-07-03 **Exploration of new Low-Pressure GC columns for food and environment emerging contaminants**
Jana Hepner - Restek Corporation

10:40 AM OR-07-04 **Optimizing Analytical Workflow of EPA Method 525 While Enhancing Speed and Sensitivity**
Alan Owens - Shimadzu Scientific Instruments

11:00 AM OR-07-05 **Green Innovations in Volatile Chemical Analysis: Advancing Sustainable Methods for Environmental, Material, and Food Samples with Thermal Desorption GC-MS**
Aaron Davies - Markes International Ltd

11:20 AM OR-07-06 **Detecting Adulterated Paprika: Identifying Quality and Authenticity Markers Using Advanced Headspace and Thermal Desorption with GC-MS**
Rebecca Cole - Markes International

11:40 AM OR-07-07 **Intermediate volume liners for splitless injections on narrow-bore columns**
Erica Pack - Restek

Organized Session

OC-01-00 *Analytical Advances in the Field of Targeted Cancer Treatment – Antibody Drug Conjugates and the Impact of the Drug Linkers*

Pharmaceutical & Biologics

Sunday, March 2, 2025

Organizer Yanqun Zhao - AbbVie Inc.

Morning 9:30 AM-12:00 PM

Room 206A

10:10 AM OC-01-03 **Exploring structural changes of antibody-drug conjugates (ADCs) under stress with enhanced analytical toolbox: bottom-up and middle-down mass spectrometry**
Xinhao Shao - AbbVie

10:40 AM OC-01-04 **Enabling Analytical Capabilities for Next-Generation Antibody-Drug Conjugates (ADCs)**
Bingchuan Wei - Genentech

11:20 AM OC-01-06 **Comprehensive Method Development Platform for Antibody Drug Conjugates: Leveraging AI and DOE for Analytical Challenges**
Beth Readell - AbbVie

11:40 AM OC-01-07 **Characterizing Monoclonal Antibodies and Antibody-drug Conjugates Using Top-Down and Middle-Down Mass Spectrometry Strategies**
Joseph Loo - UCLA

Oral

OR-08-00 *Bioanalytical Microscopy Applications and Methodology*

Bioanalytical & Life Science

Sunday, March 2, 2025

Morning 9:30 AM-12:00 PM

Room 210B

9:30 AM OR-08-01 **Localized detection of analyte concentrations using an electrochemical aptamer based sensor probe in scanning electrochemical microscopy**
Debashis Sen - Florida State University

9:50 AM OR-08-02 **Scanning electrochemical microscope for the analysis of biological samples**
Evaldas Balčiūnas - State research institute Center for Physical Sciences and Technology

10:10 AM OR-08-03 **Automatic Profiling System for Consistent Diagnosis of Cancer via Targeting Multiple Bio-fluids**
Moonhyun Choi - Massachusetts General Hospital (MGH), Center for Systems Biology (CSB)

Oral

OR-05-00 *Considerations in Pharmaceutical Formulations*

Pharmaceutical & Biologics

Sunday, March 2, 2025

Morning 9:30 AM-12:00 PM

Room 207

9:30 AM OR-05-01 **Method Development of Forced Degradation Samples: Using the Proper Tools to Better Characterize Drug Candidates and Formulated Samples**
Kenneth Berthelette - Waters Corporation

9:50 AM OR-05-02 **Analytical strategies for administration of suspension formulation using Nasogastric tube**
ILA PATEL - GENENTECH, INC

10:10 AM OR-05-03 **Droplet Size Analysis of Pharmaceutical Emulsions: Lab and In-Process Solutions**
Mark Bumiller - Entegris

Oral

OR-06-00 *Data Management in Pharma*

Pharmaceutical & Biologics

Sunday, March 2, 2025
Morning 9:30 AM-12:00 PM
Room 207

9:30 AM OR-06-01 **Statistical Methods for Combined Accuracy and Precision Approaches for Validation**
Pierre Lebrun - Cencora Pharmalex, Belgium

9:50 AM OR-06-02 **Choosing Your LIMS Path: Understanding Deployment Options and Benefits**
James Brennan - LabWare, Inc

10:10 AM OR-06-03 **Quality Assessment of Nineteen brands of Ciprofloxacin Tablets commercially Available in Lagos, Nigeria**
ADERONKE ADEPOJU-BELLO - UNIVERSITY OF LAGOS

Oral

OR-04-00 *Drug Characterization and Monitoring using Liquid Chromatography*

Pharmaceutical & Biologics

Sunday, March 2, 2025
Morning 9:30 AM-12:00 PM
Room 206B

9:30 AM OR-04-01 **LC method development and optimisation throughout different project stages of a pharmaceutical regulatory starting material**
Emanuele Petruzzella - Bristol Myers Squibb

9:50 AM OR-04-02 **Intracellular concentration LC-MS-MS assays supporting early-stage drug discovery**
Sharon Tentarelli - AstraZeneca

10:10 AM OR-04-03 **Method Transfer Challenges and Risk Mitigation for Insulin Across HPLC Systems**
Kimberly Martin - Waters Corporation

10:40 AM OR-04-04 **Could Light Ruin your RPLC robustness – Lessons from API Method Development**
Anna Calkins - Bristol Myers Squibb

11:00 AM OR-04-05 **Scaling of Challenging UHPLC Compendial Methods on HPLC Systems**
Norris Wong - Waters Corporation

11:20 AM OR-04-06 **Characterize Adeno-Associated Virus (AAV) Related Substances by HPLC**
Xiaodong Liu - NanoChrom Technologies

11:40 AM OR-04-07 **Automated analysis and monitoring of continuous reactions by On-line Liquid Chromatography and Infrared spectrometry**
Bradley Greiner - AbbVie Inc.

Oral

OR-03-00 *Electrochemical sensors and instrumentation*

Instrumentation & Nanoscience

Sunday, March 2, 2025
Morning 9:30 AM-12:00 PM
Room 205C

9:30 AM OR-03-01 **Size-Dependent and Antifouling Properties of Laser-Induced Graphene Electrodes toward Electrochemical Sensors Food and Clinical Applications**
Pumidech Puthongkham - Chulalongkorn University

9:50 AM OR-03-02 **Investigation of a Free-Standing Boron-Doped Diamond Grid Electrode for Fundamental Spectroelectrochemistry**
Dustyn Weber - Miami University

10:10 AM OR-03-03 **Development of a portable and autonomous potentiostat for on-site chemical analyses**
Rafael Silva Santos - University of São Paulo

10:40 AM OR-03-04 **Controlling Droplet Cell Environment in Scanning Electrochemical Cell Microscopy via Migration & Electroosmotic Flow**
Samuel Wenzel - University of Texas at Austin

11:00 AM OR-03-05 **Understanding the Anomalous Electrochemical Response of 3D-Printed Flow Cells Through Numerical Simulation**
Mostafa Mahmoudi - University of Arkansas

11:20 AM OR-03-06 **CALIBRATION-FREE APPROACH USING A NANOPOROUS GOLD MICROELECTRODE FOR PARACETAMOL QUANTIFICATION IN VISCOUS MEDIUM**
Valdomiro Conceição - University of São Paulo

Oral

OR-01-00 *Methodology Developments Applied to Food Science*

Environment & Energy

Sunday, March 2, 2025
Morning 9:30 AM-12:00 PM
Room 108

9:30 AM OR-01-01 **A Bacterial Biosensor to Detect the Presence of Pathogenic Strains of *Vibrio parahaemolyticus***
Sara Quinn - University of Massachusetts Boston

9:50 AM OR-01-02 **Developing novel methods for *Bacteroides* detection on agricultural produce using nanoplate digital polymerase chain reaction.**
Sylvia Etim - Florida International University

10:10 AM OR-01-03 **Production of Concentrated Cheese Aroma from Enzyme Modified Cheese by Using Supercritical Carbon Dioxide Extraction Method**
Tugba Bulat - Hacettepe University

Oral

OR-50-00 *New Applications in Biosensors*

Bioanalytical & Life Science

Sunday, March 2, 2025
Morning 9:30 AM-12:00 PM
Room 210A

Organized Session

OC-11-00 *Next-Generation Vibrational Spectroscopy: The Path Ahead*

Bioanalytical & Life Science

Organizer Justyna Grabska - University of Innsbruck

Sunday, March 2, 2025
Morning 9:30 AM-12:00 PM
Room 104B

9:30 AM OC-11-01 **The Near-Infrared and Imaging Spectroscopy in Food and Bioanalysis: Current and Future Directions**

Christian Huck - Institute of Analytical Chemistry and Radiochemistry, Leopold-Franzens University, Innsbruck, Austria

10:40 AM OC-11-04 **Mid-Infrared Sensors in Clinical Practice: Tool or Dream?**

Boris Mizaikoff - Ulm University & Hahn-Schickard

11:00 AM OC-11-05 **Raman hyperspectroscopy of saliva and machine learning for Sjögren's disease diagnostics**

Igor Lednev - University at Albany, State University of New York

11:20 AM OC-11-06 **Efficient Microplastic Detection in Environmental Matrices: Portable NIR Spectroscopy for Soil Analysis**

Justyna Grabska - University of Innsbruck

Oral

OR-02-00 *Novel Electrochemistry Applied to Energy Systems*

Environment & Energy

Sunday, March 2, 2025
Morning 9:30 AM-12:00 PM
Room 109A

9:30 AM OR-02-01 **The Impact of the Cathode Electrolyte Interface Evolution and Formation on Ni-Rich Cathodes Stability and Kinetics**

Olivia Paden - University of Massachusetts Boston

9:50 AM OR-02-02 **Lithium salt mixture with fluorinated ether co-solvent improves high temperature performance in lithium-ion batteries**

Michael Keating - Graduate Center CUNY

10:10 AM OR-02-03 **Alloy Anodes for Rechargeable Calcium Ion Batteries**

Vincent Briselli - University of Massachusetts Boston

10:40 AM OR-02-04 **Highly Selective Electrochemical Lithium Extraction from Brine by Bipolar Electrode Method**

Tamilselvi Gurusamy - The University of Texas at Austin

11:00 AM OR-02-05 **Electrochemical Investigation of Uranium and Corrosion Products in Chloride-Based Molten Salts**

Vlvian Flaum - Miami University

11:20 AM OR-02-06 **Self-Discharge Mechanism of Carbon-Based Ion-Selective Electrode Solid Contacts**

Emily Robinson - University of Minnesota

11:40 AM OR-02-07 **Investigation of a Novel Electrolyte for the Aluminum Trivalent System**

Leslie Gates - University of Massachusetts Boston

Organized Session

OC-16-00 *SEAC - Student Session in Electroanalysis*

Environment & Energy

Organizer Martin Edwards - University of Arkansas - Dept. Chemistry & Biochemistry

Sunday, March 2, 2025
Morning 9:30 AM-12:00 PM
Room 107C

9:30 AM OC-16-01 **Real-time, Voltammetric Co-Detection of Serotonin and Glucose at Carbon-Fiber Microbiosensors**

Kalynn Turner - University of Florida, Department of Pharmacodynamics

9:50 AM OC-16-02 **Surface Adsorption-Controlled Nanoparticle Collision Response**

Ruixuan Wan - University of Washington

10:10 AM OC-16-03 **Microscale Electrokinetic Desalting and Salting of Water-in-Oil Droplets**

Aparna Krishnamurthy - Iowa State University

10:40 AM OC-16-04 **Multi-length Scale Electrochemical Insights into Conducting Polymer Functionality using Scanning Electrochemical Cell Microscopy**

Spencer Yeager - University of Arizona

11:40 AM OC-16-07 **Direct Probe of quasi-Fermi Level of Metal Cocatalyst in Hybrid Photoelectrodes**

SA SUO - Emory University

Oral

OR-10-00 *Analytical Applications in Food and Art*

Instrumentation & Nanoscience

Sunday, March 2, 2025
Afternoon 2:30 PM-4:40 PM
Room 205B

2:30 PM OR-10-01 **Review of Software Tools that Streamline Comprehensive Two-Dimensional Gas Chromatography (GCxGC) Data Review for Characterizing and Differentiating Batches of Complex Food and Beverage Samples**

Elizabeth Humston-Fulmer - LECO Corporation

2:50 PM OR-10-02 **Analyzing Beer is FUN: Determining Flavors and "Defects" in Beer by Headspace Trap/Gas Chromatography/Mass Spectrometry (HStrap/GC/MS)**

Lee Marotta - PerkinElmer

3:10 PM OR-10-03 **Comparing the flavour profiles of gin using high-capacity sorptive extraction and GCxGC-TOF MS**

Laura McGregor - SepSolve Analytical

3:40 PM OR-10-04 **Controlling Roast Degree, Antioxidant Capacity and Flavors during Coffee Roasting by Photoionization Mass Spectrometry (PIMS)**

Andreas Walte - Photonion GmbH, Schwerin, Germany

4:00 PM OR-10-05 **Utilizing portable, flexible analytical instrumentation to add interpretative value to Cultural Heritage collections**

Eric Monroe - Library of Congress

4:20 PM OR-10-06 **The challenge of cellulose: detecting volatile organic compounds from paper via thermal desorption GCMS in application of cultural heritage**

Kelli Stoneburner - Library of Congress

Oral

OR-14-00 *Biomedical Extraction Techniques*

Bioanalytical & Life Science

Sunday, March 2, 2025
Afternoon 2:30 PM-4:40 PM
Room 210B

2:30 PM OR-14-01 **In vivo solid-phase microextraction for therapeutic drug monitoring of anticancer drugs and pharmacometabolomic fingerprinting of lung during the chemotherapy**
Anna Roszkowska - Department of Chemistry, University of Waterloo, Canada

2:50 PM OR-14-02 **Rapid and instrument-free viral RNA extraction from human plasma integrated with loop-mediated isothermal amplification for molecular HIV testing at the point-of-care**
Jeffrey W. Beard - University of Rochester

3:10 PM OR-14-03 **Deployment of rapid biopsy processing for Kaposi's sarcoma point-of-care diagnostics.**
Xinying Chu - Sibley School of Mechanical and Aerospace Engineering, Cornell University

3:40 PM OR-14-04 **Selective extraction of modified RNA nucleosides from neuronal cell cultures using BTAIL: a borate-complexation and temperature-assisted ionic liquid microextraction technique**
Gabriella Floro - Tufts University

Organized Session

OC-28-00 *CACA: Navigating Career Paths in Science: Insights and Strategies for Success*

Professional Development

Organizer Tao Jiang - Mallinckrodt Pharmaceuticals

Sunday, March 2, 2025
Afternoon 2:30 PM-4:40 PM
Room 210C

Oral

OR-48-00 *Diverse Applications and Methodology Improvements in the Environmental & Energy Fields*

Environment & Energy

Sunday, March 2, 2025
Afternoon 2:30 PM-4:40 PM
Room 109A

2:30 PM OR-48-01 **Application of Pearson Correlation Coefficient to Two-Dimensional Gas Chromatography High-Resolution Time-of-Flight Mass Spectrometry as a Comparison and Discovery-Based Technique**
Michelle Corbally - Los Alamos National Laboratory

2:50 PM OR-48-02 **Molecular Characterization of Electrolytes and Electrodes in Lithium Ion Batteries**
Pierre Giusti - TotalEnergies

3:10 PM OR-48-03 **Robust, Sensitive Cavity Ringdown Spectroscopy Detection of Trace Ethylene Oxide**
James Hodges - Process Insights

3:40 PM OR-48-04 **Simplified Quantitation of C6-C14 Aromatics in Detailed Hydrocarbon Analysis of Gasolines by Simultaneous Dual-Detection GCxGC-TOFMS and FID**
Christina Kelly - LECO Corporation

4:00 PM OR-48-05 **Mass Save Programs & Lab Sustainability: The Possibilities for Energy Efficient Life Sciences Equipment**
Phil Pipitone - Energy Solutions

4:20 PM OR-48-06 **Rapid and Efficient Microwave Digestion for Trace Metals Analysis of Shellfish**
Michael Howe - CEM Corporation

4:40 PM OR-48-07 **Automated PFAS Extraction from Shellfish**
Alicia Stell - CEM Corporation

Oral

OR-13-00 *Innovations in Microfluidics and Lab-on-a-Chip Platforms*

Bioanalytical & Life Science

Sunday, March 2, 2025
Afternoon 2:30 PM-4:40 PM
Room 210A

- 2:30 PM OR-13-01 **Multiplex point-of care (POC) ELISA based on 3D printed microdevices**
Brandi Binkley - West Virginia University
- 2:50 PM OR-13-02 **PolyJet 3D printed Microchip Electrophoresis devices with Electrochemical Detection for Neurotransmitters Analysis**
Major Allen Selemani - Saint Louis University
- 3:10 PM OR-13-03 **PolyJet and Fused Deposition Modeling (FDM) 3D Printed Microfluidic Systems for Cell Culture with Integrated Analysis for Small Molecule Detection**
Samuel Azibere - Saint Louis University
- 3:40 PM OR-13-04 **Real-Time Digital PCR for Multiplexed Analysis of miRNA and Protein**
Brice Vanness - Wayne State University
- 4:00 PM OR-13-05 **Unveiling Islet Variability Using A Medium Throughput Microfluidic Islet Imaging System**
James Thornham - Program in Molecular Biophysics, Florida State University, Tallahassee, FL 32304, USA
- 4:20 PM OR-13-06 **Evaluating VAT polymerisation resins for applications in microfluidics and high-value biomolecule production**
Vithukka Velthasan - University of Brighton
- 4:40 PM OR-13-07 **Two-Color Duplex Platform for Point-of-Care Differential Detection of Lassa and Ebola Viruses**
Thea Nikolaou - Meinig School of Biomedical Engineering at Cornell University

Oral

OR-11-00 *Methods in Material Sciences*

Instrumentation & Nanoscience

Sunday, March 2, 2025
Afternoon 2:30 PM-4:40 PM
Room 205C

- 2:30 PM OR-11-01 **A New Technology Innovation for Material Thermal Conductivity Measurements: Thermo-Optical Plane Source (TOPS)**
Jeffrey Braun - Laser Thermal
- 2:50 PM OR-11-02 **Use of Field-Portable Analytical Instruments in Investigation of Building Materials Degradation**
Kimberly Steiner - Wiss, Janney, Elstner Associates, Inc.
- 3:10 PM OR-11-03 **Update on Peoples' FTIR: Towards simplification, miniaturization, scalability and open source approach at a basic instrument concept**
Johannes Kunsch - Laser Components Germany GmbH
- 3:40 PM OR-11-04 **Ultrasonic Pulsed Doppler, a Novel and Unique Technology for Characterization of Nanoparticles**
Steven Africk - Prodyne Corp.
- 4:00 PM OR-11-05 **Getting More Chemical Information from Hyphenation Techniques: TGA-FTIR-GC/MS**
Samantha Nania - PerkinElmer
- 4:20 PM OR-11-06 **Spectral Data Analysis Leveraging Immersive Analytics with Virtual Reality: Exploring Domain Shifted Model Spaces for Optimal Model Selection**
John Kalivas - Idaho State University
- 4:40 PM OR-11-07 **Accurately Quantifying Tails of Particle Size Distributions**
Mark Bumiller - Entegris

Organized Session

OC-09-00 *Nano-Infrared and Nano-Raman Imaging in Biology, Chemistry and Material Science*

Bioanalytical & Life Science

Sunday, March 2, 2025
Afternoon 2:30 PM-4:40 PM
Room 107B

Organizer Dmitry Kurouski - Texas A&M University

- 2:30 PM OC-09-01 **Understanding Signal Intensity and Spatial Resolution in Resonance-Enhanced AFM-IR: Experimental and Theoretical Insights**
Andrea Centrone - National Institute of Standards and Technology
- 2:50 PM OC-09-02 **Spatially Resolved Infrared Spectroscopy of Amyloid Aggregates in Alzheimer's Disease**
Ayanjeet Ghosh - The University of Alabama
- 3:10 PM OC-09-03 **Nanoscale Chemical Imaging using Tip-Enhanced Raman Spectroscopy**
Renato Zenobi - ETH Zurich
- 4:00 PM OC-09-05 **Super-Resolution SERS spectral Imaging**
Zachary Schultz - The Ohio State University
- 4:20 PM OC-09-06 **Single-Molecule Spectroscopic Probing of N-heterocyclic Carbenes on a Two-Dimensional Metal**
Nan Jiang - University of Illinois Chicago

Oral

OR-09-00 *New Developments in Sampling and Sample Preparation*

Environment & Energy

Sunday, March 2, 2025
Afternoon 2:30 PM-4:40 PM
Room 108

2:30 PM OR-09-01 **From emission to destruction; solving the challenges of volatile PFAS monitoring with Thermal Desorption and GC-MS.**
Helen Martin - Markes International Ltd

2:50 PM OR-09-02 **Material selection for PFAS separations: transfer tubing, GC systems, and HPLC systems**
Jesse Bischof - SilcoTek Corporation

3:10 PM OR-09-03 **Accessing suitable sample preparation methods for the analysis of PFAS in cosmetics: SPME and automated micro-SPE**
Aghogho Olomukoro - University at Buffalo

3:40 PM OR-09-04 **Comparison of Mesoporous Silica Media to 2,4-Dinitrophenylhydrazine Media for Collection of Aldehydes with Very Low Moisture**
mitch rubenstein - USAF

4:00 PM OR-09-05 **Total Sample Preparation Workflow for Heavy Metals Analysis of Baby Foods**
Eric Farrell - Milestone, Inc.

4:20 PM OR-09-06 **Sensitive, high-throughput quantitation of chlorophenols and common odorants in water using high capacity sportive extraction with GC-MS.**
Rebecca Cole - Markes International

4:40 PM OR-09-07 **Bacterial endotoxins testing using non-animal derived reagents and innovative microfluidic technology on real world samples**
Hayden Skalski - Veolia - Sievers Analytical Instruments

Organized Session

OC-15-00 *Recent Progress in Affinity Sensing for Advanced Healthcare Applications*

Bioanalytical & Life Science

Sunday, March 2, 2025
Afternoon 2:30 PM-4:40 PM
Room 104B

Organizer Nandhakumar Ponnusamy - University of California San Diego

2:30 PM OC-15-01 **Biomolecular engineering to realize biosensors for in vivo continuous monitoring systems**
Koji Sode - The Joint Department of Biomedical Engineering, UNC/NCSU

2:50 PM OC-15-02 **Monitoring HIV Antiretroviral Therapy via Aptamer-Based Measurements in Preclinical Animal Models and in Human Plasma**
Netz Arroyo - Johns Hopkins School of Medicine

4:40 PM OC-15-07 **Biosymbiotic closed-loop haptic feedback platform for assistive and therapeutic applications**
Aman Bhatia - University Of Arizona

Oral

OR-12-00 *Specialty Methods for Monitoring and Characterization*

Pharmaceutical & Biologics

Sunday, March 2, 2025
Afternoon 2:30 PM-4:40 PM
Room 207

- 2:30 PM OR-12-01 **Metabolomic Characterization of a Perfusion Bioprocess System using Pyxis TM – A Machine Learning Tool for Absolute Quantitation**
Erin Weisenhorn - Just Evotec Biologics
- 2:50 PM OR-12-02 **Multiplex detection of tumor-derived EVs for monitoring drug resistance in ovarian cancer**
Jihye Hong - Center for Systems Biology, MGH, Harvard Medical University
- 3:10 PM OR-12-03 **Cyclosporines: A Deeper Look into Heterogeneity and Permeability**
Miranda Limbach - University of Tennessee, Knoxville

Symposium

SY-10-00 *Analysis of Cells, Bacteria, Viruses, and Biomolecules with Next-Generation Microfluidic Systems*

Bioanalytical & Life Science

Sunday, March 2, 2025
Morning 9:30 AM-11:40 AM
Room 107A

Organizer Aaron Timperman - University of Pennsylvania

- 9:30 AM SY-10-01 **Cells – the Outsides and Insides with Transverse AC Electrophoresis and Low-Flow Electrospray Interfaces**
Aaron Timperman - University of Pennsylvania
- 10:00 AM SY-10-02 **Large Electric Fields and Gradients in Microfluidics Enable Ultra-High Resolution Separations of Cells and Bioparticles**
Mark Hayes - Arizona State University
- 10:00 AM SY-10-02 **An Advanced Microfluidic Electroporation System for Efficient Gene Delivery in Patient-Derived Cells**
SJ Claire Hur - Johns Hopkins University
- 10:40 AM SY-10-03 **Microfluidic dielectrophoresis-based systems for cell analysis and sorting**
Lisa Flanagan - University of California, Irvine
- 11:10 AM SY-10-04 **Single-Particle Analysis with In-Plane Nanofluidic Devices**
Stephen Jacobson - Indiana University

Symposium

SY-03-00 *Around the World and Across the Spectrum: New Directions in Art and Archaeology Analysis Using Portable Devices*

Instrumentation & Nanoscience

Sunday, March 2, 2025

Organizer Mary Kate Donais - Saint Anselm College

Morning 9:30 AM-11:40 AM

Room 109B

9:30 AM SY-03-01 **Reverse engineering archaeological traditions using portable devices: chemical and geometric morphometric analysis of pre-Hispanic ceramics from Nariño, Colombia**
Marcos Martinon-Torres - University of Cambridge

10:00 AM SY-03-02 **Portable XRF and mobile Raman in Museum environment**
Laure Dussubieux - Field Museum

10:40 AM SY-03-03 **Development and Use of Portable XRF for Scanning Art and Archaeological Artifacts at Sub-Micron Resolution**
Aaron Shugar - Queen's University

11:10 AM SY-03-04 **Portable Spectrometry Characterization of Etruscan Weaving Tools: Exploring Women's Roles, Migration, and Ceramic Production**
Mary Kate Donais - Saint Anselm College

Symposium

SY-01-00 *Bioanalytical Measurements for Analysis of Disease Pathways: New Molecules and Methods*

Bioanalytical & Life Science

Sunday, March 2, 2025

Organizer Michael Johnson - University of Kansas

Morning 9:30 AM-11:40 AM

Room 106

10:00 AM SY-01-02 **Metabolomics of the Living Brain**
Robert Kennedy - University of Michigan

10:40 AM SY-01-03 **Expanding the Target Toolkit for Wearable and Implantable Sensors**
Anne Andrews - University of California, Los Angeles

11:10 AM SY-01-04 **Proposal Type: 2025 Call for Invited Abstracts** **Format – Symposium**
Jonathan Sweedler - University of Illinois Urbana Champaign

Symposium

SY-02-00 *Enabling Disease Bioanalysis Using Unconventional Approaches*

Bioanalytical & Life Science

Sunday, March 2, 2025

Organizer Joaquín Rodríguez-López - University of Illinois Urbana-Champaign

Morning 9:30 AM-11:40 AM

Room 107B

9:30 AM SY-02-01 **Microscale Redox Titrations for the Quantification of Surface-Captured Analytes: A Strategy for Cancer Biomarker Detection**
Joaquín Rodríguez-López - University of Illinois Urbana-Champaign

10:40 AM SY-02-03 **Developing nanoscale analytical platform for interrogating neurotransmission dynamics in real-time**
Mei Shen - University of Illinois Urbana-Champaign

Symposium

SY-11-00 *Exploring the Variance Among Cannabinoid Certified Reference Materials Based on Testing Data*

Cannabis & Psychedelic

Sunday, March 2, 2025

Organizer Dan DeLurio - Restek Corporation

Morning 9:30 AM-11:40 AM

Room 209

9:30 AM SY-11-01 **Five Cannabis Testing Labs Compare the Variability of Certified Reference Materials from Five Vendors**

Jeff Rawson - Institute of Cannabis Science

10:00 AM SY-11-02 **Collaborative Study Examines the Contribution of Reference Standards to “Potency Inflation”**

Kate Calati - Cayman Chemical

10:40 AM SY-11-03 **Addressing the Sources of Variability in Cannabinoid Content Testing: A Collaborative Study on the Role of Reference Materials**

Sarah Otis - Anresco Laboratories

11:10 AM SY-11-04 **Detector Response, Curve Fitting, and “Potency Inflation”**

Jini Glaros - Modern Canna

Symposium

SY-07-00 *Analytical Development of Cell and Gene Therapies*

Pharmaceutical & Biologics

Sunday, March 2, 2025

Organizer BINGCHUAN WEI - Genentech

Afternoon 2:30 PM-4:40 PM

Room 206A

3:40 PM SY-07-03 **Physiochemical and Biophysical Characterization of Base Editing Drug Products**

Bo Yan - Beam Therapeutics

4:10 PM SY-07-04 **Unveiling the Structural Complexity of Guide RNA, A Critical Reagent Used in CRISPR Gene Therapy**

Bingchuan Wei - Genentech

Symposium

SY-05-00 *Integrating Label-Free Detection into Bioanalytical Separations*

Bioanalytical & Life Science

Sunday, March 2, 2025

Organizer Tom Linz - Wayne State University

Afternoon 2:30 PM-4:40 PM

Room 106

2:30 PM SY-05-01 **Applications of Nanoscale Electrophoresis with Label-Free Resistive Pulse Sensing in Biology and Medicine**

Steven Soper - University of Kansas

3:00 PM SY-05-02 **Gradient elution moving boundary electrophoresis: Minimizing sample preparation for rapid analysis**

Shannon Krauss - RTI International

3:40 PM SY-05-03 **Integrating Label-Free Detection into Bioanalytical Separations**

Petra Dittrich - ETH Zürich

4:10 PM SY-05-04 **Streamlining Thermal Gel Electrophoresis with Inline Labeling and Label-Free Detection**

Tom Linz - Wayne State University

Symposium

SY-06-00 *Redefining Disease Monitoring: A Pathogen-Agnostic Paradigm Shift Through Multi-Omics, Mass Spectrometry Innovations, and Advanced Bioinformatic Analysis*

Bioanalytical & Life Science

Sunday, March 2, 2025

Organizer John Barr - Centers for Disease Control and Prevention

Afternoon 2:30 PM-4:40 PM

Room 107A

2:30 PM SY-06-01 **Charge Detection Mass Spectrometry of Viruses and Other Large Particles**

Evan Williams - University of California, Berkeley

3:00 PM SY-06-02 **Leveraging Multi-omics Technologies for Pathogen Agnostic Research**

Brooke Kaiser - Pacific Northwest National Laboratory

3:40 PM SY-06-03 **Precision dispensing for diagnostics devices and low input sample preparation for LCMS**

Joshua Cantlon - Scienion US Inc

Symposium

SY-08-00 *Thin Film Sensors: Emerging Solutions for Energy, the Environment, and Medicine*

Instrumentation & Nanoscience

Sunday, March 2, 2025

Organizer Scott Crawford - National Energy Technology Laboratory

Afternoon 2:30 PM-4:40 PM

Room 109B

2:30 PM SY-08-01 **Metal-Organic Framework Thin Films: From Fabrication to Sensitive Detection of Energy Relevant Metal Ions and Gasses**

Scott Crawford - U.S. Department of Energy/National Energy Technology Laboratory

Organized Session

OC-22-00 *What's in Your Chowda?*

Instrumentation & Nanoscience

Sunday, March 2, 2025

Organizer Alicia Stell - CEM Corporation

Morning 9:30 AM-12:00 PM

Room 205B

9:30 AM OC-22-01 **Microwave Digestion of Difficult Food Matrices Common to the Northeast**

Michael Howe - CEM Corporation

9:50 AM OC-22-02 **Building Better Standards for Metal Analysis in Seafood: Ensuring Stability and Preventing Interferences**

Mike Booth - Inorganic Ventures

10:10 AM OC-22-03 **From Seawater to Shellfish: Microplastics... Find out what's slowly killing you, and the best way to stay happy as a clam.**

Ryan Brennan - GLASS EXPANSION, INC

11:10 AM OC-22-04 **Automated PFAS Solvent Extraction of Difficult Food Matrices Common to the Northeast**

Alicia Stell - CEM Corporation

Award

AW-02-00 *Chromatography Forum of Delaware Valley Dal Nogare Award*

Instrumentation & Nanoscience

Monday, March 3, 2025

Organizer Mary Ellen McNally - Chromatography Forum of Delaware Valley

Morning 8:30 AM-11:40 AM

Room 104A

Oral

OR-19-00 *Applications of Electrochemistry to Bioanalytical Systems I*

Bioanalytical & Life Science

Monday, March 3, 2025
Morning 9:30 AM-12:00 PM
Room 210A

9:30 AM OR-19-01 **Redox Cycling Integrated Electrochemical Lateral-Flow Immunoassay for Sensitive Insulin Detection**

Nandhakumar Ponnusamy - University of California-San Diego

9:50 AM OR-19-02 **SECM Investigation of Bacterial Metabolism and Communication in Confined 3D Microstructures**

Changhyun Ryu - University of Texas at Austin

10:10 AM OR-19-03 **Affinity sensors for the determination of SARS-CoV-2 virus proteins**

Arunas Ramanavicius - 1. NanoTechnas – Center of Nanotechnology and Materials Science, Faculty of Chemistry and Geosciences, Vilnius University, Naugarduko str. 24, 03225 Vilnius, Lithuania

10:40 AM OR-19-04 **A modular electrochemical biosensor for detection of multiple nucleic acids**

Julio Hector Ojeda Velarde - University of Central Florida

Oral

OR-17-00 *Chemistry at the nanoscale*

Instrumentation & Nanoscience

Monday, March 3, 2025
Morning 9:30 AM-12:00 PM
Room 205C

9:30 AM OR-17-01 **Benchmarking the chemistry of nanoparticle growth using in situ electroanalytical measurements**

Michelle Personick - University of Virginia

9:50 AM OR-17-02 **Thermal Measurements at the Nano-scale: Theory, Reality, and Examples**

John Gaskins - Laser Thermal

10:10 AM OR-17-03 **Application of Spooling Electrogenerated Chemiluminescence (ECL) and Photoluminescence (PL) Spectroscopy in (nano)Material Chemistry**

Mahdi Hesari - State University of New York at Oswego

10:40 AM OR-17-04 **Chemical strategies for metal doping, anchoring, and perforation of graphene derivatives**

Volodymyr Zaitsev - Pontifical Catholic University of Rio de Janeiro

11:00 AM OR-17-05 **Nanoelectrochemical imaging**

Kamsy Anderson - University of Arkansas

11:20 AM OR-17-06 **Sustainable Synthesis of Magnetic Nanomaterials from Galvanizing Effluent as a Path Towards Next-Generation Electronics by “Resource Conservation and Technological Innovation**

Sanjitha Rajapakshe - University Peradeniya

11:40 AM OR-17-07 **Synthesis and Application of Inverted Bi-layered Opal Photoanodes in Dye Sensitised Solar Cells (DSSCs)**

Emmanuel Kamba - Researcher/Federal University Wukari

Organized Session

OC-27-00 *Emerging Microfluidic and Nano-analytical Technologies for Biomarker Detection*

Bioanalytical & Life Science

Monday, March 3, 2025
Morning 9:30 AM-12:00 PM
Room 106

Organizer Xiujun James Li - University of Texas at El Paso

10:40 AM OC-27-04 **Conjugation of DNA to Gold Nanoparticles for Biosensor Applications**

Juewen Liu - University of Waterloo

Oral

OR-16-00 *Exploring Gas Chromatography Methods and Applications*

Instrumentation & Nanoscience

Monday, March 3, 2025
Morning 9:30 AM-12:00 PM
Room 205B

9:30 AM OR-16-01 **Analysis Ethylene Oxide by EPA 327 Using Preconcentration Technology**

Gesheng Dai - Nutech Instrument, Inc.

9:50 AM OR-16-02 **A novel GC-FID method for quantification of residual 1,4-Dioxane and Ethylene Oxide at ppm levels in ethoxylated surfactants**

Elenita Costa - Indorama Ventures

10:10 AM OR-16-03 **The Multiple Benefits of GC-MS with Cold EI - The Whole is Greater than the Sum of its Parts**

Aviv Amirav - Tel Aviv University

10:40 AM OR-16-04 **Unknown-Unknown Analysis: Strategies for Identifying Compounds Not in Libraries Using Single Quadrupole GC/MS**

Don Kuehl - Cerno Bioscience

11:00 AM OR-16-05 **Automating GC Retention Index Calibration to Enable more Confident GC/MS Search**

Stacey Simonoff - Cerno Bioscience

11:20 AM OR-16-06 **How to choose the optimal Gas Chromatographic (GC) detector for Several Applications and Requirements?**

Lee Marotta - PerkinElmer

11:40 AM OR-16-07 **Characterization of Extractables in Dental Bite Guards using Gas Chromatography and High Performance Time-of-Flight Mass Spectrometry**

Joseph E. Binkley - LECO Corporation

Oral

OR-20-00 *Laboratory Information Systems*

Instrumentation & Nanoscience

Monday, March 3, 2025
Morning 9:30 AM-12:00 PM
Room 109A

9:30 AM OR-20-01 **Professional Insights on Selecting the Right LIMS**

Dave Sloan - Confience

9:50 AM OR-20-02 **Signs that You Need a LIMS Project Manager**

Aimee Zwart - CSols Inc.

10:10 AM OR-20-03 **AI-Assisted Lab Automation Control Framework**

Gulnur Tuyenbayeva - Northwest Control Systems, LLC

10:40 AM OR-20-04 **Optimizing Lab Operations: Integrating Laboratory Instruments, Systems and Calculations with LIMS**

Steve Wesson - Confience

11:00 AM OR-20-05 **Data Security in the New Lab--ISMS as a Systematic Approach**

Dwayne Caldwell - Simplicia

11:20 AM OR-20-06 **Practical Use Cases for R in Life Sciences Labs**

Phil Callahan - CSols Inc.

11:40 AM OR-20-07 **SaaS LIMS Deployments: Key Hosting and SLA Factors to Consider**

Stacey Brewer - Confience

Oral

OR-15-00 *Latest Advances in LC Hardware and Methods*

Instrumentation & Nanoscience

Monday, March 3, 2025
Morning 9:30 AM-12:00 PM
Room 109B

9:30 AM OR-15-01 **Electron Ionization LC-MS with Cold EI – Why is it Better Than APCI-LC-MS**

Aviv Amirav - Tel Aviv University

9:50 AM OR-15-02 **Compact Capillary LC for the Analysis of Samples with Complex Matrices**

Eliza Hanson - Rowan University

10:10 AM OR-15-03 **Improving Throughput and Automation of Capillary Liquid Chromatography**

Samuel Foster - Rowan University

10:40 AM OR-15-04 **Expanding the Utility of a Virtual Method Development Tool**

Melinda Urich - Restek Corporation

11:00 AM OR-15-05 **Introduction and Characterization of Halogen Bonding Liquid Chromatography: Liquid Chromatographic Separations Based on Novel Chemical Interaction and Separation Mechanisms**

Christopher Palmer - University of Montana Department of Chemistry and Biochemistry

11:20 AM OR-15-06 **Inert HPLC hardware via CVD coatings for pharmaceuticals, food and beverage, environmental, and more**

Jesse Bischof - SilcoTek Corporation

11:40 AM OR-15-07 **Clicking the Stationary Phase on Superficially Fibrous Organo-Silica Particles for HPLC**

Dulan Edirisinghe - Department of Chemistry, University at Buffalo, Buffalo, NY, USA

Oral

OR-21-00 *New Methods in Biosensors*

Bioanalytical & Life Science

Monday, March 3, 2025
Morning 9:30 AM-12:00 PM
Room 210B

9:30 AM OR-21-01 **Bilayer magnetic hydrogels for affordable and sensitive point-of-care biosensing**

Mark Ferris - National Institute of Standards and Technology (NIST)

9:50 AM OR-21-02 **Ultrasensitive rapid inexpensive protein and cell detection with buoyant-analyte-magnetic (BAM) assays**

Jeffrey Anker - Clemson University

10:10 AM OR-21-03 **Innovative Approach for Detecting Amyloid Beta Oligomers in Human Cerebrospinal Fluid And Plasma**

zahra karimpourkalou - clemson university

10:40 AM OR-21-04 **Homogenous SELEX: Rapid nuclease-assisted selection of high-affinity small-molecule aptamers**

LINLIN WANG - NCSU

Oral

OR-18-00 *Novel and Enhanced Probes for Biologics and Pharmaceuticals*

Pharmaceutical & Biologics

Monday, March 3, 2025
Morning 9:30 AM-12:00 PM
Room 206B

9:30 AM OR-18-01 **High-Throughput Nitrosamine Analysis from Aqueous Solutions Using Headspace-SIFT-MS**

Tucker Kitchengs - Syft Technologies Inc

9:50 AM OR-18-02 **Orthogonal Validation of Mass Spectrometry Results for Impurity Analysis in Pharmaceutical Products**

Eduardo Sanchez - Northeastern University

10:10 AM OR-18-03 **Improved Bioseparations with a Novel Charged Surface Superficially Porous Column**

Stephanie Schuster - Advanced Materials Technology, Inc.

10:40 AM OR-18-04 **Soft-Spot Identification in Cyclic Peptides Using MASSPEC Structural Elucidation Software with HPLC/ESI Exact-Mass MS and MSMS Data**

Marshall Siegel - MS Mass Spec Consultants

11:00 AM OR-18-05 **Analysis of volatile impurities in complex samples by headspace molecular rotational resonance spectroscopy**

Alexander Mikhonin - BrightSpec, Inc.

11:20 AM OR-18-06 **A Pilot Study of User-Friendly, Verified APP for In Vitro Drug Release (IVR) Modeling of Complex Biodegradable Sustained Release Ocular Implant System**

HongPeng Wang - Abbvie

11:40 AM OR-18-07 **High speed ultra-high pressure liquid chromatography in recent pharmaceutical development**

Frank (Naijun) Wu - Neurocrine

Award

AW-06-00 *Pittsburgh Conference Achievement Award*

Bioanalytical & Life Science

Monday, March 3, 2025
Afternoon 1:30 PM-4:40 PM
Room 211

Organizer Diane Hoover - Pittcon

1:40 PM AW-06-01 **Controlling organic reaction selectivity by alternating current electrolysis**

Long Luo - University of Utah

2:30 PM AW-06-02 **Improving the Selectivity and Efficiency of Synthetic Organic Electrosynthesis**

Shelley Minter - Missouri University of Science and Technology

3:00 PM AW-06-03 **Photoelectrocatalytic System as a Reaction Platform for Selective Radical–Radical Coupling**

Taek Dong Chung - Seoul National University

4:10 PM AW-06-05 **Integrating High-Throughput Electrochemistry for Analysis and Synthesis**

Lane Baker - Texas A&M University

Award

AW-01-00 *Ralph N. Adams Award*

Bioanalytical & Life Science

Organizer Robert Kennedy - University of Michigan

Monday, March 3, 2025
Afternoon 1:30 PM-4:40 PM
Room 104A

1:40 PM AW-01-01 **NEW FRONTIERS IN PROTEOMICS - PROTEOFORMS, PROTEOFORM FAMILIES, AND THE HUMAN PROTEOFORM PROJECT**
Lloyd M. Smith - University of Wisconsin - Madison

3:00 PM AW-01-03 **Microfluidics-enabled multi-omics assays with digital and analog quantification**
J Michael Ramsey - University of North Carolina

3:40 PM AW-01-04 **In vivo Protein Footprinting Reveals the Dynamic Conformational Changes of Proteome of Multiple Tissues in Progressing Alzheimer's Disease**
John Yates - The Scripps Research Institute

4:10 PM AW-01-05 **Ralph N. Adams Award**
Neil Kelleher - Northwestern University Professor

Oral

OR-27-00 *Analysis of Cannabis via Mass Spectrometry*

Cannabis & Psychedelic

Monday, March 3, 2025
Afternoon 2:30 PM-5:00 PM
Room 209

2:30 PM OR-27-01 **Holy smokes! The detection and identification of cannabidiol pyrolysis products**
Niara Nichols - Louisiana State University

2:50 PM OR-27-02 **Identification of Key Sensory-Active Compounds in Cannabis by Aroma Dilution Analysis**
Nicole Kfoury - GERSTEL, Inc.

3:10 PM OR-27-03 **Medicinal cannabis as standartized production in the clinical settings**
Václav Trojan - MUNI

3:40 PM OR-27-04 **Profiling of phytocannabinoids in medicinal cannabis plant material via solid-phase microextraction approach**
Anna Roszkowska - Department of Chemistry, University of Waterloo, Waterloo, Canada; Department of Pharmaceutical Chemistry, Medical University of Gdansk, Gdansk, Poland

4:00 PM OR-27-05 **Fully Automated Waters ACQUITY™ QDa™ Pipeline for Cannabis Terpene Profiling and Cannabinoid Detection using SICRIT® Technology**
Taylor Hayward - Plasmion GmbH

Oral

OR-24-00 *Analytical Methods for Quality Control*

Instrumentation & Nanoscience

Monday, March 3, 2025
Afternoon 2:30 PM-5:00 PM
Room 205B

- 2:30 PM OR-24-01 **Optical Emission Spectroscopy of Dahlia and Pearl Fireworks Effects**
Aaron Orland - National Fireworks Association
- 2:50 PM OR-24-02 **Non-destructive Plastic Stress Inspection Using Polarization Camera**
Naohiro Kohmu - Hitachi America
- 3:10 PM OR-24-03 **The causes of unsatisfactory performance in proficiency testing**
Joe Lackey - LGC
- 3:40 PM OR-24-04 **Characterization of UV-Curing Process by Hyphenated Techniques of Photo-DSC and UV-DMA**
YANXI ZHANG - NETZSCH INSTRUMENTS, INC
- 4:00 PM OR-24-05 **Using Low-Field NMR Relaxation for Quality Control and to determine the Equivalency of Materials for Pharmaceutical, Cosmetic and Industrial Formulations**
David Fairhurst - Colloid Consultants Ltd
- 4:20 PM OR-24-06 **Particle Size Analysis of Powder Used in Additive Manufacturing**
Mark Bumiller - Entegris
- 4:40 PM OR-24-07 **Raman Spectroscopy for Battery analysis and QC**
Peng Miao - HORIBA

Oral

OR-28-00 *Applications of Electrochemistry to Bioanalytical Systems II*

Bioanalytical & Life Science

Monday, March 3, 2025
Afternoon 2:30 PM-5:00 PM
Room 210A

- 2:30 PM OR-28-01 **Surface functionalization of carbon-based electrodes for enhancing biosensing applications**
Emie Marin - Colorado State University
- 2:50 PM OR-28-02 **In vivo electrochemical detection of serotonin in murine anorectum**
Ryan Hopkins - University of Brighton
- 3:10 PM OR-28-03 **Diving Deep into Chemobrain: Zebrafish Lead the Way to Cognitive Clarity**
Romana Jarosova - Colorado State University
- 3:40 PM OR-28-04 **Real-Time Detection of Toxic Metal Ions: Innovations in Electrochemical Sensing for Future Medical Applications**
Pavithra Pathirathna - Florida Institute of Technology
- 4:00 PM OR-28-05 **Utilizing Nafion antifouling coatings on stencil-printed electrodes for sensitive electrochemical detection of the epilepsy therapy drug carbamazepine from human saliva**
Khadijeh Khederlou - Oregon State University
- 4:20 PM OR-28-06 **Utilize cSWV for quantitative and qualitative determination of cross-reactive targets with E-AB sensors**
Swati Singh - Department of Chemistry, University of Cincinnati
- 4:40 PM OR-28-07 **Emission Intensity Readout – Pushing the Limits of Ion-Selective Sensing**
Agata Michalska - University of Warsaw, Warsaw, Poland

Oral

OR-26-00 *Applications of ICP-MS*

Instrumentation & Nanoscience

Monday, March 3, 2025
Afternoon 2:30 PM-5:00 PM
Room 205C

3:40 PM OR-26-04 **Increasing Efficiency of ICPMS Analysis of Challenging Matrices by Using an Innovative Low Maintenance Nebulizer**
Sergei Leikin - Texas Scientific Products

4:00 PM OR-26-05 **Analysis of Organometallic Compounds and Metallic Particles in Specialty Gases by Direct Injection Using Gas Exchange Device (GED) Coupled to Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)**
Chady Stephan - PerkinElmer

Oral

OR-29-00 *Electrochemical Biosensors*

Bioanalytical & Life Science

Monday, March 3, 2025
Afternoon 2:30 PM-5:00 PM
Room 210B

2:30 PM OR-29-01 **Electrochemical tape-and-paper-based pH sensors towards oral preventative care**
Oreoluwa Cherebin - Indiana University - Indianapolis

2:50 PM OR-29-02 **Crafting 3D printed carbon thermoplastic electrodes using multi-material architecture approaches**
Ricoveer Shergill - University of Brighton

3:10 PM OR-29-03 **Quantitative and Qualitative Multi-Analyte Detection Using a Novel Four-Bore Electrode with Fast-Scan Cyclic Voltammetry**
Noel Manring - Florida Institute of Technology

3:40 PM OR-29-04 **Touch-based electrochemical sensors for the simultaneous detection of disease and micronutrient biomarkers toward personalized medicine and nutrition**
Sumeyye Seker - University of California San Diego

4:00 PM OR-29-05 **Development of a Magnetic Bead-Based Electrochemical Immunoassay for HIV-1 p24 Antigen Detection**
Thaisa Baldo - Colorado State University

4:20 PM OR-29-06 **High spatial resolution biosensing using aptamers on microelectrodes and in nanopipettes**
Robert Lazenby - Florida State University

4:40 PM OR-29-07 **Comparative analysis of composite materials towards highly reproducible ion-selective electrodes**
Carlos Rodrigo Salazar Gallupe - University of Central Florida

Oral

OR-23-00 *Environmental Applications of Mass Spectrometry*

Environment & Energy

Monday, March 3, 2025
Afternoon 2:30 PM-5:00 PM
Room 108

- 2:30 PM OR-23-01 **Real-Time Measurement of EPA Regulated HON Compounds and Environmental Pollutants Using SIFT-MS**
Nathan Hoppens - Syft Technologies
- 2:50 PM OR-23-02 **Investigating the chemical composition of wildfire smoke particles using advanced single-particle mass spectrometry**
Ralf Zimmermann - Joint Mass Spectrometry Centre, University of Rostock and Helmholtz Munich, Germany
- 3:10 PM OR-23-03 **Comprehensive Screening of Air Pollutants using Enhanced Chromatography with High-Resolution Time-of-Flight Mass Spectrometry**
David E. Alonso - LECO CORPORATION
- 3:40 PM OR-23-04 **Elemental Composition Determination of Unknown Organometallic Compounds with Mass Spectral Accuracy**
Yongdong Wang - Cerno Bioscience
- 4:00 PM OR-23-05 **Validation of a Hydrolysis-DART-HRMS Screening Method for 6:2 Fluorotelomer Alcohol Greaseproofing coatings**
Luke K. Ackerman - US-FDA Center for Food Safety
- 4:20 PM OR-23-06 **Novel ship-based and submersible Membrane Inlet-Photo-Ionization Mass Spectrometer (MI-PIMS) for on-line detection of environmental pollutants and explosives in sea water**
Sven Ehlert - Photonion GmbH, Schwerin, Germany
- 4:40 PM OR-23-07 **Air Analysis: Volatile and Semi-Volatile Organic Compounds (VOCs and SVOCs) in One Analysis by Automated Thermal Desorption (ATD) Gas Chromatography/Mass Spectrometry (GCMS)**
Lee Marotta - PerkinElmer

Oral

OR-25-00 *Innovations in Ion Mobility Spectroscopy*

Instrumentation & Nanoscience

Monday, March 3, 2025
Afternoon 2:30 PM-5:00 PM
Room 205C

- 2:30 PM OR-25-01 **Solving the General Elution Problem in Ion Mobility Spectrometry**
Eric Davis - Whitworth University
- 2:50 PM OR-25-02 **Portable multi-sensor array with ultra-fast polarity switching ion mobility spectrometer, photoionization detector and fast gas chromatographic pre-separation**
Bert Ungethuem - Airsense Analytics
- 3:10 PM OR-25-03 **High-kinetic-energy ion mobility spectrometry (HIKE-IMS) for use in trace detection of hazardous substances**
Antonia Vollbehre - Airsense Analytics

Organized Session

OC-25-00 *Metal-organic Frameworks: New Materials for Unprecedented Perspectives for Analytical and Bioanalytical Applications*

Bioanalytical & Life Science

Monday, March 3, 2025

Organizer Stephane Petoud - Center for Molecular Biophysics - CNRS Orléans

Afternoon 2:30 PM-5:00 PM

Room 106

2:30 PM OC-25-01 **Exploring the Complex Structural Landscape and Potential Applications of Rare-Earth Metal–Organic Frameworks**
Ashlee Howarth - Concordia University

Organized Session

OC-10-00 *New Detection Methods for Bio-related Substances*

Bioanalytical & Life Science

Monday, March 3, 2025

Organizer Manabu Tokeshi - Division of Applied Chemistry, Hokkaido University

Afternoon 2:30 PM-5:00 PM

Room 104B

2:30 PM OC-10-01 **Cell separation by a sponge monolith column format**
Noritada Kaji - Kyushu University

2:50 PM OC-10-02 **Investigation of the pseudo-luciferase activity of human and viral proteins and its application to analytical chemistry**
Ryoji Kurita - National Institute of Advanced Industrial Science and Technology

3:10 PM OC-10-03 **Organic Transistor-based Chemical Sensors for Real-sample Analysis**
Tsuyoshi Minami - The University of Tokyo

3:40 PM OC-10-04 **Paper-based Analytical Device for On-site Detection of Nerve Agents**
Manabu Tokeshi - Hokkaido University

4:20 PM OC-10-06 **Microfluidic devices and nanodiamond sensors for environmental exposure analyses**
Taisuke Shimada - Institute of Quantum Life Science, National Institutes for Quantum Science and Technology (QST)

4:40 PM OC-10-07 **Microfluidic Engineering of Size-Controlled Hybrid Exosomes for Targeted mRNA Delivery**
Masatoshi Maeki - Hokkaido University

Oral

OR-22-00 *New Life Science Applications of Vibrational Spectroscopy*

Bioanalytical & Life Science

Monday, March 3, 2025
Afternoon 2:30 PM-5:00 PM
Room 107A

- 2:30 PM OR-22-01 **Raman chemical imaging as a tool to visualize the molecular-level interactions and structural dynamics of biological macromolecules in cells**
David Punihaole - University of Vermont
- 2:50 PM OR-22-02 **Monitoring the uptake of microplastics by cells with vibrational spectroscopy**
Cassio Lima - University of Liverpool
- 3:10 PM OR-22-03 **Using Low Frequency Vibrations to Characterize the Long-Range Structure of Amyloid Fibril Polymorphs**
Madeline Harper (Hatch) - University of Vermont
- 3:40 PM OR-22-04 **Shining a Light on Metabolic Susceptibilities in Diabetes-Induced Endothelial Dysfunction Using SRS Microscopy and Transcriptomics**
Rahuljeet Chadha - California Institute of Technology (Caltech)
- 4:00 PM OR-22-05 **Expanding the Capabilities of Reagentless SERS Sensors through Machine Learning and Automated Design**
Steven Quarin - University of Cincinnati
- 4:20 PM OR-22-06 **Scaling metabolomics down to the single cell level with O-PTIR spectroscopy**
Roy Goodacre - University of Liverpool
- 4:40 PM OR-22-07 **Polymeric Vectors for Gene Therapy Applications: An In-Depth Structural Analysis of Nucleic Acid Interactions using Vibrational Spectroscopy**
Rusul Mustafa - University of Vermont

Organized Session

OC-13-00 *NIJ - Innovations in Forensic Examination of Seized Drugs and Forensic Toxicology*

Cannabis & Psychedelic

Monday, March 3, 2025
Afternoon 2:30 PM-5:00 PM
Room 107B

Organizer Frances Scott - National Institute of Justice

- 2:30 PM OC-13-01 **Nanoparticle Decorated Porous Micropillars as SERS and ESI-MS Substrates for Ultrasensitive Synthetic Drug Analysis in Blood Plasma**
Rajesh Sardar - Department of Chemistry and Chemical Biology
- 2:50 PM OC-13-02 **The application of surface enhanced Raman spectroscopy in the detection of fentanyl and other NPS**
Bruce McCord - Florida International University
- 3:10 PM OC-13-03 **Improving Non-Contact Fentanyl Detection by IMS using a novel pre-concentrator**
Galpayage Dona Thouli Jayawardana - Florida International University
- 3:40 PM OC-13-04 **Hint in the Print: The determination of Cannabis-use biomarkers in fingerprint residues using high-resolution mass spectrometry**
Rabi Musah - Louisiana State University
- 4:20 PM OC-13-06 **Prevalence and Stability of THC in Baseline Breath Samples Collected after Overnight Abstinence from Cannabis Use**
Kavita Jeerage - National Institute of Standards and Technology (NIST)
- 4:40 PM OC-13-07 **Quantification of Seven Ethanol Biomarkers in Blood, Oral Fluid, and Urine in Samples from a Controlled Drinking and Vaping Crossover Study**
Alaina Holt - Department of Forensic Science, Virginia Commonwealth University

Organized Session

OC-21-00 *Uncovering Missing Organofluorine: Approaches to Identify and Quantify Novel Per/polyfluoroalkyl Substances (PFASs)*

Environment & Energy

Monday, March 3, 2025

Organizer Carrie McDonough - Carnegie Mellon University

Afternoon 2:30 PM-5:00 PM

Room 107C

2:30 PM OC-21-01 **Analytical Strategies to Uncover the Biological Burden of "Forever Chemicals"**
Carrie McDonough - Carnegie Mellon University

3:10 PM OC-21-03 **Occurrence and fate of per-/polyfluoroalkyl substances (PFASs) in residential wastewater and their fate in nitrogen-removing biofilters**
Rachel Smolinski - Carnegie Mellon University

4:00 PM OC-21-05 **Improving our understanding of "missing" atmospheric organofluorine**
Cora Young - York University

4:20 PM OC-21-06 **Characterizing the Areal Extent of PFAS Contamination in Fish Species Downgradient of AFFF Source Zones**
Heidi Pickard - Harvard University

Symposium

SY-04-00 *Detection and Analysis of Counterfeit Pharmaceutical and Cannabis Products Via Portable Instruments in the Field*

Cannabis & Psychedelic

Monday, March 3, 2025

Organizer Richard Crocombe - Crocombe Spectroscopic Consulting

Morning 9:30 AM-11:40 AM

Room 209

10:40 AM SY-04-03 **Combatting counterfeit cannabis edibles with laboratory and portable spectroscopy**
Brooke Kammrath - University of New Haven

11:10 AM SY-04-04 **Analysis of Drug Products by an International Mail Facility Satellite Laboratory Equipped with Rapid Screening Devices**
Hannah LaRoy - U.S. Food and Drug Administration

Symposium

SY-12-00 *Innovations and Future Directions in Environmental Non-Targeted Analysis (NTA)*

Environment & Energy

Monday, March 3, 2025

Organizer Zhenyu Tian - Northeastern University

Morning 9:30 AM-11:40 AM

Room 107C

9:30 AM SY-12-01 **Improving Non-Target Screening for Polar Micropollutants: Tackling Matrix Effects and Quantification Gaps in Water Analysis**
Selina Tisler - University of Copenhagen

10:00 AM SY-12-02 **Tracking Dynamic Photochemical Reactivity Networks in Microplastic-Derived Dissolved Organic Carbon**
Vittorio Albergamo - NYU Grossman School of Medicine

11:10 AM SY-12-04 **Answering the Call of Non-Targeted Analysis For Routine Testing**
David Schiessel - Babcock Labs

Symposium

SY-13-00 *NIJ - Innovations in Technology to Advance Forensic Science*

Bioanalytical & Life Science

Organizer Igor Lednev - University at Albany, SUNY

Monday, March 3, 2025

Morning 9:30 AM-11:40 AM

Room 107B

9:30 AM SY-13-01 **Moving from Innovative R&D to Assay Production in a Regulated Environment/Establishing Quality Controls, System Suitability, & a Statistical Measure of Assay Confidence using Likelihood Ratio Farmwork**
Donald Siegel - NYC Office of Chief Medical Examiner

10:00 AM SY-13-02 **Identification of ammunition brands and estimation of shooting distance through spectroscopic gunshot residue (GSR) analysis**
Jorge Yañez - Department of Analytical and Inorganic Chemistry, Universidad de Concepción, Chile

10:40 AM SY-13-03 **Towards Direct Identification and Detection of Bodily Fluids on Common Substrates for Forensic Purposes**
Mohamed Amin - University at Albany

Symposium

SY-25-00 *Application of LC-MS for Bioanalysis and Matrix Effect Evaluation*

Pharmaceutical & Biologics

Organizer Perry Wang - FDA

Monday, March 3, 2025

Afternoon 2:30 PM-4:40 PM

Room 206B

4:10 PM SY-25-04 **Strategies for Dealing with Matrix Suppression in LC/MS/MS Bioanalyses**
Jack Henion - Henion Enterprises

Organized Session

OC-06-00 *Extractables & Leachables Analysis for Pharmaceutical and Medical Products*

Pharmaceutical & Biologics

Organizer Dujuan Lu - SGS Health Sciences

Monday, March 3, 2025

Morning 9:30 AM-12:00 PM

Room 206A

9:50 AM OC-06-02 **Using LC-QToF-MS to identify HTPE related Extractables and Leachables compounds from polymer filter with Oligomer Hindered amine light stabilizer (HALS)**
Xiaoran Zhang - Cytiva

11:00 AM OC-06-05 **Simultaneous targeted and non-targeted PFAS screening as part of the extractables analysis of pharmaceutical container closure, manufacturing components and medical device materials by LC-HRMS**
Dujuan Lu - SGS Health Science

11:20 AM OC-06-06 **Case Study: Migration of PFAS from Fluoropolymers used as Single-Use Processing Components in the Manufacture of Cell & Gene Therapy Products**
Sam Albeke - Element Materials Technology

11:20 AM OC-06-01 **Method Validation Challenges in Extractables and Leachables Analysis**
Gagandeep Singh - Nexus pharmaceuticals

Organized Session

OC-07-00 *Incorporating Research into the Curriculum at Primarily Undergraduate Institutions*

Professional Development

Monday, March 3, 2025

Organizer Christine MacTaylor - Salem State University

Morning 9:30 AM-12:00 PM

Room 210C

9:30 AM OC-07-01 **Incorporating Endophyte Research into Instrumental Analysis and Disseminating Results without Traditional Publication**
Christine MacTaylor - Salem State University

9:50 AM OC-07-02 **Ride the Wave of Research to Experience the Exciting places it will take you: Challenging undergraduates with Protein Electrochemistry and Surface Chemistry**
Rose Clark - Saint Francis University

10:10 AM OC-07-03 **Incorporating Research into the Curriculum at Primarily Undergraduate Institutions (MacTaylor) ()**
Liza Abraham - Gordon College

10:40 AM OC-07-04 **Expanding Access to Undergraduate Research Opportunities via an Introductory Research Course**
Steven Suljak - Santa Clara University

11:00 AM OC-07-05 **Incorporating Research into the Photonics Curriculum at Stonehill College**
Guiru Gu - Stonehill College

11:40 AM OC-07-07 **Scaffolding Research into the Four-Year Chemistry Curriculum at Bridgewater State University**
Cielito "Tammy" DeRamos King - Bridgewater State University

Organized Session

OC-17-00 *Sustainable Electrochemical Sensing Manufacture Aiming at Inexpensive Sensors*

Bioanalytical & Life Science

Monday, March 3, 2025

Organizer Thiago Paixao - University of Sao Paulo / Institute of Chemistry

Morning 9:30 AM-12:00 PM

Room 211

9:30 AM OC-17-01 **Sustainable Electrochemical Sensing Manufacture: Developing Low-Cost, High-Performance Sensors using Laser and 3D-Printing**
Thiago Paixao - Institute of Chemistry - University of Sao Paulo

Organized Session

OC-18-00 *Synthetic Biology-based Sensing*

Bioanalytical & Life Science

Monday, March 3, 2025

Organizer Can Dincer - University of Freiburg

Morning 9:30 AM-12:00 PM

Room 104B

9:30 AM OC-18-01 **Electrochemical Interfaces for Gene Circuit-Based Sensors**
Shana Kelley - Northwestern University

10:10 AM OC-18-03 **Next-generation Synthetic Biology Diagnostics**
James Collins - MIT

11:40 AM OC-18-07 **Disposable Sensors for Next-generation Point-of-care Diagnostics**
Can Dincer - Technical University of Munich

Organized Session

OC-19-00 *Technical Developments and Applications of Mid-infrared Photothermal (MIP) Microscopy*

Bioanalytical & Life Science

Monday, March 3, 2025

Organizer Caitlin Davis - Yale University

Morning 9:30 AM-12:00 PM

Room 107A

9:30 AM OC-19-01 **Advancing Metabolic Understanding Through Photothermal Infrared Microscopy in Biomedical Research**
Yeran Bai - University of Arizona

11:40 AM OC-19-07 **Time-resolved mid-infrared photothermal imaging**
Michelle Sander - Boston University

Organized Session

OC-08-00 *Mid-infrared Photothermal (MIP) Microscopy: A New Frontier of Chemical Imaging*

Instrumentation & Nanoscience

Monday, March 3, 2025

Organizer Ji-Xin Cheng - Boston University

Afternoon 2:30 PM-5:00 PM

Room 109B

3:40 PM OC-08-04 **Mid-infrared Photothermal Quantitative Phase Microscopy for High-Speed and High-Resolution Chemical Imaging**
Takuro Ideguchi - The University of Tokyo

Award

AW-03-00 *LCGC Lifetime Achievement and Emerging Leader in Chromatography*

Instrumentation & Nanoscience

Tuesday, March 4, 2025

Organizer Caroline Froncich - LCGC

Morning 8:30 AM-11:40 AM

Room 211

9:30 AM AW-03-02 **Composite Porous Polymers Using Thermoplastic Supports**
John Riviello - Trovion Company

10:00 AM AW-03-03 **Exploring the Feasibility of Using Generative AI and Signal Processing in Solving Separation Science Problems**
M. Farooq Wahab - Department of Chemistry & Biochemistry, University of Texas at Arlington

Award

AW-05-00 *Pittsburgh Spectroscopy Award*

Environment & Energy

Tuesday, March 4, 2025

Organizer Rieko Ishima - Pittcon

Morning 8:30 AM-11:40 AM

Room 104A

9:30 AM AW-05-02 **PAHsing to Compute Vibrational Spectra**
Ryan Fortenberry - Department of Chemistry & Biochemistry, University of Mississippi

10:00 AM AW-05-03 **Photoelectron spectroscopy of cryogenically-cooled SO₃⁻ and HOSO₂⁻ anions and the dynamics of the key atmospheric SO₂ oxidation reaction by the hydroxyl radical**
Lai-Sheng Wang - Brown University

10:40 AM AW-05-04 **Accurate quantum chemistry to characterize novel molecules involving actinide elements**
Kirk Peterson - Washington State University

11:10 AM AW-05-05 **Applications of computational chemistry for fluorinated compounds across the Periodic Table**
David Dixon - The University of Alabama

Oral

OR-34-00 *Advancements in Neurochemistry*

Bioanalytical & Life Science

Tuesday, March 4, 2025
Morning 9:30 AM-12:00 PM
Room 210A

9:30 AM OR-34-01 **Chemical Derivatization of RNA for Enhanced Mass Spectrometry (MS) Detection of Ribosomal RNA Modifications in *A. californica* Neurons**
Max Sharin - Tufts University

9:50 AM OR-34-02 **Elucidating the role of thyroid hormone on microglia action during remyelination**
Matthew Zupan - University of Kansas

10:10 AM OR-34-03 **Estrogen Depletion Effects on Lipid Homeostasis and Myelination**
ESTHER HOLT - University of Kansas

10:40 AM OR-34-04 **Exploring Dynamic Dopamine Release from CD4+ T Cells: Using Fast-Scan Cyclic Voltammetry to Investigate the Mechanism of Release and Transport**
Farzaneh Asadpour - University of Cincinnati

11:00 AM OR-34-05 **Guanosine as a Contributor to Purinergic Regulation of Dopamine during Ischemia**
Moriah Weese-Myers - University of Cincinnati

11:20 AM OR-34-06 **A microfluidic electrochemical device for the real-time monitoring of extracellular potassium levels in the brain during a multimodal cardiac arrest study.**
Chiara Cicatiello - Imperial College London

11:40 AM OR-34-07 **Micro-invasive Sampling of Interstitial Fluid in Rat Brain**
Qun Cao - MIT

Organized Session

OC-02-00 *Analysis of Vaccine Antigens, Adjuvants, and Delivery Systems with Multi-Angle Light Scattering*

Pharmaceutical & Biologics

Tuesday, March 4, 2025
Morning 9:30 AM-12:00 PM
Room 206B

Organizer Emory Payne - Merck & Co.

9:30 AM OC-02-01 **Light Scattering Solutions for Vaccine-Related Molecules and Nanoparticles**
Sophia Kenrick - Wyatt Technology, LLC

9:50 AM OC-02-02 **Leveraging Asymmetric-Flow Field-Flow Fractionation for Characterization of Stable Nanoemulsion Adjuvants**
Jack Terry - The University of Kansas

10:10 AM OC-02-03 **Asymmetrical Flow Field-flow Fractionation with Multi-angle Light Scattering for Separation and Characterization of Lipid Nanoparticles**
Juan Bian - Genentech

10:40 AM OC-02-04 **(WITHDRAWN on HOLD) SEC-MALS Analysis of the MAPS Vaccine Platform**
Justin Godinho - GSK

11:00 AM OC-02-05 **Enhancing the Utilization of MALS in the Vaccine R&D Environment**
Ray McClain - Merck

11:20 AM OC-02-06 **Real-time monitoring and control of downstream vaccine production processes by RT-MALS**
Daniel Some - Waters | Wyatt Technology

Oral

OR-36-00 *Developments in Forensics & Toxicology*

Bioanalytical & Life Science

Tuesday, March 4, 2025
Morning 9:30 AM-12:00 PM
Room 210B

9:30 AM OR-36-01 **Development of a standard validation method of alternative canine explosive training aids**

Katherine Castro - Florida International University

9:50 AM OR-36-02 **Utilizing Mass Spectrometry to Reveal the Eggs-citing Volatiles Emissions of *Lucilia sericata* Eggs as a Function of Age—Towards Development of New Approaches for Postmortem Interval Determination**

Alexa Figueroa - Louisiana State University

10:10 AM OR-36-03 **Beyond SPME: Alternative Approach to Fentanyl Vapor Sampling**

Galpayage Dona Thouli Lochana Jayawardana - Florida International University

10:40 AM OR-36-04 **Evolution of VOC Profiles during Early Human and Animal Decomposition in Application for Canine Detection**

Fantasia Whaley - Florida International University

11:00 AM OR-36-05 **Field Deployable Noninvasive Screening Systems for Drugs and Alcohol**

Jan Halámek - Texas Tech University

11:20 AM OR-36-06 **Investigating the Controls for New Point-of-Need Sensors using Electrochemical Impedance Spectroscopy**

Sarah Bramlitt-Harris - University of New Hampshire

11:40 AM OR-36-07 **Rapid and Sensitive Detection of Cocaine Utilizing Aptamer-Dye Complexes**

THINH NGUYEN - North Carolina State University

Oral

OR-30-00 *Diverse Applications and Advancements in Environmental Analyses I*

Environment & Energy

Tuesday, March 4, 2025
Morning 9:30 AM-12:00 PM
Room 107C

9:30 AM OR-30-01 **Enhancing Water Quality Monitoring in Resource-Limited Settings: A User-Friendly Approach for Contaminant Detection**
Prakash Aryal - Colorado State University

9:50 AM OR-30-02 **Sorption and desorption of 17alpha-ethinylestradiol and beta-estradiol on nylon microparticles using fluorescence detection**
Christian Manuelli - University of Massachusetts Dartmouth

10:10 AM OR-30-03 **Advancing SF6 Leak Detection and Monitoring: High Sensitivity Solutions for a Greener Future**
Ismo Kauppinen - Gasera Ltd.

10:40 AM OR-30-04 **Evaluating the Partitioning of Emerging Organic Pollutants in Chitin**
Madison Williams - The University at Buffalo

11:00 AM OR-30-05 **Advancements in Drinking Water Analysis with Universal Collision-Reaction Gas Technology**
Aaron Hineman - PerkinElmer

11:20 AM OR-30-06 **Utilizing Daucus Carota for Heavy Metal Analysis of Chicago's Pilsen and Little Village Industrial Corridors**
Alyssa Tovar - Loyola University Chicago

11:40 AM OR-30-07 **DOZN™2.1 - A Quantitative Green Chemistry Evaluator**
Ettigounder (Samy) Ponnusamy - MilliporeSigma

Oral

OR-35-00 *Forensic Analysis of Controlled Substances*

Cannabis & Psychedelic

Tuesday, March 4, 2025
Morning 9:30 AM-12:00 PM
Room 207

9:30 AM OR-35-01 **Open Probe Fast GC-MS – Real Time Analysis with Separation and its Forensic Applications**
Aviv Amirav - Tel Aviv University

9:50 AM OR-35-02 **High-level Density Functional Theory Calculations Reveal a Rapid Approach for Differentiating Marijuana from Hemp by DART-HRMS**
Benedetta Garosi - Louisiana State University

10:10 AM OR-35-03 **Investigating Counterfeit Cannabis Edibles Using Vibrational Spectroscopy**
Marisia Fikiet - University of New Haven

Oral

OR-31-00 *Improvement of Methods for PFAS Analysis*

Environment & Energy

Tuesday, March 4, 2025
Morning 9:30 AM-12:00 PM
Room 108

9:30 AM OR-31-01 **Non-Targeted Analysis of PFAS in Fluoropolymers using High Performance Liquid Chromatography-Quadrupole Time-of-Flight Mass Spectrometry**
Brooke Baumgarten - Los Alamos National Laboratory

9:50 AM OR-31-02 **Native and Stable Isotope Labelled PFAS Reference Material Optimization**
Dan Biggerstaff - LGC

10:10 AM OR-31-03 **LC/MS Approaches for Analysis of PFAS Short and Long Chain Mixtures**
Barry Boyes - Advanced Materials Technology, Inc.

10:40 AM OR-31-04 **Organo-silica hybrids media with “click chemistry” functionalization to analyze PFAS via SFC**
Luis Colón - University at Buffalo

11:00 AM OR-31-05 **Development of a rapid, in-field sensor for performing PFAS analysis on-site**
Emily Hicks - FREDsense Technologies Corp.

11:20 AM OR-31-06 **Advanced LC/MS/MS Methods for CECs in Waters**
Yongtao Li - Eurofins Eaton Analytical, LLC

11:40 AM OR-31-07 **Transforming Pollution into Potential: The Promise of Waste Plastic Pyrolysis Oil and Its Analytical Challenges**
Jean-Francois Borny - Lummus Technology

Oral

OR-32-00 *Innovations in Forensic Detection Methods*

Instrumentation & Nanoscience

Tuesday, March 4, 2025
Morning 9:30 AM-12:00 PM
Room 205B

9:30 AM OR-32-01 **Nanobiosensor Arrays for Rapid On-Site Multiplexed Detection of Forensically Relevant Body Fluids at Crime Scenes**
Samridha Dutta - University of California, Riverside

9:50 AM OR-32-02 **Light it up! Photoluminescent Lead Detection for Forensic Investigations**
Kendra Adelberg - AMOLF

10:10 AM OR-32-03 **Real-Time Detection of Hazardous Dusts from Narcotics and Explosives using Single-Particle Mass Spectrometry**
Andreas Walte - Photonion GmbH, Schwerin, Germany

10:40 AM OR-32-04 **Discovery of a Simultaneous False Positive and Negative Illicit Drug Identification with Portable Surface Enhanced Raman Spectroscopy (SERS)**
Ella Galvan - University of New Haven

11:00 AM OR-32-05 **Illicit Drug Analysis in the Field with a Portable Instrument "Toolkit"**
Brooke Kammrath - University of New Haven

11:20 AM OR-32-06 **Investigating Odor Signatures of Electronic Storage Devices**
Samuel Friday - University of New Haven

11:40 AM OR-32-07 **Forensic Soil Analysis by Particle Correlated Raman Spectroscopy (PCRS): Comparison to Traditional Methods**
Jasmine Kaur - UNIVERSITY OF NEW HAVEN

Organized Session

OC-29-00 *Ionophore-Based Chemical Sensors I*

Bioanalytical & Life Science

Organizer Philippe Buhlmann - University of Minnesota

Tuesday, March 4, 2025
Morning 9:30 AM-12:00 PM
Room 107B

Oral

OR-33-00 *Methods in Life Science Research*

Instrumentation & Nanoscience

Tuesday, March 4, 2025
Morning 9:30 AM-12:00 PM
Room 205C

9:30 AM OR-33-01 **Aptamer Nanopipette Sensors for Enhanced Detection of Target Molecules**
Ana Ramirez - Florida State University Department of Chemistry & Biochemistry

9:50 AM OR-33-02 **Single-Particle Spectroscopic Chromatography Reveals Heterogeneous RNA Loading and Size Correlations in Lipid Nanoparticles**
Sixuan Li - Johns Hopkins University

10:10 AM OR-33-03 **Computationally Exploring Protein and Peptide Retention Behavior on Stationary Phase Gradients using LSS**
Ash Young - Virginia Commonwealth University

10:40 AM OR-33-04 **Single-Cell Force Spectroscopy Uncovered Region-Specific Interactions Between Plant Growth-Promoting Rhizobacteria and the Roots of the Model Plant, Arabidopsis Thaliana**
YILEI XUE - University of Toronto

Organized Session

OC-14-00 *Recent Advancements in Miniaturized Sensing Platforms for Biomolecular Monitoring*

Bioanalytical & Life Science

Tuesday, March 4, 2025

Organizer Tamoghna Saha - University of California, San Diego

Morning 9:30 AM-12:00 PM

Room 107A

9:50 AM OC-14-02 **Plasmon-Enhanced Paper Lateral Flow Assays for Point-of-Care Testing**

Nianqiang Wu - University of Massachusetts Amherst

10:40 AM OC-14-04 **CRISPR-powered multiplexed biosensors for point-of-care testing of diseases and beyond**

Can Dincer - Technical University of Munich

11:20 AM OC-14-06 **Tellurene Wearable Sensors**

Wenzhuo Wu - Prudue University

11:40 AM OC-14-07 **How Effective Is Passive Perspiration for Continuous Glucose Monitoring?**

Tamoghna Saha - University of California, San Diego

Award

AW-04-00 *Pittsburgh Analytical Chemistry Award*

Bioanalytical & Life Science

Tuesday, March 4, 2025

Organizer John Stephans - Pittcon

Afternoon 1:30 PM-4:40 PM

Room 104A

1:40 PM AW-04-01 **Transforming Analytical Science from Unexplored to Routine to Next Generation**

Daniel W. Armstrong - University of Texas at Arlington

2:30 PM AW-04-02 **Exploitation of Zwitterionic Surfactant Systems in Synthetic and Separation Science Applications**

Willie Hinze - Wake Forest University, Department of Chemistry

3:00 PM AW-04-03 **Exploring Next-Generation Tools for Improved Analytical Efficiency in Pharmaceutical Development**

Zachary Breitbach - AbbVie, Inc.

3:40 PM AW-04-04 **Data Science Tools for Advanced Method Development and Prediction in Analytical Measurements**

Kevin Schug - The University of Texas at Arlington

4:10 PM AW-04-05 **High Throughput Nucleic Acid Purification and Analysis**

Jared Anderson - Iowa State University

Oral

OR-39-00 *Bioanalytical Method Development in LC-MS*

Bioanalytical & Life Science

Tuesday, March 4, 2025
Afternoon 2:30 PM-5:00 PM
Room 210A

2:30 PM OR-39-01 **A Comparison of Sample Preparation Techniques for the Analysis of Drugs of Abuse in Oral Fluids**
Samantha Herbick - Restek Corporation

2:50 PM OR-39-02 **BIOANALYTICAL METHOD DEVELOPMENT AND VALIDATION FOR SIMULTANEOUS ESTIMATION OF PHYTOMARKERS IN NOVEL ANTI-DIABETIC HERBAL FORMULATION**
Avani Khristi - Parul Institute of Pharmacy

3:10 PM OR-39-03 **Impact of HPLC Pump Performance and Instrumentation on Non-Specific Adsorption of Peptides**
Andrew Steere - Waters Corporation

3:40 PM OR-39-04 **Rapid and Online Microvolume Flow-Through Dialysis Probe for Sample Preparation in Veterinary Drug Residue Analysis**
Hanin Diab - Texas Tech University - Amarillo

4:00 PM OR-39-05 **Accurate Quantitation of Unknowns in Non-Target LC-MS Analysis Using Experimentally Measured Response Factors**
Rebecca Stevens - Smith and Nephew

4:20 PM OR-39-06 **Using AI to enable rapid decision making by transforming raw LC-MS data to identified and quantified molecules**
Jennifer Campbell - Matterworks

Oral

OR-43-00 *Bioanalytical Separation Techniques*

Bioanalytical & Life Science

Tuesday, March 4, 2025
Afternoon 2:30 PM-5:00 PM
Room 207

2:30 PM OR-43-01 **Re-emergence, Theory, and Practice of Slalom Chromatography For Analyzing Large DNA Biopolymers Relevant in Cell and Gene Therapies**
Fabrice Gritti - Waters Corporation

2:50 PM OR-43-02 **Analyzing Charge Heterogeneity in Monoclonal Antibodies and Fusion Proteins via SCX-HPLC**
Zeshan Aqeel - YMC America

3:10 PM OR-43-03 **Recent advances in the chromatographic analysis of adeno-associated virus vectors**
Jukka Kervinen - Tosoh Bioscience LLC

Oral

OR-40-00 *Current Biomedical Detection and Monitoring Methods*

Bioanalytical & Life Science

Tuesday, March 4, 2025
Afternoon 2:30 PM-5:00 PM
Room 210B

- 2:30 PM OR-40-01 **3D printed skyscraper electrochemical biosensor for the detection of tumour necrosis factor alpha (TNF α) in faeces**
Khalil Khadim Hussain - Brighton University
- 2:50 PM OR-40-02 **Monitoring real-time neurochemical changes during a porcine model of cardiac arrest and resuscitation**
Sally Gowers - Imperial College London
- 3:10 PM OR-40-03 **Monitoring the electroactive cargo of extracellular vesicles from various cancer cell lines**
Bhavik Patel - University of Brighton
- 3:40 PM OR-40-04 **Integrated fingertip wearable microgrid system for autonomous energy management and metabolic monitoring**
Shichao Ding - University of California San Diego
- 4:00 PM OR-40-05 **Integrated biosensor strip for near-real-time analysis of levodopa levels and motor performance in Parkinson's disease**
Kuldeep Mahato - University of California San Diego
- 4:20 PM OR-40-06 **Validation and use of a microfluidic biosensing system for dynamic determination of acetylcholinesterase activity**
Georgia Smith - Imperial college london
- 4:40 PM OR-40-07 **A flexible microdialysis probe coupled with a miniaturised biosensor system for real-time neurochemical monitoring in TBI patients**
Xueer Zhang - Imperial College London

Oral

OR-37-00 *Diverse Applications and Advancements in Environmental Analyses II*

Environment & Energy

Tuesday, March 4, 2025
Afternoon 2:30 PM-5:00 PM
Room 108

- 2:30 PM OR-37-01 **Rapid and Accurate Determination of Challenging Metals in Petroleum Distillates: ASTM D8110-17 analysis with ICP-MS**
Aaron Hineman - PerkinElmer
- 2:50 PM OR-37-02 **Innovative Remote Monitoring of Shipping Emissions**
Ismo Kauppinen - Gasera Ltd.
- 3:10 PM OR-37-03 **The Analysis of Fresh and Produced Waters in Hydraulic Fracturing Fluids with the PlasmaQuant 9100 Elite ICP-OES**
Jesus Acapulco - Analytik Jena
- 3:40 PM OR-37-04 **DIRECT ANALYSIS OF MERCURY IN COSMETICS USING THE ISO 23674 METHOD**
Jesse Davidson - Milestone, Inc.
- 4:00 PM OR-37-05 **Combining waste PET-MIL-101(Fe) and cellulose acetate polymeric membrane for the preconcentration and extraction of neonicotinoid insecticides in water samples**
Philiswa Nomngongo - University of Johannesburg
- 4:20 PM OR-37-06 **Sustainability in Scientific Research: Frameworks for Reducing Environmental Footprint of the Scientific Supply Chain.**
Jazmine Stenger-Smith - Impact Laboratories a subsidiary of 501c3 non-profit, My Green Lab
- 4:40 PM OR-37-07 **Flexible screen-printed electrochemical sensor based on Copper particles, Poly 1,5-Diaminonaphthalene and Carbon Black for nitrate detection in water**
SAAD BENHAIBA - Hassan II University of Casablanca, Morocco

Organized Session

OC-04-00 *Doing More with the Same: Workflow Innovations & Simplification of Processes*

Instrumentation & Nanoscience

Tuesday, March 4, 2025
Afternoon 2:30 PM-5:00 PM
Room 205B

Organizer Helen Evans-Lemmo - Ego Pharmaceuticals

- 2:30 PM OC-04-01 **If It's Not Broken, Why Fix It?...Laboratory Business Sustainability**
Helen Evans-Lemmo - Ego Pharmaceuticals
- 2:50 PM OC-04-02 **Automation of Sample Preparation**
Peter Dawes - ePrep
- 3:10 PM OC-04-03 **Revolutionize How You Manage Your Work – Complex Projects Made Easy with ClickUp**
Angela Bunner - Field CTO, ClickUp
- 3:40 PM OC-04-04 **Unlocking Efficiency: Transforming Sample Preparation in Pharmaceutical Labs Through Automation**
Justin Lacomel - Ego Pharmaceuticals
- 4:20 PM OC-04-06 **Enabling hyper accuracy and precision for sample preparation of drug products**
Bradley VanMiddlesworth - ePrep, Inc.

Organized Session

OC-05-00 *Driving Innovation in Pharmaceuticals: Highlights of the Enabling Technologies Consortium's Impact and Future Directions*

Pharmaceutical & Biologics

Organizer Michael Rerick - GSK

Tuesday, March 4, 2025

Afternoon 2:30 PM-5:00 PM

Room 206B

2:30 PM OC-05-01 **UltraPAT: High sensitivity Processes Analytical Technologies for Pharma enabled by advances in deep UV spectroscopy**
Rohit Bhartia - Photon Systems Inc.

2:50 PM OC-05-02 **The Crucial Interplay between Mechanism and Mass Transport for Scaling Organic Electrosynthesis**
Marcel Schreier - University of Wisconsin-Madison

Organized Session

OC-30-00 *Ionophore-Based Chemical Sensors II*

Bioanalytical & Life Science

Organizer Philippe Buhlmann - University of Minnesota

Tuesday, March 4, 2025

Afternoon 2:30 PM-5:00 PM

Room 107B

Oral

OR-49-00 *Methods for Analysis in Life Sciences*

Instrumentation & Nanoscience

Tuesday, March 4, 2025

Afternoon 2:30 PM-5:00 PM

Room 205C

3:40 PM OR-49-01 **An Approach to Make an Adaptive Immunoassay to Detect an Unknown Variant**
Josselyn Mata Calidonio - University of Massachusetts Boston

4:00 PM OR-49-02 **Comparison of plasma/serum electrolyte and metabolite testing on blood gas ABL837 and core laboratory Cobas8000 analyzers**
Vera Chen - University of New Brunswick

4:20 PM OR-49-03 **Multiplexed paper diagnostics for infectious diseases using multiplexed gold nanoparticles**
Kimberly Hamad-Schifferli - University of Massachusetts Boston

4:40 PM OR-49-04 **ATMS robotic models, mechanical stimulation, and AI enhance tissue engineering and disease mechanism research, facilitating drug discovery**
VIC CHANG - TAIHOYA CORPORATION

Oral

OR-42-00 *New Applications in Bioanalytical and Agricultural Science*

Bioanalytical & Life Science

Tuesday, March 4, 2025
Afternoon 2:30 PM-5:00 PM
Room 207

3:40 PM OR-42-01 **Spearmint (*Mentha spicata* L.) leaves essential oil: Comparative compositional and biological attributes as a function of different agroclimatic regions**
Dr Iram Saba - GC Women University Sialkot

4:00 PM OR-42-02 **Development of New Disease Diagnostic Methods Using AI and Spectroscopy**
James Chapman - Griffith University

4:20 PM OR-42-03 **X-Ray Visualized Chemically Responsive Hydrogel Sensors for Detection of Hip Implant Infection**
Rong Wang - Clemson University

4:40 PM OR-42-04 **Rapid Detection of Honey Quality: Utilizing UV-Vis Spectroscopy and Chemometrics**
Mohamed Amin - University at Albany

Organized Session

OC-12-00 *NIJ - Advancements in the Analysis of Forensic Trace Evidence*

Instrumentation & Nanoscience

Organizer Gregory Dutton - National Institute of Justice

Tuesday, March 4, 2025
Afternoon 2:30 PM-5:00 PM
Room 106

9:30 AM OC-12-01 **The evaluation of data fusion methods for addressing source-level questions in forensic paint examinations**
Patrick Buzzini - Sam Houston State University

3:40 PM OC-12-04 **Pigment Identification in Solution Dyed Fibers**
Christopher Palenik - Microtrace LLC

4:00 PM OC-12-05 **Fire Debris Interpretation Using Quantitative Measures of Chromatographic Features**
Brenda Christy - Virginia Department of Forensic Science

4:20 PM OC-12-06 **Recovery and Analysis of Less Volatile Components for the Identification of Ignitable Liquid Residues in Fire Debris by DART-MS**
Mengliang Zhang - Ohio University

Oral

OR-38-00 *Substrates and Application Innovations in Raman Spectroscopy*

Instrumentation & Nanoscience

Tuesday, March 4, 2025
Afternoon 2:30 PM-5:00 PM
Room 109B

2:30 PM OR-38-01 **2D materials as Raman enhancement substrates for chemical sensing**
Xi Ling - Boston University

2:50 PM OR-38-02 **Plasmonic nanostructures modified by conducting polymers as an efficient substrate in EC-SERS studies**
Kacper Jędrzejewski - Faculty of Chemistry, University of Warsaw

3:10 PM OR-38-03 **Towards better detection of biological compounds - modified graphene oxide and gold nanoparticles as sensitive SERS substrates.**
Krystian Pupel - Faculty of Chemistry, University of Warsaw

3:40 PM OR-38-04 **Ti3C2Tx MXenes Application in Wastewater Treatment and Sensing of Hazardous Materials**
Simonas Ramanavicius - SRI Center for Physical Sciences and Technology

4:00 PM OR-38-05 **SICM coupled with Raman spectroscopy**
Aleix Güell - Ecole Polytechnique - Institut Polytechnique de Paris

Symposium

SY-14-00 *Advances in Biological Mass Spectrometry*

Bioanalytical & Life Science

Tuesday, March 4, 2025
Morning 9:30 AM-11:40 AM
Room 104B

Organizer Ronghu Wu - Georgia Institute of Technology

10:00 AM SY-14-02 **Expanding the Landscape of Lysine Posttranslational Modifications with Chemical and Functional Proteomics**
Yue Chen - University of Minnesota at Twin Cities

11:10 AM SY-14-04 **Proteomics of highly post-translationally modified extracellular matrix proteins**
Joseph Zaia - Boston University Medical Campus

2:30 PM SY-14-01 **Application and Challenges of LC-MS for Bioanalysis**
Perry Wang - FDA

Symposium

SY-16-00 *Analytical Methodologies for Cannabis Characterization*

Cannabis & Psychedelic

Organizer Imma Ferrer - University of Colorado

Tuesday, March 4, 2025
Morning 9:30 AM-11:40 AM
Room 209

9:30 AM SY-16-01 **Cannabis Pesticide Residue Analysis Limit of Detection: A Case Study Showing Why Mandated Methods Don't Work and Demonstration of a Practical Alternative**
Julie Kowalski - jkSS, LLC

10:00 AM SY-16-02 **Volatile Analysis of Terpenes and Cannabinoids for the Geographical Sourcing of Marijuana**
Lauryn DeGreeff - Florida International University, Department of Chemistry, Global Forensic and Justice Center

10:40 AM SY-16-03 **Quantification of CBD, Δ^9 -THC and their isomers in Cannabis-based drug matrices by UHPLC-MS: A comparison between LTQ and Orbitrap MS Analyzers**
WANDERSON ROMAO - Instituto Federal do Espírito Santo, campus Vila Velha

11:10 AM SY-16-04 **A Novel Cannabinoid in Hemp: Isolation by Flash Chromatography and Identification by LC/Q-TOF-MS**
Imma Ferrer - University of Colorado

Symposium

SY-15-00 *Green Chromatography - The Heart of Sustainability and Efficiency in Pharmaceutical and Drug Analysis*

Pharmaceutical & Biologics

Organizer Nicholas Snow - Seton Hall University

Tuesday, March 4, 2025
Morning 9:30 AM-11:40 AM
Room 206A

9:30 AM SY-15-01 **Green Chromatography - The Heart of Sustainability and Efficiency in Pharmaceutical and Drug Analysis Snow**
Nicholas Snow - Seton Hall University

10:00 AM SY-15-02 **Greener Separations with Capillary Liquid Chromatography**
James Grinias - Rowan University

10:40 AM SY-15-03 **Achieving Sustainability with Complex Pharmaceutical Challenges: Innovations to Solve Problems**
Michael Hicks - Merck & Co., Inc.; AR&D

Symposium

SY-20-00 *Challenges of Analytical Method Development for Entheogenic Psychedelic Products Part 2: A Focus on In-Matrix Psilocybe Cubensis Testing*

Cannabis & Psychedelic

Organizer Dan DeLurio - Restek Corporation

Tuesday, March 4, 2025
Afternoon 2:30 PM-4:40 PM
Room 209

2:30 PM SY-20-01 **Neuroactive fungal secondary metabolites: Psiloids and the mycochemical landscape beyond**
Kyle Meyer - Fungi Perfecti LLC

3:00 PM SY-20-02 **Homogenization, Extraction, Stability and Testing by LC-UV and LC-MS/MS of Psychoactive Alkaloids Found in Psychedelic Mushrooms**
Melinda Urich - Restek Corporation

3:40 PM SY-20-03 **A Comparative Exploration of Psychedelic Mushroom Testing Protocols: Insights and Lessons from Cannabis**
Sarah Otis - Anresco Laboratories

4:10 PM SY-20-04 **Psychedelic and Psychoactive Compounds from Botanical Sources by LC-MS/MS**
Anthony Fontana - Alkemist Labs

Symposium

SY-17-00 *Innovative Nanobiotechnology for Advanced Diagnostics and Therapeutics*

Bioanalytical & Life Science

Organizer X. Nancy Xu - Old Dominion University

Tuesday, March 4, 2025
Afternoon 2:30 PM-4:40 PM
Room 104B

2:30 PM SY-17-01 **MOSAIC: A New Platform for Ultrasensitive Protein Analysis**
David Walt - Harvard Medical School/ Brigham and Women's Hospital

3:00 PM SY-17-02 **Innovative Nanobiotechnology for Biomarker Discovery**
X. Nancy Xu - Old Dominion University

3:40 PM SY-17-03 **Tools for Analyzing, Controlling, and Simulating Biological Systems**
Edward Boyden - MIT, HHMI

Symposium

SY-21-00 *New Methodologies in Catalyst Development for Energy Conversion Reactions Enabled by Mechanistic Study*

Environment & Energy

Organizer Charles Machan - University of Virginia

Tuesday, March 4, 2025
Afternoon 2:30 PM-4:40 PM
Room 107C

3:00 PM SY-21-02 **Controlling Product Selectivity in Electrocatalytic CO₂ reduction. A Case Study of Homogeneous Manganese Tricarbonyl Catalysts**
Jonathan Rochford - UMass Boston

3:40 PM SY-21-03 **Harnessing Porous Frameworks for Controlling Electrocatalyst Microenvironments**
Agnes Thorarinsdottir - University of Rochester

4:10 PM SY-21-04 **Isotope Effects in Catalytic Reactions: Implications for Catalyst Design**
Alfredo Angeles-Boza - University of Connecticut

Symposium

SY-19-00 *Novel tools for the analysis of excipients, impurities, residuals, and extractables and leachables*

Pharmaceutical & Biologics

Tuesday, March 4, 2025

Organizer Justin Shearer - GSK

Afternoon 2:30 PM-4:40 PM

Room 206A

3:40 PM SY-19-03 **Impurity Analysis and Control for Pharmaceutical Compounds using Different Analytical Method Development and Optimization Tools**
Yanqun Zhao - AbbVie, Inc.

Symposium

SY-18-00 *Sensing Technology in Neuroscience: From Single Cells to In Vivo Measurements*

Bioanalytical & Life Science

Tuesday, March 4, 2025

Organizer Ashley Ross - University of Cincinnati

Afternoon 2:30 PM-4:40 PM

Room 107A

2:30 PM SY-18-01 **Electroanalytical Monitoring of Catecholamine and Opioid Peptide Exocytosis Events at Single Cells**
Leslie Sombers - University of Florida - Pharmacodynamics

3:00 PM SY-18-02 **Approaching synaptic scales with nanoscale aptamer-based biosensors**
Nako Nakatsuka - Neuro-X Institute, EPFL

3:40 PM SY-18-03 **Sensing neurochemicals along the gut-brain-immune axis**
Ashley Ross - University of Cincinnati

4:10 PM SY-18-04 **Therapeutic Drug Distribution Across the Brain is Heterogeneous as Revealed by In Vivo, Spatially Resolved Aptamer-Based Sensing**
Netz Arroyo - Johns Hopkins School of Medicine

Organized Session

OC-26-00 *PAI-NET Cutting-edge IR Spectroscopy for Studying Organic Thin Films, Sensing Surfaces and Material Recycles*

Instrumentation & Nanoscience

Tuesday, March 4, 2025

Organizer Takeshi Hasegawa - ICR, Kyoto Univ., Japan

Morning 9:30 AM-12:00 PM

Room 109B

Organized Session

OC-20-00 *The Future of Analytical Chemistry Education*

Professional Development

Tuesday, March 4, 2025

Organizer Bhavik Patel - University of Brighton

Morning 9:30 AM-12:00 PM

Room 210C

Organized Session

OC-03-00 *Artificial Intelligence and Vibrational Spectroscopy: From the Cutting-edge Research to Practical Applications*

Bioanalytical & Life Science

Tuesday, March 4, 2025

Organizer Jürgen Popp - Leibniz-Institute of Photonic Technologies, Jena, Germany

Afternoon 2:30 PM-5:00 PM

Room 211

2:30 PM OC-03-01 **Enhancing medical diagnostics with AI-driven Raman spectroscopy**
Juergen Popp - Leibniz Institute of Photonic Technology

4:10 PM OC-03-03 **New horizons in forensic applications of Raman spectroscopy enabled by artificial intelligence**
Igor Lednev - University at Albany, State University of New York

Award

AW-08-00 *Williams-Wright Award (Presented by The Coblenz Society)*

Instrumentation & Nanoscience

Organizer Luisa Profeta - Coblenz Society

Wednesday, March 5, 2025

Morning 8:30 AM-11:40 AM

Room 104A

8:40 AM AW-08-01 **Fostering the Application of Vibrational Spectroscopy through New Instruments and Methods**

David Schiering - 908 Devices, Inc.

9:30 AM AW-08-02 **Dave is delightful, and other tales from the fringe**

Christopher Brown - 908 Devices

10:00 AM AW-08-03 **45 Years of Developing Raman Instrumentation: Cadillacs to Big Macs**

Keith Carron - SKM Instruments

10:40 AM AW-08-04 **A 40 year spectroscopy hardware journey**

Bob Messerschmidt - COR Health Inc.

11:10 AM AW-08-05 **Williams Wright Award Symposium**

Andre Sommer - Molecular Microspectroscopy Laboratory

Oral

OR-45-00 *Advancements for Air Monitoring*

Environment & Energy

Wednesday, March 5, 2025

Morning 9:30 AM-12:00 PM

Room 108

9:30 AM OR-45-01 **A complete and autonomous solution for the on-line and continuous characterization of VOCs and OVOCs in ambient air**

Jean-Philippe AMIET - CHROMATOTEC

9:50 AM OR-45-02 **Detection of trace contaminants in cabin air of airplanes based on a combination of ion mobility spectrometer and other sensors**

Andreas Walte - Airsense Analytics GmbH

10:10 AM OR-45-03 **Making Sense of Indoor Carbon Dioxide Measurements**

John Saffell - NosmoTech Ltd.

10:40 AM OR-45-04 **Coupling of Photoionization Mass Spectrometry to Thermal Optical Carbon Analysis (EC/OC-Measurement) for Rapid PM-Characterization**

Ralf Zimmermann - Joint Mass Spectrometry Centre, University of Rostock and Helmholtz Munich, Germany

11:00 AM OR-45-05 **Solid-Phase Microextraction Reveals Microplastic-Mediated Transfer of Semi-Volatile Pesticides**

Hector Martinez Perez Cejuela - University at Buffalo

11:20 AM OR-45-06 **Advanced Multi-Gas Monitoring for Greenhouse Gases Using Photoacoustic Spectroscopy**

Tuomas Hieta - Gasera Ltd.

11:40 AM OR-45-07 **Validation of a virtual chromatogram modeling tool for PLOT columns**

Erica Pack - Restek

Oral

OR-47-00 *Bioanalytical Methodologies in MS and LC-MS*

Bioanalytical & Life Science

Wednesday, March 5, 2025

Morning 9:30 AM-12:00 PM

Room 210A

9:30 AM OR-47-01 **A comparison of methoxylated fentanyl analog metabolite profiles**
Jillian Morgan - National Center of Forensic Science, University of Central Florida

9:50 AM OR-47-02 **Droplet-ESI-MS for enabling high-throughput enzyme substrate screens**
Bridget Murray - University of Michigan

10:10 AM OR-47-03 **Developing an on-line SPE-UPLC-MSMS method for studying cytosine methylation in cells**
Jing Qu - Jackson State University

10:40 AM OR-47-04 **Development of a High-Resolution Paper-Spray Mass Spectrometry Method for the Detection of Newly Emerging Substances in the Illicit Drug Supply**
Allie Miskulin - University of Victoria

11:00 AM OR-47-05 **LC/MS quantitative aspects of hexafluoropropylene oxide HFPO-DA (GenX): dimer formation and in-source decarboxylation.**
Eduard Rogatsky - Mosaic Diagnostics

11:20 AM OR-47-06 **SIL-Seq: Stable Isotope Labeling for Sequencing of RNA Modifications by Liquid Chromatography-Tandem Mass Spectrometry**
Nina Fitzgerald - Tufts University

11:40 AM OR-47-07 **Automated LC-MS/MS analysis of peptide hormones secreted from islets of Langerhans**
Joshua Davis - Florida State University

Oral

OR-44-00 *Fluorescence Applications and Methods in Bioanalytical Research*

Bioanalytical & Life Science

Wednesday, March 5, 2025

Afternoon 9:30 AM-12:00 PM

Room 210B

2:30 PM OR-44-01 **(WITHDRAWN) A systematic functional screening platform to generate aptamer beacons**
Liqin Zhang - Peking University

2:50 PM OR-44-02 **Simultaneous Cytokine analysis using light-up Aptamer based on Nano-plasmonic Immunoassay (SCAN)**
jisun ki - Center for Systems Biology, Massachusetts General Hospital

3:10 PM OR-44-03 **Biocompatible fluorescent nanomaterials for sensing of biomarkers and reactive oxygen species**
Dr. Suresh Kumar Kailasa - Sardar Vallabhbhai National Institute of Technology

3:40 PM OR-44-04 **Evaluation of covalently binding fluorogenic dyes for screening of protein-biomolecular inhibition**
Jonathan Ashby - Trinity College

Organized Session

OC-23-00 *Innovative Detection Approaches for Organs on Chips, Cell Analysis and Diagnostics*

Bioanalytical & Life Science

Wednesday, March 5, 2025

Organizer Susan Lunte - University of Kansas

Morning 9:30 AM-12:00 PM

Room 107A

9:30 AM OC-23-01 **New Approaches of Integrating Electrodes into Microfluidic Devices for Analysis using 3D Printing**

R. Scott Maritn - Saint Louis University

10:10 AM OC-23-03 **Microfluidic paper-based analytical devices for salivary diagnostics**

Wendell Coltro - Universidade Federal de Goiás

10:40 AM OC-23-04 **Microchip electrophoresis methods for the analysis of reaction products of RNOS with proteins**

Susan Lunte - University of Kansas

11:00 AM OC-23-05 **Fluorescence anisotropy and mass spectrometry for assaying dynamic cellular secretions**

Michael Roper - Florida State University

11:20 AM OC-23-06 **Microengineered platforms for improved stimulation and culture of tissues ex vivo**

Ashley Ross - University of Cincinnati

Symposium

hold *JAIMA: Analytical Solutions for Research, Development & CMC of Novel Modalities of Drugs ~ Comprehensive Understanding of Molecular Structure, Dynamics and Function*

Pharmaceutical & Biologics

Wednesday, March 5, 2025

Organizer Kouhei Tsumoto - The University of Tokyo

Morning 9:30 AM-11:40 AM

Room 206A

Oral

OR-46-00 *Methods and Applications in Polymer Analysis*

Instrumentation & Nanoscience

Wednesday, March 5, 2025

Morning 9:30 AM-12:00 PM

Room 205C

9:30 AM OR-46-01 **Tandem Evolved Gas–Gas Chromatography–Mass Spectrometry**

Derek Dwyer - Oak Ridge National Laboratory

9:50 AM OR-46-02 **A step-by-step analytical protocol for detecting and identifying minor differences in like materials and polymers Using Pyrolysis -Gas Chromatography/Mass Spectrometry Technique**

Athena Nguyen - Frontier Lab Americas

10:10 AM OR-46-03 **Foreign Particle Analysis - Modern AI-Driven Solutions**

Nisarg Mistry - Houston MJ Associates

10:40 AM OR-46-04 **Identification of nanoscale polymer structures by Infrared Nanospectroscopy**

Tobias Gokus - attocube Systems AG

11:00 AM OR-46-05 **Comparative study of polymers mechanical properties determined by atomic force microscopy**

Inga Morkvėnaitė-Vilkončienė - State research institute Center for Physical Sciences and Technology

11:20 AM OR-46-06 **Automated data analysis and machine learning-driven assessment of environmental microplastics by TGA-FTIR**

Daniel Prezgot - National Research Council Canada

Organized Session

OC-24-00 *Novel Modalities/Vaccines*

Pharmaceutical & Biologics

Organizer Bingchuan Wei - Genentech

Wednesday, March 5, 2025

Morning 9:30 AM-12:00 PM

Room 207

Symposium

SY-23-00 *ACS Division of Analytical Chemistry Symposium: Electrochemistry, Mass Spectrometry, Separations, and Spectroscopy*

Bioanalytical & Life Science

Organizer Si Wu - University of Alabama

Wednesday, March 5, 2025

Morning 9:30 AM-11:40 AM

Room 104B

10:00 AM SY-23-02 **Mass Spectrometry-Based Top-Down Proteomics in Nanomedicine: Proteoform-Specific Measurement of Protein Corona**

liangliang sun - Michigan State University

Symposium

SY-28-00 *Advances in PFAS Analysis: Analytical Challenges and Solutions*

Environment & Energy

Organizer Silvana Andreescu - Florida International University

Wednesday, March 5, 2025

Morning 9:30 AM-11:40 AM

Room 107C

9:30 AM SY-28-01 **Rapid Detection of PFAS in Water Using Field-Effect Transistor Sensors Based on 2D Nanomaterials**

Junhong Chen - University of Chicago/Argonne National Laboratory

10:00 AM SY-28-02 **Analysis of the relative abundances of perfluorooctane sulfonate isomers in biological samples**

Diana Aga - University at Buffalo

10:40 AM SY-28-03 **Common and distinctive Raman spectral features of per- and polyfluoroalkyl substances for their identification and distinction**

Haoran Wei - University of Wisconsin-Madison

Symposium

SY-22-00 *Analyst at 150: The Longest-serving Measurement Science Journal Continues to Shape the Field*

Bioanalytical & Life Science

Organizer Ryan Bailey - University of Michigan

Wednesday, March 5, 2025

Morning 9:30 AM-11:40 AM

Room 211

9:30 AM SY-22-01 **The SEISMIC facility for spatially resolved single and sub-cellular omics**

Melanie Bailey - University of Surrey

11:10 AM SY-22-04 **Multiplexed Biomarker Analysis to Improve Diagnostics of Infections and Infectious Diseases**

Ryan Bailey - University of Michigan

Symposium

SY-24-00 *Biosensors and Digital Diagnostics for the Point-of-Care (Presented in Cooperation with the IAEAC)*

Bioanalytical & Life Science

Wednesday, March 5, 2025

Organizer Antje Baeumner - University of Regensburg

Morning 9:30 AM-11:40 AM

Room 106

10:40 AM SY-24-03 **Development of a low-cost, total-disposable, nucleic acid amplification lateral flow test device designed for the needs of LMIC primary healthcare**
John Connelly - Global Health Labs

11:10 AM SY-24-04 **Nanomaterial-based biosensors and sample prep for digital healthcare**
Antje Baeumner - University Regensburg

Symposium

SY-27-00 *NIJ - Seized Drugs and Forensic Toxicology Innovations and Trends*

Cannabis & Psychedelic

Wednesday, March 5, 2025

Organizer Frances Scott - National Institute of Justice

Morning 9:30 AM-11:40 AM

Room 107B

9:30 AM SY-27-01 **Separation and quantification of R-(-)- and S-(+)-methamphetamine enantiomers using chiral UPLC-MS/MS**
Heather Barkholtz - University of Wisconsin-Madison

11:10 AM SY-27-04 **Advancements for Laboratory Colorimetric Screening of Seized Drugs**
Shannon Krauss - RTI International

Symposium

SY-26-00 *Spectroscopy and the Role it Plays in the Successful Development and Deployment of Modern Biopharmaceutical Medicines*

Pharmaceutical & Biologics

Wednesday, March 5, 2025

Organizer Andrew Whitley - HORIBA

Morning 9:30 AM-11:40 AM

Room 206B

9:30 AM SY-26-04 **Screening Falsified Biologic Drug Products with A-TEEM Spectroscopy**
Brendon Lyons - Bristol Myers Squibb

10:40 AM SY-26-03 **Coherent Raman Scattering Imaging as a Quantitative Tool for Pharmacology**
Conor Evans - Massachusetts General Hospital