



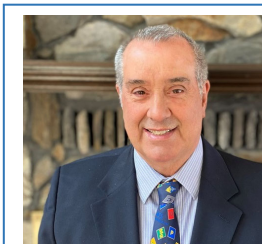
**EASTERN  
ANALYTICAL SYMPOSIUM  
& EXPOSITION 2023**  
SAVE THE DATE AND JOIN US

Better life with  
Analytical Chemistry

Crowne Plaza Princeton Conference Center | Plainsboro, NJ  
November 13–15, 2023

## 2023 EAS PRELIMINARY PROGRAM

### Message from the President of the Governing Board



The 2023 Eastern Analytical Symposium is all set for November 13-15. Registration opens in mid-July. Our theme this year is “Better Life with Analytical Chemistry”. The technology available to today’s scientists continue to become more and more powerful. A variety of disciplines rely on the newest technology to stay ahead of their competitors. Whether you’re a student, instructor, or a science professional working in the industry, EAS is an excellent venue to learn about new technologies. If you’re an Analytical Chemist, EAS is a great venue to hone your skills by attending a Short Course, Workshop, Technical Presentation, Seminar or Poster Session.

If you are planning to upgrade your laboratory equipment, you should visit the EAS Expo. The exhibitors display their most recent state-of-the-art instrumentation, products, and services for all three days of the symposium. The conference center allows easy access to visit the exposition throughout the day so please take some time to visit both our long-time exhibitors as well as those new to EAS. Thanks to all our sponsors for helping make EAS a success. We are particularly pleased to present the current list of exhibitors and sponsors and thank them for their continuous support.

Our Monday Keynote Speaker, Dr. Vasilis Vasiliou, will speak on *Exposome and Human Disease: From Neurological Disorders to Diabetes and Cancer*. Dr. Vasiliou is the Susan Dwight Bliss Professor of Epidemiology and the Chair of Environmental Health Sciences at the Yale School of Public Health. He is also a professor at the Yale School of the Environment and the Yale School of Medicine. Dr. Vasiliou’s laboratory utilizes a state-of-the-art integrated system approach that includes metabolomics, exposomics, imaging mass spectrometry, deep-learning, and human cohorts to research disease. Many of us are concerned with the impact our environment has on our overall health.

A very popular event is our Tuesday Breakfast Lecture. This year the speaker will be Dr. Frank Nichols, DDS, PhD. He is a Professor of Periodontology at UConn Health. He will be presenting his lifelong work on bacterial lipids. He uses UHPLC-QTOF and other analytical tools to assess their role in human health and their link to various diseases.

Please join us on Wednesday for our Plenary Lecture presented by Dr. Sibrina Collins. Dr. Collins will speak on *Inclusive Stories in Chemistry: Celebrating Dr. Marie Maynard Daly*. (Dr. Daly was recently honored at an ACS National Historic Chemical Landmark Dedication at Havemeyer Hall, Columbia University on May 19, 2023.) Dr. Collins was recently appointed as Executive Director of STEM Education for the College of Arts and Sciences (CoAS) at Lawrence Tech. Her research efforts include inorganic chemistry, chemical education, history of chemistry, and addressing inclusion and equity in the STEM fields.

EAS is proud to sponsor six awards recognizing distinguished career achievements across analytical subdisciplines as well as our student research awards. I congratulate all our awardees this year and encourage attendees to attend the award sessions. See page 21-22 for the list of the 2023 awardees.

Please plan on attending this year’s event at the Crowne Plaza Princeton Conference Center, Plainsboro, NJ and mark your calendars. For up-to-date information and more details about EAS please check our website at [eas.org](http://eas.org) and follow us on Twitter, Instagram, LinkedIn and/or Facebook.

**Frank Romano**  
2023 EAS President

Follow us on social media:





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## 2023 EAS PRELIMINARY PROGRAM

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*The Eastern Analytical Symposium & Exposition is sponsored  
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Association of Laboratory Managers; the New Jersey  
Association of Forensic Scientists; and the Chinese American  
Chromatography Association.*

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Eastern Analytical Symposium & Exposition, Inc. reserves the right,  
without notice, to modify the material or schedules, as well as to amend  
the roster of presenters or instructors.



# EAS General Information & Schedule

## Technical Sessions

All oral & poster technical sessions are held in the Crowne Plaza Conference Center. Room assignments for the various sessions are located in the Final Program.

## Schedule

### Oral Technical Sessions

#### Sunday

No oral sessions

#### Monday - Wednesday

9:00am-11:30am; 1:30pm-4:00pm

### Lecture Schedule

#### Monday

4:15pm Keynote Lecture

Dr. Vasilis Vasiliou, Yale University

#### Tuesday

8:00am Breakfast Lecture

Dr. Frank Nichols, University of Connecticut

#### Wednesday

11:45am Plenary Lecture

Dr. Sibrina Collins, Lawrence Technical University

## Schedule

### Electronic Poster Sessions

Posters are displayed only on the designated day of the poster session.

#### Monday & Tuesday Session 1

Poster Set-Up: 9:00am-10:00am

Posters on display: 10:00am-noon

Authors Available: 11:30am-12:25pm

Posters Removed: 12:00pm

#### Monday & Tuesday Session 2

Poster Set-Up: 9:00am-10:00am

Displayed: 12:30pm-4:00pm

Authors Available: 12:30pm-1:25pm

Posters Removed: 4:00pm

#### Wednesday

Poster Set-Up: 9:00am-10:00am

Displayed: 10:00am-3:30pm

Authors Available: 12:30pm-1:15pm

Posters Removed: 3:30pm

## EAS Short Courses

You must pick up your Full Conferee registration information prior to going to the short course.

### Sunday - Wednesday

8:30am to 5:00pm

## Seminars for High School Teachers and Students

Pre-registration is required.

#### Sunday

*(High School Teachers only)*

1:00pm to 4:00pm

#### Monday & Wednesday

10:00am to 12:00pm

## Workshops

An EAS registration is required to attend the career development workshops. Pre-registration is requested.

#### Wednesday, November 1 (Zoom)

12:00pm to 1:00pm

#### Tuesday, November 7 (Zoom)

12:00pm to 1:00pm

#### Monday, November 13 (Onsite)

12:00pm to 1:00pm

#### Tuesday, November 14 (Onsite)

12:00pm to 1:00pm

## Employment Bureau

Stay tuned for more details on our Employment Bureau!

## Exposition Schedule

#### Sunday

Open for exhibitor set-up only

#### Monday

Hours: 10:00am to 6:30pm

*There will be Keynote Reception in the Expo from 5:00pm-6:30pm for all attendees.*

#### Tuesday

Hours: 10:00am to 5:30pm

*There will be a special Mixer in the Expo from 4:00pm-5:30pm for all attendees.*

#### Wednesday

Hours: 10:00am to 3:00pm

## Attendee Registration Hours

#### Sunday

Short Course: 7:30am - 9:00am

All attendees: 3:00pm - 5:00pm

#### Monday

8:00am - 5:30pm

#### Tuesday

7:30am - 4:30pm

#### Wednesday

8:00am - 3:30pm

## Exhibitor Registration Hours

#### Sunday

Exhibitors – 9:00am to 6:00pm

#### Monday

8:30am - 5:30pm

#### Tuesday

8:30am - 4:30pm

#### Wednesday

8:30am - 8:30pm

## Camera & Cell Phone Use

The use of cameras and cell phones is not permitted during program sessions. Cameras are permitted on the exhibit floor; however, permission from the exhibitors involved must be obtained before photographs may be taken.

## Badges

Your badge is your admission to many of the activities at the 2023 EAS. Please make sure that you remember to bring it with you when you come to the meeting. There is a \$25 fee for the processing of lost or misplaced badges. Badges are non-transferable.

## More Information

EAS Hotline: 732-449-2280

EAS E-mail: [askEAS@EAS.org](mailto:askEAS@EAS.org)

Eastern Analytical Symposium & Exposition Inc.

PO Box 185,

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# 2023 EAS CONFERENCES-IN-MINIATURE

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

## BIOANALYSIS, PROTEOMICS & METABOLOMICS

### Technical Sessions

- Revolutionizing Bioanalysis: Cutting Edge Analytical Advancements (11/14 PM)
- **EAS Young Investigator Award, Honoring Emanuela Gionfriddo, University of Toledo (11/15 AM)**
- Applications of Analytical Chemistry in Proteomic Research (11/15 PM)

### Short Courses

- Practical Bioanalytical Method Validation by LC-MS/MS (11/14)
- Introduction to LC-MS Metabolomics (11/15)

## CHEMOMETRICS

### Technical Sessions

- Applied Chemometrics and Machine Learning (11/13 AM)
- **EAS Award for Outstanding Achievements in Chemometrics, Honoring John Kalivas, Idaho State University (11/13 PM)**
- Accelerating Pharma R&D: Automation, Machine Learning, Predictive Sciences, and Image Analytics (11/14 AM)
- Unleashing the Power of Data with Quality-by-Design and Chemometrics (11/14 PM)
- Chemometrics: Using Data to Solve Tomorrow's Problems (11/15 PM)

### Short Course

- Non-Linear Machine Learning for Calibration and Classification (11/12)

## CHROMATOGRAPHY

### Technical Sessions

- **EAS Award for Outstanding Achievements in Separation Science Honoring Mary Wirth, Purdue University (11/13 AM)**
- **EAS Award for Outstanding Achievements in the Field of Analytical Chemistry, Honoring Robert Kennedy, University of Michigan (11/13 PM)**
- Chromatographic Solutions for Modern-Day Challenges (11/13 PM)
- Multidimensional Separations: Theory & Practice (11/13 AM)
- Separations in Pharmaceutical Applications (11/13 PM)
- Fifty Years of Innovations in HPLC Columns (11/14 AM)
- What You Actually Need to do to Make Your Separations Sustainable? (11/14 PM)
- Recent Developments in High Performance Thin Layer Chromatography (11/14 PM)
- Evaluating and Understanding Extremely Large Molecules Through Various Separation Techniques (11/15 AM)
- Beyond Boundaries: Expanding Horizons of Liquid Chromatography (11/15 AM)
- Advances in Chromatography with Applications in the Biomedical / Clinical Diagnostics Field (11/15 PM)

### Short Courses

- HPLC and UHPLC for Practicing Scientists 1 and 2: Fundamentals, Method Development, and Troubleshooting (11/12-11/13)
- Practical LC-MS Method Development and Sample Preparation (11/12-11/13)
- Chromatographic Methods of Analysis of Oligonucleotides, siRNA, and mRNA (11/12)
- High-Performance Thin-Layer Chromatography an Alternative Approach to Quality: Standardization, Quantification and Automation (11/12)
- Supercritical Fluid Chromatography (SFC): A Powerful and Greener Tool for Analytical and Preparative Separations (11/15)
- Two-Dimensional Liquid Chromatography for Pharmaceutical Analysis (11/14)
- Improve Your LC Separations – What to Do Next When C18 Does or Doesn't Work (11/14)
- Getting the most from GC and GC/MS (11/14)
- Systematic Chromatography Maintenance and Troubleshooting (11/15)

## CONSERVATION SCIENCE

### Technical Sessions

- From Brushstrokes to Chemical Signatures: Uncovering the Mysteries of Artworks through Forensic Analytical Techniques (11/13 PM)
- Conservation Science: Beyond Art & Forensics (11/15 AM)
- Analytical Studies in Heritage Discovery, Authentication and Attribution (11/15 PM)

### Short Courses

- The Fundamentals of Laboratory Management – Managing People (11/14)

## ENVIRONMENTAL & CONSUMER ANALYSIS

### Technical Sessions

- Food Safety Analysis (11/13 AM)
- Advancing Approaches for Analyzing Fine Microplastics and Nanoplastics (11/13 AM)
- Forever Bounded: PFAS and Other Xenobiotics in the Environment and Analytical Challenges (11/13 AM)
- Human Exposures to PFASs from Everyday Sources (11/13 PM)
- Protecting the Food Chain: Developments in Food and Beverage Analysis (11/13 PM)
- Beyond Traditional Methods: Exploring Next Generation Innovations in Environmental Science (11/14 AM)
- Analytical Approaches to Cosmetic Chemistry (11/15 AM)
- Measurement Challenges in Cannabis-Derived Products (11/15 PM)

### Short Course

- Green Analytical Chemistry (11/13)

## FORENSIC ANALYSIS

### Technical Sessions

- Research from our Emerging Forensic Scientists (11/13 AM)
- State-of-the-Art Innovation in Forensic Science (11/13 AM)
- From Brushstrokes to Chemical Signatures: Uncovering the Mysteries of Artworks through Forensic Analytical Techniques (11/13 PM)
- Explosives & GSR: Present & Future Directions (11/14 AM)
- Forensic Microscopy "What is it? Who does it?" (11/14 PM)

### Short Course

- The Importance of Microscopy in Microspectroscopy (11/15)

## LABORATORY MANAGEMENT

### Technical Session

- Lab Managers Basics: Essentials Every Lab Manager Should Know (11/13 PM)

### Short Courses

- The Fundamentals of Laboratory Management – Managing People (11/12)
- Prepare Your Analytical Laboratory for Quality Audit and Inspection (11/13)
- Design of Experiments (DoE): Key to Effectiveness and Continuous Improvement in the Laboratory (11/13)
- ABC to PMP: A Project Management Crash Course (11/15)

## MASS SPECTROMETRY

### Technical Sessions

- Shaping the Future of Cancer Research: Exploring Mass Spectrometry Innovations (11/13 AM)
- Mass Spectrometry: Unlocking a World of Applications (11/13 PM)
- **EAS Award for Outstanding Achievements in Mass Spectrometry, Honoring John McLean, Vanderbilt University (11/14 AM)**
- Quantitative Mass Spectrometry through Drug Development Life Cycle (11/14 PM)
- Applications of Ion Mobility Mass Spectrometry (11/15 AM)



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

### MASS SPECTROMETRY *continued*

#### Short Courses

- Practical LC-MS Method Development and Sample Preparation (11/12-11/13)
- Getting the most from GC and GC/MS (11/14)
- Practical Bioanalytical Method Validation by LC-MS/MS (11/14)
- Introduction to LC-MS Metabolomics (11/15)

### NMR SPECTROSCOPY

#### Technical Sessions

- NMR: The Swiss Army Knife of Analytic Methods (11/14 AM)
- **EAS Award for Outstanding Achievements in Magnetic Resonance, Honoring James Prestegard, University of Georgia (11/14 PM)**

#### Short Course

- Practical NMR Spectroscopy (11/12)

### PHARMACEUTICAL ANALYSIS

#### Technical Sessions

- Accelerating Pharma R&D: Automation, Machine Learning, Predictive Sciences, and Image Analytics (11/14 AM)
- Infectious Diseases - Diagnostics, Treatment and Prevention (11/14 AM)
- Applying Analytical Technologies to Drug Development (11/14 PM)
- Risk Mitigation in the Pharma QC Laboratory (11/14 PM)
- Overcoming the Complexity of Biological Drug Products through Experimental and Computational Characterizations (11/15 AM)
- Analytical Advancements Driving Pharmaceutical Excellence (11/15 PM)

#### Short Courses

- Prepare Your Analytical Laboratory for Quality Audit and Inspection (11/12)
- Sample Preparation: The Chemistry Behind the Techniques (11/12)
- Analytical Method Validation and Lifecycle Management – FDA, ICH and USP Expectations (11/13)
- Intact and Top-Down Protein Characterization and Quantitation by Mass Spectrometry: Approaches for Pharmaceutical Drug Discovery, Development, and Bioanalysis (11/13)
- Analytical Method Validation: A Quality by Design Approach (11/14)
- 2D Liquid Chromatography for Pharmaceutical Analysis (11/14)
- An Overview of Drug Development, Drug Quality, Regulatory, and Quality Control Processes (11/15)
- Process Analytical Technology: Out of the Lab and into the Line (11/15)

### POWERHOUSE PANEL DISCUSSIONS

#### Technical Sessions

- Advancing Approaches for Analyzing Fine Microplastics and Nanoplastics (11/13 AM)
- Separations in Pharmaceutical Applications (11/13 PM)

### SPECIAL LECTURES

#### Technical Sessions

- Keynote Lecture by Dr. Vasilis Vasililiou, Yale University (11/13 PM)
- Breakfast Lecture by Dr. Frank Nichols, University of Connecticut (11/14 AM)
- Plenary Lecture by Dr. Sibrina Collins, Lawrence Technical University (11/15 AM)

### SPECTROSCOPY

#### Technical Sessions

- Coherent Nonlinear Optical Spectroscopy and Imaging (11/13 AM)
- PAT: Eyes in the Process (11/13 PM)
- Highlighting Early Career Scientists in Spectroscopy and Analytical Chemistry (11/14 AM)
- **New York/New Jersey Section of the Society for Applied Spectroscopy Gold Medal Award, Honoring Curtis Marcott, Light Light Solutions (11/14 PM)**
- Portable Instrumentation in the Field (11/15 AM)
- Sub-mMicron IR and Raman Spectroscopies (11/15 AM)
- Exploring Diverse Applications of Spectroscopic Techniques (11/15 PM)

#### Short Courses

- Practical NMR Spectroscopy (11/12)
- Introduction to Quantitative Spectroscopy for Near Infrared and Raman Instrumentation (11/13)
- Practical Raman Microscopy (11/14)
- Problems with FT-IR Spectra and How to Avoid Them (11/14)
- The Importance of Microscopy in Microspectroscopy (11/15)

## EASTERN ANALYTICAL SYMPOSIUM & EXPOSITION 2023

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**CALL FOR PAPERS!**


Poster Presentations: Mar 1 – Sept 4

Online Submission at [eas.org](https://eas.org)

## 2023 Preliminary Technical Oral Program

Here is the preliminary list of oral invited and contributed sessions. The Poster Sessions will be announced in September. It is not too late to submit an abstract for a **poster** presentation! The deadline is September 4th. Visit our submission site for more details and to submit: [www.EAS.org/asubmit](http://www.EAS.org/asubmit)

### MONDAY MORNING, NOVEMBER 13

Time	Title, Author(s)
<b>EAS Award for Outstanding Achievements in Separation Science</b> <b>Honoring Mary Wirth, Purdue University</b> <b>Chair: Shelley Claridge, Purdue University</b> <b>Sponsored by Restek Corporation</b> 	
9:00am	<i>Plenty of Room at the Top: From Atomic-Scale Surface Science to Materials for Human Health</i> , Shelley Claridge, Purdue University
9:30am	<i>Drug Discovery Using Mass Spectrometry for Synthesis and Analysis</i> , Graham Cooks, Purdue University
10:00am	Break
10:30am	<i>Interfacial Chemistry within Porous Chromatographic Silica – The Inside Story Revealed by Confocal Raman Microscopy</i> , Joel Harris, University of Utah
11:00am	<i>Presentation of the EAS Award for Outstanding Achievements in Separation Science</i>
11:05am	<i>Surface Science Underlying Protein Chromatography</i> , Mary Wirth, Purdue University

<b>Food Safety Analysis</b> <b>Chair: Douglas Stevens, Waters Corporation</b>	
9:00am	Dairy Ingredients Safety for the Global Market, Erin Aungier-Markoff, Cayuga Milk Ingredients
9:30am	Analysis of PFAS, Pesticides, and Mycotoxins in Food and Agriculture, Volker Bornemann, Avazyme, Inc.
10:00am	Break
10:30am	Flexible Multi-Mycotoxin Methods to Meet Current and Future Regulatory Requirements, Emily Britton, Waters Corp.
11:00am	Multi-Residue GC/MS/MS of Pesticides Analysis in Infant Food, Douglas Stevens, Waters Corp.

<b>The Research from our Emerging Forensic Scientists</b> <b>Sponsored by New Jersey Association of Forensic Scientists</b> <b>Chair: Monica Joshi, West Chester University of PA</b>	
9:00am	<i>Detection of Yellow Fever Virus in Human Remains Using Mass Spectrometry-Based Protein Identification</i> , Kyra Miller, Rutgers University-Camden
9:30am	<i>Determining Interperson Variation of Head Hair Through Color Assessment</i> , Emma Redman, Cedar Crest College
10:00am	Break
10:30am	<i>A Novel FTIR Method for the Detection and Quantitation of Ruhemann's Purple in Latent Fingerprint Analysis</i> , Kira Bochard, Heather Harris, Arcadia University, Kimberlee Moran, Rutgers University-Camden, Cynthia Tidwell, University of Montevallo
11:00am	<i>GC-Triple Quadrupole Analysis of Organic Gunshot Residues</i> , Thomas Ledergerber, West Virginia University

<b>Multidimensional Separations: Theory &amp; Practice</b> <b>Sponsored by ACS Division of Analytical Chemistry</b> <b>Chair: James Grinias, Rowan University</b>	
9:00am	<i>Comprehensive Two-Dimensional Gas Chromatography: The Future of Nontargeted VOC Analysis</i> , Katelynn Perrault Uptmor, College of William and Mary
9:30am	<i>Adventures in Two-Dimensional Liquid Chromatography Separations of Therapeutic Oligonucleotides</i> , Dwight Stoll, Gustavus Adolphus College
10:00am	Break
10:30am	<i>Trapping Mode Two-Dimensional Liquid Chromatography for Quantitative Low-Level Impurity Enrichment in Pharmaceutical Development</i> , Ziqing Lin, Bristol Myers Squibb
11:00am	<i>LCxMSy: Exploring Different Combinations of Multi-Dimensional Liquid Chromatography with Multiple Parallel Mass Spectrometry</i> , William Byrdwell, United States Department of Agriculture

<b>POWERHOUSE SESSION:</b> <b>Advancing Approaches for Analyzing Fine Microplastics and Nanoplastics</b> <b>Chair: Beizhan Yan, Columbia University</b>	
9:00am	<i>Challenges in Sample Processing for Raman Analysis of Environmental and Biological Samples</i> , Beizhan Yan, Columbia University
9:30am	<i>Rapid Single-Particle Chemical Imaging of Nanoplastics by SRS Microscopy</i> , Naixin Qian, Wei Min, Beizhan Yan, Columbia University
10:00am	Break
10:30am	To be announced
11:00am	Panel Discussion

## 2023 Preliminary Technical Oral Program

### Monday Morning continued

<b>Forever Bounded: PFAS and Other Xenobiotics in the Environment and Analytical Challenges</b> <b>Chairs: Kaitlyn Campbell, Christopher Perkins, University of Connecticut</b>	
9:00am	<i>Transport and Deposition of Emerging PFAS Through Rainfall</i> , Jennifer Faust, Yubin Kim, Jameson Sprinkle, Donald Conley, Rebekah Gray, Paul Edmiston, The College of Wooster, Kyndal Pike, University of Wisconsin-Madison
9:30am	<i>Developing and Testing of Passive Samplers for Dissolved PFAS</i> , Rainer Lohmann, Jitka Becanova, Matthew Dunn, Jarod Snook, University of Rhode Island
10:00am	Break
10:30am	<i>Investigating the Role of Coastal Wetland on the Fate and Transport of PFAS</i> , Mi-Ling Li, University of Delaware
11:00am	<i>PFAS Method Development and Bioaccumulation in Long Island Sound</i> , Kaitlyn Campbell, University of Connecticut

<b>Shaping the Future of Cancer Research: Exploring Mass Spectrometry Innovations</b> <b>Chair: Costel Darie, Clarkson University</b>	
9:00am	<i>Proteomics Analysis of Breast Milk for Early Detection of Breast Cancer: A Mass Spectrometry Approach</i> , Aneeta Arshad, Danielle Whitham, Costel Darie, Clarkson University, Brian T. Pentecost, Kathleen F. Arcaro, University of Massachusetts Amherst
9:20am	<i>Proteomic Analysis and Comparison of Stage IIA T1N1 ER/PR Negative Breast Cancer Serum to Controls for Identification of Potential Biomarkers for Breast Cancer</i> , Pathea S. Bruno, Costel Darie, Clarkson University, Brian T. Pentecost, University of Massachusetts Amherst
9:40am	<i>A Proteomic Investigation of Human Serum from Donors with Stage IIB Breast Cancer and Matched Controls to Identify Protein Biomarkers for Earlier Breast Cancer Detection</i> , Danielle Whitham, Panashe Mutsengi, Brian T. Pentecost, Costel Darie, Clarkson University
10:00am	Break
10:30am	<i>A Proteomic Investigation of Human Serum from Donors with Triple Negative Breast Cancer and Matched Controls to Identify Potential Protein Biomarkers for Breast Cancer Detection</i> , Norman Haaker, Isabelle Sullivan, Danielle Whitham, Brian T. Pentecost, Costel Darie, Clarkson University
10:50am	<i>A Proteomics Investigation of Human Sera from African American Donors with Invasive Ductal Carcinoma Breast Cancer and Matched Controls</i> , Logan Seymour, Panashe Mutsengi, Danielle Whitham, Brian Pentecost, Costel Darie, Clarkson University
11:10am	<i>A Case Study Investigation for Biomarker Discovery: Proteomics Analysis of Sera from an Asian American Woman with Triple Negative Breast Cancer and a Matched Controls</i> , Hailey Morrissiey, Panashe Mutsengi, Danielle Whitham, Costel Darie, Clarkson University, Brian Pentecost, University of Massachusetts Amherst

<b>State-of-the-Art Innovation in Forensic Science</b> <b>Chair: Dave Trimble, Northrop Grumman Corp</b>	
9:00am	<i>Determining the Time Since Deposition of Variable Heated Bloodstains Utilizing Raman Spectroscopy and Chemometrics</i> , Alexis Weber, Igor K. Lednev, University at Albany, SUNY
9:20am	<i>Combining Surface-Enhanced Raman Spectroscopy (SERS) and Paper Spray Mass Spectrometry (PS-MS) for Drug Detection</i> , Sevede Dogruer Erkok, Bruce McCord, Florida International University, Roxanne Gallois, ENS of Lyon, Leon Leegwater, Pascal Camoiras Gonzalez, Arian van Asten, University of Amsterdam
9:40am	<i>Investigating the Dynamics of Soil Chemistry and its Related Microbiome through Liquid Chromatography and Mass Spectrometry</i> , Jessica Grace Prudence Hay, Deakin University
10:00am	Break


<b>Coherent Nonlinear Optical Spectroscopy and Imaging</b> <b>Chair: Kenneth L. Knappenberger, Pennsylvania State University</b>	
9:00am	Hai-Lung Dai, Temple University
9:30am	Tessa Calhoun, University of Tennessee
10:00am	Break
10:30am	Ariel Alperstein, University of Delaware
11:00am	<i>The Interactions of Electrolyte Solutions with Charged Monolayer Films at the Air/Water Interface</i> , Paul Cremer, Penn State University


<b>Applied Chemometrics and Machine Learning</b> <b>Chair: Brandye Smith-Goettler, Merck &amp; Co., Inc.</b>	
9:00am	Barry Wise, Eigenvector Research
9:30am	Michael George, University of Nottingham
10:00am	Break
10:30am	Brandye Smith-Goettler, Merck & Co., Inc.
11:00am	Panel Discussion



## 2023 EAS Preliminary Technical Oral Program

### MONDAY AFTERNOON, NOVEMBER 13

Time	Title, Author(s)
<b>EAS Award for Outstanding Achievements in the Field of Analytical Chemistry</b> <b>Honoring Robert Kennedy, University of Michigan</b> <b>Chair: James Grinias, Rowan University</b> <b>Sponsored by Bristol Myers Squibb</b> 	
1:30pm	<i>Presentation of the EAS Award for Outstanding Achievements in the Fields of Analytical Chemistry</i>
1:35pm	<i>Using Microfluidic Droplet Technology to Improve Throughput for Chemical Analysis</i> , Robert Kennedy, University of Michigan
2:00pm	<i>Small Separations and Big Data: Using Analytical Chemistry to Address the Challenges of Cancer Detection</i> , Rebecca Whelan, University of Kansas
2:30pm	Break
3:00pm	<i>Two-Dimensional Liquid Chromatography for Advanced Characterization of Industrial Polymers and Sustainable Materials</i> , Peilin Yang, Dow Chemical Company
3:30pm	<i>Low-Cost, Open-Source Tools for Chemical Analysis</i> , James Grinias, Samuel Foster, Deklin Parker, Christopher Piccolo, Joeachin Obasi, Catherine Seltzer, Matthew Will, Rowan University

<b>EAS Award for Outstanding Achievements in Chemometrics</b> <b>Honoring John Kalivas, Idaho State University</b> <b>Chair: Peter Harrington, Ohio University</b> <b>Sponsored by Eigenvector Research</b> 	
1:30pm	<i>AI, Machine Learning, Chemoinformatics, and Chemometrics: What's the Deal</i> , Peter Harrington, Ohio University
2:00pm	<i>Temporal Surface Mode Decomposition for Catalytic Characterization</i> , Ross Kunz, Idaho State University
2:30pm	Break
3:00pm	<i>Photonic Data Science: Model Transfer for Raman Spectra and FAIR Data Storage for Vibrational Spectroscopic Data</i> , Thomas Bocklitz, Leibniz-Institut of Photonic Technology
3:30pm	Presentation of the EAS Award for Outstanding Achievements in Chemometrics
3:35pm	<i>Rashomon Effect on Model Interpretability and Improving Model Generalizability</i> , John Kalivas, Idaho State University

<b>POWERHOUSE SESSION:</b> <b>Separations in Pharmaceutical Applications</b> <b>Chairs: Erik Regalado &amp; Imad Haidar, Merck &amp; Co., Inc.</b>	
1:30pm	<i>Strategies and Tools to Simplify and Support Method Development in Two-Dimensional Liquid Chromatography - A Progress Report</i> , Dwight Stoll, Gustavus Adolphus College
2:00pm	<i>Pharmaceutical Portfolio Delivery by Benefit of Strategic Method Development and Automation for Large and Small Molecule Separations</i> , Kaitie Grinias, GSK
2:30pm	Break
3:00pm	<i>Coupling Separation and Sample Preparation Methods for Pharmaceutical Analysis</i> , Iowa State University
3:30pm	Panel Discussion

<b>Mass Spectrometry: Unlocking a World of Applications</b> <b>Chair: Michelle Case, Bristol Myers Squibb</b>	
1:30pm	<i>Investigation of the Effects of Human Jumping Translocation Breakpoint (hJTB) Protein Using Mass Spectrometry Based Proteomics</i> , Taniya Jayaweera, Madhuri Jayathirtha, Danielle Whitham, Costel C. Darie, Clarkson University
1:50pm	<i>Development of an Automated Matrix Assisted Laser Desorption Ionization Mass Spectrometry Workflow for Formulation Risk Assessment of Novel, Engineered Cytokine Proteins</i> , Gregory Pirrone, Erik Munsell, Alexey Makarov, Heidi Ferguson, Suman Luthra, Mohammad Al-Sayah, Merck & Co., Inc.
2:10pm	<i>Optimization of the In-Gel Sample Preparation for Mass Spectrometry-Based Proteomics</i> , Danielle Whitham, Costel C. Darie, Brindusa Alina Petre, Clarkson University
2:30pm	Break
3:00pm	<i>Evaluation of LC-MS Instruments for Multi-Attribute Method (MAM) Implementation</i> , Catherine O. Brown, Kelsey T. Morgan, Matthew D. Maust, Justin W. Shearer, Nicole A. Schneck, Emily L. Gill, GSK
3:20pm	<i>Nontarget LC/QToF Interrogation of Fluorinated Residues in a Fluoropolymer Dispersion Prepared with a Hydrocarbon Based Processing Aid</i> , Jill E. Boyle, Maria D. Cervantes Garcia, Jordyn Kramer, Peter A. Morken, Adam P. Smith, John C. Sworen, Michael Wadsley, Michael C. Davis, The Chemours Company
3:40pm	<i>Moving into PROTACs Drug Discovery: Considerations for LC-MS Analysis</i> , Sharon Tentarelli, AstraZeneca

## 2023 Preliminary Technical Oral Program

Monday Afternoon continued

<b>From Brushstrokes to Chemical Signatures: Uncovering the Mysteries of Artworks through Forensic Analytical Techniques, organized by the New Jersey Association of Forensic Scientists</b> <b>Chair: David Fisher, New Jersey Institute of Technology</b>	
1:30pm	<i>Materials Analysis and Art Historical Research on a 16th Century painting of St. Catherine of Alexandria</i> , Jeffrey Taylor, NY Art Forensics
2:00pm	<i>Science in the Museum: How Analytical Techniques Inform Art History, Conservation, and Museum Practice</i> , Marco Leona, Metropolitan Museum of Art
2:30pm	Break
3:00pm	Thiago Piwowarczyk, NY Art Forensics
3:30pm	<i>The Forensic Examination of Red, Black and Silver</i> , Nick Petraco, Petraco Consulting

<b>Chromatographic Solutions for Modern-Day Challenges</b> <b>Chair: Enju Wang, St. John's University</b>	
1:30pm	<i>Development of Limit Test for Residual Spermine and Putrescine in Monoclonal Antibody In-Process Samples</i> , Sina Mortazavi, GSK
1:50pm	<i>Small Molecule HPLC Method Optimization Using an Acidic, Basic, and Neutral Panel and Superficially Porous Particles</i> , Conner McHale, Advanced Materials Technology
2:10pm	<i>Nonstoichiometric Pseudoprotic Ionic Liquids as Media for Metal Separations</i> , Mark Kobrak, Brooklyn College
2:30pm	Break
3:00pm	<i>The Benefits of Reducing Metal Ion Introduction into HPLC Flow Paths via Silicon-Based CVD Coatings</i> , Jesse Bischof, SilcoTek Corporation
3:20pm	<i>Modeling and Visualizing Mass Transfer of Monoclonal Antibodies (mAb) in Size Exclusion Chromatography (SEC) Columns</i> , Sornanathan Meyyappan, Fabrice Gritti, Waters Corporation
3:40pm	<i>The Systematic Screening Protocol: A Streamlined Way to Develop Fast and Robust Reversed-Phase Liquid Chromatography Methods</i> , Kenneth Berthelette, Kim Haynes, Waters Corporation

<b>Human Exposures to PFASs from Everyday Sources</b> <b>Chair: James D. Stuart, University of Connecticut</b>	
1:30pm	<i>Dietary Pathways and Routes of Human Exposure to PFAS</i> , Dana McCue, EHS Support
2:00pm	<i>Using Non-Targeted Analyses to Probe PFAS Exposure from Sources Ranging from Nonstick Pans to Fish</i> , Erin Baker, University of North Carolina
2:30pm	Break
3:00pm	<i>Bioaccumulation of Per/Polyfluoroalkyl Substances (PFASs): What We Can Learn Using Complex Mixtures and High-Resolution Mass Spectrometry</i> , Carrie McDonough, Carnegie Mellon University
3:30pm	<i>PFAS in Foods: Modified Expansion and Results</i> , Susan Genualdi, United States Food & Drug Administration

<b>Protecting the Food Chain: Developments in Food and Beverage Analysis</b> <b>Chair: Shelby Zangari</b>	
1:30pm	<i>Rapid Screening Techniques for the Identification of Chemicals of Interest in Food Contact Materials: A US FDA Approach</i> , Rafael Paseiro-Cerrato, Luke K. Ackerman, Lowri DeJager, United States Food & Drug Administration, Erika Gonzales, Joint Institute for Food Safety and Applied Nutrition
1:50pm	<i>Multivariate Regression of Chili Capsaicinoids for Absorbance-Transmittance Excitation Emission Matrix (A-TEEM) Spectroscopy and UPLC-DAD Data</i> , Adam Gilmore, HORIBA Instruments, Uwe Nienaber, Kalsec Inc.
2:10pm	<i>Accurate and Reliable Analysis of Food Samples Using ICP-MS with Argon Gas Dilution</i> , Andy Fornadel, Sukanya Sengupta, Bhagyesh Surekar, Richard Fussell, Daniel Kutscher, Thermo Fisher Scientific
2:30pm	Break
3:00pm	<i>Analytical Testing Solutions for Method Validation Studies on PFAS Testing of Drinking Water and other Samples Matrices by UHPLC/MS/MS</i> , Cole Strattman, PerkinElmer
3:20pm	<i>Determination of Cannabinoids in Animal Feeds by Liquid Chromatography–Tandem Mass Spectrometry</i> , Xin Xu, Lisa Murphy, University of Pennsylvania
3:40pm	<i>Wet Chemistry Automation for Increasing Laboratory Productivity in Environmental, Food &amp; Beverage Testing</i> , Gary He, Thermo Fisher Scientific

<b>PAT: Eyes in the Process</b> <b>Chair: James Rydzak, Specere Consulting</b>	
1:30pm	<i>Do You Really Understand Your Crystallization - The Value of PAT</i> , Norman Wright, Mettler Toledo
2:00pm	<i>Development of Adaptable and Scalable Quantitative Mid-Infrared Spectroscopy Models for In-line Monitoring of the Continuous Synthesis of Furosemide Using Dynamic Calibration Methodology</i> , Roudabeh Sadat Moazeni Pourasil, Yuma Miyai, Matthew Glace, Rachel Vallejo, James Rydzak, Thomas D. Roper, University of Virginia Commonwealth
2:30pm	Break
3:00pm	John Wasylyk, Bristol Myers Squibb
3:30pm	<i>Near-Infrared Spectroscopy: From a Simple Lab-Based Tool for Raw Material Qualification to a Key Component in PAT/QbD and Continuous Manufacturing</i> , Emil Ciurczak, Doramaxx Consulting

## 2023 Preliminary Technical Oral Program

Monday Afternoon continued

<b>Lab Managers Basics: Essentials Every Lab Manager Should Know</b> <b>Chair: Denis Swijter, ALMA</b>	
1:30pm	<i>Transitioning from the Bench to Lab Leadership</i> , Scott Hanton, Lab Manager Magazine
2:00pm	<i>How to Recruit, Hire and Onboard New Staff</i> , Dwayne F. Henry, Montgomery College
2:30pm	Break
3:00pm	<i>Improving Productivity Through the Use of SharePoint</i> , Veronica Godley, San Antonio Water System
3:30pm	<i>How to Manage the Budget</i> , Tarshae Drummond, Fayetteville State University

### KEYNOTE LECTURE

Monday, NOVEMBER 13, 4:15pm

***Exposome and Human Disease: From Neurological Disorders to Diabetes and Cancer***  
**Dr. Vasilis Vasiliou, Yale University**

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

## TUESDAY MORNING, NOVEMBER 14

### BREAKFAST LECTURE

Tuesday, November 14, 8:00am

***Fractionation and Characterization of Bacterial Complex Lipids Using Analytic Chemical and Mass Spectral Approaches***  
**Dr. Frank Nichols, University of Connecticut**

*All registered Full Conferees and Full-Time Student Conferees are invited to attend. A light breakfast will be provided.*

Time	Title, Author(s)
<b>EAS Award for Outstanding Achievements in Mass Spectrometry</b> <b>Honoring John McLean, Vanderbilt University</b> <b>Chair: Erin Baker, University of North Carolina</b> <b>Sponsored by the American Microchemical Society</b>	
9:00am	Presentation of the EAS Award for Outstanding Achievements in Mass Spectrometry
9:05am	<i>Advanced Molecular Phenomics in Systems, Synthetic, and Chemical Biology</i> , John McLean, Vanderbilt University
9:30am	<i>Identifying and Quantifying Cellular and Media Metabolites Predictive of Mesenchymal Stromal Cell Potency by Metabolomics Coupled to Machine Learning</i> , Facundo Fernández, Georgia Institute of Technology
10:00am	Break
10:30am	<i>Next Generation Imaging Mass Spectrometry: Molecular Microscopy for the New Age of Biology and Medicine</i> , Richard Caprioli, Vanderbilt University
11:00am	<i>Advancing Lipidomic Measurements and Informatics Tools to Enable Better Health Assessments</i> , Erin Baker, University of North Carolina



<b>Analytical Method Development and New Modalities in Biopharmaceutical Laboratories</b> <b>Chair: Brandon Presley, Janssen R&amp;D</b>	
9:00am	<i>Capillary Isoelectric Focusing (cIEF) Technology Bridging</i> , Christopher Cammarata, Janssen R&D
9:30am	<i>Controlling Process-Related Impurities in the Biopharma Setting</i> , Hope McMahon, Chris Gerberich, Robert Luo, GSK
10:00am	Break
10:30am	<i>Large Molecule Bioassay Development: Strategies and Analytical Challenges</i> , Julie McIntosh, Merck & Co., Inc.
11:00am	<i>Vaccine Analytical Development</i> , Kristen Feibelman, Merck & Co., Inc.

<b>Infectious Diseases - Diagnostics, Treatment and Prevention</b> <b>Chair: David Banach, University of Connecticut School of Medicine</b>	
9:00am	<i>Applied Chemistry in Clinical Bacteriology</i> , Melissa Gitman, Mount Sinai School of Medicine
9:30am	<i>CRISPR-Powered Microfluidics Biosensing Devices for Point of Care Detection of Infectious Diseases</i> , Changchun Liu, University of Connecticut School of Medicine
10:00am	Break
10:30am	<i>Advances in Sterilization and Disinfection in Healthcare Settings</i> , Scott Roberts, Yale University
11:00am	<i>The Treatment and Prevention of Clostridioides Difficile Infection</i> , David Banach, University of Connecticut School of Medicine



## 2023 Preliminary Technical Oral Program

Tuesday Morning continued

<b>Fifty Years of Innovations in HPLC Columns</b> <b>Sponsored by Waters Corporation</b> <b>Chair: Thomas Walters, Waters Corporation</b>	
9:00am	<i>Fifty Years of Innovations in HPLC Column Reproducibility, Efficiency, Stability and Inertness</i> , Thomas Walters, Waters Corp.
9:30am	<i>Fifty Years of Innovations in HPLC Column Selectivity</i> , David Bell, Restek Corporation
10:00am	Break
10:30am	<i>Innovations in HPLC Columns: Perspectives from a Pharmaceutical Analyst</i> , Michael Dong, MWD Consulting
11:00am	<i>Innovations in HPLC Column Technology for Faster and More Efficient Separations of Large Biomolecules</i> , Szabolcs Fekete, Waters Corp

<b>Highlighting Early Career Scientists in Spectroscopy and Analytical Chemistry</b> <b>Chair: Fay Nicolson, Dana-Farber Cancer Institute</b>	
9:00am	<i>Getting the Most Out of Portable Instrumentation: Handheld LIBS Method Development for Timber Analysis</i> , Caelin Celani, Helder Carneiro, Maria Delgado, Karl Booksh, University of Delaware, Erin McClure-Price, United States Fish & Wildlife Service, James Jordan, Tyler Coplen, United States Geological Survey
9:30am	<i>Academics to Industry: Becoming a Pharmaceutical Forensics Chemist</i> , Britany Handzo, Bristol Myers Squibb
10:00am	Break
10:30am	<i>PCR-Less, Enzyme-Free Methods for Sensitive Detection of Disease Biomarkers</i> , Samuel Mabbott, Texas A&M University
11:00am	<i>A Novel Diagnostic Method for Sjogren Syndrome Using Saliva Based on Raman Spectroscopy and Machine Learning</i> , Bhavik Vyas, University of Albany-SUNY

<b>Explosives &amp; GSR: Present &amp; Future Directions</b> <b>Chairs: Brooke Kammrath, University of New Haven, Gina Guerrerra, US Federal Bureau of Investigation</b>	
9:00am	<i>Nanoparticle Enhanced LIBS for GSR Detection</i> , Alyssa Marsico, University of New Haven
9:30am	Stephan Hlohowskyj, United States Federal Bureau of Investigation
10:00am	Break
10:30am	Melissa Singletary, Auburn University
11:00am	<i>Development of Strategic Analytical Methods to Support the Modernization of Gunshot Residue Practice in Forensic Science</i> , Tatiana Trejos, Luis Arroyo, Kourtney Dalzell, Thomas Ledergerber, Leah Thomas, Madison Lindung, West Virginia University

<b>Accelerating Pharma R&amp;D: Automation, Machine Learning, Predictive Sciences, and Image Analytics</b> <b>Chairs: Daniel Skomski, Merck &amp; Co., Inc &amp; Kim Huynh-Ba, Pharmalytik</b>	
9:00am	<i>Machine Deep Learning to Accelerate Drug Development</i> , Yue-Ming Chen, Merck & Co., Inc.
9:30am	<i>Development of a Viscosity Optimization Algorithm through Automated Experimentation</i> , Peter Soler, Stephen Thomas, Bristol Myers Squibb
10:00am	Break
10:30am	<i>Automated Data Pipeline for Organic Solubility High-Throughput Screening Workflows in Pharmaceutical Drug Development</i> , Michael Rerick, GSK
11:00am	<i>Investigating Oral Solid Dosage Excipient Compatibility Via Automation and High-Throughput Experimentation</i> , Alexander Chin, Merck & Co., Inc.



<b>Beyond Traditional Methods: Exploring Next Generation Innovations in Environmental Science</b> <b>Chair: Shirley Fischer-Drowos, Widener University</b>	
9:00am	<i>Sorption and Desorption of 17alpha-ethinylestradiol (EE2) and Beta-Estradiol (E2) on Montmorillonite Clay</i> , Christian Manuelli, Yuegang Zuo, University of Massachusetts Dartmouth
9:20am	<i>PFAS Dark Matter, Slippery Cannabis and Catechin Epimers: Disparate Problems with a Similar Path to a Solution</i> , Frederick Strathmann, Thomas Lubinsky, Rachel Harris, Julie Wushensky, MOBILion Systems, Inc.
9:40am	<i>Your GC/MS Knows What You're Doing at Home...Sort of: Looking at VOC Makeup of New and Occupied Homes Using Pyrolysis Gas Chromatography</i> , Khadiza Mom, Quantum Analytics
10:00am	Break
10:30am	<i>Analytical Chemistry is Essential for Gaining Understanding of the Earth's Climate, Past Present and Future</i> , Roland Hirsch
10:50am	<i>Photooxidation and Phenol Decomposition Processes on Hydrophobic Nanoparticles</i> , Alexander Greer, Britney Singh, Serah Essang, Lloyd Lapoot, Brooklyn College, Graduate Center of the City University of New York
11:10am	<i>Rapid, Efficient and Safe Microwave-Assisted Digestion of Li Battery Components for Trace Metals Analysis</i> , Alicia Stell, Samuel Heckle, Macy Harris, CEM Corporation

## 2023 Preliminary Technical Oral Program

Tuesday Morning continued

<b>NMR: The Swiss Army Knife of Analytic Methods</b> <b>Chair: Jeffrey C. Hoch, University of Connecticut</b>	
9:00am	<i>Towards Enabling High Voltage LiNi<sub>0.5</sub>Mn<sub>1.5</sub>O<sub>4</sub> Cathodes: Understanding Transition Metal Dissolution Mechanisms with Operando NMR Spectroscopy</i> , Lauren Marbella, Columbia University
9:30am	<i>Leveraging Quadrupolar Nuclei in Solid-State NMR</i> , Alex Paterson, University of Wisconsin-Madison
10:00am	Break
10:30am	<i>NMR-Based Metabolomics for Biomarker &amp; Clinical Diagnostic Development</i> , Alessia Trimigno, Olaris, Inc.
11:00am	<i>Painting a Portrait of a Protein that Won't Sit Still</i> , Alexandra Pozhidaeva, UConn Health

## TUESDAY AFTERNOON, NOVEMBER 14

Time	Title, Author(s)
<b>EAS Award for Outstanding Achievements in Magnetic Resonance</b> <b>Honoring James Prestegard, University of Georgia</b> <b>Chair: Darón I. Freedberg, United States Food &amp; Drug Administration</b> <b>Sponsored by Bruker BioSpin and New Era Enterprises</b>	
	 
1:30pm	<i>NMR Illuminates the Conformational Ensembles of Nucleic Acids</i> , Hashim Al-Hashimi, Columbia University
2:00pm	<i>An NMR Journey that all Began in New Haven</i> , John Marino, National Institute of Standards and Technology
2:30pm	Break
3:00pm	<i>Flipping Some of Nature's Machines into our Tools and Therapies</i> , Kevin Gardner, CUNY Advanced Science Research Center
3:30pm	Presentation of the EAS Award for Outstanding Achievements in Magnetic Resonance
3:35pm	<i>Glycans on Glycoproteins; What NMR Can Tell Us</i> , James Prestegard, University of Georgia

<b>New York/New Jersey Sections of the Society for Applied Spectroscopy Gold Medal Award</b> <b>Honoring Curtis Marcott, Light Light Solutions</b> <b>Chairs: Dana Garcia, Deborah Peru, DP Spectroscopy and Training</b>	
1:30pm	<i>Industrial Spectroscopy Research Leading to the Development of Novel Bioplastics</i> , Isao Noda, University of Delaware
2:00pm	<i>Super-Resolution Photothermal Infrared Spectroscopy for Science and Industry</i> , Craig Prater, Photothermal Spectroscopy Corp.
2:30pm	Break
3:00pm	<i>Multimodal Infrared Nanospectroscopy in the Bio- and Materials Sciences</i> , Simone Ruggeri, Wageningen University
3:30pm	<i>Chemically Characterizing the Microstructure of Novel Bioplastics Using Photothermal Infrared Spectroscopy</i> , Curtis Marcott, Light Light Solutions

<b>Forensic Microscopy "What is it? Who does it?"</b> <b>Sponsored by Agilent Technologies</b> <b>Chair: Thomas A. Kubic, John Jay College &amp; The Graduate Center, CUNY</b>	
1:30pm	<i>The Fatal Bullet - Was it a Ricochet or Not</i> , Peter Diaczuk, John Jay College CUNY
2:00pm	<i>Microscopy and Microanalysis of Aluminum Powders Used in Improvised Explosive Devices (IED)</i> , John Buscaglia, United States Federal Bureau of Investigation
2:30pm	Break
3:00pm	<i>Investigative Leads from Microscopic Traces: A Lost Skill?</i> , Skip Palenik, Microtrace
3:30pm	<i>Microscopic Trace Evidence and the Last Work of Jackson Pollock</i> , Nick Petraco, Petraco Consultants

<b>Applying Analytical Technologies to Drug Development</b> <b>Chair: Oscar Liu, Silver Springs Scientific LLC</b>	
1:30pm	<i>Modernizing USP Methods According to &lt;621&gt; with Superficially Porous Particle Columns</i> , Stephanie Schuster, Peter Pellegrinelli, Conner McHale, Advanced Materials Technology
1:50pm	<i>Using Ion Chromatography to Assay for Citrate and Phosphate in Pharmaceutical Formulations</i> , Gary He, Jingli Hu, Jeff Rohrer, Carl Fisher, Thermo Fisher Scientific
2:10pm	<i>Direct Quantitation of Small-Molecule Impurities Using Molecular Rotational Resonance Spectroscopy</i> , Alexander Mikhonin, Ann Adele Byars, Reilly Sonstrom, Voislav Blagojevic, Justin Neill, BrightSpec, Inc.
2:30pm	Break
3:00pm	<i>Towards Globally Accepted Specifications of Pharmaceutical Products: A Summary of the Current State</i> , Kaitlin Grinias, GSK
3:20pm	<i>Analysis of Extractables and Leachables in Pharmaceutical and Medical Products using A Novel Simultaneous UHPLC-UV-CAD-HRMS Multi-Detector Platform</i> , Vedha Patel, Rajesh Chennam Shetti, Dujuan Lu, Danny Hower, Chongming Lui, SGS Health Science

## 2023 Preliminary Technical Oral Program

Tuesday Afternoon continued

<b>What You Actually Need to do to Make Your Separations Sustainable?</b> <i>Sponsored by Chromatography Forum of DE Valley</i> <b>Chair: Mary Ellen McNally, FMC Corporation</b>	
1:30pm	<i>Portable Capillary LC: Higher Sensitivity with Lower Solvent Consumption</i> , Michael Hicks, Merck & Co., Inc.
2:00pm	<i>Sustainable Separations: Development and Application of Process Analytical Technology to Significantly Reduce Process Mass Intensity in Pharmaceutical Development and Manufacturing</i> , Stephen Groskreutz, Eli Lilly and Company
2:30pm	Break
3:00pm	<i>Evaluating your Method from a Sustainable Perspective</i> , Mary Ellen McNally, FMC Corporation
3:30pm	<i>Green Sample Preparation: It's All Green</i> , Douglas Raynie, South Dakota State University

<b>Risk Mitigation in the Pharma QC Laboratory</b> <i>Sponsored by Waters Corporation</i> <b>Chair: Isabelle Vu Trieu, Waters Corporation</b>	
1:30pm	<i>AQbD as Enabler of Continuous Quality Improvement</i> , Amanda Guiraldelli, United States Pharmacopeia
2:00pm	<i>Control Strategies for the Routine Testing Lab</i> , Alec Minnick, Merck & Co., Inc.
2:30pm	Break
3:00pm	<i>Continuous Monitoring of Method and Instrument Performance Across Various Instrument Vendors and Platforms Using a Variety of USP Monographs</i> , Jennifer Simeone, Waters Corporation
3:30pm	<i>Data Integrity and How it Will Impact Your Laboratory</i> , Michael Barkan, Consultant

<b>Quantitative Mass Spectrometry Through Drug Development Life Cycle</b> <b>Chair: Carolina Cabral, Merck &amp; Co., Inc.</b>	
1:30pm	<i>Stereoisomer Separation of Drugs and Biomarkers Using Supercritical Fluid Chromatography to Support PK/PD Studies</i> , Fangbiao Li, Bang-Lin Wan, Guanping Bi, Rena Zhang, Daniel Spellman, Merck & Co., Inc.
2:00pm	<i>A Novel Hybridization LC-MS/MS Methodology for Quantification of siRNA in Plasma, CSF and Tissue Samples</i> , Long Yuan, Biogen
2:30pm	Break
3:00pm	<i>Characterization of Riboflavin as a Breast Cancer Resistance Protein-Specific Endogenous Biomarker</i> , Linna Wang, Bristol Myers Squibb
3:30pm	<i>Hybrid LBA-LC-MS/MS Method for Glycan-Resolved PK Monitoring of a Therapeutic Fusion Protein</i> , Ines Santos, Bristol Myers Squibb

<b>Recent Developments in High Performance Thin Layer Chromatography</b> <b>Chair: Leonel Santos</b>	
1:30pm	<i>High-Performance Thin-Layer Chromatography PRO as a Quality Control Tool in Routine Analysis</i> , Wilmer Perera, CAMAG Scientific, Inc., Shaune Liendo, Diana Catalan, Cape Fear Community College
1:50pm	<i>Is Lipid Repair in Hair a Possibility or a Pipe Dream?</i> , Ernesta Malinauskyte, TRI Princeton
2:10pm	<i>High Performance Thin Layer Chromatography - Accurate Mass Spectrometry for the Rapid Identification of Unknown Compounds</i> , James Kababick, Stacy Wise, Chanze Jennings, Flora Research Laboratories, LLC
2:30pm	<i>Equivalency of DNA Sequencing vs. HPTLC Chromatographic Analysis vs. Botanical Microscopy Methodologies for Botanical Identity: A Statistical Evaluation</i> , Anthony Fontana, Sidney Sudberg, Dinah Yu, Alkemist Labs, Robert LaBudde, Least Cost Formulations, Zhengfei Lu, Yanjun Zhang, Adam Faller, Herbalife

<b>Revolutionizing Bioanalysis: Cutting Edge Analytical Advancements</b> <b>Chair: Lydia Breckenridge, Bristol Myers Squibb</b>	
1:30pm	<i>Exploration of Ultra High Pressure Liquid Chromatography for Bioanalysis</i> , Hayley Herderschee, Robert Kennedy, University of Michigan, Noah Lancaster, Evgenia Shishkova, Austin Salome, Joshua Coon, University of Wisconsin-Madison
1:50pm	<i>Rapid Label-Free Cell-Based Approach Membrane Permeability Assay Using MALDI-HDX-MS for Peptides in Drug Discovery</i> , Alexey Makarov, Merck & Co., Inc.
2:10pm	<i>Nanoparticle-Enhanced Laser Induced Breakdown Spectroscopy (NELIBS) on Lanthanide Micro Particles Tagged to Biomarker</i> , Ali Safi, Helmar G. Adler, Joshua E. Landis, Kemal Efe Esseller, Nouredine Melikechi, University of Massachusetts Lowell, Yuri Markushin, Delaware State University
2:30pm	Break
3:00pm	<i>Identifying Size-Dependent Toxin Sorting in Bacterial Outer Membrane Vesicles</i> , Aarshi Singh, Justin Nice, Angela Brown, Nathan Wittenberg, Lehigh University
3:20pm	<i>Mass-Activated Droplet Sorting for Selection of Lysine-Producing Escherichia Coli</i> , Emory Payne, Bridget Murray, Laura Penabad, Robert Kennedy, University of Michigan, Eirc Abbate, Inscripta, Inc.



## 2023 Preliminary Technical Oral Program

Tuesday Afternoon continued

Unleashing the Power of Data with Quality-by-Design and Chemometrics Chair: Pankaj Aggarwal, Merck & Co., Inc.	
1:30pm	<i>Mapping Key Elements in the USP &lt;1220&gt; and ICH Q14 Guidances to an Enhanced Quantitative Framework and Workflow for Analytical Procedure Development</i> , Richard Verseput, S-Matrix Corporation
1:50pm	<i>Faster, Cheaper, Greener! Joining HT Plate Readers and Chemometrics to Enable Enzyme Evolution</i> , Umme Ayesa, Zachary Dance, Merck & Co., Inc.
2:10pm	<i>Chemometrics Best Practices and the Impact on Quality Management</i> , Brian Rohrback, Infometrix, Inc.
2:30pm	Break
3:00pm	<i>Combining Analytical Data with Contextual Metadata through CDS Platform, Suite of Applications, and Spotfire Dashboards</i> , Henry Tat, Jonathan Fine, Pankaj Aggarwal, Merck & Co., Inc.
3:20pm	<i>Successful Replacement of Two Problematic HPLC Methods – One for API and One for Related Substances – with a Robust Single UHPLC Method Using the Enhanced QbD Approach</i> , Richard Verseput, S-Matrix Corporation, Marina Mavrinac, J.G.L. Pharma, Gordan Dinter, Labtim Adria

## WEDNESDAY MORNING, NOVEMBER 15

EAS Young Investigator Award Honoring Emanuela Gionfriddo, University of Toledo Chair: Jared Anderson, Iowa State University	
9:00am	Jared Anderson, Iowa State University
9:30am	Emanuela Gionfriddo, University of Toledo
10:00am	Break
10:30am	<i>Diverse Applications of Compact Capillary LC</i> , James Grinias, Samuel Foster, Benjamin Libert, Sangeeta Kurre, John Boughton, Ama Hackman, Rowan University
11:00am	Katelynn Perrault, College of William and Mary

New Applications of Quantitative Proteomics Chair: Jeremy Balsbaugh, University of Connecticut	
9:00am	<i>A Proteomics Approach to Examine Nuclear Protein Expression Level Changes in Age and Dementias</i> , Olivia Durham, University of Connecticut
9:30am	<i>Integrative Single-Organoid Proteomics in 3D Models of Ovarian Cancer Uncovers Remodeled Mitochondria Bioenergetics</i> , Krystal Lum, Princeton University
10:00am	Break
10:30am	<i>Proteogenomic Analysis of Pediatric Acute Myeloid Leukemia Diagnosis and Relapse Pairs</i> , Han Fisher, Children's Hospital of Philadelphia
11:00am	Li Hong, Rutgers University

Applications of Ion Mobility Mass Spectrometry Chairs: Gene Hall, Rutgers University, Anthony Pitts-McCoy, Merck & Co., Inc.	
9:00am	<i>What is Ion Mobility Spectrometry?</i> , David Clemmer, Indiana University
9:30am	<i>Instrumentation in Ion Mobility Spectrometry</i> , Rachel Buckley, Indiana University
10:00am	Break
10:30am	Athula Attygalle, Stevens Institute of Technology
11:00am	<i>Ion Mobility Spectrometry in Big Pharma</i> , Gene Hall, Rutgers University

Beyond Boundaries: Expanding Horizons of Liquid Chromatography Chair: Peter Bratin, KLA	
9:00am	<i>Method Migration of Amino Acid Analysis Across Multiple Instruments to Quantify Amino Acid Content in Commercially Available Supplements</i> , Kimberly Martin, Paula Hong, Jennifer Simeone, Waters Corporation
9:20am	<i>Development of a Rapid LC Method for the Determination of 3-Chloropropionic Acid and 3-Chloropropionyl Chloride using EDC Derivatization</i> , Yuan Ren, Qian Zhang, James Chadwick, Robert Menger, Yan Zha, Bristol Myers Squibb, John Orlet, Pfizer
9:40am	<i>The Development and Use of a Virtual Liquid Chromatography Method Development Tool</i> , Melinda Ulrich, Justin Steimling, Jamie York, Chris Nelson, Tim Yosca, Restek Corporation, John Garrett, Analytical Innovations
10:00am	Break
10:30am	<i>Quantification and Characterization of Intact Polysorbate 80, its Degradants, and its Subspecies in Biopharmaceuticals</i> , Katie Carnes, Justin Shearer, Lee Oliver, Sina Mortazavi, Timothy Brown, Mike Morris, Michelle Ward, Josh Fuller, GSK, Roberto Delgadillo, Element Biosciences
10:50am	<i>Deeper Understanding of the Mechanism of Water Dewetting from Hydrophobic Mesoporous Silica Particles to Improve the Design of Stationary Phases in Reversed-Phase Liquid Chromatography</i> , Fabrice Gritti, Waters Corporation
11:10am	<i>Separation of guide RNA for CRISPR: Methods, Mechanisms and Applications</i> , Bingchuan Wei, Jenny Wang, Bifan Chen, Lulu Dai, Lance Cadang, Kelly Zhang, Genentech

## 2023 Preliminary Technical Oral Program

Wednesday Morning continued

<b>Conservation Science: Beyond Art &amp; Forensics</b> <b>Chairs: Jocelyn Alcantara-Garcia, University of Delaware, Rosie Grayburn, Winterthur Museum</b>	
9:00am	<i>ARCHE (Art and Cultural Heritage): Natural Organic Polymers by Mass Spectrometry</i> , Julie Arslanoglu, Metropolitan Museum of Art
9:30am	<i>When Science Reveals Craft Practice: pyGCMS Analysis of Chinese Export Lacquer</i> , Catherine Matsen, Winterthur Museum
10:00am	Break
10:30am	<i>For the Culture: Collective Scientific Studies of Colonial-era Art of the Spanish Americas</i> , Alicia McGeachy, Metropolitan Museum of Art
11:00am	<i>Exploring Yale's Collection: XRF Scanning at Scale</i> , Marcie Wiggins, Yale University

<b>Evaluating and Understanding Extremely Large Molecules Through Various Separation Techniques</b> <b>Sponsored by Chromatography Forum of DE Valley</b> <b>Chair: Ray McClain, Merck &amp; Co., Inc.</b>	
9:00am	<i>Redefining the Characterization Paradigm of RNA Lipid Nanoparticles</i> , Marshall Padilla, University of Pennsylvania
9:30am	<i>The Purification of Really Big (or Small?) Things: C-CP Fiber Isolation of Exosomes from Diverse Matrices</i> , Kenneth Marcus, Clemson University
10:00am	Break
10:30am	<i>Analytical Characterization of a Pneumococcal Conjugate Vaccine</i> , James Deng, Merck & Co., Inc.
11:00am	<i>A Multi-Technique Approach to Characterizing High Molecular Weight Abundance in AAV Products</i> , Aubree Himes, Spark Therapeutics

<b>Overcoming the Complexity of Biological Drug Products through Experimental and Computational Characterizations</b> <b>Chair: Yongchao Su, Merck &amp; Co., Inc.</b>	
9:00am	<i>Visible Light Photodegradation of Therapeutic Proteins: Mechanisms, Excipient Effects, and Preventive Strategies</i> , Christian Schoneich, University of Kansas
9:30am	<i>Nucleic Acid Lipid Nanoparticle Based Therapeutics: Development and Process Optimization</i> , Jeffery Smith, Merck & Co., Inc.
10:00am	Break
10:30am	<i>Understanding Protein Interactions Under Hydrodynamic Stress with Multiphysics Simulation</i> , Tonglei Li, Purdue University
11:00am	<i>Hydrodynamic Molecular Weight of Chemically Modified Peptides and Protein</i> , Kang Chen, United States Food & Drug Administration

<b>Portable Instruments in the Field</b> <b>Sponsored by the Rigaku Analytical Devices and New England SAS</b> <b>Chair: Suzanne Schreyer, Rigaku Analytical Devices</b>	
9:00am	<i>Development of Alternate QC Techniques for More Rapid Screenings within LMIC Contexts</i> , David Jenkins, FHI 360
9:30am	<i>Analysis of FDA-Regulated Products for the Presence of Active Pharmaceutical Ingredients Using Surface Enhanced Raman Spectroscopy</i> , Michael Thatcher, United States Food & Drug Administration
10:00am	Break
10:30am	<i>The Introduction of Raman Technology into Existing Law Enforcement Strategies to Degrade the Flow of Precursor Chemicals in Myanmar for the Production of Narcotics</i> , Michael Brown, Rigaku
11:00am	<i>Street Chemistry: How Optical Spectrometries (FTIR and RAMAN) are Used to Solve Crimes</i> , Pakorn Patimetha, NJ State Police

<b>Sub-Micron IR and Raman Spectroscopy</b> <b>Chair: Jing Qu, University of Delaware</b>	
9:00am	<i>Correlated Micro- and Nano-Scale Analyses of Two Particles from the Near-Earth Asteroid Ryugu</i> , Timothy Glotch, Stony Brook University
9:30am	<i>Recent Advances in Multimodal Optical-Photothermal Infrared Imaging and Spectroscopy</i> , Samuel Tenney, Brookhaven National Lab
10:00am	Break
10:30am	<i>Visible to Mid-IR Spectromicroscopy with Top-Down Illumination and Nanoscale (<math>\approx 10</math> nm) Resolution</i> , Devon Jakob, Andrea Centrone, National Institute of Standards and Technology
11:00am	<i>Tip-Enhanced Raman Spectroscopy and Nano-Imaging for 2D Materials</i> , Peter Schuck, Columbia University

## WEDNESDAY AFTERNOON, NOVEMBER 15

### PLENARY LECTURE

Wednesday, NOVEMBER 15, 11:45am – 12:45pm

*Inclusive Stories in Chemistry: Celebrating Dr. Marie Maynard Daly*

**Dr. Sibrina Collins**

**Lawrence Technical University**

*All registered Attendees are invited to attend.*

Time	Title, Author(s)
<b>Advances in Chromatography with Applications in the Biomedical/Clinical Diagnostics Field</b> <b>Chair: David Bell, Restek Corporation</b>	
1:30pm	<i>Leveraging Multi-Mode Microextraction and Liquid Chromatography Stationary Phases for Quantitative Analysis of Neurotoxin Non-Proteinogenic Amino Acids</i> , Emanuela Gionfriddo, University of Toledo
2:00pm	<i>Separation and Analysis of Oligonucleotides for Clinical Diagnostics</i> , Jared Anderson, Iowa State University
2:30pm	Break
3:00pm	<i>Simplifying Clinical LC-MS Development by Leveraging Unique Stationary Phase Selectivity</i> , Samantha Herbrick, Restek Corporation
3:30pm	<i>Utilization of Hydrophilic Interaction Liquid Chromatography (HILIC) in Clinical Analyses</i> , David Bell, Restek Corporation

<b>Measurement Challenges in Cannabis-Derived Products</b> <b>Chair: Aaron Urbas, National Institute of Standards and Technology</b>	
1:30pm	<i>Things WE'ED Like to Avoid – Circumventing Measurement Challenges When Analyzing Cannabinoid-infused Complex Matrices</i> , Rabi Musah, University at Albany - SUNY
2:00pm	<i>The Importance of Digestion Temperature on Trace Metals Analysis</i> , Samuel Heckle, CEM Corporation
2:30pm	Break
3:00pm	<i>The Characterization of <math>\Delta^9</math>-THC Enantiomers in Various Cannabis Products</i> , Brandy Young, Certainty Analytical Labs
3:30pm	<i>Accurate Identification and Quantitation of Contaminants - Understanding the Impact of the Cannabis Matrix</i> , Jini Glaros, ModernCanna Labs

<b>Chemometrics: Using Data to Solve Tomorrow's Problems</b> <b>Chairs: Caelin Celani &amp; Helder Carneiro, University of Delaware</b>	
1:30pm	<i>Addressing Confidence Intervals with Multi-Label Classification</i> , Helder Carneiro, University of Delaware
2:00pm	<i>Self-Modeling Curve Resolution of Raman Spectra from Mixed Deuterated and Protiated Phospholipid Membranes Reveals Isotopically-Segregated Lipid Domains</i> , Jay Kitt, University of Utah
2:30pm	Break
3:00pm	<i>To be announced.</i>
3:30pm	<i>Towards a Fully Automated Machine Learning Solution</i> , Manuel Palacios, Eigenvector Research

<b>Analytical Approaches to Cosmetic Chemistry</b> <b>Chair: Andrew Koutrakos, KX Technologies</b>	
1:30pm	<i>Chromatography and Mass Spectrometry Based Approaches for Raw Materials Characterization and Finished Goods Analysis in Consumer Goods Samples</i> , Chad Herman, Unilever R&D
2:00pm	<i>Using Biology as Inspiration for Dynamic Optical Materials</i> , Lelia Deravi, Northeastern University
2:30pm	Break
3:00pm	<i>Multivariate Data Analysis for Cosmetic Formulations Powered by Umetrics</i> , Gregory Casee, Sartorius

<b>The Critical Role of Chromatography in Advancing Discovery and Development of Novel Medicines</b> <b>Sponsored by the Chinese American Chromatography Association</b> <b>Chair: Yi He, John Jay College of Criminal Justice</b>	
1:30pm	<i>Accelerating Drug Discovery by High-Throughput Purification and Physico-Chemical Characterization by HPLC/MS</i> , Laszlo Varady, Rilas Technologies
2:00pm	<i>Separation Workflows Coupled with Mass Spectrometry for Biotherapeutic Development</i> , Nicole Schneck, GSK
2:30pm	Break
3:00pm	<i>Advanced Chromatographic Tools for Accelerated Development of Nucleic Acid Based Medicines</i> , Balasubrahmanyam Addepalli, Waters Corporation
3:30pm	<i>Challenges and Solutions in Analyzing Variants in Antibodies and Related Substances: Some Real-Life Case Studies</i> , Xiaodong Liu, NanoChrom Technologies



## 2023 Preliminary Technical Oral Program

Wednesday Afternoon continued

<b>Analytical Studies in Heritage Discovery, Authentication and Attribution</b> <b>Organized by Kenescott Fdn; NY Microscopical Society</b> <b>Chair: John Scott, Kenescott Fdn; NY Microscopical Society</b>	
1:30pm	<i>Illuminating Surprises in the Manuscript Collections of the College of Physicians' Historical Medical Library, Philadelphia</i> , Jennifer L. Mass, Scientific Analysis of Fine Art, LLC
2:00pm	<i>Considerations and Misinterpretations: Practical Notes on Authenticity, from a Paintings Conservator</i> , Kristin deGhetaldi, deGhetaldi Fine Art Restoration
2:30pm	Break
3:00pm	<i>Understanding the Chemistry of Latex Browning in Eva Hesse's 'Expanded Expansion,'</i> Teresa Duncan, Scientific Analysis of Fine Art, LLC
3:30pm	<i>Development, Application, and Relevance of Artificial Intelligence for Art Discovery, Authentication and Attribution</i> , Lauryn Smith, The Frick Pittsburgh

<b>Analytical Advancements Driving Pharmaceutical Excellence</b> <b>Chair: Sharla Wood, Bristol Myers Squibb</b>	
1:30pm	<i>Improved Drug Product Development and Control through Detailed Characterization of API Epimerization</i> , Nathan Contrella, Steven Tignor, Colin Lam, Margaret Brunell, Alexandra Andrews, Josey Topolski, Devin Swiner, Tamara Cabalu, Zhoupeng Zhang, Ryan Cohen, Brittany Kassim, Merck & Co., Inc.
1:50pm	<i>CMC Development of [<sup>14</sup>C]-Labeled Sotorasib for the Conduct of Microtracer Human ADME Study</i> Sonika Sharma, Andrew T. Parsons, Prashant Agarwal, James E. Huckle, Tiffany L. Correll, Amgen
2:10pm	<i>Efficiency of Ultrafiltration / Diafiltration in Removing Organic and Elemental Process Equipment Related Leachables</i> , Bin Sun, Pall
2:30pm	Break
3:00pm	<i>Application of XRF in the Pharmaceutical Industry</i> , Sergey Mamedov, HORIBA Scientific
3:20pm	<i>Pharmaceutical Applications Utilizing LUMA Vacuum Ultraviolet Detection: Advancements in Moisture Content, Impurity Analysis, and FAMES Analysis</i> , Rafael Acosta, Ryan Schonert, VUV Analytics
3:40pm	<i>First-Principle-Based Investigation of Column Selectivities - Using Multidimensional Analytical Design Space Models as Tools to Find Equivalent Working Ranges Across Various Stationary Phases</i> , Arnold Zoeldhegyi, Molnar-Institute, Róbert Kormány, Egis Pharmaceuticals Plc.

<b>Applications of Analytical Chemistry in Proteomic Research</b> <b>Chair: Kate Jackson, Colgate Palmolive</b>	
1:30pm	<i>New Technologies and Techniques for the Separation of Oligonucleotides and Polypeptides</i> , Weston Umstead, Daicel Chiral Technologies
1:50pm	<i>Assessing Chromatographic Systems for Use in Phosphopeptide Mapping Studies</i> , Corey Reed, Paula Hong, Robert Birdsall, Jennifer Simeone, Waters Corporation
2:10pm	<i>Don't Go to Pieces on Me: Importance of Particle Architecture and Backpressure on Oligonucleotide Characterization</i> , Cory Muraco, Clinton Corman, MilliporeSigma
2:30pm	<i>Increased Efficiency of Protein and Peptide Separations by Varying Particle Size, Column Dimension, and Pore Size of Superficially Porous Particle Columns</i> , Peter Pellegrinelli, Ben Libert, Stephanie Schuster, AMT

<b>Exploring Diverse Applications of Spectroscopic Techniques</b> <b>Chair: Dana Garcia</b>	
1:30pm	<i>Thermodynamic Stabilization of Conformations in Lewis Antigens</i> , Darón Freedberg, Jeahoo Kwon, Hugo Azurmendi, Jasmin Zarb, Marcos Battistel, CBER/FDA, Alessandro Ruda, Göran Widmalm, Stockholm University, Liang Liao, France-Isabelle Auzanneau, University of Guelph
1:50pm	<i>i-HMBC: Unequivocal Identification of Two-Bond Heteronuclear Correlations in Natural Products at Nanomole Scale</i> , Xiao Wang, Merck & Co. Inc
2:10pm	<i>Developing Benchtop NMR Spectrometer into QC and PAT</i> , Hector Robert, Anh Le McClain, Magritek
2:30pm	Break
3:00pm	<i>Nanoscale Chemical Analysis of Surfaces and Monolayers of Intentional and Unintentional Molecules</i> , Sung Park, Padraic O'Reilly, Derej Nowak, Patrick O'Hara, Molecular Vista
3:20pm	<i>Optical Imaging and Spectroscopic Analysis of Polysulfide Speciation in Li-S Battery Electrolyte</i> , Gbenga Taiwo, Ali Rashti, Mritunjay Mishra, Koffi Yao, University of Delaware
3:40pm	<i>Can Magnetic Resonance Force Microscopy Detect and Image Individual Nitroxide Spins?</i> , John Marohn, Michael Boucher, Peter Sun, Russell Burgett, Pamela Nasr, Corinne Isaac, Roger Loring, Cornell University, Lee Harrell, U.S Military Academy, Robert McMichael, National Institute of Standards and Technology

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# KEYNOTE, PLENARY & BREAKFAST LECTURES

We are excited to announce our special lectures!  
Join us to hear these experts:

## Keynote Lecture

Monday, November 13, 4:15pm

***Exposome and Human Disease: From  
Neurological Disorders to Diabetes and  
Cancer***

**Dr. Vasilis Vasiliou**  
Yale University

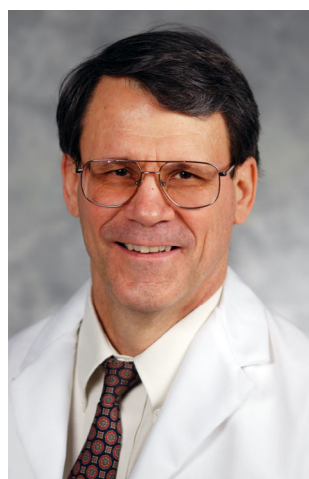


## Breakfast Lecture

Tuesday, November 14, 8:00am

***Fractionation and Characterization of Bacterial  
Complex Lipids Using Analytic Chemical and  
Mass Spectral Approaches***

**Dr. Frank Nichols**  
University of Connecticut



## Plenary Lecture

Wednesday, November 15, 11:45am

***Inclusive Stories in Chemistry:  
Celebrating Dr. Marie Maynard Daly***

**Professor Sibrina Collins**  
Lawrence Technical University



## 2023 EAS Short Course Schedule

Pricing for 2023 Short Courses is \$625 one-day and \$900 two-day **before Oct. 15<sup>th</sup>** and \$850 one-day and \$1,250 two-day **after Oct. 15<sup>th</sup>** in addition to the Full Conferee registration fee. Full-Time Student Conferees – registration rates for short courses are \$100.00 for one-day and \$200.00 for a two-day course before Oct. 15<sup>th</sup>; \$425.00 for one-day and \$625.00 for a two-day course after Oct. 15<sup>th</sup> in addition to the Full-Time Student Conferee registration fee. Limited space available for students in each course so sign up early! Courses are subject to changes/cancellations.

For complete descriptions of all EAS Short Courses, [click on the course name to link to the description](#).

### Two-Day Courses

Code	~ 2-Day Courses ~ Sunday, Nov. 12 – Monday, Nov. 13 8:30am - 5:00pm	Instructor(s)
E23-01	<a href="#">HPLC and UHPLC for Practicing Scientists 1 and 2: Fundamentals, Method Development, and Troubleshooting</a>	Michael Dong, MWD Consulting
E23-08	<a href="#">Practical LC-MS Method Development and Sample Preparation</a>	Perry Wang, LC-MS Technical Expert

### One-Day Courses

Code	Sunday, November 12 8:30am - 5:00pm	Instructor(s)
E23-02	<a href="#">HPLC and UHPLC for Practicing Scientists Part 1 ONLY</a>	Michael Dong, MWD Consulting
E23-03	<a href="#">Sample Preparation: The Chemistry Behind the Techniques</a>	Douglas Raynie, SD State University
E23-04	<a href="#">Chromatographic Methods of Analysis of Oligonucleotides, siRNA, and mRNA</a>	Martin Gilar, Waters Corporation
E23-05	<a href="#">Practical NMR Spectroscopy</a>	Damodaran Achary, University of Pittsburgh
E23-06	<a href="#">Analytical Method Validation and Lifecycle Management – FDA, ICH and USP Expectations</a>	Kim Huynh-Ba, Pharmalytik, LLC
E23-07	<a href="#">High-Performance Thin-Layer Chromatography an Alternative Approach to Quality: Standardization, Quantification and Automation</a>	James Kababick, Flora Research Labs Wilmer Perera, CAMAG
E23-09	<a href="#">Non-linear Machine Learning for Calibration and Classification</a>	Barry Wise, Eigenvector Research
E23-10	<a href="#">The Fundamentals of Laboratory Management – Managing People</a>	Scott Hanton, Lab Manager

Code	Monday, November 13 8:30am - 5:00pm	Instructor(s)
E23-11	<a href="#">Prepare Your Analytical Laboratory for Quality Audit and Inspection</a>	Kim Huynh-Ba, Pharmalytik, LLC
E23-12	<a href="#">Green Analytical Chemistry</a>	Douglas Raynie, SD State University
E23-13	<a href="#">HPLC and UHPLC for Practicing Scientists Part 2 ONLY</a>	Michael Dong, MWD Consulting
E23-14	<a href="#">Introduction to Quantitative Spectroscopy for Near Infrared and Raman Instrumentation (Sandbox)</a>	Debbie Peru, DP Spectroscopy and Training, LLC
E23-16	<a href="#">Design of Experiments (DoE): Key to Effectiveness and Continuous Improvement in the Laboratory</a>	Zenaida Otero Gephardt, Otero Associates
	<i>continued on next page</i>	



# 2023 EAS Short Course Schedule

## One-Day Courses *continued*

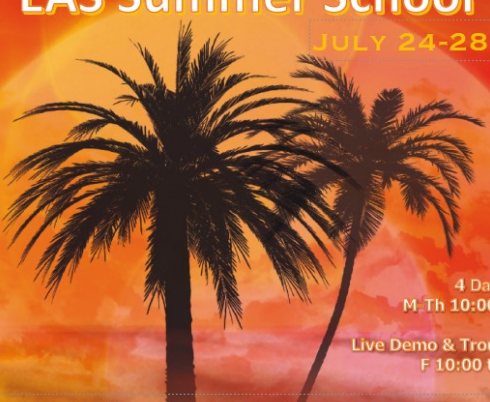
For complete descriptions of all EAS Short Courses, [click on the course name to link to the description](#).

Code	Tuesday, November 14 8:30am - 5:00pm	Instructor(s)
E23-17	<a href="#">Practical Bioanalytical Method Validation by LC-MS/MS</a>	Perry Wang, LC-MS Technical Expert
E23-18	<a href="#">Improve Your LC Separations – What to Do Next When C18 Does or Doesn't Work</a>	Merlin Bicking, ACCTA, Inc.
E23-19	<a href="#">Practical Raman Microscopy (Sandbox)</a>	Alex Rzhetskii, Thermo Fisher Scientific
E23-20	<a href="#">Analytical Method Validation: a Quality by Design Approach</a>	Carolyn Merkel, Mariner Analytical, LLC Larry Wilson, Mariner Analytical, LLC
E23-21	<a href="#">Two-Dimensional Liquid Chromatography for Pharmaceutical Analysis</a>	Dwight Stoll, Gustavus Adolphus College
E23-22	<a href="#">Getting the most from GC and GC/MS</a>	Gregory Slack, Slack Consulting Nicholas Snow, Seton Hall University
E23-23	<a href="#">Problems with FT-IR Spectra and How to Avoid Them</a>	Ellen Miseo, Miseo Consulting Jeff D'Agostino, Specac
Code	Wednesday, November 15 8:30am - 5:00pm	Instructor(s)
E23-24	<a href="#">Supercritical Fluid Chromatography: A Powerful and Greener Tool for Analytical and Preparative Separations</a>	Yingru Zhang, Lotus Separations Michael Hicks, Merck & Co., Inc.
E23-25	<a href="#">The Importance of Microscopy in Microspectroscopy</a>	Dale Purcell, Chemical Microscopy, LLC Brooke Kammrath, University of New Haven
E23-26	<a href="#">Process Analytical Technology: Out of the Lab &amp; into the Line</a>	James Rydzak, Specere Consulting
E23-27	<a href="#">Introduction to LC-MS Metabolomics</a>	Dajana Vuckovic, Concordia University
E23-28	<a href="#">An Overview of Drug Development, Drug Quality, Regulatory, and Quality Control Processes</a>	Michael Dong, MDW Consulting
E23-29	<a href="#">Systematic Chromatography Maintenance and Troubleshooting</a>	Merlin Bicking, ACCTA, Inc. Douglas Raynie, SD State University
E23-30	<a href="#">ABC to PMP: A Project Management Crash Course</a>	Luisa Profeta

“INTRODUCTION TO LIQUID CHROMATOGRAPHY”

## EAS Summer School

JULY 24-28, 2023





4 Days of Classes  
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+  
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F 10:00 to Noon EDT

Hone your LC skills in this virtual short course taught by  
**Dr. Merlin K. L. Bicking**. Learn chromatographic terminology, column selection, operating modes, sample preparation, & troubleshooting.

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Early registration: \$900 (\$200 for students).  
After July 7<sup>th</sup>: \$1250 (\$625 for students)

## EAS Awards Program

### *Brandy Young, 2023 EAS Awards Chair*

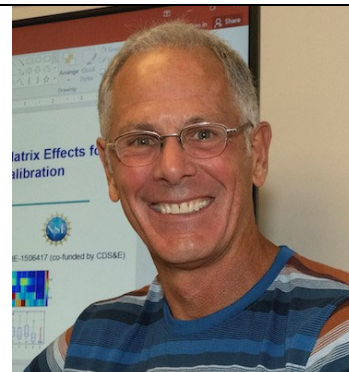
Each year the Eastern Analytical Symposium honors Analytical Chemists who have distinguished career achievements. The recipients of these awards advanced these fields by superior work in developing theory, techniques or instrumentation. This year scientists in six areas of endeavor will be presented awards.



**Professor Robert Kennedy**  
University of Michigan  
*EAS Award for Outstanding  
Achievements in the Fields of  
Analytical Chemistry*



**Professor James Prestegard**  
University of Georgia  
*EAS Award for Outstanding  
Achievements in Magnetic Resonance*



**Professor John Kalivas**  
Idaho State University  
*EAS Award for Outstanding  
Achievements in Chemometrics*



**Professor Mary Wirth**  
Purdue University  
*EAS Award for Outstanding  
Achievements in Separation Science*



**Professor John McLean**  
Vanderbilt University  
*EAS Award for Outstanding  
Achievements in Mass Spectrometry*



**Professor Emanuela Gionfriddo**  
University of Toledo  
*EAS Young Investigator Award*

This other award will be presented at the Annual Symposium in  
November under the auspices of the EAS Sponsoring Organization



**Dr. Curtis Marcott**  
Light Light Solutions,  
*NY/NJ Section of the Society for Applied  
Spectroscopy Gold Medal Award*

EAS Awards are selected by independent juries of experts in these respective fields from nominations received by the Award Committee from the scientific community at large. Each award consists of an honorarium, travel expenses to EAS, a plaque, and the opportunity for the Awardee to present their work at EAS at an Award Symposium in their honor. Visit our website for full biographies of Awardees. Persons wishing to make a nomination for any of the awards given by EAS should send complete documentation of the candidate (content of the nomination package detailed on the EAS website) electronically to: [awards@eas.org](mailto:awards@eas.org). **The deadline for all 2024 award nominations is September 1, 2023.**

## 2023 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 2023, three undergraduates and five 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



**Trevor Kempen**

Gustavus Adolphus College  
*Nominated by Prof. Dwight Stoll*



**Yu Tin Lin**

University of Florida  
*Nominated by Prof. Boone Prentice*



**Aric Potter**

University of Utah  
*Nominated by Prof. Joel Harris*

### GRADUATE STUDENTS



**Samuel Foster**

Rowan University  
*Nominated by Prof. James Grinias*



**Nicole North**

Ohio State University  
*Nominated by Prof. Heather Allen*



**Riti Sen**

University of Pittsburgh  
*Nominated by Prof. Jill Millstone*



**Alexis Weber**

State University of New York - Albany  
*Nominated by Prof. Igor Lednev*



**Danielle Whitham**

Clarkson University  
*Nominated by Prof. Costel Darie*

**The Governing Board of the 2023 EAS congratulates these awardees  
for their outstanding achievements.**

**The Student Awardees' posters will be presented on Tuesday, November 14, 2023  
in the Poster Area on the Bridge to the hotel from 11:30pm – 12:30pm**



## Speed Mentoring Session



The Coblentz Society will offer an in-person Speed Mentoring event on Monday, November 13 from 11:45am – 1:15pm.

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 spectroscopist. This proved to be a good way to connect students with a variety of mentors and spark conversations in many possible career paths.

Mentors and Mentees must register for the Eastern Analytical Symposium & Exposition. Part of the online registration process you will need to respond to the question asking if you want to be a mentor or a mentee. Space is limited and we encourage you to [register](#) in advance.

## CALL FOR STUDENT REPRESENTATIVE

EAS is accepting applications for the Nov 2023 – Nov 2025 student representative position. Candidates will need to be either an undergraduate or graduate student through mid-2025. The role of the student representative is to work directly with the EAS publicity committee, creating posts for EAS social media platforms throughout the entire year and leading social media initiatives to increase engagement with EAS.

The candidate is expected to spend time each week making contributions to the social media platforms of EAS, attend 4 board meetings per year and be present at the 4-day symposium which is held the third week of November. Board meetings may be held virtually or in person and are mainly scheduled for a Friday morning. EAS provides travel reimbursement for attendance at the meetings. The affiliation starts November of 2023 with a maximum duration of 2 years.

A knowledge of social media platforms, current enrollment in a discipline centered in or related to the analytical sciences or scientific communication would be highly valued in this role. Applications consisting of a CV and a cover letter should be emailed to [askeas@eas.org](mailto:askeas@eas.org) by the application deadline of September 15, 2023.

The Eastern Analytical Symposium (EAS) is a volunteer organization that sponsors a scientific conference and exposition each November. The annual symposium is attended by more than 1500 scientists from industry, academia and government. The symposium offers educational short courses, student seminars, professional development workshops and technical sessions including award sessions, oral and poster presentations. The exposition presents information, products and services from companies that supply the analytical chemistry field. The symposium and all in person board meetings are held in the Princeton, NJ area.

## CALL FOR STUDENT VOLUNTEERS

Are you a high school, undergraduate, or graduate student looking to get involved? Look no further than Eastern Analytical Symposium! We are actively recruiting volunteers to help with all aspects of our November Symposium and Exposition in Plainsboro, NJ! We are looking for help with setting up on the Saturday and Sunday prior to the conference, tech support in various sessions, manning booths such as registration or short course check-in, and more. This is a great opportunity to learn what goes into putting on a scientific conference and will provide the opportunity to network with analytical chemistry experts across industry, academia, government, and fellow students! As a thank you for volunteering, free registration will be provided for the conference!

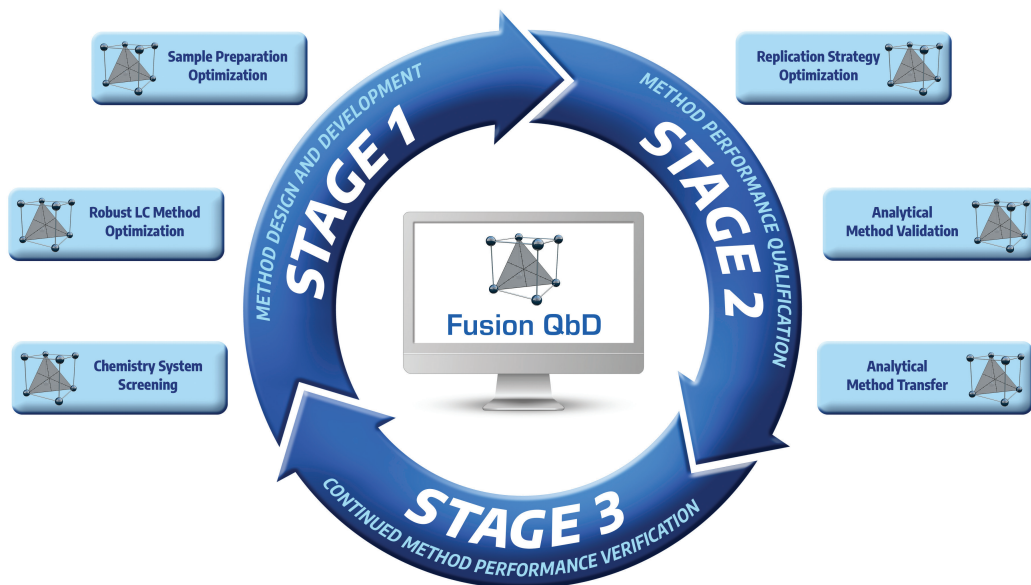
If you're interested in volunteering or have questions, email Caelin Celani ([celanicp@eas.org](mailto:celanicp@eas.org), Student Representative) or Bernadette Taylor ([askeas.org](mailto:askeas.org))!



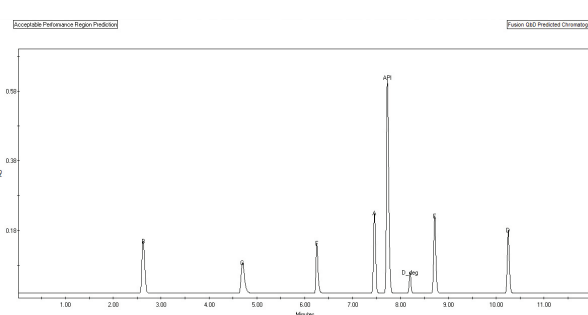
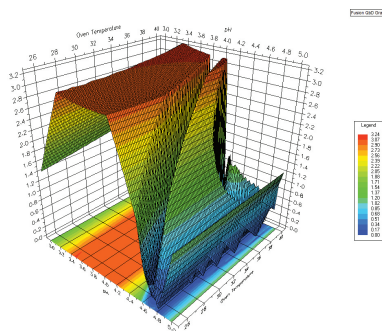
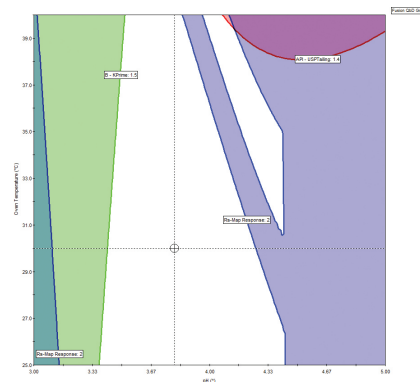
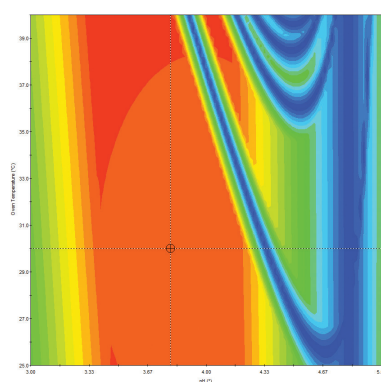


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# 2023 EAS Exhibitors

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## 2023 Exhibitors

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# Exposition Hours & Events

Monday, November 13 <sup>th</sup>	10:00 am to 6:30 pm
Tuesday, November 14 <sup>th</sup>	10:00 am to 5:30 pm
Wednesday, November 15 <sup>th</sup>	10:00 am to 3:00 pm

## Technology Tour

Your Technology Tour Passport contains the names, booth / table locations, and logos of the Technology Tour sponsors. By visiting the participating companies listed in your passport, you will learn more about their products and services. At each Technology Tour stop, have your Passport marked by one of the companies' representatives. Once you have visited the participating companies, you can take your passport to the EAS Souvenir Booth located in Stockton B, to get a special gift. Additionally, your completed passport will also be entered in a daily grand prize drawing. The winner of the drawing on Monday and Tuesday will win free registration to EAS in 2024. The winner of the Wednesday drawing will win free registration to an EAS 2024 short course of their choice.

## Keynote Reception

**Monday, November 13<sup>th</sup>**

**5:15pm to 6:30pm**

Immediately following the keynote lecture, EAS invites all registered attendees to join us at the keynote reception that takes place in the exposition halls. Take this time to enjoy food and drinks while visiting the exhibits and networking with other attendees.

## Exposition Mixer

**Tuesday, November 14<sup>th</sup>**

**4:00pm to 5:30pm**

EAS invites all registered attendees to join us at our annual Exposition Mixer. Sample passed hors d'oeuvres, appetizers and refreshments while learning about the newest developments in analytical instrumentation, supplies, technologies, and services. The Exposition Mixer is a wonderful opportunity to connect with technology and a fun way to end the day at EAS. This Mixer is open to all registered attendees.





# 2023 Exhibitor Offerings

## Seminar

### **Thermo Fisher Scientific Seminar**

**Tuesday, November 14<sup>th</sup>**

**12:00pm to 1:00pm**

Thermo Fisher Scientific will be hosting presentations in the Einstein Meeting Room from 12:00pm through 1:00pm on Tuesday. You'll have the opportunity to learn more about their newest products and technologies and its benefits. Lunch will be provided.

## Demonstration Rooms

**Monday November 13<sup>th</sup> - Wednesday November 15<sup>th</sup>**

**Open during Expo Hours**

### **Waters Corporation**

Waters Corporation invites all attendees to visit their booth Wilson 1 and demo room #109 to experience intuitive simplicity in liquid chromatography with the Alliance iS HPLC System. Meet our scientists, demo our systems, and discover our innovative products and services in liquid chromatography, mass spectrometry and laboratory informatics.

### **Agilent Technologies**

Visit the Agilent booth (L-4) and Demo Room 110A to learn about two newly launched LCMS systems. We will also be featuring products from molecular spectroscopy and consumables. In our demo room we will be presenting two different seminars, one will discuss 2D Chromatography while the other will cover recent updates to USP 621 and how this will impact your research.

We still have a few booth and tabletop spaces available. For more information, please contact Janine Kishbaugh at [exposition@eas.org](mailto:exposition@eas.org).





# Spectroscopic Solutions for the Validated Pharmaceutical Industry



*Join us at booth L15 - Monday as we focus on a new enticing application, come raise a glass with us!*



Today's regulated pharmaceutical laboratories must comply with extensive regulatory requirements. Bruker offers together with its high-end FT-IR, FT-NIR and Raman spectrometer line comprehensive system validation tools to achieve systematic and cost-effective compliance.

## ■ ALPHA the Extremely Compact FT-IR Spectrometer

The ALPHA makes FT-IR analysis simpler than it has ever been before and offers full FT-IR sampling flexibility.

User exchangeable QuickSnap™ sampling modules allow the analysis of almost any kind of sample (e.g. solids, liquids or gases).



## ■ BRAVO Handheld Raman Spectrometer

BRAVO mitigates fluorescence (SSETM), addresses a large spectral range (Duo LASERTM) including CH stretching re-gion and is a class 1M Laser product. The intuitive and guide workflow gives the ability for Raman spectroscopy into everybody's hands.



## ■ LUMOS Fully Automated Stand-Alone FT-IR Microscope

LUMOS provides best performance for visual inspection and infrared spectral analysis of micro samples with highest comfort in use.



## ■ MPA II FT-NIR Spectrometer

The MPA II is a powerful tool for developing sophisticated calibration methods for your laboratory or process needs, yet an easy to use QA/QC instrument for routine work.

Contact us for more details [www.bruker.com/optics](http://www.bruker.com/optics)

# CAREER DEVELOPMENT WORKSHOPS

## Register for EAS and take advantage of these FREE workshops to improve your job seeking skills!

EAS is committed to your professional development. Our workshops are designed to provide a space where you can enhance knowledge and hone your professional skills. Workshops are included with your EAS registration.

### **Building and Nurturing a Professional Network**

Stephen Scypinski, Ph.D., Stephen Scypinski Consulting LLC

**Live ONLINE Workshop, Wednesday, November 1; 12:00 pm – 1:00 pm ET**

In today's high-paced and internet-centric environment, it is much easier to build and maintain a professional network than it was in the days of business card files and phone calls. Having a solid network of contacts can be valuable in many situations. For example, who would you call if you were about to undergo a government inspection and needed an experienced opinion? Where would you turn if your position is being eliminated and you want to know who is hiring? Who would you contact regarding the reputation of a contractor or consultant you might want to do business with? In this workshop you will learn how to build, expand, and nurture an up-to-date scientific professional network that is essential for these and other circumstances. Professional social media, such as LinkedIn, present a multitude of opportunities for members to network and communicate with colleagues and friends in their industry. This presentation will highlight guidance as well as specific examples.

### **Resume and Interview Hints Helpful for Obtaining Positions at Any Level**

Roy Helmy, Associate Vice President, Merck & Co., Inc.

Gino Salituro, Senior Principal Scientist – PCD BA -Preclinical Development Bioanalytics, Merck & Co., Inc.

**Live ONLINE Workshop – Tuesday, November 7; 12:00 pm – 1:00 pm ET**

Learn the secrets of locating positions. Understand the importance of how to read a job description so that you can submit an effective application. Format a resume appropriately tailored to a specific job description. Generic resumes are not as effective. This workshop takes you from preparing the resume to accepting the offer by reviewing 1) writing a resume, 2) preparing for a phone screen, 3) what to expect in a typical candidate on-site interview experiences and questions, and 4) taking the time to review the offer and how to respond to the human resources and/or hiring manager. This session is interactive. Come prepared with resumes, experiences to share, and questions.

### **Career Change – Unlocking your Potential**

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

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

**Live ON-SITE Workshop; Monday, November 13; 12:00 pm – 1:00 pm**

This workshop will provide attendees the opportunity to discover and communicate core skill sets during breakout sessions. The objective of the workshop is to help the technical person to identify and win opportunities outside their current area of specialty or if you are starting your career to understand your skill set.

- Understanding and communicating your core skills
- Understanding and identifying the core skills required in new careers
- Identifying the gaps and problems of a position/company in the new area you can bring value to
- Identifying your success stories
- How to generalize highly specialized knowledge

### **A Guide to the Job Search for Young Professionals**

Shelby Zangari, Ph.D.

**Live ON-SITE Workshop; Tuesday, November 14; 12:00 pm – 1:00 pm**

The modern employment search is very different in 2023 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**

An Employment Bureau will be available to provide ample opportunity for employees to view job postings and to meet prospective employers. The Employment Bureau is free to all registered attendees.



# ALVIN BOBER STUDENT SEMINARS

**November 12-15, 2023**

Eastern Analytical Symposium (EAS) offers **three** outreach seminars designed for high school students, high school teachers, and collegiate undergrads during the November meeting. Each seminar will have outstanding presenters from academia and industry that will demonstrate the advantages of a career in chemistry through engaging presentations and hands-on experiments. The 2023 seminar registration is **Free** for middle & high school students attending with a registered teacher. Furthermore, all seminars are included in the collegiate student full registration fee of \$50. **We also encourage all students to attend the Exposition after the seminar to pick up an EAS souvenir.**

**Brewing = Chemistry: The Science of Beer**  
**Presented by Dr. Jeanne Berk, Cedar Crest College**  
**Sunday, November 12, 2023**  
**Registration Limited to TEACHERS ONLY**  
**1:00 pm to 4:00 pm**

Join Jeanne Berk of Cedar Crest College, Lehigh Valley ACS, as we learn about some of the chemistry involved in brewing beer. Discover how four simple ingredients, barley, water, hops and yeast come together through fermentation and other chemical reactions to make such a wide variety of beers. The steps involved in the production of beer will be covered as well as how the flavor and type of beer depends on the temperature, timing, and amount of each ingredient.

**Spectroscopy and the World Around Us**  
**Presented by Dr. Sharla Wood, Bristol Myers Squibb**  
**Tuesday, November 14, 2023**  
**10:00 am to 12:00 pm**

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.

**Careers in Science “Looking Back Through the Journey & Science of Color”**  
**Presented by Debbie Peru, DP Spectroscopy and Training**  
**Wednesday, November 15, 2023**  
**10:00 am to 12:00 pm**

This workshop 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, nutrition 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 workshop 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 workshop 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.

*Students and teachers must **pre-register** to reserve a space; [click here to register](#). Please contact the Eastern Analytical Symposium at [askeas@eas.org](mailto:askeas@eas.org) or visit our website at [www.EAS.org](http://www.EAS.org) for more information.*

## Housing at the 2023 Eastern Analytical Symposium

EAS has a block of rooms reserved at The Crowne Plaza Princeton Hotel & Conference Center which is located on Scudders Mill Road in Plainsboro, NJ. The hotel is connected to the Conference Center where all EAS activities are held: Technical Program (Oral & Poster Sessions), Short Courses, Workshops, Seminars, Employment Bureau and Exposition.

In order to obtain a reservation at The Crowne Plaza Princeton hotel, you may use the web site or use the phone numbers provided below; be sure to use the Group Code to receive the discounted rate. You will need to provide a credit card number in order to guarantee your room. Please carefully read the information provided on the hotel's reservation website so that you are aware of any relevant cancellation penalties and dates. When you make your reservation, you will be provided with a confirmation; please retain it in case you need to modify your reservation.



### Crowne Plaza Princeton

900 Scudders Mill Rd.  
Plainsboro, NJ 08536  
1-609-936-4200

2023 Room rate - \$169.00 per night plus tax  
(you must mention **Group Code: EAS**)  
[Click here for on-line reservations](#)

## Transportation & Directions

### LOCATION:

EAS will be held at the **Crowne Plaza Princeton-Conference Center & Hotel, 900 Scudders Mill Rd, Plainsboro, NJ 08536** (phone: 609-936-4200), located in the community of Plainsboro, NJ, just minutes from downtown Princeton. This location is ideally situated between Philadelphia and New York City. It is easy to reach from within New Jersey and the Mid-Atlantic region using some of the following highways: the New Jersey Turnpike, the Garden State Parkway, I-95, I-195, I-295, and Routes 1, 33, 133, 130 & 206.

### PARKING & LOCAL SHUTTLE SERVICE:

Parking space is available at the Conference Center and at the adjacent Crowne Plaza Hotel and Holiday Inn Express. Overflow parking is available at the nearby Princeton Alliance Church at 20 Schalks Crossing Road, Plainsboro, NJ. **EAS will provide shuttle service from the overflow parking lot to the conference center Monday & Tuesday only.**

### RAIL SERVICE:

NJ Transit Trains from Newark International Airport via the Northeast Corridor line is an economical and convenient method of transportation from Newark Airport and other locations in NJ, NY and PA. The closest train station is **Princeton Junction**. It serves both NJ Transit ([www.njtransit.com](http://www.njtransit.com)) and Amtrak (<https://www.amtrak.com>). NJT / SEPTA trains from Philadelphia and NJ Transit trains from NYC are frequent. Amtrak offers service to/from New York City, Metro Park in NJ, Providence, Boston, Philadelphia, Wilmington DE, Baltimore, and Washington DC.

[Click here for more transportation options and for driving directions.](#)



# EASTERN ANALYTICAL SYMPOSIUM & EXPOSITION 2023



## Better life with Analytical Chemistry



Crowne Plaza Princeton Conference Center  
Plainsboro, NJ

**November 13 – 15, 2023**

### CALL FOR PAPERS!

Poster Presentations: Mar 1 – Sept 4

Online Submission at [eas.org](http://eas.org)

**EAS invites YOU to be a part of the Technical Program in November!**  
**Contribute a paper for oral or poster consideration via our website:**  
**[www.eas.org/asubmit](http://www.eas.org/asubmit)**

## Sample Areas of Interest

- Bioanalysis • Cannabinoid Analysis • Capillary Electrophoresis
- Chemometrics • Conservation Science • Counterfeit Analysis
- Environmental Analysis • Food Analysis • Forensic Analysis • Gas Chromatography • Liquid Chromatography (HPLC/UHPLC/HPTLC)
- Immunochemistry • Industrial Hygiene • IR/NIR/Raman Spectroscopy
- Laboratory Automation • Laboratory Management • Mass Spectrometry
- NMR Spectroscopy • Pharmaceutical Analysis • Process Analytical Science • Proteomics & Metabolomics • Quality by Design • Regulatory/Compliance • Sample Preparation • Science Education
- Sensors • Separation Sciences • SFC & SEC • Surface Science
- Vibrational Spectroscopy

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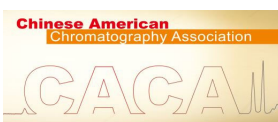
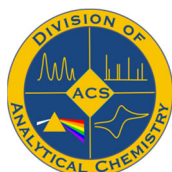
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## 2023 Registration Types & Rates

	Before Oct. 15	After Oct. 15
<b>Full Conferee</b>	\$275	\$400
<b>Exposition/Networking/Posters</b>	\$100	\$100
<b>Full-Time Student Conferee</b>	\$50	\$50
<b>High School Student with Seminar</b> (must register for a seminar)	\$0	\$0
<b>Wednesday Only Full Conferee</b> (available onsite only 11/15)		\$150
<b>One-Day Short Course</b> (must register as Full Conferee in order to take course)	\$625	\$850
<b>One-Day Short Course - Student Rate</b> (must be a Full-Time Student in order to take course at Student Rate)	\$100	\$425
<b>Two-Day Short Course</b> (must register as Full Conferee in order to take course)	\$900	\$1,250
<b>Two-Day Short Course - Student Rate</b> (must be a Full-Time Student in order to take course at Student Rate)	\$200	\$625