

2024



November 18–20, 2024

EASTERN ANALYTICAL SYMPOSIUM & EXPOSITION

Partners in Problem Solving

Crowne Plaza Princeton Conference Center, Plainsboro, NJ

FINAL PROGRAM



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The Eastern Analytical Symposium & Exposition is sponsored by the Analytical Division, the North Jersey and the New York Sections of the American Chemical Society; the American Microchemical Society; the Chromatography Forum of Delaware Valley; the Coblenz Society; the New York Microscopical Society; the Delaware Valley, New England, & New York Sections of the Society for Applied Spectroscopy; the Association of Laboratory Managers; the New Jersey Association of Forensic Scientists; and the Chinese American Chromatography Association

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For updates and discussions follow us on:



Parking & Shuttle Services

Parking is available at the nearby Princeton Alliance Church at 20 Schalks Crossing Road, Plainsboro which is just 0.7 miles away. EAS Trolley shuttle service will be available Monday & Tuesday (only) every 15 min. from 7:00 AM to 6:00 PM daily to transport you from the overflow Church parking lot to & from the Conference Center.

A message from the President



Welcome to the 2024 Eastern Analytical Symposium & Exposition (EAS). Our dedicated and diverse group of volunteers has worked tirelessly to prepare for this year's event. This particular year holds special significance for me personally, as it marks my second opportunity to serve as President of EAS, with the first being the year we moved to our current facility, the Crowne Plaza Princeton Conference Center.

This year, our theme is "Partners in Problem Solving," with a focus on how analytical scientists are uniquely positioned to build strong cross-functional partnerships and enable complex solutions through the use of data. One of my favorite related quotes is from Lord Kelvin: "... when you cannot measure it, when you cannot express it in numbers, your knowledge is of a meager and unsatisfactory kind." Experimental science relies on our ability to produce and interpret data. The challenges of today are rarely solved by single techniques but through the application of complementary approaches, making the Eastern Analytical Symposium an ideal place to interact and learn from all areas of analytical science, whether you want to dive deep into a focus area or broaden your horizons.

At EAS this year, we will offer a celebration of our EAS awards in a combined all-attendee session designed to inspire everyone in attendance. We have an exciting lineup of Technical Sessions, Short Courses, Workshops, Exposition, and all the other activities that you are accustomed to participating in at EAS. Be sure not to miss this year's keynote speaker, Ron Piervincenzi, the CEO of the United States Pharmacopeia, highlighting the critical role of analytical in society.

I hope you will enjoy your time at EAS this year, build your network, and hone your craft as partners in problem-solving.

Justin Pennington
EAS 2024 President

The Governing Board of EAS would like to THANK the following individuals for their generous donations:

Thank you to the following people for their generous donations to EAS. Your support is critical to help us achieve our mission – *"to provide pathways and opportunities to improve scientific education, training, and networking to both new scientists just entering the field, as well as experienced scientists looking to expand their knowledge base and stay current in these ever-so-quickly advancing fields."*

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As the end of the 2024-year approaches, please consider making a charitable donation to EAS. As a 501(c)3 organization, your donation is generally tax deductible (according to applicable tax laws). Help to guarantee the future of EAS as a successful conference and pathway for continued collaboration among the local and global scientific community!

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2024 EAS Conferences-in-Miniature

All Short Courses are full-day from 8:30am – 5:00pm

EAS AWARD SESSION November 19; 1:30pm – 4:00pm

Technical Session

- EAS Award for Outstanding Achievements in the Fields of Analytical Chemistry, Honoring **Jeanne Pemberton**, University of Arizona
- EAS Award for Outstanding Achievements in Separation Science, Honoring **Nelu Grinberg**, Retired
- EAS Award for Outstanding Achievements in Mass Spectrometry, Honoring **Benjamin Garcia**, Washington University-St. Louis
- EAS Award for Outstanding Achievements in Magnetic Resonance, Honoring **Rachel Martin**, University of CA - Irvine
- EAS Award for Outstanding Achievements in Vibrational Spectroscopy, Honoring **Igor Lednev**, University at Albany
- EAS Young Investigator Award, Honoring **Ariel Furst**, Massachusetts Institute of Technology

ARTIFICIAL INTELLIGENCE / MACHINE LEARNING

Technical Sessions

- Data-Driven Discovery and Design for Modern Laboratories with Machine Learning and Artificial Intelligence: From Materials Discovery to Process Optimization (11/19 AM)
- Chemical Data Science: Artificial Intelligence and Machine Learning Applied to Analytical Chemistry (11/20 AM)
- Data Science Solutions for Modern Day Problems (11/20 PM)

Short Course

- Introduction to Data Analytics for Analytical Chemists (11/17)

BIOANALYSIS

Technical Sessions

- Analytical Advancements in Bioanalysis (11/18 AM)
- Next Generation Innovations in Biotechnology (11/18 PM)
- Perspectives on Macromolecule Analysis (11/20 AM)

Short Course

- Bioanalytical Method Validation by LC-MS/MS (11/20)

CHROMATOGRAPHY

Technical Sessions

- Sustainability: Driving the Next Major Developments in the Analytical Laboratory (11/18 AM)
- The Emerging Role of Oligonucleotides in Pharmaceutical Sciences (11/18 PM)
- New Detection Approaches in Separation Science (11/18 PM)
- Separations for Therapeutic Oligonucleotides and New Modalities (11/19 AM)
- High-Performance Thin-Layer Chromatography (11/19 AM)
- Developments in Separation Sciences (11/19 AM)
- Predictive Sciences for Chromatographic Method Development (11/20 AM)
- Leveraging Modeling for Chromatographic Analysis (11/20 PM)

Short Courses

- Supercritical Fluid Chromatography (SFC): A Powerful and Greener Tool for Analytical and Preparative Separations (11/17)
- HPLC and UHPLC for Practicing Scientists 1 and 2: Fundamentals, Method Development, and Troubleshooting (11/17-11/18)
- High-Performance Thin-Layer Chromatography a Reliable Analytical Technique in a Quality Control Environment (11/17-11/18)
- Chromatographic Methods of Analysis of Oligonucleotides, siRNA, and mRNA (11/18)
- Practical LC-MS/MS Method Development and Sample Preparation (11/18-11/19)
- Getting the most from GC and GC/MS (11/19)
- HPLC Operating Modes Primer – Reversed-Phase and Other Options (11/20)

ENVIRONMENTAL & FOOD ANALYSIS

Technical Sessions

- Analytical Chemistry: Studies in Environmental Science (11/18 AM)
- The Evolving Role of Analytical Chemistry in PFAS Environmental Issues (11/18 PM)
- Nitrosamines Everywhere - Defining the Risk Level, How to Measure, How to Control (11/18 PM)
- Developments in Food and Cannabis Science (11/20 AM)
- Environmental Chemistry & Sustainable Analytical Methods (11/20 PM)

Short Course

- PFAS - A Wonder Chemical which Became a Nightmare (11/17)

FORENSIC ANALYSIS

Technical Sessions

- Forensic Microscopy: Fusing Theory & Practice (11/18 PM)
- Leveraging Portable Instruments to Solve Problems at the Sample Site (11/19 AM)
- Research from our Emerging Forensic Scientists (11/20 AM)
- Forensic Analysis: From Lab to Crime Scene (11/20 PM)

LABORATORY MANAGEMENT & EDUCATION

Technical Session

- Challenges Managers Face Today (11/20 AM)

Short Courses

- The Fundamentals of Laboratory Management – Managing People (11/18)
- How to Deliver a Winning Technical Presentation (11/19-11/20)

MASS SPECTROMETRY

Technical Sessions

- Problem Solving with Mass Spectrometry (11/18 AM)
- High Throughput Mass Spectrometry Applications in Drug Discovery and Development (11/18 PM)
- Method Development and Applications of Mass Spectrometry: Bioanalysis (11/19 AM)

Short Courses

- Practical LC-MS/MS Method Development and Sample Preparation (11/18-11/19)
- Getting the most from GC and GC/MS (11/19)
- Bioanalytical Method Validation by LC-MS/MS (11/20)

KEYNOTE LECTURE 11/18

The Role of Quality and Analytical in Supporting Industry Growth in Low- and Middle-Income Countries

Dr. Ronald T. Piervincenzi, CEO, United States Pharmacopeia

PHARMACEUTICAL ANALYSIS

Technical Sessions

- Analytical Innovations Driving Pharmaceutical Excellence (11/18 AM)
- Pushing the Boundaries of Structure Elucidation (11/18 AM)
- Impact of Q14 on Analytical Procedure Validation (11/19 AM)
- Pharmaceutical Chromatography (11/19 AM)
- Molecular Puzzles: Navigating Analytical Challenges in Peptide, Protein, and Oligonucleotide Drug Products (11/20 AM)
- High Throughput Analytical Experimentation: An Automated Approach (11/20 PM)

PHARMACEUTICAL ANALYSIS (continued)**Short Courses**

- Analytical Method Validation and Lifecycle Management – FDA, ICH and USP Expectations (11/18)
- Analytical Target Profile: An Introduction and its Strategic Link to Quality Target Product Profile and Analytical Life Cycle Management (11/19)
- Process Analytical Technology: Out of the Lab and into the Line (11/19)
- Successfully Implementing Key Elements of the USP and ICH Guidances in an Enhanced Analytical Procedure Development Workflow (11/20)

SPECTROSCOPY**Technical Sessions**

- From Pixels to Insights: Hyperspectral Techniques in Analytical Chemistry and Biological Imaging Analysis (11/18 AM)
- Diverse Applications of Spectroscopy and NMR (11/18 AM)
- Spectroscopy at Interfaces (11/18 PM)
- New York/New Jersey Section of the Society for Applied Spectroscopy Gold Medal Award, Honoring Mark Witkowski, United States Food and Drug Administration (11/19 AM)
- The Very Latest Developments in Atomic Spectrometry (11/20 AM)
- Sub-Micron Infrared and Raman Spectromicroscopy (11/20 PM)
- Applications of Analytical Science in Nanotechnology (11/20 PM)

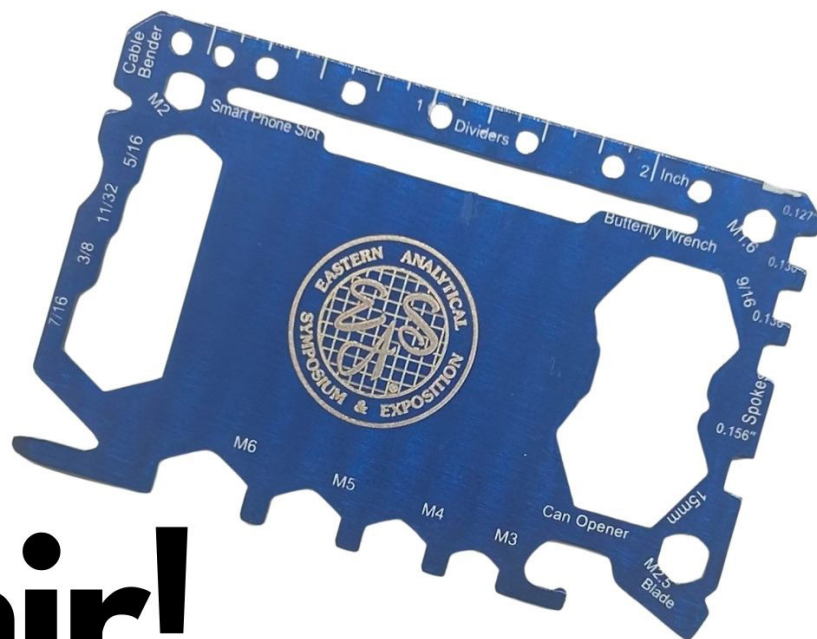
SPECTROSCOPY (continued)**Short Courses**

- Practical NMR Spectroscopy (11/17)
- Analytical Atomic Spectroscopy and its Environmental Applications (11/17)
- Introduction to Quantitative Spectroscopy for Near Infrared and Raman Instrumentation (11/17)
- Interpretation of Infrared and Raman Spectra (11/17-11/18)

e-POSTERS**Technical Sessions**

- Monday Morning Poster Session (11:30 AM)
- Monday Afternoon Posters Session (12:30 PM)
- Student Awardee Poster Session (11/19; 11:30 AM)
- Tuesday Morning Poster Session (11:30 AM)
- Tuesday Afternoon Poster Session (12:30 AM)
- Wednesday Morning Poster Session (11:30 AM)

Don't forget your Souvenir!



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2024 Technical Program

Monday Morning, November 18, 2024

Sustainability: Driving the Next Major Developments in the Analytical Laboratory

Sponsored by Chromatography Forum of DE Valley

Chair: Mary Ellen McNally, FMC Corporation

- 9:00 1 Sustainability in Present-Day Forensic Science, [Tom Brettell](#), Cedar Crest College
- 9:30 2 Driving Sustainability Goals Through GSK's Global Chromatography Technique Network, [Daniel Fabry](#), GSK
- 10:00 Break
- 10:30 3 Continuous Manufacturing of Tirzepatide Using Online UH-PLC-Based PAT: An Enabling Technology for Commercialization of a Synthetic Peptide, [Bradley Campbell](#), Eli Lilly & Company
- 1 1:00 4 Incorporating Sustainable Practices in the Analytical Laboratory, [Mary Ellen McNally](#), Austin Whittington, Mary Grace Guardian, [Xiaoyan Wang](#), Anna Grifo, FMC Corporation

Pushing the Boundaries of Structure Elucidation

Chair: Sloan Ayers, Bristol Myers Squibb

- 9:00 5 Charge Detection Mass Spectrometry for Viruses, Vaccines, and Particles: Mass Spectrometry in the [Megadalton Regime](#), [Martin Jarrold](#), Indiana University
- 9:30 6 i-HMBC and Isotope-Shift-Based NMR Structure Elucidation Strategy, [Mikhail Reibarkh](#), Merck & Co., Inc.
- 10:00 Break
- 10:30 7 Structural Characterization of Macrocyclic Peptido-Mimetic Compounds by NMR Spectroscopy, [Christine Jorge](#), Luciano Mueller, Purnima Khandelwal, Alexander Brueckner, Janet Caceres-Cortese Bristol Myers Squibb, Ajay Jain, Ann Cleves, Optibrium Limited
- 11:00 8 Small Molecule Crystallography to Solve Big Problems, [Amy Sarjeant](#), Bristol Myers Squibb

From Pixels to Insights: Hyperspectral Techniques in Analytical Chemistry and Biological Imaging Analysis

Chair: Vanessa Castro, Rutgers University

- 9:00 9 Vibrational Spectroscopy & Hyperspectral Imaging Analyses for Biomedical Related Applications, [Frank Weston](#), Tobias Gokus, Artem Danilov, Attocube Systems
- 9:30 10 Biomedical Applications of MALDI MS Imaging: Spatial Metabolomics and Beyond, [Ye He](#), CUNY Graduate Center
- 10:00 Break
- 10:30 11 FTIR/Raman and TOF-SIMS Imaging, [Samuel Gourion-Arsiquaud](#), TRI Princeton
- 11:00 12 High-Dimensional Mass Spectrometry Imaging Enables Prediction of Cancer Recurrence, [Drew Jones](#), NYU Langone Health

Analytical Advancements in Bioanalysis

Chair: Neil Jespersen

- 9:00 13 Improving PS80 Content Analysis of Biopharmaceutical Therapeutics by Incorporation of Protein Precipitation, [Daniel Steyer](#), Kennedy Guillot, Katie Carnes, Sina Mortazavi, Suraj Hettiarachchi, Michelle Ward, Lee Oliver, GSK
- 9:20 14 Multi-Dimensional Separation for Vaccine Component Analysis and Characterization, [Arthur Arcinas](#), Rodell Barrientos, Mohamed Hamdi Said Hemida, Gunjan Dixit, Heather Wang, Andrew Singh, Emmanuel Appiah-Amponsah, Erik Regalado, Merck & Co., Inc.

- 9:40 15 Directly Detecting the Degradation of mRNA in mRNA Vaccine Model System Using Deep UV Resonance Raman Spectroscopy, [Lamyaa Almeahmadi](#), Massachusetts Institute of Technology, Sergei Reverdatto, Igor Lednev, Alexander Shekhtman, State University of New York-Albany, Vladimir Ermolenkov, The RNA Institute
- 10:00 Break
- 10:30 16 Two-Dimensional SEC-SEC-UV-MALS-dRI Workflow for Streamlined Analysis and Characterization of Biopharmaceuticals, [Ophelia Ukaegbu](#), ARD, Rodell Barrientos, Andrew Singh, Mohamed Hemida, Heather Wang, Imad Haidar Ahmad, Hang Hu, Zachary Dunn, Emmanuel Appiah-Amponsah, Erik Regalado, AR&D
- 10:50 17 Enhancing Quantitative Analysis of Xenobiotics in Blood Plasma through Cross-Matrix Calibration and, Bayesian Hierarchical Modeling, [Emanuela Gionfriddo](#), University at Buffalo, Nipunika H Godage, Song S. Qian, University of Toledo, Erasmus Cudjoe, Perkin Elmer Inc.

Analytical Chemistry: Studies in Environmental Science

Chair: Alexander Greer, Brooklyn College - CUNY

- 9:00 18 Effects of Radiolysis on the Stability and Chemical Fate of Perchnetate under Solvent Extraction Conditions for Nuclear Waste Reprocessing and Long-Term Storage, [Donna McGregor](#), Rachel Greenberg, Hossam Elshendidi, Benjamin Burton-Pye, Lehman College of the City University of New York, Lynn Francesconi, Hunter College of the City University of New York
- 9:30a 19 A Novel Method to Quantify and Prevent Fouling Using Superhydrophobic Surfaces, [Louis Pimpinella](#), Graduate Center-CUNY
- 10:00 Break
- 10:30 20 NMR Detection of Primary and Secondary Products from the Photooxidation of a Phenolic Compound on Silica Particles and in Solution, [Serah Essang](#), Brooklyn College
- 11:00 21 Biomimetic Photooxidation of a Geranylated Phenol to Reach Natural Product-Like Dihydrobenzofuran and Allylic Hydroperoxides: Synthesis, Homogeneous, and Singlet Oxygen Quenching Studies, [Kamrun Nahar](#), Brooklyn College

Diverse Applications of Spectroscopy and NMR

Chair: Dana Garcia

- 9:00 22 Preliminary Characterization of Cultural Heritage Objects in the West Chester University Museum Collections, [Zachary Voras](#), West Chester University
- 9:20 23 Imaging of Fluorescent and Autofluorescent Biomaterials and Photosynthetic Microorganisms via Fluorescence Detected Widefield Photothermal Infrared Spectroscopy, [Eoghan Dillon](#), Jay Anderson, Craig Prater, Ting Yan, Photothermal Spectroscopy Corp., Kathleen Gough, University of Manitoba
- 9:40 24 A Collaborative Study on Platform 1H Quantitative NMR Method: Towards Capacity Building for Novices, [Yang Liu](#), United States Pharmacopeia
- 10:00 Break
- 10:30 25 Automatic qNMR Data Analysis Approach: Prototype of qQMSA-Based Digital Product, [Sunil Paudel](#), Yang Liu, Ben Shapiro, United States Pharmacopeia, Joo-Won Nam, Yeungnam University, Reino Laatikainen, University of Eastern Finland, Pekka Laatikainen, Spin Discoveries
- 10:50 26 Measuring Therapeutic Proteins (TPs) Particulates Using Submicron IR (O-PTIR), Microscopy from >100µm to <500nm, [Jay Anderson](#), Mustafa Kansiz, Eoghan Dillon, Photothermal Spectroscopy Corp.

Problem Solving with Mass Spectrometry**Chair: James Stuart, University of Connecticut**

- 9:00 27 Absolute Quantitation of Peptides and Proteins by Coulometric Mass Spectrometry, Hao Chen, New Jersey Institute of Technology
- 9:20 28 A Comprehensive Analysis of Serum from Women with Breast Cancer and Age-Matched Controls to Determine Candidate Protein Biomarkers, Logan Seymour, Danielle Whitham, Pathea Bruno, Costel Darie, Clarkson University, Brian Pentecost, University of Massachusetts-Amherst
- 9:40 29 Protein Biomarkers in Human Whole and Lactoferrin-Depleted Breast Milk: Mass Spectrometry-Based In-Solution Proteomics Analysis for Facilitating Early Detection and Treatment of Breast Cancer, Tochukwu (Victor) Njoku, Lilian Corrice, Costel Darie, Clarkson University, Brian Pentecost, Kathleen Arcaro, University of Massachusetts-Amherst
- 10:00 Break
- 10:30 30 GC/MS Approach for Analysis of Extractables and Leachables (E&L) in Complex Matrices Using Spectral Deconvolution and Retention Indices, Anastasia Andrianova, Bruce Quimby, Eric Fausett, Sofia Nieto, David Weil, Agilent Technologies
- 10:50 31 Rapid Screening of Enzymatic Reactions via Droplet-APCI-MS and FIA-MS, Bridget Murray, Robert Kennedy, University of Michigan, Moritz Pott, BASF SE, Jules Beekwilder, Isobionics BV
- 11:10 32 Strategic Analytical Method Development for Trace Levels of EDC and EDU in API Material by LC-MS, Sondrica Goines, Cong Bi, Jonathan Shackman, Robert Menger, Bristol Myers Squibb

Analytical Innovations Driving Pharmaceutical Excellence**Chair: Oscar Liu, Silver Springs Scientific LLC**

- 9:00 33 New Insights into and Applications of Tandem-Column Liquid Chromatography, Joe Foley, Megan Marrazzo, Zhiyang Liu, Drexel University
- 9:20 34 Development and Application of a Selectively Tunable, Universal 1H and 19F Quantitative NMR Standard, Ryan Cohen, Jared Wood, Xiao Wang, Mikhail Reibarkh, Merck & Co., Inc., Thomas Williamson, University of North Carolina
- 9:40 35 Fast and Simple Quantitation of GC-Unfriendly Impurities Using Headspace-MRR, Alexander Mikhonin, Voislav Blagojevic, Reilly Sonstrom, Steven Shipman, Justin Neill, BrightSpec, Inc.
- 10:00 Break
- 10:30 36 Pharmaceutical Formulation Stability Studies with BeScan, Beverly Barnum, Annika Jurgilewicz, Bettersize, Inc.
- 10:50 37 What Is a Scientifically Sound Method? Examples of Form FDA 483s and Warning Letters Under CFR211.160(b), Xiaohui (Sherry) Shen, United States Food and Drug Administration

Monday, November 18: E-Poster Morning Session; 11:30am – 12:25pm

- 38 Deducing Melanin Biosynthesis and Supramolecular Organization, Dhairavi Shah, Dhaara Shah, Subhasish Chatterjee, Kean University
- 39 Determination of Glucose in Blood by Applying Imbedded Enzyme Technology, Ben Sutter, Kevin Schlueter, Xylem
- 40 Probing Binding Affinities, RNA Compaction, and Complex Stoichiometry for SARS CoV-2 Nucleocapsid Protein and RNA Using Single-Molecule FRET, Alec Garasimowicz, Madison Stringer, Jasmine Cubuk, Kathleen Hall, Melissa Stuchell-Breton, Andrea Soranno, Washington University School of Medicine

- 41 Automation of a Capsid ELISA Method for Support of Manufacturing Process Development of AAV Therapeutics, Monica Bond, Jeanna Hill, Daniel Konovalov, Zhichao Fang, Thomas Slaney, Gloria Li, Anthony Leone, Bristol Myers Squibb
- 42 Lipid Profiling of Human Hair Fibers Using MALDI-TOF Imaging: Insights from Root to Tip in Scalp Sections, Ernesta Malinauskite, Vanessa Castro, TRI Princeton
- 43 Interaction Between Fluorescent Gold Nanoclusters with Proteins and Cells, Maima Bogar, Jingqiu Hu, West Chester University, Jah'dir Cartegena-Rivers, Lankenau Hs
- 44 Ion Chromatography-Based Quantification of Tris(2-Carboxyethyl) phosphine in Antibody-Drug Conjugates, Suji Lee, Michael Zompa, Frank Bernardoni, Tao Liang, David Schenk, Casey Dougherty-Gunsch, Teng Peng, Neil Williams, Xinxin Han, Mirlinda Biba, Patrick Fier, Paul Bulger, Merck & Co., Inc.
- 45 Suppress or Not to Suppress?!... – CRAFT it! Extracting Essential Biomarker Signals Directly from the Full 1H NMR Spectrum of Serum Samples, István Pelczér, James Chen, Ayelet Yablon, Christina Metaxas, Mateus Guedin, Joseph Hu, Kenith Conover, Princeton University, Krish Krishnamurthy, Chempacker LLC
- 46 Optimizing Oligonucleotide Extraction by SPE, Geoff Faden, MAC-MOD Analytical, Colin Pipe, David Dunthorne, Tony Edge, Matt James, Avantor
- 47 A Proteomics Analysis of Serum from African American Donors with Invasive Ductal Carcinoma Breast Cancer Compared to Matched Controls, Celeste A. Darie, Logan Seymour, Panashe Mutsengi, Danielle Whitham, Brian T. Pentecost, Costel Darie, Clarkson University
- 48 Proteomic Study and Comparison of Sera from Controls and Stage IIA T1N1 ER/PR Cases for the Discovery of Possible Breast Cancer Biomarkers, Angiolina Hukovic, Niyogushima Nuru, Norman Haaker, Isabella Pelkey, Pathea Bruno, Brian T. Pentecost, Costel Darie, Clarkson University
- 49 Monitoring the Estrogen-Inducible Proteins in Lake Trout (*Salvelinus namaycush*) from Great Lakes upon Exposure to Environmental Contaminants, Taniya Jayaweera, Krishan Weraduwage, Sujana Fernando, Thomas Holsen, Costel Darie, Clarkson University, Bernard Crimmins, AEACS
- 50 Rapid Machine Learning Identification of Rhodamine-B in Ballpoint Pen Ink, Alisha Khodabocus, Eden Fitsum, Walker Knapp, Sinead McWeeney, Benjamin Steinman, Kristin Wustholz, College of William & Mary
- 51 Japanese Woodblock Prints Analysis, An Art History and Chemistry Collaboration, Kayla Geulen, Kennedy Short, Rutgers University
- 52 Detecting the Presence of PFAS "Forever Chemicals" in Commonly Used Infant Care Products, Anthony Provasas, Kevon Rattigan, Angelica Velasquez, Abigail Manka, Christopher Perkins, University of Connecticut
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- 54 Navigating Challenges in Extractables & Leachables Characterization of Polyethylene Glycol-Based Medical Devices, Yunyun Yuan, Ying Jiang, Yijun Lu, Johnson & Johnson MedTech
- 55 Novel Optimal Tryptic Digestion Methods Using Bovine Serum Albumin in-gel Sample Preparation for Mass Spectrometry-Based Proteomics, Niyogushima Nuru, Pathea Bruno, Danielle Whitham, Norman Haaker, Hailey Morrissey, Costel C. Darie, Brindusa Alina Petre, Clarkson University
- 56 Proteomic Analysis of Varying Protein Contents in Different Plant Milk Types Using Gel-Based Mass Spectrometry Analysis, Alivia Sochia, Celeste A. Darie, Angiolina Hukovic, Niyogushima Nuru, Taniya Jayaweera, Pathea Bruno, Costel C. Darie, Clarkson University
- 57 Utilizing Monodisperse Fully Porous Particles (MFPP) for improvements in LC-MS based Metabolomics for Disease Detection, Edward Faden, MAC-MOD Analytical, Tim Garrett, University of Florida, Mark Woodruff, Fortis Technologies

Monday, November 18: E-Poster Afternoon Session; 12:30pm – 1:25pm

- 58 Removal and Recovery of Lead and Cadmium Ions with Biowaste Adsorbent from Aqueous Solutions, Liang Feng, Enju Wang, St. John's University
- 59 Detection of "Forever Chemicals" per and poly-fluoroalkyl Substances (PFAS) in Water Using Surface Enhanced Raman Spectroscopy (SERS), Syed Islam, Eastern Connecticut State University
- 60 Liquid Chromatography-Tandem Mass Spectrometry for Determination of 40 PFAS Compounds, Elizabeth Smiley, Dongmei Alvi, Joan Wirt, Occoquan Lab
- 61 New Capillary C18, Carbon, and HILIC HPLC Columns for Bio-Analysis, Breanne Smith, William Maule, Michael Ye, Olga Shimelis, Cory Muraco, MilliporeSigma
- 62 Method Development Made Easy for GC×GC Users, Kira Fisher, Katelynn Perrault Uptmor, William & Mary
- 63 Comparison Between Plasma and Serum Matrices for Perfluoroalkyl and Polyfluoroalkyl Substance Detection, Diana Mathes, New Jersey Department of Health
- 64 Identification of the Estrogen-Inducible Proteins in Fishes from the Great Lakes Upon Exposure to Environmental Contaminants, Krishan Weraduwage, Taniya Jayaweera, Sujan Fernando, Thomas Holsen, Costel Darie, Clarkson University, Bernard Crimmins, AEACS
- 65 Green Chromatographic Method for assay, Impurities, and Preservatives from Ketoconazole Cream Formulation: Identification of Degradants by Q-ToF LCMS and Robustness by Design of Experiments, Siva Krishna Muchakayala, Naresh Kumar Katari, GITAM University, Vishnu Murthy Mariseti, ScieGen Pharmaceuticals Inc.
- 66 Scalability of Solid-Core Particles for Chromatographic Analyses, Maureen DeLoffi, Gabrielle Zabala, Gary Izzo, Weiqiang Gu, Thomas Walter, Cheryl Boissel, Daniel Walsh, Waters Corporation
- 67 Mitigation of the Non-Specific Binding during HILIC Analysis of Metal Sensitive Compounds, Tony Reinhold, Paula Hong, Martin Gilar, Andrew Steere, Waters Corporation
- 68 Evaluation of Hybrid Silica C18 End-capped with Bidentate Silylating Reagent for HPLC, Norikazu Nagae, ChromaNik Technologies Inc., Scott Sliver, Pyvot
- 69 Application of RP-HPLC with Fluorescence Detector for Analysis of Bisphenol Analogues in Infant and Toddler Products, Viral Shah, Louis Fleck, Axel Martinez, Intertek, Tyler Horvath, Academic
- 70 Preparation of Capillary LC Columns in Tube-in-Manifold Microfluidic Devices, Christopher Piccolo, James Grinias, Rowan University, M. Keller, T. Austin, G. Shelver, D. J. Czarnecki, IDEX Health & Science
- 71 Porous Graphitic Carbon Chromatography Columns: Retention Mechanisms and Applications, Egidijus Machtejevas, Merck Life Science, Clinton Corman, Sigma-Aldrich Corp.
- 72 Structure Elucidation of Trace Impurities in Commercial Compounds by Nuclear Magnetic Resonance, Yao An, Sloan Ayers, Ziyu Wang, Bristol Myers Squibb
- 73 Arrayed Spin Lock Durations in One Dimensional Total Correlation NMR Spectra for Structural Characterization, Alexander Marchione, Sara Maute, Michael Davis, Chemours
- 74 Sustainable Synthesis and Surface Functionalization of Cellulose Derived Carbon Quantum Dots (CQDs) for Applications in Drug Delivery, Sarah Watson, Simret Asefa, Abbie Ganas, West Chester University
- 75 Dynamic Partitioning of Surfactants into Non-Equilibrium Emulsion Droplets Analyzed by Quantitative Mass Spectrometry, Wangyang Xue, Parvin Bayati, Stewart Mallory, Lauren Zarzar, The Pennsylvania State University, Rebecca Balaj, Dow Chemical

Monday Afternoon, November 18, 2024**The Emerging Role of Oligonucleotides in Pharmaceutical Sciences****Sponsored by the Chinese American Chromatography Association****Chair: Yi He, John Jay College of Criminal Justice**

- 1:30pm 76 The Challenges and Solutions to Develop the Ultra-Sensitive Hybridization LCMS Assay for Oligonucleotides, David Zuluaga, Resolian
- 2:00pm 77 Oligonucleotide and Metabolites Bioanalysis Using LC-MS/MS Technique: Case Studies, Xiangji Liu, Frontage Laboratories
- 2:30pm Break
- 3:00pm 78 Probing the Structure of sgRNA Through Advanced Analytical Tools, Wei Bingchuan, Genetech
- 3:30pm 79 Recent Advances in LC-MS of Oligonucleotides, Vidya Annavarapu, University of Georgia

The Evolving Role of Analytical Chemistry in PFAS Environmental Issues**Chair: Charles R. Powley, Center for PFAS Solutions**

- 1:30 80 The Evolving Role of Analytical Chemistry in PFAS Environmental Issues, Charles R. Powley, Center for PFAS Solutions
- 2:00 81 Current LC Approaches for Analysis of PFAS Referencing Short and Long Chain Mixtures, Barry Boyes, Conner McHale, Advanced Materials Technology, Inc.
- 2:30 Break
- 3:00 82 Hunting the Missing Fluorine in Aqueous Film-forming Foams Containing Per- and Polyfluoroalkyl Substances, Min Liu, Gabriel Munoz, Sung Vo Duy, Sébastien Sauvé, University of Montreal, Caitlin M. Glover, Jinxia Liu, McGill University
- 3:30 83 A Non-Targeted Approach for PFAS Analysis Using Combustion Ion Chromatography, Jay Sheffer, Metrohm USA

High Throughput Mass Spectrometry Applications in Drug Discovery and Development**Chair: Debopreeti Mukherjee, Merck & Co., Inc.**

- 1:30 84 Acoustic Ejection Mass Spectrometry for Ultrahigh-Throughput Analysis of Pharmaceutical Targets, Hang Hu, Ophelia Ukaegbu, Umme Ayesa, Joseph Gouker, Jarrod Laro, Jane Wen, David McLaren, Michael Wlekinski, Erik Regalado, Emmanuel Appiah-Amponsah Merck & Co., Inc., Chang Liu, SCIEX
- 2:00 85 Acoustic Ejection Mass Spectrometry in High-Throughput Screening, Xiujuan Wen, David McLaren, Merck & Co., Inc., Chang Liu, SCIEX
- 2:30 Break
- 3:00 86 New-Generation Automated Ambient Mass Spectrometry Platform for High-Throughput Experimentation in Early Drug Discovery, Nicholas Morato, Veronica Feng, Kai-Hung Huang, Kitmin Chen, Beinan Yang, Christina Ferreira, Andrew Mesecar, R. Graham Cooks, Purdue University, Carleen Klumpp-Thomas, National Center for Advancing Translational Sciences, Adam Gloeckner, Matt Galbraith, Hamilton Robotics, Csaba Hajdu, Michael Morris, Steven Pringle, Julia Balog, Waters Corporation
- 3:30 87 Advancing Cancer Research: Broad-Spectrum Cancer Target Identification Using High-Sensitivity Immunopeptidomics, Darshit Shah, Regeneron Pharmaceutical Inc.

New Detection Approaches in Separation Science
Sponsored by ACS Division of Analytical Chemistry
Chair: James Grinias, Rowan University

- 1:30 88 Quantitative Determination of Biomass Pyrolysis Products Using Micropyrolysis and GC-Polyarc-FID, [Charles Mullen](#), United States Department of Agriculture
- 2:00 89 Machine Learning vs. Theoretical Computational Prediction of Gas Phase Vacuum Ultraviolet/Ultraviolet (GC-VUV) Absorption Spectra, [Kevin Schug](#), [Linh Ho Manh](#), [Jay Rosenberger](#), [Victoria Chen](#), University of Texas-Arlington
- 2:30 Break
- 3:00 90 Simple Interfacing of Capillary Electrophoresis to Mass Spectrometry through Vibrating Sharp Edge Spray Ionization, [Lisa Holland](#), West Virginia University
- 3:30 91 Light Scattering Applications to Biologics and AAV Characterization, [Gurusamy Balakrishnan](#), Bristol Myers Squibb

Forensic Microscopy: Fusing Theory & Practice
Chair: Michelle D. Miranda, Farmingdale State College, SUNY

- 1:30 92 Microscopy and Microanalysis of Aluminum Powders Used in Improvised Explosive Devices (IEDs), [JoAnn Buscaglia](#), [JenaMarie Baldaino](#), [Kayla Moquin](#), United States Federal Bureau of Investigation, [Jack Hietpas](#), [John Jay College of Criminal Justice](#)
- 2:00 93 Seldom Believe What Your Client Tells You: Make Sure to Inquire Carefully and Look More Closely, Preferably Before You Start, [Thomas Kubic](#), [John Jay College of Criminal Justice](#)
- 2:30 Break
- 3:00 94 A Microscopical Approach to Problem Solving in Law and Industry, [Chris Palenik](#), [Microtrace](#)
- 3:30 Panel Discussion

Nitrosamines: Formation, Control, and Acceptable Intakes
Chair: Leonardo Allain, Merck & Co., Inc.

- 1:30 95 Something in the Air: The Contribution of Nitrogen Oxides to the Formation of Nitrosamines from Vulnerable Active Pharmaceutical Ingredients, [Joerg Schlingemann](#), [EMD Serono](#)
- 2:00 96 Nitrites and NOx Everywhere: Impact in Nitrosamine Formation in Drug Products, [Leonardo Allain](#), [Merck & Co., Inc.](#)
- 2:30 Break
- 3:00 97 Strategies for Overcoming Challenges in LC-MS Analysis of Nitrosamines in Pharmaceutical Products, [Jinjian Zheng](#), [Merck & Co., Inc.](#)
- 3:30 98 Approaches to Establishing Acceptable Intakes for NDSRIs, [Mark Powley](#), [Merck & Co., Inc.](#)

Spectroscopy at Interfaces
Chair: Kenneth L. Knappenberger, Pennsylvania State University

- 1:30 99 How Does Interfacial Water Structure Change with Increasing Surface Charge Density?, [Paul Cremer](#), [Pennsylvania State University](#)
- 2:00 100 Near Infrared Vibrational Second Harmonic Generation (NIR-vSHG): A New Nonlinear Vibrational Spectroscopy of Interfaces, [Eric Borquet](#), [Temple University](#)
- 2:30 Break
- 3:00 101 Single Molecule FRET Imaging and Deep Learning Reveal Concentration Dependence of Aggregation Pathways during A β 42 Aggregation, [Sara Sohail](#), [Swarthmore University](#), [Janghyun Yoo](#), [Hoi Sung Chung](#), [NIDDK/NIH](#)

- 3:30 102 Characterizing Materials Interfaces Using Second Harmonic Generation, [Kenneth Knappenberger](#), [Pennsylvania State University](#)

Next Generation Innovations in Biotechnology
Chair: Shirley Fischer-Drowos, Widener University

- 1:30 103 Bacterial Model Membrane Systems Featuring Phosphatidylethanolamine and Phosphatidylglycerol as Predominant Lipids, [Aarshi Singh](#), [Tiffany Ye](#), [Nicholas Lima](#), [Nathan Wittenberg](#), [Lehigh University](#)
- 1:50 104 Investigation of the Effects of Overexpression of Human Jumping Translocation Breakpoint (JTB) Protein Using In-Solution Digestion-Based Proteomics, [Taniya Jayaweera](#), [Madhuri Jayathirtha](#), [Danielle Whitham](#), [Costel Darie](#), [Clarkson University](#)
- 2:10 105 Extractables and Leachables Study on Self-Amplifying RNA-LNPs Manufacturing, [Bin Sun](#), [Cytiva](#)
- 2:30 Break
- 3:00 106 Mass Spectrometry-Based Degradomics Analysis of Breast Milk for Early Detection of Breast Cancer, [Kaya Johnson](#), [Pathea Bruno](#), [Brian Pentecost](#), [Costel Darie](#), [Clarkson University](#), [Kathleen Arcaro](#), [University of Massachusetts-Amherst](#)
- 3:20 107 Method Development Approach to Separating Oligonucleotides Under UV and MS Detection, [Peter Pellegrinelli](#), [Ben Libert](#), [Chuping Luo](#), [Stephanie Schuster](#), [AMT](#)
- 3:40 108 Chemical Impurity Analytical Method Development in Biopharmaceutical R&D, [Kedene Clarke](#), [GSK](#)

KEYNOTE LECTURE
Monday, November 18, 4:15pm

(#109) Role of Quality and Analytical in Supporting Industry Growth in Low- and Middle-Income Countries
Dr. Ronald Piervincenzi, CEO, United States Pharmacopeia

All registered Conferees, Attendees and Exhibitors are invited to attend. A reception will be held immediately following the lecture.

Tuesday Morning, November 19, 2024

Impact of ICH Q14 on Analytical Procedure Validation
Chairs: Isabelle Vu Trieu, Waters Corporation and Kim Huynh-Ba, Pharmalytik

- 9:00 110 Mapping Key Elements in the Current ICH and USP Guidelines for an Enhanced Workflow for Analytical Procedure Development, [Richard Verseput](#), [S-Matrix Corporation](#)
- 9:30 111 Enhanced Method Development using Empower Chromatography Data System and Quality by Design Software, [Margaret Maziarz](#), [Andrea Gheduzzi](#), [Stephanie Harden](#), [Isabelle VuTrieu](#), [Waters Corporation](#)
- 10:00 Break
- 10:30 112 Challenges of Developing and Validating Analytical Procedures with the New ICH Q14 Guideline, [Trevor Williams](#), [Pharmaceuticals International Inc.](#)
- 11:00 113 Opportunities and Barriers in ICH Q14 Implementation: An ISPE-PQLI Survey, [Qinggang Wang](#), [Bristol Myers Squibb](#)

New York/New Jersey Sections of the Society for Applied Spectroscopy Gold Medal Award

Honoring Mark Witkowski, United States Food & Drug Administration

Chairs: Dana Garcia, Deborah Peru, DP Spectroscopy and Training

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| 9:00 | 114 | Using Alternate Light Sources to See the Unseen; Award Presentation, Mark Witkowski , Nicola Ranieri, Douglas Albright, John Lynch, Megan Sterling, United States Food & Drug Administration |
| 9:30 | 115 | Advancing Food and Dietary Supplement Safety with 15 Years of Spectroscopic Methods at FDA/CFSAN, Betsy Yakes , United States Food & Drug Administration |
| 10:00 | | Break |
| 10:30 | 116 | Pharma in Focus: Spectroscopic Imaging for Physico-chemical Insights, Daniel Willett , Huzeyfe Yilmaz, Yeakub Zaker, Snober Ahmed, Changning Guo, Jason Rodriguez, United States Food & Drug Administration |
| 11:00 | 117 | Analysis of Unknown (Unlabeled/Mislabeled) Drug Products for Active Pharmaceutical Ingredients at Remote Sampling Sites by FDA's Satellite Laboratory Program, Adam Lanzarotta , United States Food & Drug Administration |

Method Development and Applications of Mass Spectrometry: Bioanalysis

Sponsored by North Jersey Section ACS

Chairs: Anthony Pitts-McCoy, Merck & Co., Inc. and Michelle Gonsalves, PTC Therapeutics

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| 9:00 | 118 | Validation and Application of Volumetric Absorptive Microsampling (VAMS) Dried Blood Method for Phenylalanine Measurement in Patients with Phenylketonuria, Diksha Kaushik , Lan Gao, Neil Smith, Ronald Kong, PTC Therapeutics |
| 9:30 | 119 | Validation of Quantitation of MK-6598 Target Protein and Phenylpyruvate in Tumor Biopsies by LCMSMS to Inform Target Engagement in Phase I Oncology Clinical Trial, Carolina Cabral , Erik Henry Knelson, Stuart Shumway, Omobolaji O. Akala, Michael Lassman, Merck Sharp & Dohme LLC |
| 10:00 | | Break |
| 10:30 | 120 | Bioanalytical Assessments of a Novel Approach to Overcome Microsampling Challenges in Rodent Studies, HsinPin Ho , Bristol Myers Squibb |
| 11:00 | 121 | Overcoming Bioanalytical Assay Challenges to Support New Generation of Antibody-Drug Conjugates, Ines Santos , Jian Chen, Nicholas Colletti, Yongjun Xue, Jim Shen, Bristol Myers Squibb |

Separations for Therapeutic Oligonucleotides and New Modalities

Sponsored by Chromatography Forum of DE Valley

Chair: Kaitlin Grinias, GSK

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| 9:00 | 122 | Characterization of RNA Modifications in the Central Nervous System by LC-MS/MS-Based Epitranscriptomics, Kevin Clark , Tufts University |
| 9:30 | 123 | Analytical Control Strategy for Therapeutic Oligonucleotides, Sujana Pradhan , GSK |
| 10:00 | | Break |
| 10:30 | 124 | Impact of Nucleic Acids Melting Temperature on their Liquid Chromatographic Behavior, Martin Gilar , Samuel Redstone, Alexandre Gomes, Catalin Doneanu, Waters Corporation |
| 11:00 | 125 | Capillary Gel Electrophoresis Separations of DNA: From Fragments to Plasmids, Lisa Holland , West Virginia University |

Leveraging Portable Instruments to Solve Problems at the Sample Site

Chair: Pauline Leary, NOBLE

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| 9:00 | 126 | Experiential Forensic Science Research with Portable Spectrometers, Brooke Kammrath , University of New Haven |
| 9:30 | 127 | Portable Raman Spectrometers, Fluorescence, and Lego Blocks, Richard Crocombe , Crocombe Spectroscopic Consulting, LLC, Brooke Kammrath, University of New Haven, Pauline Leary, NOBLE |
| 10:00 | | Break |
| 10:30 | 128 | FDA's Satellite Laboratory Operations – Using a Field Deployable Tool Kit for Rapid Analysis at International Mail Facilities, Brandon Reyes , United States Food & Drug Administration |
| 11:00 | 129 | Applications of Handheld Spectroscopy in Hazardous Materials Response, Brandon Gayle , City of Raleigh Fire Department |

Data-Driven Discovery and Design for Modern Laboratories with Machine Learning and Artificial Intelligence: From Materials Discovery to Process Optimization

Chairs: Caelin Celani, University of Delaware and Michael George, University of Nottingham

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| 9:00 | 130 | Self-Optimized Development of Pharmaceutical Processes, Clarissa Wilding , Richard Bourne, University of Leeds |
| 9:30 | 131 | Iterative Optimization Technology: A Calibration-Free Modelling Approach for Monitoring Active Ingredient in Pharmaceutical Blends, Md. Nahid Hasan , Duquesne University |
| 10:00 | | Break |
| 10:30 | 132 | Deconvolution of Non-linear Surfaces Using Gaussian Mixture Models: Applications to Hyperspectral Images, Helder Carneiro , Lottie Murray, Roxanne Radpour, Joseph Smith, Caelin Celani, Matthew Doty, Karl Booksh, University of Delaware. |
| 11:00 | 133 | Scalable Continuous Photochemical, Electrochemical and Thermal Reactions: Reactors and PAT Challenges: Exploring Unlocking Molecular Landscapes with Excitation Emission Matrix (EEM) Fluorescence Spectroscopy, David Tiemessen , University of Nottingham |

Developments in Separation Sciences

Sponsored by Amgen

Chair: Mary Ellen McNally, FMC Corporation

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| 9:00 | 134 | Elastic Flow Instability Using Polymer Additives to Improve the Efficiency of Packed High-Pressure Liquid Chromatography Columns, Fabrice Griitti , Waters Corporation, Emily Chen, Sujit Datta, Princeton University |
| 9:20 | 135 | Separation of Permanent Anions, Neutral Compounds, and Weak Acids Using Sequential Elution Liquid Chromatography with Tandem Columns, Lauren Lovejoy , GSK, Joe Foley, Drexel University |
| 9:40 | 136 | Benefits of Inert Liquid Chromatography Column Hardware for Various Applications, Samantha Herbeck , Diego Lopez, Shun-Hsin Liang, Melinda Urich, Jamie York, Justin Steimling, Restek Corporation |
| 10:00 | | Break |
| 10:30 | 137 | UPLC Columns: Past, Present and Future, Thomas Walter , Waters Corp. |
| 10:50 | 138 | Fast RP-UHPLC Separation of Ribooligonucleotide Impurities Using Evosphere MAX C18/AR Monodisperse Fully Porous Particle Columns without Ion-Pair Reagents for Simplified Oligo Separations, Edward Faden , Geoff Faden, MAC-MOD Analytical |
| 11:10 | 139 | Accelerating High Throughput Thermodynamic Solubility Screening in Drug Discovery Using LC-MS, Muhammad Qamar Farooq , Adrian Carranza, Wes Barnhart, Nuria Tamayo, Imad Haidar Ahmad, Amgen |

Pharmaceutical Chromatography**Sponsored by Amgen****Chair: Mariann Neverovitch, Bristol Myers Squibb**

- 9:00 140 Analytical Method Development for Chromophore-Lacking Formulation Excipients in Gamma-Irradiated LAIs, Suraj Hettiarachchi, GSK
- 9:20 141 Advancements Towards a Universal, Sensitive, and Selective Detection Technology for Liquid Chromatography, Alex Hodgson, Dale Harrison, VUV Analytics
- 9:40 142 Modernization of a Legacy Normal Phase Method on a Modern HPLC System, Elom Pedanou, Lise Gauthier, Paula Hong, Waters Corporation
- 10:00 Break
- 10:30 143 Improving Chromatography for Basic Analytes Using a Positive Charge Surface Material, Conner McHale, Advanced Materials Technology
- 10:50 144 Enhancing Quantitation Accuracy and Minimizing Analyte-to-Analyte Variability for High-Throughput Liquid Chromatography - Charged Aerosol Detection (CAD) Methods, Daipayan Roy, Imad Haidar Ahmad, Wes Barnhart, Troy Handlovic, Amgen
- 11:10 145 Enhancing LC and LC-MS Separations of Basic Compounds with Novel High pH Stable SPP Columns, Stephanie Schuster, Conner McHale, Peter Pellegrinelli, Mark Haynes, Advanced Materials Technology

High-Performance Thin-Layer Chromatography**Chair: Michael Hicks, Merck & Co., Inc.**

- 9:00 146 Authentication of Powdered Mushroom Fruiting Body by High-Performance Thin-Layer Chromatography, Wilmer Perera, CAMAG Scientific, Inc.
- 9:20 147 Foraging for Methods: The Right Method for the Right Spec, Khanh Tran, Sidney Sudberg, Anthony Fontana, Alkemist Labs
- 9:40 148 Decoding Hair: Adapting Scalp Hair to Resemble Body Hair for In-Vitro Skin Models, Ernesta Malinauskyste, TRI Princeton
- 10:00 Break
- 10:30 149 USP Standards for Passion Flower (*Passiflora incarnata* L.): Species and Chemotype Differentiation by HPTLC Analysis, Maria Monagas, United States Pharmacopeia, Mirtha Navarro, Felipe Vargas, University of Costa Rica, Eike Reich, Wilmer Perera, CAMAG
- 10:50 150 HPTLC Identification Tests for Botanical Dietary Supplements and Herbal Medicines in USP Monographs, Cuiying Ma, United States Pharmacopeia

Tuesday, November 19: E-Poster Student Awardees Session; 11:30am – 12:25pm

- 151 Identifying and Quantifying Pesticides in Environmental Deposition Using Gas Chromatography High-Resolution Mass Spectrometry, George Belay, Eve Painter, Jennifer Faust, The College of Wooster, Rebekah Gray, Goucher College, Christopher Alaimo, Thomas Young, University of California-Davis
- 152 Binding of Naphthenic Acids to Dissolved Organic Matter, Ronny Goldshmid, Clarissa Jules, Anne Vazquez, St. John's University
- 153 Using Raman MCR to Investigate Interfacial Water Signal at the Surface of Vesicles, Phuong Ho, Alexander Lott, Olivia Fiebig, Paul Cremer, The Pennsylvania State University
- 154 Advancing Environmental Monitoring: Rapid Quantitation of 28 PFAS in Aquatic Insect Tissue Using QuEChERS Extraction Coupled with UPLC-MS/MS, Austin Pelletier, Kaitlyn Campbell, Jess Brandt, Christopher Perkins, Anthony Provatas, University of Connecticut
- 155 Direct Enantiomer Differentiation of Drug and Drug-like Small Molecules using Noncovalent Copper-Amino Acid Complexation and Ion Mobility-Mass Spectrometry, Benjamin Blakley, Jody May, Emanuel Zlibut, Rashi Gupta, John McLean, Vanderbilt University

- 156 Ion Selective Electrodes: Quantifying the Upper Limit of Detection, Madeline Honig, Phil Bühlmann, University of Minnesota
- 157 Glycosaminoglycan Imaging by IR-MALDESI, Tana Palomino, David Muddiman, North Carolina State University
- 158 Decoding CD107a and CD107b Glycosylation, Valentina Rangel-Angarita, Lea Kim, Keira Mahoney, Stacy Malaker, Yale University

Tuesday, November 19: E-Poster Morning Session; 11:30am – 12:25pm

- 159 The Applications of Spotfire for a Pharmaceutical Forensics Database, Brittany Handzo, Gabrielle Messe, Bristol Myers Squibb
- 160 Trends in Novel Psychoactive Benzodiazepine Content of Counterfeit Alprazolam Tablets, Michael Kanwischer, NMS Labs
- 161 Gas Chromatography-Flame Ionization Detector (GC-FID) System Linearity Effects on Limit of Detection Calculations, James Mizvesky, Nicholas Snow, Seton Hall University
- 162 Reliable Extraction of Fluorophore Blinking Dynamics from Wide-Field Microscopy Videos, Walker Knapp, Eden Fitsum, Alisha Khodabocus, Sinead McWeeney, Kristin Wustholz, William & Mary
- 163 Illicit Drug Desorption and Chemical Profiling of Fingerprints using SICRIT Ion Source: A Rapid Analysis Approach, Taylor Hayward, Ciara Conway, Jan-Christoph Wolf, Plasmion GmbH
- 164 Enhancing Overdose Surveillance: Targeted Method Development for Analyzing Psychoactive Substances in Urine, Anthony Lockhart, Daniel Wene, Nkemdili Nebeolisa, Linbin Zhong, Shawn O'Leary, Tina Fan, New Jersey Department of Health
- 165 Application of Raman Imaging in Surface Mapping of Nano Carbon Based Composite Membranes, Lingfen Rao, Oindrila Gupta, Sagar Roy, Somenath Mitra, New Jersey Institute of Technology
- 166 Determination of Toxic and Other Trace Elements in Baby Foods Using ICP-MS, Andrea Palpini, Liyan Xing, PerkinElmer
- 167 Determination of PFAS in Food Using the Automated FREESTYLE PFAS System, Fred Foster, GERSTEL, Inc.
- 168 Dumas Method Application for Non-Protein Nitrogen (NPN) Analysis in Milk Products, Michelle Kuzio, Jason Mote, Xylem
- 169 Headspace Analysis of Whole Milk and Soymilk Using a SERS-Active Fiber, Bezael Adainoo, Lili He, University of Massachusetts
- 170 Aroma Profiling of Commercial Poi Products in Fresh and Aged States Using Comprehensive Two-Dimensional Gas Chromatography, Sarah Foster, Katelynn A. Perrault Uptmor, William & Mary, Cynthia Cheung, Chaminade University of Honolulu, Laura Tipton, Jonathan D. Baker, Kahoalii K. Keahi-Wood
- 171 Synthesis and Characterization of Novel Europium-doped Ceria Nanocrystals (EuCeNCs) for Monitoring Antioxidants, Gloria Popoola, Aqsa Khan, Silvana Andreescu, Clarkson University

Tuesday, November 19: E-Poster Afternoon Session; 12:30pm – 1:25pm

- 172 Dissolution Method Development: Lessons Learned on Tablets with Low Solubility, Sensitive to Discrimination and Metal Chelation, Xiaoyun He, Sandya Raghavendra, Weijia Hou, Gilead Sciences, Inc.
- 173 Investigation of the Effects of Overexpression of Human Jumping Translocation Breakpoint (JTB) Protein Using In-Gel Digestion-Based Proteomics, Peter Biggers, Taniya Jayaweera, Madhuri Jayathirtha, Danielle Whitham, Costel Darie, Clarkson University
- 174 East Asian Concertina Book, Arabella Sawaked, Elizabeth Sawaked, Zachary Voras, West Chester University
- 175 Risk Assessment for Nitrosamine Impurities, Richa Mittal, Sushmeet Singh, CMIC CMO USA
- 176 Advanced Applications of LUMA GC in Pharmaceutical Analysis, Rafael Acosta, VUV Analytics
- 177 Withdrawn by the author.

- 178 Mitigation of Low Endotoxin Recovery (LER) Using CSE170 in Recombinant Human Acid Alpha-Glucosidase for the Treatment of Pompe Disease, Shengjie Bian, Eudean Garces, Steven Tuske, Partha Mukherjee, Saroj Ramdas, Amicus Therapeutics Inc., Qi Chen, Fengkun Du, Youwen Pan, Guoyin Shi, WuXi Biologics Co., Ltd.
- 179 A New LC-MS/MS Method for Identification and Quantitation of an N-Nitroso impurity (NDSRI) in a Commercial Small Molecule Drug Product Capsules, Partha S. Mukherjee, Krishnaiah Charagondla, Kalyani Ginjupalli, Saroj Ramdas, Amicus Therapeutics Inc., Bing Hu, Simrat Kaur, Paresh Thanki, Tejas Tailor, Bhavin Prajapati, SGS Inc.
- 180 A New Analytical LC-MS/MS Method for Determination of Eight Standard Nitrosamines (NDMA, NMBA, NDEA, NEIPA, NDIPA, NMPA, NDPA, NDBA) in a Commercial Small Molecule Drug Product Capsules and its API, Krishnaiah Charagondla, Partha S Mukherjee, Kalyani Ginjupalli, Saroj Ramdas, Amicus Therapeutics Inc., Bing Hu, Simrat Kaur, Paresh Thanki, Tejas Tailor, Bhavin Prajapati, SGS Inc.
- 181 Scaling of Challenging UHPLC Compendial Methods on HPLC Systems, Norris Wong, Elom Pedanou, Paula Hong, Waters Corporation
- 182 Combining Droplet Microreactor and Mass Spectrometry for Efficient Detection of Antihistamine Drugs in Oral Fluid, Mohamed O. Amin, Bessy D'Cruz, Entesar Al-Hetlani, Kuwait University
- 183 Chemometrics Assisted GC-FID Analysis of Fatty Acids in Blood Plasma Under Varying Dietary Conditions Towards Clinical Applications Mohamed O. Amin, Nouf Aldhafiri, Entesar Al-Hetlani, Kuwait University
- 184 Applications of Synthetic Carbon for Pharmaceutical Industry, Hillel Brandes, Olga Shimelis, M. James Ross, MilliporeSigma, Katharina Fach, Merck Darmstadt
- 185 Deviations of Expected Split Ratio of Active Pharmaceutical Ingredients, Alexander Bulsiewicz, Nicholas Snow, Seton Hall University
- 186 Extended Retention and Separation capacity of Nitrosamines utilizing a Polar Endcapped Monodisperse Fully Porous Particle (MFPP) HPLC Column, Edward Faden, MAC-MOD Analytical, Mark Woodruff, Fortis Technologies
- 187 Investigation on In-Vivo Degradation Rate of Compound A in Normal Human Stomach pH Range via Design and Execution of In-Vitro Biorelevant Dissolution to De-Risk a Potential PK Variability due to Varied Degradation Levels, Smriti Gupta, Hyunho Kang, Tina Masiuk, Alena Bensussan, Sanjaykumar Patel, Adrian Goodey, Sebastian Escotet, Andre Hermans, Joshua Palacios, Merck & Co.
- 188 A Proteomic Investigation to Identify Potential Protein Biomarkers for Breast Cancer Detection Using Sera from Control Donors and Women with Triple Negative Breast Cancer, Nicholas Versaci, Danielle Whitham, Norman Haaker, Brian Pentecost, Costel Darie, Clarkson University
- 189 The Use of Human Breastmilk as a Bio-Fluid for Protein Biomarker Identification for Breast Cancer, Kathleen F. Arcaro, Brian T. Pentecost, University of Massachusetts Amherst, Lilian Corrice, Danielle Whitham, Pathea Bruno, Norman Haaker, Costel C. Darie, Clarkson University
- 190 Achieving High Recovery & Reproducibility in High Throughput Sample Preparation Using Silica/Polymer Composite 96-Well SPE Plates, Geoff Faden, MAC-MOD Analytical, David Dunthorne, Colin Pipe, Anthony Edge, Matt James, Gemma Lo, Avantor
- 191 Scalable and Automatable Benchtop Scale Protein A Based mAb Purification Using AffinEx SPE Columns with Resolvex A200 Sample Processor, Qi Huang, Steven Alo, Heather Eastwood, Tuan-Linh Nguyen, Karsten Liegmann, John Laycock, Tecan SP
- 192 The Importance of Temperature on Complete Digestion of High-Fat Foods for Metals Analysis, Alicia Stell, Samuel Heckle, Macy Harris, Layla Abu-Al-Halaweh, CEM Corporation

Tuesday Afternoon, November 19, 2024

New for 2024 – EAS is honoring ALL 6 awardees in a special award session 1:15pm – 4:30pm in the Amphitheatre. All registered attendees and exhibitors are invited to attend. A complimentary Mixer will be held in the Exposition Rooms immediately following the Award Session.

EAS Award Session Chaired by Suzanne Schreyer, Rigaku

1:15pm; 193: EAS YOUNG INVESTIGATOR AWARD
Bio-Inspired Technologies for Monitoring Human and Environmental Health

Honoring Ariel Furst, Massachusetts Institute of Technology
Sponsored by American Microchemical Society

1:45pm; 194: EAS AWARD FOR OUTSTANDING ACHIEVEMENTS IN SEPARATION SCIENCE
A Career in Analytical Chemistry
Honoring Nelu Grinberg
Sponsored by Waters Corporation

2:15pm; 195: EAS AWARD FOR OUTSTANDING ACHIEVEMENTS IN VIBRATIONAL SPECTROSCOPY
Variety of Vibrational Spectroscopy: From Fundamental Research to Practical Applications for Forensic Purposes and Medical Diagnostics
Honoring Igor Lednev, University at Albany
Sponsored by the Coblentz Society

Break 2:45pm – 3:00pm

3:00pm; 196: EAS AWARD FOR OUTSTANDING ACHIEVEMENTS IN MASS SPECTROMETRY
Development of Quantitative Mass Spectrometry Approaches for Analyses of Protein and RNA Modifications
Honoring Benjamin Garcia, Washington University-St. Louis
Sponsored by Restek Corporation

3:30pm; 197: EAS AWARD FOR OUTSTANDING ACHIEVEMENTS IN MAGNETIC RESONANCE
Probes with a Purpose: NMR Instrumentation for Biological Semisolids and Partially Ordered Samples
Honoring Rachel Martin, University of CA - Irvine
Sponsored by Bruker BioSpin & New Era Enterprises

4:00pm; 198: EAS AWARD FOR OUTSTANDING ACHIEVEMENTS IN THE FIELDS OF ANALYTICAL CHEMISTRY
Spectroscopic Approaches for Tracking Degradation of Organic Semiconductors Important for Organic Optoelectronic Devices
Honoring Jeanne Pemberton, University of Arizona
Sponsored by Bristol Myers Squibb

Wednesday Morning, November 20, 2024

Molecular Puzzles: Navigating Analytical Challenges in Peptide, Protein, and Oligonucleotide Drug Products
Chairs: Yongchao Su, Merck & Co., Inc. and Kang Chen, United States Food & Drug Administration

- 9:00 199 Visible Light Photodegradation of Therapeutic Proteins: Mechanisms, Excipient Effects, and Preventive Strategies, Garth Simpson, Purdue University
- 9:30 200 Surface-Mediated Spontaneous Emulsification of an Acylated Peptide, Semaglutide, Ken Qian, Eli Lilly and Company
- 10:00 Break

- 10:30 201 CryoEM - A Powerful Multi-Attribute Characterization Tool for Nanoparticle Formulations, [Mandy Janssen](#), Sheng Wang, Brent Wood, Giovanna Scapin, Eric Bushong, Brianna Fisher, Kalyan Kallio, Nanolmaging Services
- 11:00 202 Weighing in the Biophysical Characterization Power: From Discovery to In-Depth Understanding to Biologics Product, [Jing Song](#), Merck & Co., Inc.

The Research from our Emerging Forensic Scientists
Sponsored by New Jersey Association of Forensic Scientists
Chair: Monica Joshi, West Chester University of PA

- 9:00 203 Use of Digital Representations of Skeletal Remains for Forensic Analysis, [Katie Steigerwalt](#), Matthew Kieber-Emmons, Carol Ritter, Cedar Crest College, David Webb, Kutztown University
- 9:30 204 Assessment of Blood and Semen Detection and DNA Collection from Swabs up to Three Months after Deposition on Five Different Cloth Materials, [Emily Kryvorutsky](#), Francisco Medina-Paz, Brandon Kuba, Sara Zapico, New Jersey Institute of Technology, Gabriela Roca, SERATEC mbH
- 10:00 Break
- 10:30 205 Differentiating Black Powder Manufacturers through Post Blast Residue Utilizing SEM-EDS and FTIR-DRIFTS, [Damian Niesciur](#), Ken Hand, Georgia Arbuckle, Kimberlee Moran, Rutgers University
- 11:00 206 Evaluation of Urine Cannabinoids by LC/MS/MS in a Population of CBD Users, [Kourtney Albert](#), Arcadia University

Predictive Sciences for Chromatographic Method Development

Sponsored by North Jersey Section ACS
Chair: Pankaj Aggarwal, Merck & Co., Inc.

- 9:00 207 Machine Learning Structure-Based Prediction of Chiral Stationary Phases for Chromatographic Enantioseparation from 3D Molecular Conformations, [Christopher Welch](#), Indiana Consortium for Analytical Science & Engineering
- 9:30 208 Application of Retention Prediction to LC Separation Problems, [Martin Gilar](#), Waters Corporation
- 10:00 Break
- 10:30 209 Fuel for the Engine - High Throughput Retention Measurement to Enable Predictive Models for Liquid Chromatography, [Dwight Stoll](#), Sarah Rutan, Trevor Kempen, Bob Piro, Gustavus Adolphus College
- 11:00 210 Structure and Graph Based Machine Learning Prediction of Retention Times for LC Method Development of Pharmaceuticals, [Jonathan Fine](#), Pankaj Aggarwal, Amanda Mann, Armen Beck, Merck & Co., Inc.

Challenges Managers Face Today

Chair: Denis Swijter, ALMA

- 9:00 211 Building Bridges: Turning Differences into Strengths, [Scott Hanton](#), Lab Manager Magazine
- 9:30 212 Supporting Diversity and Inclusion in the Workplace, [Dwayne F. Henry](#), Montgomery College
- 10:00 Break
- 10:30 213 How to Manage Conflict, [May Adaeze Chinda](#), University of Ghana Medical Centre
- 11:00 214 Finding the Holy Grail: Engagement, Tarshae Drummond, Fayetteville State University

The Very Latest Developments in Atomic Spectrometry

Chair: Steven Ray, University at Buffalo, SUNY

- 9:00 215 Exploring the Analytical Capabilities of LIBS-ICPMS for Geological, Energy, Pharmaceutical, and Medical Applications, [C. Derrick Quarles Jr.](#), Elemental Scientific, Benjamin T. Manard, Oak Ridge National Laboratory

- 9:30 216 Standard-Free Absolute Quantitation of Drug Metabolites via Elemental F and Cl Detection by Plasma-Based Mass Spectrometry, [Kaveh Jorabchi](#), Samuel White, Grace Hahn, Zahra Afsharsaveh, Georgetown University, Matthew Cerny, Pfizer, Inc.
- 10:00 Break
- 10:30 217 Challenges and Opportunities in Single-Particle Inductively-Coupled Plasma Mass Spectrometry (sp-ICP-MS), [Antonio R. Montoro Bustos](#), Monique E. Johnson, George C. Caceres, Karen E. Murphy, Michael R. Winchester, National Institute of Standards and Technology
- 11:00 218 Ditch the Argon! Plasma-Based Atomic Spectrometry Using Ambient Air, [Steven Ray](#), University at Buffalo, SUNY

Chemical Data Science: Artificial Intelligence and Machine Learning Applied to Analytical Chemistry

Chair: Barry Lavine, Oklahoma State University

- 9:00 219 Transmission Infrared Spectroscopy and Machine Learning for Forensic Analysis of Automotive Paint, [Barry Lavine](#), Haoran Zhong, Elizabeth Donkor, Collin White, Oklahoma State University, Thomas Hancewicz, TMH Associates
- 9:30 220 Conformal Prediction Applied to Raman Spectra of Analgesics, [Karl Booksh](#), University of Delaware
- 10:00 Break
- 10:30 221 The Use of Near Infrared Spectroscopy and Machine Learning to Assess the Quality of 3D Printing Tablets, [Stephen Hoag](#), Keith Freely, Yihan Wang, Ahmed Ibrahim, University of Maryland-Baltimore, Sharon Flank, Jon Schupp, Infracore, Inc.
- 11:00 222 Next Generation Machine Learning Technologies to Accelerate Pharmaceutical Process Research & Development, [Joseph Smith](#), Merck & Co., Inc.

Developments in Food and Cannabis Science

Chair: Anthony Provatat, University of Connecticut

- 9:00 223 Automated Solvent Extraction Method of PFAS from Difficult Food and Food Packaging Matrices, [Alicia Stell](#), [Benedict Liu](#), CEM Corporation
- 9:20 224 A High-Efficiency Approach to Quantitating Pesticides in Challenging High-Pigmented Food Matrices with GC/MS/MS Using a New Electron Ionization (EI) Source for Maximized Uptime, [Anastasia Andrianova](#), Samuel Haddad, Limian Zhao, Agilent Technologies
- 9:40 225 Non-Invasive Raman Spectroscopy for the Authentication of Food Products, [Alexander Rzhavskii](#), Thermo Fisher Scientific
- 10:30 226 Replicating Water and Fat-Soluble Vitamins Analyses on a Modern HPLC System, [Kimberly Martin](#), Lise Gauthier, Elom Pedanou, Paula Hong, Waters Corporation
- 10:50 226 A Illicit Drug Desorption and Chemical Profiling of Fingerprints using SICRIT Ion Source: A Rapid Analysis Approach, [Jan-Christoph Wolf](#), Ciara Conway, Taylor Hayward, Plasmion GmbH

Perspectives on Macromolecule Analysis

Chair: Costel Darie, Clarkson University

- 9:00 227 Understanding the Role of CD68 in the Tumor Microenvironment, [Valentina Rangel-Angarita](#), Ryan Chen, Lea Kim, Taryn Lucas, Keira Mahoney, Stacy Malaker, Yale University
- 9:20 228 Peptidomic Analysis of Breast Milk and Sera from Women with Breast Cancer and Equivalent Controls to Identify Potential Biomarkers for Early Diagnosis, [Pathea Bruno](#), Danielle Whitham, Isabella Pelkey, Brian T. Pentecost, Costel C. Darie, Clarkson University, Kathleen F. Arcaro, University of Massachusetts-Amherst

- 9:40 229 Proteomics Investigation of Human Breast Milk with Invasive Ductal Carcinoma Breast Cancer and Match Control for Early Detection of Breast Cancer: A Mass Spectrometry Approach, Aneeta Arshad, Costal C. Darie, Clarkson University, Brian T. Pentecost, Kathleen F. Arcaro, University of Massachusetts-Amherst
- 10:00 Break
- 10:30 230 Integration of Innovative Biochemical and Instrumental Methods to Enable Structural Elucidation and Spatially Resolve Labile Carbohydrates, Tana Palomino, David Muddiman, North Carolina State University, Juh Samal, University of Alabama-Birmingham, Ana Sheridan, Ashley Brown, The University of North Carolina at Chapel Hill, Tatiana Segura, Duke University
- 10:50 231 Optimizing Surface Plasmon Resonance (SPR) Characterization of the Binding Between Individual Tandem Repeats of MUC16 (CA125) and Clinically Relevant Antibodies, Eliza Hanson, Chien-Wei Wang, Rebecca Whelan, University of Kansas
- 11:10 232 Developing a Method to Monitor the Estrogen-Inducible Proteins in Fishes from the Great Lakes upon Exposure to Environmental Contaminants, Krishan Weraduwage, Taniya Jayaweera, Bernard Crimmins, Sujan Fernando, Thomas Holsen, Costel Darie, Clarkson University

Wednesday, November 20: E-Poster Session: 11:30pm – 12:25pm

- 233 Development and Qualification of a Greener High pH Generic HPLC Method, Matthew Swoyer, Kaitlin Grinias, GSK
- 234 Electron Transfer Reactions of Transition-Metal Complexes for Solar Energy Conversion and Storage, Annie Shen, Bryn Mawr College, Michael Eberhart, New Jersey Institute of Technology
- 235 Sensing Copper (II) Ions with Coumarin Dyes, Revathi Variar, Jingqiu Hu, West Chester University
- 236 Assessing Algal Toxin Contamination in Connecticut Freshwater Systems Utilizing Liquid Chromatography Tandem Mass Spectrometry, Anthony Provas, James Stuart, University of Connecticut, Slawomir Piela, Drexel University
- 237 Qualitative Analysis of Polycyclic Aromatic Hydrocarbons in Vehicle exhaust and Roadway Surfaces Utilizing GC-MS/MS, Anthony Provas, Conner Kocot, Abigail Manka, University of Connecticut CESE
- 238 A Green Chemistry Methodology for the Degradation of Malathion, Michael Eckel Santos, Marius Pelmus, Sergiu Gorun, Seton Hall University
- 239 Precise Water Analysis in Cannabis: Karl Fischer (KF) Titration Method, Michelle Kuzio, Tom Szakas, Xylem
- 240 An Automated Dynamic Headspace Approach for the Determination of Ignitable Liquid Residues from Mock Arson Evidence Megan Harper-Kerr, GERSTEL, Inc.
- 241 Investigating Odor Signatures of Electronic Storage Devices, Samuel Friday, Marisia Fikiet, Alyssa Marsico, Brooke Kammrath, University of New Haven, Jon Naples, Connecticut State Police, Pauline Leary, NOBLE
- 242 Achiral Separation of Fluorofentanyl Derivatives on Chiral Stationary Phases in Varying Mobile Phase Modes, John Ferraro, Weston Umstead, Daicel Chiral Technologies
- 243 Analysis of Volatile Organic Compounds from Submerged Animal Tissue Decomposing at Varied Temperatures, Virginia Weina, Katelynn Perrault Uptmor, William & Mary
- 244 Analysis of Green Gunshot Residues Using Scanning Electron Microscopy with Energy-Dispersive X-Ray Spectroscopy and Comprehensive Two-Dimensional Gas Chromatography, Grace Saunders, Katelynn Perrault Uptmor, William & Mary
- 245 Chemical Fingerprint of Ignitable Liquid Residues by DART-MS: More Than Volatile Organic Compounds (VOC), Mengliang Zhang, Ohio University, Shruthi Perna, Ngee Sing Chong, Middle Tennessee State University

- 246 The Role of Diphenylamine in Enhancing Fluorescence Analysis of Smokeless Powder and Gunshot Residue for Forensic Purposes, Cody Silverman, Igor Lednev, University at Albany-SUNY
- 247 Free Tools to Support Liquid Chromatography Teaching, Learning, and Method Development, Dwight Stoll, Gustavus Adolphus College
- 248 2.7-um Superficially Porous Particles for Chiral Chromatography in HPLC and SFC, Melissa Wilcox, Regis Technologies
- 249 Enhancing Basic Thin Layer Chromatographic Analysis: Application-Driven Capabilities of the TLC Explorer, Petra Lewits, Michaela Oberle, Markus Burholt, MilliporeSigma
- 250 Evaluation of Bidentate End-Capping Silylation Reagents for HPLC, Norikazu Nagae, Ryuji Koyama, Tomoyasu Tsukamoto, ChromaNik Technologies Inc., Scott Silver, Pyvot
- 251 In-Process LCMS Analysis of Polysorbate 80 Biodegradation, Jixin Liu, Kate McEvoy, Wenyi Yee, Croda, Inc.
- 252 A "Trimmed-Down" Look into Using Analytical Techniques for Lipid and Protein Composition in Aging Indian Hair, Nusrat Islam, Ernesta Malinauskyte, Vanessa Castro, Daniel Strzeszewski, Lijing Xu, TRI Princeton
- 253 Analysis of Chloro-Thioethers Photodegradation by Fluoro-Phthalocyanines in Homogenous and Heterogenous Systems, Sean Scally, Sergiu Gorun, Marius Pelmus, Seton Hall University

Wednesday Afternoon, November 20, 2024

High Throughput Analytical Experimentation: An Automated Approach

Sponsored by LRIG Philadelphia

Chair: Sharon V. Matamoros, GSK

- 1:30 254 Automated Biorelevant Solubility Workstation for Long-Acting Injectable Drug Development, Michael Rerick, Luis Herran, GSK
- 2:00 255 Enhancing the Automated Screening of Physicochemical Properties of the Discovery Portfolio, Jordan De Jesus Silva, Susana Morais, Alexander S. Chin, Dorothy Levorso, Devan McCoy, Merck & Co., Inc.
- 2:30 256 Development of Novel Technologies as Enabled by Pre-Competitive Collaborations: The Enabling Technologies Consortium, Rahul Sangodkar, Amgen
- 3:00 257 Leveraging an Automated Standardized Approach to LC Method Development, Scott Hartzell, Eli Lilly and Company

Sub-Micron Infrared and Raman Spectromicroscopy

Chair: Samuel Tenney, Brookhaven National Laboratory

- 1:30 258 Materials for Inhaled Aerosol Treatment of Disease: Optical Photothermal Infrared Microscopy (O-PTIR) as an Advanced Characterization Method for Assessing the Emitted Dose of Complex Dry Powder Inhaler Formulations, Mark Banaszak Holl, Sheikh Tanzina Haque, Blessy Joseph, University of Alabama – Birmingham, Dipesh Khanal, University of Sydney, Elizabeth Bielski, Bryan Newman, Huzeyfe Yilmaz, Snober Ahmed, United States Food & Drug Administration
- 2:00 259 Applications of Combined O-PTIR and Raman in the Analysis of Microplastics from Environmental Samples, Bangshuai Han, Moayad Yacoub, Ball State University, Samuel Tenney, Brookhaven National Laboratory
- 2:30 260 O-PTIR Submicron Spectroscopy and Imaging of Bone Tissue Mineralization, William Querido, Temple University
- 3:00 261 Spatially Resolved Spectroscopy for MOF-Based Resist Development, Andrea Kraetz, Michael Tsapatsis, Johns Hopkins University, Prerna Prerna, Ilja Siepman, University of Minnesota, Mueed Ahmad, Stony Brook University, J. Anibal Boscoboinik, Samuel Tenney, Brookhaven National Laboratory

Forensic Analysis: From Lab to Crime Scene**Chair: Sharla Wood, Bristol Myers Squibb**

- 1:30 262 Forensic Soil Analysis by Particle Correlated Raman Spectroscopy (PCRS): Comparison to Traditional Methods, [Jasmine Kaur](#), Joshua Christensen, Drew Kuroda, Ella Galvan, Marisia Fikiet, Virginia Maxwell, Brooke Kammrath, University of New Haven, Ethan Groves, Christopher Palenik, Microtrace, Peter De Forest, Forensic Consultants
- 1:50 263 Towards Determining the Limit of Detection for a Universal Body Fluid Identification Method for Forensic Purposes, [Riley Alpuché](#), Ben Taubner, Nathaniel Cady, Igor Lednev, University at Albany, SUNY
- 2:10 264 An Evaluation of the Forensic Readiness of Comprehensive Two-Dimensional Gas Chromatography Towards Organic Trace Analysis, [Katelynn Perrault Uptmor](#), Emma Macturk, Barbara Grace Saunders, Virginia Weina, William & Mary
- 2:30 265 What is in a Fingermark? A Nontargeted Analysis Using Comprehensive Two-Dimensional Gas Chromatography, [Emma Macturk](#), Katelynn Perrault Uptmor, William & Mary
- 2:50 266 Discrimination of a Self-Reference Algorithm Threshold with ROC Curve to Distinguish Between Human and Animal Blood Using Raman Spectroscopy for Forensic Purposes, [Alexis Weber](#), SupreMEtric, Harrison Dickler, Igor K. Lednev, State University of New York-Albany
- 3:10 267 Forensic Fingerprinting of the Unseen: Revealing the Dark Secrets of PFAS with High-Resolution Ion Mobility, [Frederick Strathmann](#), Thomas Lubinsky, MOBILion Systems

Leveraging Modeling for Chromatographic Analysis**Chair: Kate Jackson, Colgate Palmolive**

- 1:30 268 Digitally Enabled Generic Analytical Framework Accelerating the Pace of Liquid Chromatography Method Development for Vaccine Adjuvant Formulations, [Mohamed Hemida](#), Rodell C. Barrientos, Caleb Kinsey, Nathan Kuster, Mayank Bhavsar, Armen Beck, Heather Wang, Andrew Singh, Pankaj Aggarwal, Arthur Arcinas, Malini Mukherjee, Emmanuel Appiah-Amponsah, Erik L. Regalado, Merck & Co., Inc.
- 1:50 269 Improved Assay Development of Pharmaceutical Modalities Using Feedback-Controlled Liquid Chromatography Optimization, [Andrew Singh](#), Fatima Naser Aldine, Heather Wang, Rodell Barrientos, Michelle Wong, Pankaj Aggarwal, Erik Regalado, Imad Haidar Ahmad, Merck & Co., Inc., Devin Makey, University of Michigan
- 2:10 270 Does pH Matter? Comparing Multidimensional Design Spaces of Volatile and Non-Volatile Buffer Systems, [Arnold Zoeldhegyi](#), Imre Molnar, Molnar-Institute for Applied Chromatography, Krisztian Horvath, University of Pannonia, Robert Kormany, Egis Plc
- 2:30 271 The Relevance of Modeling in Pharmaceutical Submissions, [Imre Molnár](#), Arnold Zoeldhegyi, Molnár-Institute
- 2:50 272 Could Light Ruin your RPLC Robustness – Lessons from API Method Development, [Anna Calkins](#), Jonathan Shackman, Elizabeth Yuill, Bristol Myers Squibb
- 3:10 273 Reduction of Wet Experiments by Use of Drylab for Simulation and Prediction of Chromatographic Separations, [Xiaole Shao](#), Boehringer Ingelheim

Data Science Solutions for Modern Day Problems**Chair: Robert Vetrecin**

- 1:30 274 Deep Learning to Enhance Investigative Lead Information from Automotive Clear Coats, [Barry Lavine](#), Collin White, Douglas Heisterkamp, Oklahoma State University

- 1:50 275 Shift Invariant Tri-Linearity Algorithms for Fast, Flexible Blind Source Separation in Hyphenated Chromatography, [Neal Gallagher](#), Eigenvector Research, Inc., Paul-Albert Schneide, BASF SE, Rasmus Bro, University of Copenhagen
- 2:10pm 276 Expanding the Utility of a Virtual Method Development Tool, [Melinda Ulrich](#), Justin Steimling, Jamie York, Tim Yosca, Samantha Herbick, Chris Nelson, Restek Corporation, John Garrett, Analytical Innovations
- 2:30pm 277 Feature Extraction Algorithm for Conventional and Comprehensive Two-Dimensional Gas Chromatography Coupled with Mass Spectrometry, [Leandro Wang Hantao](#), Carlos Alberto Teixeira, Guilherme Post Sabin, Amilton Moreira Oliveira, Luidy Darllan Barbosa, University of Campinas
- 2:50pm 278 Streamlining Chromatographic Method Evaluation and Ensuring Data Quality through Advanced Tools [Farrel Borden](#), Gary Sharman, Mitcheell Maestre, Agustín Barba, Nicola Tonge, Mestrelab Research

Applications of Analytical Science in Nanotechnology**Chair: Caelin Celani, University of Delaware**

- 1:30 279 Time-Resolved Spectroscopy for Quantitative Characterization of Surface-Modified TiO₂, [Michael Uzu](#), University of Delaware
- 1:50 280 Understanding the Degradation and Strain Effects of Thin GaSe, [Lottie Murray](#), Matthew Doty, University of Delaware
- 2:10 281 Fluorescent Dyed Gold Core-Silicon Shell Nanoparticles for Biological Applications, [Briana M. Mohan](#), Bhanu P.S. Chauhan, Amana Awwad, Qiaxian Johnson, William Paterson University
- 2:30 282 Silver Nano Raspberries Stabilized by Cyclic Silanes, [Asmaa Lakhali](#), Saadia Chaudhry, Arleen Ruiz, Bhanu P. S Chauhan, William Paterson College
- 2:50 283 Decoupling Wavelength Dependence for T-ray Imaging Rescuing the Semiconductor Yield, [Anis Rahman](#), Applied Research & Photonics

2024 EAS Awards

New for 2024 – EAS will be honoring ALL 6 of our awardees in a special award session on Tuesday, November 19 from 1:15PM – 4:30PM in the Amphitheatre. All registered attendees and exhibitors are invited to attend.

EAS Award for Outstanding Achievements in the Fields of Analytical Chemistry, honoring Professor Jeanne Pemberton, University of Arizona; sponsored by Bristol Myers Squibb



Jeanne Pemberton is a Regents Professor and the John and Helen Schaefer Professor of Chemistry at the University of Arizona. She completed her undergraduate education at the University of Delaware where she received a B.S. with Distinction in Chemistry and a B.A. in Biology in 1977. She received her Ph.D. at the University of North Carolina at Chapel Hill in 1981 and then started as an Assistant Professor of Chemistry at the University of Arizona later that year, rising through the ranks to the level of Professor. She was appointed the John and Helen Schaefer Professor of Chemistry in 2001 and Regents Professor in 2005. Her scientific research interests lie in the areas broadly defined as surface and interfacial chemistry. She is known for her efforts in the development and use of a variety of molecular spectroscopic probes to understand chemistry within complex interfaces. Her scientific research has resulted in over 250 scientific publications, 10 patents and patent applications, and the successful establishment of a small business, GlycoSurf. Her research has been recognized with multiple awards and honors. She is a Fellow of the American Association for the Advancement of Science, an inaugural Fellow of the American Chemical Society (2009), and a Galileo Circle Fellow of the UA College of Science. She currently serves as Executive Editor for the journal *Analytical Chemistry*. She is a dedicated educator at all levels, with almost 100 masters and doctoral degree recipients having received their training under her mentorship.

EAS Award for Outstanding Achievements in Separation Science, honoring Dr. Nelu Grinberg; sponsored by Waters Corporation



Dr. Nelu Grinberg recently retired following an eminent career in research chemistry in the pharmaceutical industry. An internationally known expert in analytical chemistry, with an emphasis on chromatography, spectroscopy, and chiral separations, he was a Distinguished Research Fellow in the Chemical Development Department at Boehringer Ingelheim Pharmaceuticals in Ridgefield, CT until January 2017. Prior to this, he worked for sixteen years in the Analytical Department at Merck Research Laboratories in Rahway, NJ, where he was a Senior Research Fellow. Dr. Grinberg has authored and co-authored over 160 publications, including articles and book chapters, and has lectured and conducted courses worldwide. Along with being Co-Editor of the *Advances in Chromatography* series, he is currently Editor-in-Chief of the *Journal of Liquid Chromatography and Related Techniques*, and Editor of both the *Chromatographic Science* book series and the *Supramolecular* book series. Dr. Grinberg is also a member of the Board of the Connecticut Separation Science Council and was a recipient of a Koltoff Fellowship from The Hebrew University of Jerusalem. In recognition of his achievements, Al. I. Cuza University in Iasi, Romania elected him an Honorary Member of their University Senate. Dr. Grinberg obtained his Ph.D. in Chemistry from the Technical University of Iasi in Romania. He conducted postdoctoral research with Professor Barry Karger at Northeastern University in Boston, Massachusetts, and with Professor Emanuel Gil-Av at The Weizmann Institute of Science in Rehovot, Israel.

EAS Award for Outstanding Achievements in Vibrational Spectroscopy, honoring Professor Igor Lednev, University at Albany-SUNY; sponsored by the Coblenz Society



Igor K. Lednev is Williams-Raycheff Professor in Chemistry and SUNY Distinguished Professor at the University at Albany, State University of New York. He is also an Adjunct Professor in the Department of Biological Sciences and a faculty Member of the RNA Institute. Lednev is a cofounder and CTO of SupreMetric LLC commercializing a universal method for the identification body fluid traces for forensic purposes, and Early Diagnostics LLC, developing saliva and blood tests for the early diagnostics of Alzheimer's disease. Lednev's research is focused on the development and application of novel vibrational spectroscopy for forensic purposes, biomedical applications, and fundamental biochemistry. Based on his work, a new field of Raman spectroscopy for the forensic analysis of biological stains was established. In addition, Lednev developed new approaches for the analysis of gunshot residue, hair and other trace evidence recovered at a crime scene. Lednev developed and patented a novel noninvasive screening tests for Alzheimer's diseases and Sjogren syndrome. A novel in situ test for the stability of mRNA vaccine using deep UV Raman spectroscopy and a new approach for drug discovery based on a single-molecule surface enhanced Raman spectroscopy (SERS) were invented. The fundamental research has been focused on understanding the structure and formation mechanism of amyloid fibrils, which are protein aggregates related to neurodegenerative diseases. Lednev introduced several vibrational spectroscopic methods to the field including deep UV Raman spectroscopy, polarized Raman spectroscopy, 2D correlation Raman spectroscopy, tip enhanced Raman spectroscopy (TERS) and vibrational circular dichroism (VCD). Several fundamental discoveries were made including a new protein folding-aggregation phenomenon of spontaneous rearrangement of amyloid fibrils from one polymorph to another. Lednev served as an advisory member on the White House Subcommittee for Forensic Science. He has co-authored over 270 publications in peer-reviewed journals and 10 patents reaching h-index of 74. His work has been covered by media more than 90 times including 18 TV interviews, and publications in the *Wall Street Journal*, *Chemical & Engineering News*, *Forensic Magazine*, etc. Canada Discovery Channel featured his work using Raman spectroscopy for gunshot residue analysis.

EAS Award for Outstanding Achievements in Magnetic Resonance, honoring Professor Rachel Martin, University of California-Irvine; sponsored by Bruker BioSpin and New Era Enterprises



Rachel W. Martin earned her BS in Chemistry from Arizona State University in 1997. She then joined Kurt Zilm's lab at Yale for graduate school, arriving shortly before the installation of (at the time) the world's largest NMR magnet. Dreams of high-resolution protein structures were delayed for two and a half years while she and Eric Paulson built a new balanced triple resonance MAS probe for protein experiments. She then developed a method for rapid batch crystallization of proteins, enabling fast, reproducible sample preparation for biological MAS. Some of the first high-resolution protein spectra were collected using this instrumentation and methodology. After finishing her PhD in 2002, she then moved on to postdoctoral research with Alex Pines at UC Berkeley, where she worked on a variety of problems related to performing NMR and MRI experiments under challenging experimental conditions. She and her lab mates built inhomogeneous magnets, one-sided magnets, and spinning magnets for ex situ NMR, enabling novel experimental modalities outside the typical narrow-bore superconducting magnets. During this period, Martin developed her interest in NMR of oriented samples and biological semi-solids. As a faculty member at UC Irvine, Martin has continued to develop unique NMR instrumentation. Her group has built contactless switched-angle spinning (SAS) probes for high-resolution NMR of liquid crystals and oriented biological membranes. They have developed stabilized bicelle mixtures that hold up well under the mechanical challenges of SAS, and also have a favorable useful temperature range for solution-state NMR. The Martin group has also built a quadruple-resonance MAS probe for $^1\text{H}/^{13}\text{C}/^2\text{H}/^{15}\text{N}$ experiments, enabling the ^2H that is often used to simplify the ^1H spectra of proteins to also provide information about structure and dynamics. Along the way, they have developed new transceiver coil designs for specific biological experiments. One recent line of work focuses on developing strategies for enabling more researchers to participate in fabricating NMR instrumentation using 3D printing and automation. Dissolvable coil templates, 3D printed mechanical components, and inexpensive automated test devices can make NMR instrumentation development more accessible. On the applications side, the Martin group has explored the relationship between structure and optical properties in eye lens proteins, as well as discovering and characterizing novel proteins, notably a membrane-binding antimicrobial peptide. Since its founding in 2005, the Martin group has trained 7 postdoctoral fellows and 21 PhDs in a wide range of fields, including Physical Chemistry, Analytical Chemistry, Chemical Biology, Molecular Biology and Biochemistry, and Physics.

**EAS Award for Outstanding Achievements in Mass Spectrometry,
honoring Professor Benjamin Garcia, the Washington University School of Medicine; sponsored Restek Corporation**



Professor Benjamin A. Garcia obtained his BS in Chemistry at UC Davis in 2000, where he worked as an undergraduate researcher in Prof. Carlito Lebrilla's laboratory. He received his PhD in Chemistry in 2005 at the University of Virginia under Prof. Donald Hunt and then was an NIH NRSA Postdoctoral Fellow at the University of Illinois under Prof. Neil Kelleher from 2005-2008. From there Ben was appointed as an Assistant Professor in the Molecular Biology Department at Princeton University from 2008-2012, until his recruitment as the Presidential Associate Professor of Biochemistry and Biophysics at the University of Pennsylvania Perelman School of Medicine in 2012, promoted to full Professor in 2016, and named the John McCrea Dickson M.D. Presidential Professor in 2017. Ben moved in the summer of 2021 to the Washington University School of Medicine in St. Louis to become the Raymond H. Wittcoff Distinguished Professor and Head of the Department of Biochemistry and Molecular Biophysics. The Garcia lab has been developing and applying novel proteomic approaches and bioinformatics for interrogating protein modifications, especially those involved in epigenetic mechanisms such as histones during human disease, publishing over 400 publications. He is presently an Associate Editor of the Analytical Chemistry, and Mass Spectrometry Reviews journals; and serves on the editorial boards for the Molecular Omics, the Journal of Proteome Research and the Molecular and Cellular Proteomics journals. He also serves on the Board of Directors for the U.S. Human Proteome Organization (HUPO), the HUPO Governing Council/Executive Committee and the Executive Committee of the American Chemical Society (ACS) Analytical Chemistry Division. Ben has been recognized with many honors and awards for his mass spectrometry research including the American Society for Mass Spectrometry (ASMS) Research Award, a National Science Foundation CAREER award, an NIH Director's New Innovator Award, the Presidential Early Career Award for Scientists and Engineers (PECASE), an Alfred P. Sloan Fellowship, the PITTCO Achievement Award, the Ken Standing Award, the ACS Arthur F. Findeis Award, The Protein Society Young Investigator Award, the ASMS Biemann Medal, the HUPO Discovery in Proteomic Sciences Award, and was named a Fellow of the Royal Society of Chemistry.

**EAS Young Investigator Award,
honoring Ariel Furst, Massachusetts Institute of Technology; sponsored by the American Microchemical Society**



Dr. Ariel L. Furst is the Paul M. Cook Career Development Assistant Professor of Chemical Engineering at MIT. Her work centers on inventing technologies to improve human and environmental health by making access to resources more equitable. Her lab develops transformative technologies to solve important problems related to healthcare and sustainability by harnessing the inherent capabilities of biomolecules and using electrochemistry to fundamentally understand these systems. She completed her Ph.D. at Caltech developing non-invasive diagnostics for colorectal cancer and was then an A. O. Beckman Postdoctoral Fellow at UC Berkeley, where she developed sensors to monitor environmental pollutants. She is a 2023 NIH New Innovator Awardee, a 2023 Marion Milligan Mason Awardee, a CIFAR Azrieli Global Scholar for Bio-Inspired Solar Energy, and an ARO Early Career Grantee. She was recently awarded the MIT UROP Outstanding Faculty Mentor Award for her work with undergraduate researchers. She is passionate about STEM outreach and increasing participation of underrepresented groups in engineering.

New York/New Jersey Society for Applied Spectroscopy Gold Medal Award

On Tuesday, November 19, 2024, **Dr. Mark Witkowski**, United States Food and Drug Administration, will receive the New York Society for Applied Spectroscopy Gold Medal Award.































































Dr. Mark Witkowski received a B.S. degree in chemistry from the University of Pittsburgh in 1988 and a Ph.D. in Analytical Chemistry under the direction of Dr. William G. Fateley from Kansas State in 1992. Dr. Witkowski held a postdoctoral position at D.O.M. Associates International Inc. He joined Warner-Lambert Pharmaceutical Company in 1994 and joined the FDA's Forensic Chemistry Center (FCC) in Cincinnati, OH as a specialist in vibrational spectroscopy in 2000. At Warner-Lambert, he was responsible for the analysis of suspected counterfeit pharmaceutical products and researching the use of NIR technology related to pharmaceutical applications. He successfully developed and deployed NIR methods to routinely identify over 100 different pharmaceutical raw materials and explored its use in other applications such as tablet analysis. Dr. Witkowski is currently a Senior Chemist in the Trace Examination Section (TES) at FDA's FCC. He represents the FDA, both internally and externally as an expert in vibrational spectroscopy, optical microscopy, and field deployable instrumentation and evaluates novel technologies and methods. He has led the development of methods and use of both FT-IR and Raman in the analysis of counterfeit pharmaceuticals, economically motivated adulterated products, and other pharmaceutical forensic trace evidence. He provides training and mentoring of other users of FT-IR and Raman inside and outside of FDA including method of analysis to use, the interpretation of FT-IR and Raman spectra or participating as an instructor in training courses. Dr. Witkowski regularly interacts with FDA's law enforcement, imports, and regulatory organizations. Outside of FDA he interacts with other U.S. law enforcement agencies, state and local health agencies and international law enforcement and regulatory agencies. He is currently the chair of the International Laboratory Forum on Counterfeit Medicines (ILFCM). Dr. Witkowski received 46 awards for his scientific work including Scientific Achievement, Outstanding Service, Special Recognition, Excellence in Analytical Science, Leveraging/Collaboration. As a recognized expert he is regularly called to testify in court at the local and federal level. Dr. Witkowski has authored/co-authored and given over 70 publications and presentations. He is listed as co-inventor on three U.S. Patents with another FCC scientist for the development of alternate light source (ALS) devices and methodologies for the detection of counterfeit pharmaceuticals, diverted pharmaceutical products, product tampering and adulterated products.



Visit These Exhibitors at the 2024 EAS

Last updated November 10, 2024

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ALMA – FFL
Anton Paar – WF18
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Waters Corporation – W1   
Welch Materials, Inc – WF1
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Xylem Lab Solutions – M13   

For more information, please contact Janine Kishbaugh at exposition@eas.org or 610-509-2354

Exposition & Special Events

Social Times **IN THE EXPO**

Lakeside Terrace, Madison, Wilson, & Waterfront



Coffee

10:00 a.m. to 10:30 a.m.

Monday & Tuesday – Sponsored by S-Matrix

Wednesday – Sponsored by

Society for Applied Spectroscopy - Delaware Valley Section



Snacks

2:30 p.m. to 3:00 p.m.

Monday – Sponsored by S-Matrix

Tuesday – Sponsored by EAS



Receptions

Monday 5:15 p.m. to 6:30 p.m.

Tuesday 4:30 p.m. to 6:00 p.m.

Exposition & Special Events

Monday, November 18th	10:00am to 6:30pm
Tuesday, November 19th	10:00am to 6:00pm
Wednesday, November 20th	10:00am to 1:00pm

Demonstration Rooms

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Waters Demo Room: Experience the Benefits of Pioneering Science

Waters Corporation invites you to explore our innovative solutions with our scientific team on Monday 10:00 AM - 5:30 PM, Tuesday 10:00 AM-5:30 PM and Wednesday 10:00 AM -1:00 PM in Room 109.

Visit the Waters demo room and experience:

- **Alliance™ iS HPLC system:** the intuitively simple HPLC system designed to reduce common errors, enhance efficiency, and increase uptime
- **DAWN™ MALS detector** with the Arc™ Premier LC System for absolute molar mass and size characterization
- **Xevo™ MRT mass spectrometer:** our state-of-the-art QToF delivering performance and speed without compromise

For more information about the Waters Demo Room, please contact Isabelle_VuTrieu@waters.com.



Stop by the **Lazar Scientific Booth M4** and **Demo Room 108** to get a hands-on look at instrumentation from Bruker Optics, Schmidt+Haensch, and more. We're excited to be showcasing the Alpha II Compact FT-IR and BRAVO Handheld Raman spectrometers from Bruker. Applications Scientists will show hands on testing and results with informative 15-minute demos. You will also have opportunities to join Seminars presented by Tom Tague, Ph.D., Applications Manager for Bruker Optics.

Monday, November 18, 2024

Demo time slots available: 11:45 A.M., 12:15 P.M., 12:45 P.M., 1:15 P.M., or 1:45 P.M.
Seminar: Quality Control Polymer Session: 4:30 – 5:00 P.M.

Tuesday, November 19, 2024

Demo time slots available: 11:45 A.M., 12:15 P.M., 12:45 P.M., 1:15 P.M., or 1:45 P.M.
Seminar: Quality Control Pharma Session: 4:30 – 5:00 P.M.

Wednesday, November 20, 2024

Seminar: Introducing the NEW RAMANwalk: 11:30 P.M., 12:00 P.M., 12:30 P.M.

KEYNOTE LECTURE*Sponsored by the Pennington Family Giving Fund*

We are excited to announce our Keynote Speaker!
All Attendees and Exhibitors are invited to join us. A complimentary reception will be held immediately after the lecture in the Exposition rooms.

Monday, November 18, 4:15 PM
Amphitheatre, 1st Floor



The Role of Quality and Analytical in Supporting Industry Growth in Low- and Middle-Income Countries Cancer

Dr. Ronald T. Piervincenzi

**CEO; Member, Board of Trustees (ex officio); Officer, USP Convention
United States Pharmacopeia**

Ronald T. Piervincenzi, Ph.D., began his tenure as Chief Executive Officer of the United States Pharmacopeia in February 2014. Dr. Piervincenzi provides strategic leadership to USP's global staff of over 1,300 across regions including North America, Latin America, Southeast Asia, Middle East and Africa, Europe, and global public health field offices across nine countries. His transformative vision has launched key USP initiatives in bringing quality across the healthcare spectrum, upholding USP's reputation as a quality leader since its founding in 1820. Under his leadership, USP has modernized its operations and launched innovative new science, including in the areas of digital medicine, cutting-edge manufacturing technologies and advanced biologics. Recently, USP has begun building a robust "capability building" services suite of offerings including quality manufacturing consulting, donor-funded work, and education.

Dr. Piervincenzi brings more than 25 years of industry experience across pharmaceutical sciences, research and business strategy. Before joining USP, Dr. Piervincenzi served as Vice President of Development Sciences with Biogen and was a partner and leader in McKinsey & Company's global pharmaceutical and medical products practice for over 12 years. Dr. Piervincenzi earned his M.S. and Ph.D. from Duke University in Biomedical Engineering, with research focused on protein engineering. He is the proud co-founder and chairman of the board for MENTOR Newark.

2024 LIST OF SHORT COURSES

Short Courses are an additional fee and space is limited • All Short Courses are full-day from 8:30 AM – 5:00 PM

Date(s)	Courses Names	Instructor(s)
Nov. 17 & 18	Interpretation of Infrared and Raman Spectra	Peter Larkin, Solvay Mary Carrabba, Rogue Spectroscopy, LLC
Nov. 12 & 18	High-Performance Thin-Layer Chromatography a Reliable Analytical Technique in a Quality Control Environment	James Kababick, Flora Research Labs Wilmer Perera, CAMAG
Nov. 17 & 18	HPLC and UHPLC for Practicing Scientists 1 and 2: Fundamentals, Method Development, and Troubleshooting	Michael Dong, MWD Consulting
Nov. 17	Practical NMR Spectroscopy	Damodaran Achary, University of Pittsburgh
Nov. 17	Introduction to Data Analytics for Analytical Chemists	Mary Kate Donais, Anslem University
Nov. 17	Introduction to Quantitative Spectroscopy for Near Infrared and Raman Instrumentation	Debbie Peru, DP Spectroscopy & Training, LLC
Nov. 17	PFAS - A Wonder Chemical which became a Nightmare	Jay Meegoda, NJ Institute of Technology
Nov. 17	Supercritical Fluid Chromatography: A Powerful and Greener Tool for Analytical and Preparative Separations	Yingru Zhang, Lotus Separations Michael Hicks, Merck & Co., Inc.
Nov. 17	Analytical Atomic Spectroscopy and its Environmental Applications	Dula Amarasiriwardena, Hampshire College
Nov. 18	Chromatographic Methods of Analysis of Oligonucleotides, siRNA, and mRNA	Martin Gilar, Waters Corporation
Nov. 18	Analytical Method Validation and Lifecycle Management – FDA, ICH and USP Expectations, Kim Huynh-Ba, Pharmalytik, LLC	Kim Huynh-Ba, Pharmalytik, LLC
Nov. 18	The Fundamentals of Laboratory Management – Managing People	Scott Hanton, Lab Manager
Nov. 18 & 19	Practical LC-MS/MS Method Development and Sample Preparation	Perry Wang, LC-MS Technical Expert
Nov. 19	Analytical Target Profile: An Introduction and its Strategic Link to Quality Target Product Profile and Analytical Life Cycle Management	Partha Mukherjee, Amicus Therapeutics
Nov. 19	Getting the most from GC and GC/MS	Gregory Slack, Consultant Nicholas Snow, Seton Hall University
Nov. 19	Process Analytical Technology: Out of the Lab & into the Line	James Ryzak, Specere Consulting
Nov. 19 & 20	How to Deliver a Winning Technical Presentation	Dottie Li, TransPacific Communications
Nov. 20	Successfully Implementing Key Elements of the USP and ICH Guidances in an Enhanced Analytical Procedure Development Workflow	Richard Verseput, S-Matrix Corporation
Nov. 20	Bioanalytical Method Validation by LC-MS/MS	Perry Wang, LC-MS Technical Expert

2024 EAS Student Awards

EAS continues to actively support a Student Awards program to recognize students involved in research in the broad field of analytical chemistry. We have expanded the Student Awards to include both graduate and undergraduate students. In the spring of each year, we encourage professors to identify undergraduate Juniors in college and graduate students who demonstrate special talent in research. Nomination criteria include excellent grades, appraisals of how the students handle their investigations, their approach and how they resolve problems and publicly disseminate their work.

In 2024, four undergraduates and four graduate students have been selected based on these criteria to receive EAS Student Awards. The following outstanding students have been chosen from a very worthy field of candidates:

UNDERGRADUATE STUDENTS



George Belay
College of Wooster
Nominated by Prof. Jennifer Faust



Phuong Ho
Pennsylvania State University
Nominated by Prof. Paul Cremer



Ronny Goldshmid
St. John's University
Nominated by Prof. Anne Vazquez



Austin Pelletier
University of Connecticut
Nominated by Prof. Anthony Provatas



GRADUATE STUDENTS



Benjamin Blakley
Vanderbilt University
Nominated by Prof. John McLean



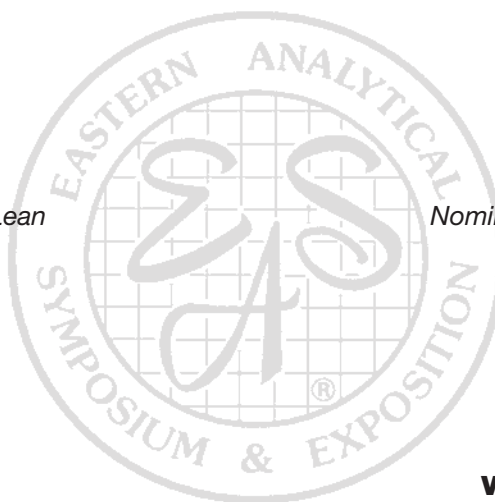
Tana Palomino
North Carolina State University
Nominated by Prof. David Muddiman



Madeline Honig
University of Minnesota
Nominated by Prof. Philippe Buhlmann



Valentina Rangel-Angarita
Yale University
Nominated by Prof. Stacy Malaker



The Governing Board of the 2024 EAS congratulates these awardees for their outstanding achievements.

The Student Awardees' posters will be presented on Tuesday, November 19, 2024
in the Poster Area on the Bridge to the hotel from 11:30 PM – 12:25 PM

WORKSHOPS

Take advantage of these FREE workshops to improve your job seeking skills!

Monday, November 18, 12:00 PM – 1:00 PM

Unlocking Your Potential: Navigating Career Change

Reno DeBono, Ph.D., QC Manager – Analytical & Metals

EMD Electronics (Electronic Business of Merck KGaA, Darmstadt Germany)

Room: Einstein, 1st Floor

Are you ready for a career change? Join us in this interactive workshop led by Dr. Reno DeBono, QC Manager at EMD Electronics. Whether you're a seasoned professional or just starting your career, this session will empower you to:

1. Discover Core Skills:
 - Understand and communicate your existing skill sets.
 - Identify transferable skills that can open new doors.
2. Explore New Career Paths:
 - Learn about core skills required in different industries.
 - Find opportunities beyond your current specialty.
3. Problem-Solving and Value Creation:
 - Analyze gaps and challenges in potential roles.
 - Discover how you can bring unique value to a position or company.
4. Share Success Stories:
 - Learn how to showcase your achievements effectively.
 - Craft compelling narratives for interviews and networking.
5. Generalize Specialized Knowledge:
 - Adapt highly specialized expertise to broader contexts.
 - Enhance your versatility and adaptability.

Join us and unlock your potential for a successful career transition!

Tuesday, November 19, 12:00 PM – 1:00 PM

A Guide to the Job Search for Young Professionals

Shelby Zangari, Ph.D.

Room: Einstein, 1st Floor

The modern employment search is very different in 2024 than in previous years, and it can be difficult to navigate if you have never experienced the process before! In this session, we will discuss tips for how to search for job opportunities and how to tailor your resume to improve your chances of receiving a call back. We will also discuss how to prepare for the interview and make a positive impression on your future employer. You'll receive tips and tricks from someone who has recently gone through the job hunt. Bring your resume if you are interested in receiving some feedback as well!

EMPLOYMENT BUREAU

The 2024 EAS Employment Bureau has gone virtual! All EAS attendees who wish to review posted jobs can access them via this QR Code to the Virtual Employment Bureau, which is also available on signage throughout the symposium. Exhibitors have QR Code(s) for their specific job posting(s), which are available at their exhibitor booths. If you are interested in a position, please contact the employer directly with your interest; EAS is not facilitating any communication between employers and job seekers. For your convenience, Room 201 is available during the symposium for meetings and interviews on a first-come, first-serve basis. All job postings will remain available for at least one month after the symposium closes. Employers are responsible for emailing employment@eas.org if a position has been filled so it can be removed from the Virtual Employment Bureau. There is no fee to post jobs.



Looking for Career Advice?

Join us for Speed Mentoring!

Sponsored by Society for Applied Spectroscopy New England Section

The Coblenz Society will offer an in-person Speed mentoring event on Monday, November 18 from 11:45 AM – 1:15 PM on the 3rd Floor. Speed Mentoring is a fun and fast paced session that enables a structured interaction with two dozen or more scientists from various industries, academia, and government labs that enable the mentees to get an understanding of what it's like to work in those areas. These interactions can be the basis of an ongoing mentoring relationship session if that is of interest and is a wonderful networking opportunity for job hunting or just getting a better understanding of life as a scientist. This is a great way to connect students with a variety of mentors and spark conversations in many possible career paths.

Lunch is provided; space is limited, and we encourage you to register in advance.

ALVIN BOBER SEMINAR SERIES

EAS offers seminars essentially for high school students and teachers and college students.
Seminars are included with the college student registration.

Tuesday, November 19, 2024; 10:00 AM – 12:00 PM

Spectroscopy and the World Around Us

Dr. Sharla Wood, Bristol Myers Squibb

Room 204, 2nd Floor

Join Dr. Sharla Wood, Bristol Myers Squibb, as we discover how light can be used to understand the world around us. Through a series of fun experiments, we will learn how spectroscopy, or the study of light and how it interacts with matter, can help us identify and learn more about materials just by how they absorb and emit light.

Wednesday, November 20, 2024; 10:00 AM – 12:00 PM

Careers in Science “Looking Back Through the Journey & Science of Color”

Debbie Peru, DP Spectroscopy and Training

Room 204, 2nd Floor

This seminar introduces the student to the various types of degrees and industrial positions available for scientists with two-year, four-year degrees or advanced degrees in chemistry, biology, engineering, etc. Part I of this seminar provides a look back through the journey of working in the energy, specialty chemical, pharmaceutical, and consumer product sectors. The seminar describes how analytical thinking and instrumental methods are used to solve problems and develop products that are used every day such as; gasoline, catalysts, plastic, soap, toothpaste, dietary supplements, roofing, etc. Part II of the seminar reviews the science of color and includes fun hands-on experiments to learn more about light including separation, reflectance, refraction, and how Beer’s law describes the relationship between absorption and concentration. These hands-on experiments are intended to demonstrate how scientists use these basic principles every day during their career.

Exposition & Special Events



EXPO BINGO

Get a sticker for every square & be entered to win!

B	I	N	G	O
HALO	ATS	BrightSpec	LAMG	Biological Technology
GERSTEL	HORIBA	IonBench	JEOL	LNI
M	MOORE'S NAGEL	pyvot	REGIS	RESTEK
R. DOUH RESEARCH ANALYTICAL	SHIMADZU	Thermo Fisher	Waters	xylem Lab Solutions

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\$100 AMAZON GIFT CARD
FREE 2025 EAS REGISTRATION
FREE 2025 EAS SHORT COURSE REGISTRATION*

*REQUIRES PURCHASE OF EAS REGISTRATION

Exposition & Special Events




MONDAY STARTING AT 4:15PM
IN THE AMPHITHEATER

KEYNOTE LECTURE & RECEPTION

*Food & Drinks after lecture
5:15 - 6:30pm*

LAKESIDE TERRACE,
MADISON, WILSON,
& WATERFRONT



**EXPO
MIXER**

Tuesday
4:30PM - 6:00PM

Enjoy food & drinks in the expo rooms
Lakeside Terrace, Madison, Wilson & Waterfront

OPEN TO ALL ATTENDEES

Exposition & Special Events

EAS AFTER HOURS

Crowne Plaza Flight Lounge

7PM TO 12AM

Monday & Tuesday

Cash Bar & Games

Thank you to our sponsors!

Monday



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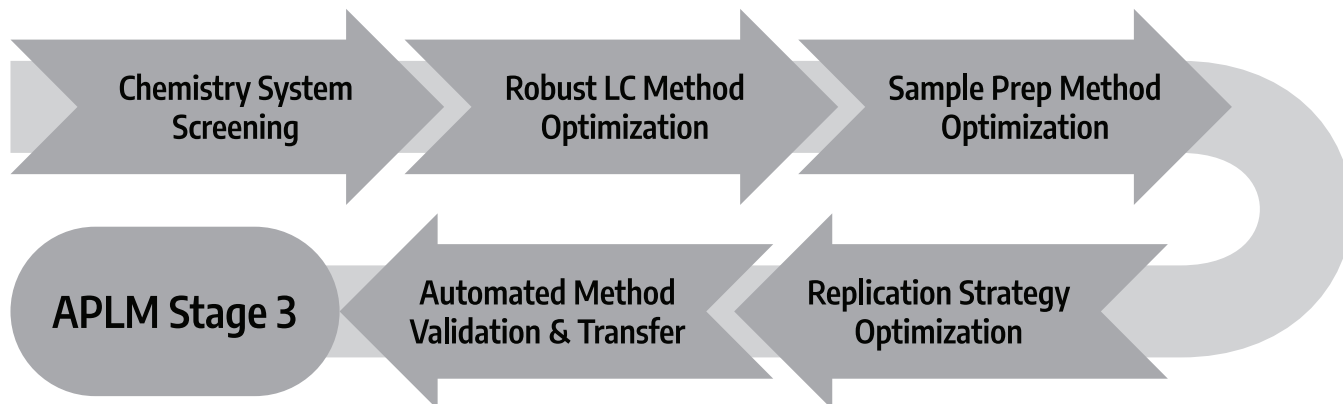
Tuesday

SOTAX

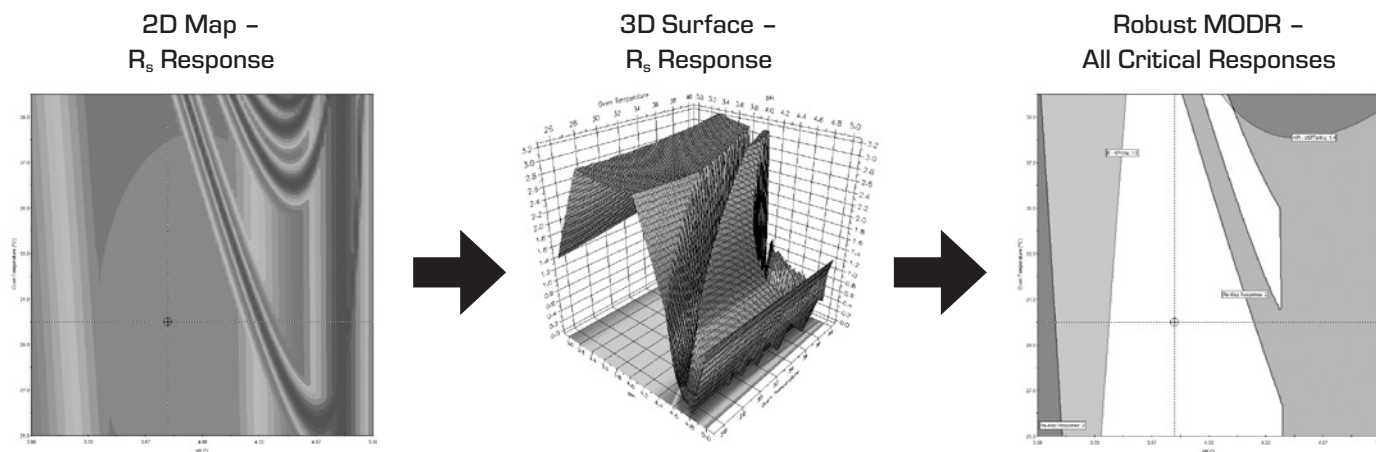
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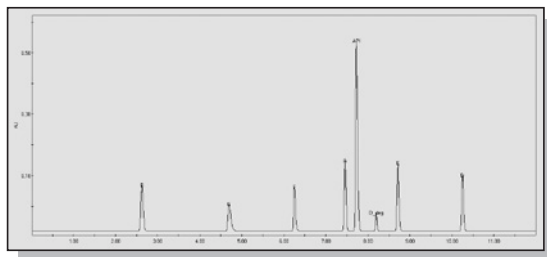


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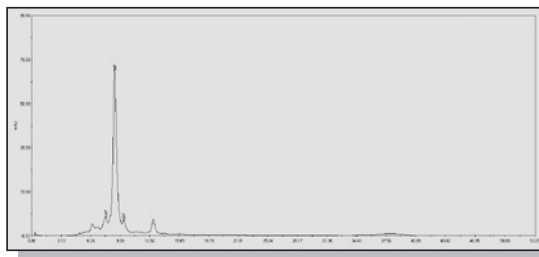


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At Waters, we unlock the potential of science by solving problems that matter. Our software and instruments ensure the safety of our medicines, the purity of the food we eat and the water we drink, and the quality of our products. Waters operates in 35 countries with 7,800 employees worldwide.

Welch Materials, Inc

28 E. Ridge Rd., Stamford, CT 06903, www.welch-us.com
Welch Materials is a multinational company that develops and manufactures chromatography consumables including analytical and preparative HPLC and UHPLC columns, Solid Phase Extraction (SPE) columns, Flash purification cartridges, GC columns, bulk packing materials, and protein purification products. Welch Materials was established in 2003 at Shanghai, China and Welch Materials (Zhejiang) was opened in 2011 at Jinhua, Zhejiang, China. Welch has a US facility in Stamford, CT, USA.

L7

Ⓢ Ⓜ Ⓜ Ⓜ Ⓜ Ⓜ W1

WF1

Wessex Press

333 riverside drive, new york, NY 10025, www.wessexlearning.com
Wessex Press is a New York State Certified Service-Disabled Veteran-Owned Business. Founded in 2007, Wessex Press makes professional books, textbooks, simulations, and other learning materials accessible and affordable for its core audience -- college students, professors, and professionals. Wessex operates at the cutting-edge of technology, providing traditional and e-learning tools. In addition to chemistry, focus topic areas are marketing and sales, account management and the social sciences.

WF14

Xylem Lab Solutions

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Xylem is a leading provider of premium field, online, and laboratory instrumentation serving the analytical needs of the surface water, wastewater, and industrial marketplaces, including petrochemical, pharmaceutical, and mining. In laboratories across the world, Xylem Lab Solutions is delivering solutions for physical measurement, as well as optical and chemical analysis. Quality control, safety, and efficient processing is essential; Xylem Lab Solutions helps meet these objectives.

Ⓢ Ⓜ Ⓜ Ⓜ Ⓜ M13

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