2022 EASTERN ANALYTICAL SYMPOSIUM

EMBRACING ANALYTICAL DIVERSITY FOR A SUSTAINABLE FUTURE

Crowne Plaza Princeton Conference Center
Plainsboro, NJ
November 14–16, 2022

2022 EAS PRELIMINARY PROGRAM

Message from the President of the Governing Board

I am truly excited about the symposium we planning for 2022. I hope you too are looking forward with anticipation to the 61st EAS Symposium in November as we Embrace Analytical Diversity for a sustainable future. Eastern Analytical Symposium has long promoted diversity and inclusion on multiple levels. While our focus is clearly on the analytical sciences, this necessarily involves diverse chemistry sub-disciplines, diverse techniques, diverse nationalities, and diverse speakers.

Dr. Raychelle Burks will be a keynote speaker this year. Dr. Burks is an analytical chemist, forensic scientist, Associate Professor at American University, and renowned science communicator. You may also recognize her name from her participation in the important documentary “Picture A Scientist”, a 2020 official selection of the Tribeca Film Festival, providing new perspectives on how to make science itself more diverse and equitable.

Also giving a plenary talk is Dr. Angela Belcher, James Mason Crafts Professor at MIT and head of the Biological Engineering Department there. Her many awards include a 2004 MacArthur Foundation Fellowship, the 2004 Four Star General Recognition Award, Scientific American’s Research Leader of the Year in 2006, and the 2013 Lemelson-MIT Prize. She also has a very popular TED Talk on using nature to grow batteries.

Our popular Breakfast Lecture is back, and we are really excited to have Dr. Elizabeth Bik as our speaker. Dr. Bik won the 2021 John Maddox Award for exposing threats to research integrity in scientific papers. Having started her career as a microbiologist in the Netherlands, she started investigating scientific integrity after discovering plagiarism in published research. Often referred to as a science-sleuth, she works to expose poor quality research that may contribute to wide-spread misinformation and mistrust of science.

Be sure to check out our 2022 Shorts Courses; we have an array of topics to enhance your education and professional development no matter your current career stage. Whether you are interested in fundamentals, advanced techniques, or management, there is a Short Course to help advance your career. New this year for our Short

Courses will be a Spectroscopy Sandbox. Several of our instructors, in conjunction with our sponsoring organizations, will create a ‘sandbox area’ for use in their Short Courses. This will contain instruments allowing hands-on instruction. The sandbox is for use only by those enrolled in spectroscopy Short Courses, so I encourage you to take advantage of this opportunity and register for a Short Course. Remember, anyone signing up for more than one Short Course receives a discount on the 2nd (or 3rd).

If you attend just one conference this year, make it count, make it inclusive, make it informative, make it fun, make it EAS. Take the opportunity to encounter an array of techniques crossing disciplinary boundaries. Be sure to check our website, eas.org, for updates and follow us on Twitter, Instagram, and LinkedIn. And be sure to join us in Princeton, NJ in November 2022, and embrace analytical diversity.

Barbara Hillery
2022 EAS President

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2022 EAS PRELIMINARY PROGRAM

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

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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. Raychelle Burks, American University

Tuesday
8:00am Breakfast Lecture
Dr. Elisabeth Bik, Harbers Bik LLC

Wednesday
11:45am Plenary Lecture
Dr. Angela Belcher, Massachusetts Institute of Technology

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

Exposition

The Exposition is located in the Crowne Plaza Conference Center

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 special Mixer in the Expo from 4:00pm-5:30pm for all attendees.
Wednesday
Hours: 10:00am to 4:00pm

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 & College Students

Pre-registration is required.
Sunday
(High School Teachers only)
1:00pm to 4:00pm
Monday & Tuesday
10:00am to 12:00pm

Workshops

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

Tuesday, October 18 (Zoom)
12:00pm to 1:00pm

Tuesday, November 1 (Zoom)
4:00pm to 5:30pm

Tuesday, November 15 (Onsite)
12:00pm to 1:00pm

Employment Bureau

Stay tuned for more details on our Employment Bureau!

Registration Hours

Sunday
Exhibitors – 9:00am to 6:00pm
All Others – 7:30am to 9:00am and 3:00pm to 5:00pm
Monday
8:00am to 4:30pm
Tuesday
7:30am – 4:30pm
Wednesday
8:00am – 3:30pm

Photography & 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 2022 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

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2022 EAS CONFERENCES-IN-MINIATURE

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

BIOANALYSIS, PROTEOMICS & METABOLOMICS

Breakfast Lecture: Nov. 15, 8:00am
The Dark Side of Science: Misconduct in Research
Dr. Elisabeth Bik, Harbers Bik LLC

Technical Sessions

- Bioanalysis: New Technology Advances and Developments (11/14 AM)
- **EAS Young Investigator Award, Honoring Simone Sidoli, Albert Einstein College of Medicine (11/15 AM)**
- Novel Applications of Electron-Based Dissociation for Proteomics (11/15 PM)
- Advances in Proteomics and Metabolomics Research (11/16 AM)
- Proteomics and Metabolomics: Challenges and Recent Developments (11/16 PM)

Short Course

- Intact and Top-Down Protein Characterization and Quantitation by Mass Spectrometry: Approaches for Pharmaceutical Drug Discovery, Development, and Bioanalysis (11/15)

CHEMOMETRICS

Technical Sessions

- Applied Data Science: Expanding the Chemometrics Toolbox (11/14 AM)
- Handheld Instrumentation and Chemometrics as Diverse Analytical Tools (11/16 AM)

Short Course

- Chemometrics Without Equations Part 1 & 2 (11/13-11/14)

CHROMATOGRAPHY

Technical Sessions

- Innovative Approaches to Liquid Chromatography in Drug Development: From Small Molecules to New Modalities (11/14 AM)
- Sustainable Separations (11/14 PM)
- Recent Advances in Liquid Chromatography (11/15 AM)
- **EAS Award for Outstanding Achievements in Separation Science Honoring Fabrice Gritti, Waters Corporation (11/15 PM)**
- HPTLC: A Powerful Technique Addressing Analytical Challenges (11/15 PM)
- HPLC/UHPLC Separations in Pharmaceutical Applications (11/15 PM)
- Recent Applications of Separations for Chemical Analysis and Physical Characterization (11/16 AM)
- The Utility of Supercritical Fluid Chromatography in Challenging Separations (11/16 AM)
- Liquid Chromatography Applications for Better Separations (11/16 AM)
- Enhanced Approaches to LC Method Development (11/16 PM)
- New Advances and Trends in HPLC/UHPLC (11/16 PM)

Short Courses

- HPLC and UHPLC for Practicing Scientists 1 and 2: Fundamentals, Method Development, and Troubleshooting (11/13-11/14)
- Supercritical Fluid Chromatography (SFC): A Powerful and Greener Tool for Analytical and Preparative Separations (11/13)
- Practical LC-MS Method Development and Sample Preparation (11/14-11/15)
- How to Develop Validated HPLC Methods: Rational Design with Practical Statistics and Troubleshooting (11/15)
- Getting the most from GC and GC/MS (11/15)
- Systematic Chromatography Maintenance and Troubleshooting (11/16)

CANABIS ANALYSIS

Technical Session

- Challenges in Cannabis Testing for a Growing Industry (11/15 AM)
- Cannabis - CBD Product Testing (11/15 PM)

EDUCATION

Technical Sessions

- STEM Education Innovations (11/14 AM)
- New York Microscopical Society Ernst Abbe Award; Honoring Manu Prakash, Stanford University (11/14 PM)

EDUCATION *continued*

Keynote Lecture: Nov. 14, 4:15pm
Making Progress with Social Justice and Sensing
Dr. Raychelle Burks, American University

Short Courses

- The Fundamentals of Laboratory Management – Managing People (11/14)
- Analytical Challenges of Emerging Contaminants for Young Research Professionals (11/15)

ELECTROCHEMISTRY

Technical Sessions

- **EAS Award for Outstanding Achievements in the Fields of Analytical Chemistry, Honoring Richard Crooks, University of Texas-Austin (11/14 AM)**
- Electrochemical Analysis (11/14 PM)

ENVIRONMENTAL ANALYSIS

Technical Sessions

- Applications and Technologies Addressing Environmental Concerns (11/14 AM)
- Green Chemistry from Fundamentals to Applications (11/15 PM)
- Addressing PFAS Total Analytical Challenges (11/16 AM)

Short Courses

- Analytical Challenges of Emerging Contaminants for Young Research Professionals (11/15)
- Analytical Atomic Spectroscopy and its Environmental Applications (11/15)

FORENSIC ANALYSIS

Technical Sessions

- Forensic Analysis: Innovations and Technological Advancements (11/14 AM)
- Analytical Schemes in Forensic Science (11/14 PM)
- Research from our Emerging Forensic Scientists (11/15 AM)
- Forensics on the Go: Portable Instruments in the Field (11/15 PM)
- Novel Applications of Elemental Profiling in Forensics (11/16 AM)
- Forensic Microscopy "What is it? Who does it?, (11/16 PM)

Short Course

- The Importance of Microscopy in Microspectroscopy (11/13)
- Portable Spectroscopy and Its Application in Forensic Science (11/13)

LABORATORY & DATA ANALYSIS

Technical Session

- Managing the Analytical Laboratory: The New "Normal" (11/15 AM)

Short Courses

- The Fundamentals of Laboratory Management – Managing People (11/14)
- Quality-by-Design Fundamentals for Analytical Chemists: A Continuous Improvement Paradigm for the Analytical Laboratory (11/16)

MASS SPECTROMETRY

Technical Sessions

- Advancements of Mass Spectrometry & Applications Diversity (11/14 AM)
- Mass Spectrometry Solutions to Challenges in the Pharmaceutical Industry (11/14 PM)
- Probing the Microbiome Using Mass Spectrometry (11/15 PM)
- You Are What You Eat as Viewed Through the Eyes of High-Resolution Mass Spectrometry Analyses of Foods (11/16 AM)
- **EAS Award for Outstanding Achievements in Mass Spectrometry, Honoring Martin Jarrold, Indiana University (11/16 PM)**
- Advances in Proteomics & Metabolomics Research (11/16 AM)

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

MASS SPECTROMETRY *continued*

Short Courses

- Intact and Top-Down Protein Characterization and Quantitation by Mass Spectrometry: Approaches for Pharmaceutical Drug Discovery, Development, and Bioanalysis (11/15)
- Practical LC-MS Method Development and Sample Preparation (11/15-11/16)
- Getting the most from GC and GC/MS (11/15)

NMR SPECTROSCOPY

Technical Sessions

- Advances in NMR Data Science (11/14 AM)
- NMR Spectroscopy as a Versatile Analytical Tool in Chemical Characterizations (11/15 AM)
- **EAS Award for Outstanding Achievements in Magnetic Resonance, Honoring Philip Grandinetti, The Ohio State University (11/14 PM)**

Short Course

- Practical NMR Spectroscopy (11/13)

PHARMACEUTICAL ANALYSIS

Technical Sessions

- Accelerating Innovation with Machine learning, Predictive Technologies and Lab Automation (11/15 AM)
- Data Integrity and Security in Pharmaceuticals (11/16 PM)
- Solving your PAT Problems with Technology (11/16 PM)

Short Courses

- Prepare Your Analytical Laboratory for Quality Audit and Inspection (11/13)
- Lifecycle Approach to Analytical Methods: Incorporating QbD Concepts into Method Development, Validation, Verification and Transfer (11/14)
- Process Analytical Technology: Out of the Lab and into the Line (11/15)
- Intact and Top-Down Protein Characterization and Quantitation by Mass Spectrometry: Approaches for Pharmaceutical Drug Discovery, Development, and Bioanalysis (11/15)

Plenary Lecture: Nov. 16, 11:45am
Professor Angela Belcher, Massachusetts Institute of Technology

POWERHOUSE PANEL DISCUSSIONS

Technical Sessions

- Challenges of Counterfeit Detection in the Pharmaceutical Industry (11/14 PM)
- Challenges in Cannabis Testing for a Growing Industry (11/15 AM)
- How to Crack the Glass Ceiling: Diversity and Inclusion in Chemistry (11/15 PM)

SPECTROSCOPY

Technical Sessions

- Vibrational Spectroscopy: Propelling New Insights into Chemical Analysis (11/14 AM)
- **EAS Award for Outstanding Achievements in Vibrational Spectroscopy, Honoring Richard Crocombe, Crocombe Spectroscopic Consulting (11/14 PM)**
- Food Spectroscopy - It's not Just Near Infrared (11/14 PM)
- Innovations in Vibrational Spectroscopy as an Essential Tool in Chemical Analyses (11/14 PM)
- **New York/New Jersey Section of the Society for Applied Spectroscopy Gold Medal Award, Honoring Rohit Bhargava, University of Illinois-Urbana-Champaign (11/16 AM)**
- Optical Technologies in the Fight Against Disease (11/16 PM)
- Solving your PAT Problems with Technology (11/16 PM)
- 1+1=3: Applications of Automated Particle Imaging Combined with Raman Spectroscopy (11/16 PM)

Short Courses

- Atomic Spectroscopy in the Pharmaceutical Laboratory (11/15)
- Portable Spectroscopy and Its Application in Forensic Science (11/13)
- The Importance of Microscopy in Microspectroscopy (11/13)
- An Introduction to Quantitative Spectroscopic Analysis (11/14)
- Modern Raman Spectroscopy Techniques and Applications in the Material and Biological Sciences (11/14)
- Analytical Atomic Spectroscopy & its Environmental Applications (11/15)
- Problems with FT-IR Spectra and How to Avoid Them (11/16)

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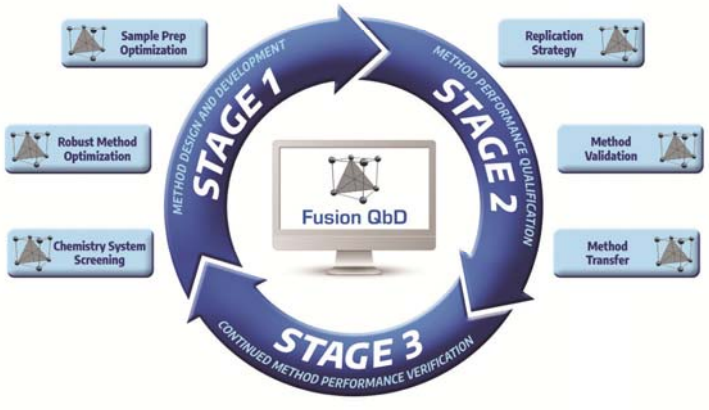

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2022 Preliminary Technical Oral Program

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

MONDAY MORNING, NOVEMBER 14

Time	Title, Author(s)
EAS Award for Outstanding Achievements in the Fields of Analytical Chemistry Honoring Richard Crooks, University of Texas-Austin Chair: Frank Zamborini, University of Louisville	
9:00am	*Oxidation and Deposition Processes with Metal Nanoparticles*, Frank Zamborini, University of Louisville
9:30am	*Desalting and Salting Nanoliter-Scale Water-in-Oil Droplets*, Robbyn Anand, Iowa State University
10:00am	Break
10:30am	*Serial and Parallel Approaches to High-Throughput Electro-Chemistry*, Lane Baker, Texas A&M University
11:00am	*Presentation of the EAS Award for Outstanding Achievements in the Fields of Analytical Chemistry*
11:05am	*Magnetic and Electrochemical Preconcentration: A Route to Home-Based, Picomolar Detection of a Heart Failure Biomarker*, Richard Crooks, University of Texas-Austin

Advances in NMR Data Science Chair: David Rovnayk, Bucknell University	
9:00am	*Getting New Correlations from Old Spectra-Covariance NMR to Rescue Challenging Biomolecular Projects*, Dominique Frueh, Kenneth Marincin, Johns Hopkins University, Aswani Kancherla, Mynvax Private Limited, Subrata Mishra, United States Pharmacopeia
9:30am	*Characterization of Biotherapeutics by Chemometrics and Machine Learning Analysis of NMR Spectra*, Frank Delaglio, University of Maryland
10:00am	Break
10:30am	*Shifting-Corrected Regularized Regression Model for NMR Metabolomic Identification*, Thao Vu, Colorado School of Public Health, Yuhang Xu, Bowling Green State University, Yumou Qiu, Iowa State University, Robert Powers, University of Nebraska-Lincoln
11:00am	*Using Deep Learning to Unleash the Potential of NMR Spectroscopy*, Flemming Hansen, University College London

STEM Education Innovations Chair: Shirley Fischer-Drowos, Widener University	
9:00am	*BCEENET: Creating a Collaborative Network to Support Course-Based Undergraduate Research Experiences (CUREs) Using Digitized Natural History Collections*, Janice Krumm, Widener University
9:30am	*Student Outcomes and Perceptions of Specifications Grading in a First Semester General Chemistry Course*, Stephen Habay, Salisbury University
10:00am	Break
10:30am	*Thinking Outside the Classroom – Coursework Using Current Environmental Case Studies*, Gina Plantz, Haley & Aldrich
11:00am	*Transforming the Chemistry Lab Experience*, Shirley Fischer-Drowos, Widener University

Innovative Approaches to Liquid Chromatography in Drug Development: From Small Molecules to New Modalities Chair: Yi He, John Jay College of Criminal Justice	
9:00am	*Novel Strategies for Targeted Protein Quantification in Biomatrices*, Bo An, GlaxoSmithKline
9:30am	*In Silico Multifactorial Modeling for Streamlined Development and Optimization of Chromatography Methods*, Imad Haidar Ahmad, Merck & Co., Inc.
10:00am	Break
10:30am	*Improving Oligonucleotide Separations and Impurity Analysis Using LC Systems and Columns with Hybrid Surface Technology*, Martin Gilar, Waters Corporation
11:00am	*Empower mRNA-Based Medicines by HPLC*, Penggao Duan, Moderna

Applied Data Science: Expanding the Chemometrics Toolbox Chair: Brandye Smith-Goettler, Merck & Co., Inc.	
9:00am	Peter Harrington, Ohio University
9:30am	*Online Model Selection: Which One?*, Barry Wise, Eigenvector Research
10:00am	Break
10:30am	*Pharmaceutical Applications of Machine Learning*, Brandye Smith-Goettler, Merck & Co., Inc.
11:00am	Adam Gilmore, HORIBA Scientific

2022 Preliminary Technical Oral Program

Monday Morning continued

Advancements of Mass Spectrometry and Applications Diversity **Chair: Peter Bratin, ECI Technology**	
9:00am	*The Importance of High Resolution Ion Mobility Mass Spectrometry to Accurately Read Back the Complex Language of Biology*, David Muddiman, Jeffrey Enders, Taufika Williams, Kenneth Garrard, North Carolina State University
9:30am	*Statistical Approach for System Suitability Testing for Mass Spectrometry Imaging by Infrared Matrix-Assisted Laser Desorption Electrospray Ionization (IR-MALDESI),* Olivia Dioli, Hellena Bai, Kenneth Garrard, David Muddiman, Emily Hector, North Carolina State University
10:00am	Break
10:30am	*Quantitation of Antibody Deamidation Degradation and Host Cell Proteins by Coulometric Mass Spectrometry*, Yongling Ai, Hao Chen, New Jersey Institute of Technology
11:00am	*A Novel Chromatographic Approach to Microplastics Analysis Using Pyrolysis-GC-MS: How Your GC/MS Can Be Adapted for Microplastics Research*, Khadiza Mom, Quantum Analytics

Applications and Technologies Addressing Environmental Concerns **Chair: Neil Jespersen and Christina Robb, United States Food & Drug Administration SANFL**	
9:00am	*Green Chemistry Initiatives at MilliporeSigma for a Sustainable Future*, Ettigounder Ponnusamy, Milliporesigma
9:30am	*Growth Rate Dependence of Secondary Organic Aerosol on Seed Particle Size, Composition, and Phase*, Devon Higgins, Michael Taylor, Justin Krasnomowitz, Murray Johnston, University of Delaware
10:00am	Break
10:30am	*Unraveling the Complex Composition of Produced Water by Specialized Extraction Methodologies*, Emanuela Gionfriddo, Ronald V. Emmons, Govind S. Shyam Sunder, Jon R. Kirchhoff, The University of Toledo, Tiffany Liden, Kevin A. Schug, University of Texas at Arlington
11:00am	*A Screening Test for Pollution of Lakes with Perfluoroalkyl Substances (PFAS): Raman Spectroscopy of Fish Blood*, Luis Pérez-Almodóvar, Igor Lednev, State University of New York

Bioanalysis: New Technology Advances and Developments **Chair: Mary Lynn Grayeski**	
9:00am	*Smart Biosensors with Machine Learning for Objective Pain Assessment*, Omowunmi Sadik, New Jersey Institute of Technology
9:30am	*Light-Addressable Electroanalysis with Semiconductor/Metal Nanoparticle Junctions*, Glen O'Neil, Montclair State University
10:00am	Break
10:30am	*AI for Model Exploration of Molecular Equilibria in VR*, Fereshteh Emami, Tara Richard, Bryanne Boudreaux, Mathew Massey, Southeastern Louisiana University, Sheldon Zhu, Joseph Perez, Liam Golly, Theodore Nguyen, Srujan Gutta, Sunwoo Kim, Jonathon Padon, Thomas DeFanti, Larry Smarr, University of San Diego

Forensic Analysis: Innovations and Technological Advancements **Chair: Penny Moore**	
9:00am	*Forensics and Innovative Technologies (FIT): How FIT Fits in Bristol-Myers Squibb*, Ravi Kalyanaraman, Bristol Myers Squibb
9:30am	*HPTLC Separation of Novel Psychoactive Substances*, Thomas Brettell, Marianne Staretz, Cedar Crest College
10:00am	Break
10:30am	*Identification of Fibers Using Raman Microspectroscopy: A Case Study*, Sergey Mamedov, HORIBA Scientific
11:00am	*Examination of Pigmented Fibers for Trace Evidence Applications*, Christopher Palenik, Kelly Beckert, Ethan Groves, Skip Palenik, Otyllia Abraham, Microtrace LLC

Vibrational Spectroscopy: Propelling New Insights into Chemical Analysis **Chair: Dave Russell**	
9:00am	*Raman Spectroscopy of TiO_2, WO_3, and Y_2O_3 Nanoparticles*, Sergey Mamedov, HORIBA Scientific
9:30am	*Differentiation of Structurally Similar Fentanyl Analogues with Theoretical and Experimental Analysis by Surface-Enhanced Raman Spectroscopy (SERS)*, Sevde Dogruer, Emily Hernandez, Bruce McCord, Florida International University
10:00am	Break
10:30am	*Highly Selective Differentiation of Organic Gunshot Residues Combining their Elemental and Molecular Signatures,* Shelby Khandasammy, Igor Lednev, University at Albany – SUNY, Lenka Halámková, Texas Tech University, Matthieu Baudelet, University of Central Florida
11:00am	*Root Cause Spectroscopic Failure Investigation Aided by High Resolution SEM/EDS, FT-IR, XPS Instruments*, Jeanette vajki Vass, Auto & Materials

2022 EAS Preliminary Technical Oral Program

MONDAY AFTERNOON, NOVEMBER 14

Time	Title, Author(s)
EAS Award for Outstanding Achievements in Magnetic Resonance **Honoring Philip Grandinetti, The Ohio State University** **Chair: Lyndon Emsley, École Polytechnique Fédérale de Lausanne** ***Sponsored by Bruker BioSpin and New Era Enterprises***  	
1:30pm	*Higher Resolution and Higher Sensitivity for Solid-State NMR Spectroscopy*, Lyndon Emsley, École Polytechnique Fédérale de Lausanne
2:00pm	*Scaling Analyses of Hyperpolarization Transfer from Paramagnetic Centers into Solid Media*, Brad Chmelka, Nathan Prisco, University of California-Santa Barbara, Arthur Pinon, Lyndon Emsley, École Polytechnique Fédérale de Lausanne
2:30pm	Break
3:00pm	*Custom-Made Magnetic Resonance: An Application-Driven Instrumentation Approach*, Dimitrios Sakellariou, KU Leuven
3:30pm	*Presentation of the EAS Award for Outstanding Achievements in Magnetic Resonance*
3:35pm	*Statistical Learning in NMR Non-Crystallography*, Philip Grandinetti, The Ohio State University

New York Microscopical Society Ernst Abbe Award **Honoring: Professor Manu Prakash, Stanford University** **Chairs: Brooke Kammrath, University of New Haven, John Reffner, John Jay College of Criminal Justice**	
1:30pm	Manu Prakash, Stanford University
2:00pm	Benedict Diederich, openUC2
2:30pm	Break
3:00pm	Thibaut Thibaut, Stanford University
3:30pm	Panel Discussion

POWERHOUSE SESSION: **Challenges of Counterfeit Detection in Pharmaceutical Industry** **Chairs: Pauline Leary, Federal Resources, Kim Huynh-Ba, Pharmalytik, LLC**	
1:30pm	*Analytical and Operational Challenges in Counterfeit Case Studies*, Ravi Kalyanaraman, Bristol Myers Squibb
2:00pm	*Microscopical Analysis Applied to the Detection and Sourcing of Counterfeit Products*, Christopher Palenik, Microtrace LLC
2:30pm	Break
3:00pm	*Unsafe: Fake or Counterfeit*, Dale Purcell, Chemical Microscopy, LLC
3:30pm	Panel Discussion

Analytical Schemes in Forensic Science, *organized by the New Jersey Association of Forensic Scientists* **Chair: David Fisher, New Jersey Institute of Technology**	
1:30pm	*Forensic Capabilities for US Trade Enforcement at the CBP New York Laboratory*, Adam Hutter, United States Department of Homeland Security
2:00pm	*Pain Biosensors in Forensic Identification of Physical Trauma*, Omowunmi Sadik, Gaddi Eshun, Christopher Henni, New Jersey Institute of Technology, J Schaffer, Walker Land, State University of New York-Binghamton
2:30pm	Break
3:00pm	*Illicit Drugs: A Guide for Analysis*, Kristi Bartok, Union County Prosecutor's Office Forensic Laboratory
3:30pm	*Quantitation of Protein Deamidation Degradation by Coulometric Mass Spectrometry (CMS) and Its Potential Application for Determining Post-Mortem Interval (PMI)*, Hao Chen, New Jersey Institute of Technology

Food Spectroscopy - It's not Just Near Infrared **Chair: Ellen Miseo, Miseo Consulting**	
1:30pm	*Adapting Portable XRF Spectroscopy for Field Use in Agriculture*, Jill Clapperton, Rhizoterra Inc.
2:00pm	*Exploring the Contours of A-TEEM Spectroscopy for Food Analysis*, Linda Kidder, Adam Gilmore, Cary Davies, HORIBA Scientific Instruments
2:30pm	Break
3:00pm	*Mid-Infrared Solutions for Rapid Sensing of Food Contaminants*, Luis Rodriguesz-Soana, The Ohio State University
3:30pm	*Applications of Raman Spectroscopy for Food Analysis*, Zili Gao, University of Massachusetts-Amherst

2022 Preliminary Technical Oral Program

Monday Afternoon continued

Electrochemical Analysis **Chair: Michelle Rasmussen, Lebanon Valley College**	
1:30pm	*Functional Biosensors for Infectious Disease*, Ariel Furst, Massachusetts Institute of Technology
2:00pm	*Using Bioelectrocatalysis for Analysis*, Shelley Minteer, University of Utah
2:30pm	Break
3:00pm	*Revealing the Heterogeneity in Metal Dissolution Reaction via Colocalized Electrochemical and Structural Imaging*, Hang Ren, University of Texas at Austin
3:30pm	David Hickey, Michigan State University

Mass Spectrometry Solutions to Challenges in the Pharmaceutical Industry, *organized by the North Jersey Mass Spec Discussion Group* **Chair: David J. Schenk, Merck & Co., Inc.**	
1:30pm	*HRMS on Small Molecule Impurity Identification in Pharmaceutical Development*, Jiaxuan Yan, Xing Yin, Wendy Zhong, Douglas Richardson, Hillary Schuessler, Merck & Co., Inc.
2:00pm	*2-Pyridine Carboxaldehyde for Semi-Automated Soft Spot Identification in Cyclic Peptides*, Joe R. Cannon, Bristol Myers Squibb
2:30pm	Break
3:00pm	*Host Cell Protein Characterization Methodology and Use within Downstream Process Development Pipeline*, Stephanie Lehman, Josue Baeza, GlaxoSmithKline
3:30pm	*Two-Dimensional Liquid Chromatography-Mass Spectrometry (2DLC-MS) for Simultaneous Multi-Attribute Characterization of Adeno-Associated Viruses*, Zhijie Wu, Hongxia Wang, Andrew Tustian, Haibo Qiu, Ning Li, Regeneron Pharmaceuticals, Inc.

Sustainable Separations, *sponsored by the Chromatography Forum of the Delaware Valley* **Chair: Mary Ellen McNally, FMC Corporation**	
1:30pm	*The Role of Instrument Detection Level in the Development of Sustainable Trace Level Methods*, James Stry FMC Corporation
2:00pm	*Greening Separation Science*, Chris Welch, Center for Bioanalytic Metrology an NSF Industry-University Cooperative Research Center
2:30pm	Break
3:00pm	*A Rapid Automated Extraction Platform to Assess Drug Product Potency by Online Liquid Chromatography*, Stephen Groskreutz, Grodon Lambertus, Eli Lilly and Company
3:30pm	*Transferring Analytical-Scale LC Separations to Compact Capillary LC Instrumentation*, James Grinias, Rowan University

Innovations in Vibrational Spectroscopy as an Essential Tool in Chemical Analyses **Chair: Kate Jackson, Colgate Palmolive**	
1:30pm	*Determining the Time Since Deposition of Menstrual Blood Stains Utilizing Raman Spectroscopy,* Alexis Weber, Igor Lednev, University at Albany-SUNY
2:00pm	*The Role of Micro Spectroscopic Analysis Tools in Industrial Problem Solving*, Jeanette vajki Vass, Auto & Materials
2:30pm	Break
3:00pm	*Phenotype Profiling Based on Raman Spectroscopy of a Blood Deposit: The Effect of Hormone Replacement Therapy on Sex Determination*, Emily Miller, Brooke Kammrath, University of New Haven, Alexis Weber, Igor Lednev, University at Albany-SUNY

KEYNOTE LECTURE
Monday, November 14, 4:15pm

Making Progress with Social Justice and Sensing

Dr. Raychelle Burks - @DrRubidium
Analytical Chemist, Forensic Scientist &
Science Communicator, American University

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

2022 Preliminary Technical Oral Program

TUESDAY MORNING, NOVEMBER 15

BREAKFAST LECTURE
Tuesday, November 15, 8:00am

The Dark Side of Science: Misconduct in Research

Dr. Elisabeth Bik - @MicrobiomeDigest
Science Consultant - Microbiome, Science Integrity & Image Forensics
Harbers Bik LLC

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

Time	Title, Author(s)
EAS Award for Outstanding Achievements in Vibrational Spectroscopy **Honoring Richard Crocombe, Crocombe Spectroscopic Consulting** **Chair: Ellen Miseo, Miseo Consulting**	
9:00am	Presentation of the EAS Award for Outstanding Achievements in Vibrational Spectroscopy
9:05am	*Spectrometers in Wonderland: Shrinking, Shrinking, Shrinking*, Richard Crocombe, Crocombe Spectroscopic Consulting
9:30am	*Safety and Security Dependence on Vibrational Spectroscopy*, Pauline Leary, Federal Resources
10:00am	Break
10:30am	*Advancing the On-Scene Detection and Identification of Illicit Drugs With Portable Technologies,* Brooke Kammrath, Henry C. Lee College of Criminal Justice and Forensic Sciences
11:00am	*Process Analytical Technology for Oral Solid Dose Manufacturing*, Larry McDermott, Vertex Pharmaceuticals

EAS Young Investigator Award; New Perspectives in the Analysis of the Modified Proteome Using Mass Spectrometry **Honoring Simone Sidoli, Albert Einstein College of Medicine** **Chair: Benjamin Garcia, Washington University in St. Louis**	
9:00am	*Quantitative Mass Spectrometry for Understanding Chromatin Mutations in Human Disease*, Benjamin Garcia, Washington University in St. Louis
9:30am	*Proteomics Analysis Combined with Pulsed Metabolic Labeling Reveals Phosphorylation-Mediated Regulation of Host Heterochromatin during Herpes Simplex Virus 1 Infection*, Katarzyna Kulej, Children's Hospital of Philadelphia
10:00am	Break
10:30am	*Activity-Based Protein Profiling of PTMs and Enzyme Cofactors*, Megan Matthews, University of Pennsylvania
11:00am	Presentation of the EAS Young Investigator Award
11:05am	*A New Perspective for Aging Research: The Proteome that Decorates Reactivated Heterochromatin*, Simone Sidoli, Albert Einstein College of Medicine

POWERHOUSE SESSION **Challenges in Cannabis Testing for a Growing Industry** **Chair: Anthony Provatas, University of Connecticut**	
9:00am	*D8-THC Distillates Analysis Using High Resolution and Ion Mobility Mass Spectrometry*, Douglas Stevens, Marian Twohig, Andrew Baker, Waters Corporation, Andrew Aubin, Christopher Hudalla, ProVerde Laboratories, Inc.
9:30am	*Case Studies Where Regulations Drive Laboratory Failure*, Susan Audino, Audino & Associates
10:00am	Break
10:30am	*Compliance Testing of Cannabis Sativa L. for Delta-9 THC and CBD Using Gas Chromatography with Flame Ionization Detection Compared to Liquid Chromatography with UV Detection,* Anuja Bharadwaj, Terri Arsenault, The Connecticut Agricultural Experiment Station
11:00am	*Cannabis & CBD Testing Primer: Understanding the Details of Testing Cannabis & CBD in 2022,* Toby Astill, Perkin Elmer

Managing the Analytical Laboratory: The New "Normal" **Chair: Dennis Swijter, Association of Laboratory Managers (ALMA)**	
9:00am	*Laboratory Automatization is no Silver Bullet,* Pascal Mbithy, Pwani Oil Limited
9:30am	*Empowering Staff through a Constructive Performance Review*, Scott Hanton, Lab Manager Magazine
10:00am	Break
10:30am	*A Diverse and Collaborative Workforce: Starting it and Keeping it*, Maria Dennis, Weill Cornell Medicine
11:00am	*Motivating and Retaining Staff*, May Adaeze Chinda, University of Ghana Medical Centre

2022 Preliminary Technical Oral Program

Tuesday Morning continued

The Research from our Emerging Forensic Scientists, *sponsored by New Jersey Association of Forensic Scientists* **Chair: Monica Joshi, West Chester University of PA**	
9:00am	*Expanding the PROVEDIt Set with Next Generation Sequencing Data: Supporting Foundational Forensic Research Initiatives*, Ami Reader, Jessica Dominguez Lopez, Catherine GrgicakRutgers University-Camden
9:30am	*Optimization of Fellatio Sample Analysis*, Brianna Gregory, Janine Kishbaugh, Cedar Crest College
10:00am	Break
10:30am	*Development and Validation of a GC-QQQ Method for Smokeless Powder Additives*, Blake Kerstetter, Monica Joshi, West Chester University of Pennsylvania
11:00am	*Method Development and Validation for the Determination of Fentanyl and Fentanyl-Related Compounds on United States Paper Currency by LC-QQQ-MS*, Matthew Hewes, Barry Logan, Thomas Jefferson University, Donna Papsun, NMS Labs, Alex Krotulski, Center for Forensic Science Research and Education

Accelerating Innovation with Machine learning, Predictive Technologies and Lab Automation **Chairs: Yongchao Su, Merck & Co., Kim Huynh-Ba, Pharmalytik, LLC**	
9:00am	*Predicting Pharmaceutical Product Performance through Modeling, Machine Learning and Statistics*, Timothy Rhodes, Merck & Co., Inc.
9:30am	*Automated High-Throughput Biophysical Methods for Higher Order Structure Analysis of Protein Biopharmaceuticals*, Anne Kim, Pfizer
10:00am	Break
10:30am	*Computational Tools for Modeling Critical Quality Attributes in Biologics*, Naresh Chennamsetty, Bristol Myers Squibb
11:00am	*NMR as Integral Part of Innovative, Smart Solutions to Increase Automation from R&D to Manufacturing - New Compact, Mobile, Affordable Approach to API Manufacturing*, Anna Codina, Bruker, Luis Carrillo, De Dietrich Process Systems, Julien Marin, NovAliX, Philippe Robin, Alysophil SAS

Recent Advances in Liquid Chromatography, *sponsored by the Chromatography Forum of the Delaware Valley* **Chair: Joe Foley, Drexel University**	
9:00am	*Recent Developments in Tandem-Column Liquid Chromatography and Chiral Capillary Electrophoresis*, Joe Foley, Drexel University
9:30am	*Capillary Electrophoresis Coupled to Mass Spectrometry through Vibrational Sharp-Edge Spray Ionization*, Lisa Holland, West Virginia University
10:00am	Break
10:30am	*Liquid Chromatography Column Considerations in Pharmaceutical & Biopharmaceutical Analysis*, James Grinias, Rowan University
11:00am	*Improving the Performance of Second Dimension Separations in 2D-LC - Vignettes about Recent Progress*, Dwight Stoll, Gustavus Adolphus College

Frontiers in Pharmaceutical Analysis: Technology and Applications **Chair: Michelle Case, Bristol Myers Squibb**	
9:00am	*Sustainable Analytical Methodology for Residual Dextran Sulfate in Biopharmaceutical In-process Samples by UV-Vis Spectrophotometry*, Lee Oliver, GlaxoSmithKline
9:30am	*Modernized Impurity Analysis of the Kinase Inhibitor Imatinib by High-Resolution LC with MS-Compatible Mobile Phases*, Peng Chen, Bonnie Alden, Matthew Lauber, Waters Corporation
10:00am	Break
10:30am	*Root Cause Identification of Unexpected Toluene Ingress Enables Commercial Process Validation for the Synthesis of a GMP Pharmaceutical Intermediate*, Jackson Hall, Robert Franklin, Pratiq Patel, Holst Halsey, Zhu Liu, Linda Zheng, James Corry, Lisa Jellett, Hanlin Luo, Morgan Crawford, Cheol Chung, Nadine Kuhl, Rebecca Arvary, Feng Tan, Sachin Lohani, Merck & Co.
11:00am	*Determination of Promethazine and Codeine and Differentiation from Dextromethorphan by HPTLC,* Sateedrah Beckwith, Marianne Staretz, Thomas Brettell, Cedar Crest College, Samantha Berrios, OCME

2022 Preliminary Technical Oral Program

TUESDAY AFTERNOON, NOVEMBER 15

Time	Title, Author(s)
EAS Award for Outstanding Achievements in Separation Sciences Honoring Fabrice Gritti, Waters Corporation Chair: Mark Schure, Kroungold Analytical, Inc. Sponsored by Restek Corporation	
1:30pm	*Innovative Chromatographic Approaches to Improve the Characterization of Complex Biopharmaceutical Products,* Davy Guillarme, Amarande Murisier, University of Geneva, Szabolcs Fekete, Waters Corporation
2:00pm	*Three More Chromatographic Questions Needing to be Answered*, Mark Schure, Kroungold Analytical, Inc.
2:30pm	Break
3:00pm	*Fabrice Gritti: Chromatographic MythBuster*, Martin Gilar, Waters Corporation
3:30pm	Presentation of the EAS Award for Outstanding Achievements in Separation Sciences
3:35pm	*Retention Mechanism in Reversed-Phase Liquid Chromatography: Past, Recent, and Future Research Investigations,* Fabrice Gritti, Waters Corporation

Novel Applications of Electron-Based Dissociation for Proteomics Chair: Jeremy L. Balsbaugh, University of Connecticut	
1:30pm	*Application of Electron Transfer Dissociation in Phosphoproteomics to Identify Rewiring of Kinase Substrate Specificity*, Danielle Caefer, University of Connecticut
2:00pm	*ETD and Glycoproteomics*, Stacy Malaker, Yale University
2:30pm	Break
3:00pm	*Analysis of Intact Proteins with Electron Transfer Dissociation, Proton Transfer Charge Reduction, and Parallel Ion Parking*, Seamus Kelley, Jeffrey Shabanowitz, Donald Hunt, University of Virginia
3:30pm	*ETD of Charge Reduced Precursors...a Moot Point?*, Lissa Anderson, National High Magnetic Field Laboratory

Probing the Microbiome Using Mass Spectrometry Chair: Roy Martin, Waters Corporation	
1:30pm	*MicrobeMASST - Detection of MS/MS Spectra in a Bacterial and Fungal Reference Database*, Simone Zuffa, Robin Schmid, Anelize Bauermeister, Andres Mauricio Caraballo Rodriguez, Emily Gentry, Paulo Wender Portal Gomes, Michael Meehan, Mingxun Wang, Pieter Dorrestein, University of California-San Diego
2:00pm	*Toward High-Throughput Metabolic Phenotyping in Synthetic Biology with Desorption Electrospray Ionization-Mass Spectrometry Imaging*, Hawkins Shepard, Jody May, John McLean, Vanderbilt University
2:30pm	Break
3:00pm	*D-Amino Acids in the Microbiome-Gut-Brain Axis*, Huang Chen, Tian Qiu, Cindy Lee, Stanislav Rubakhin, Jonathan Sweedler, University of Illinois, Dongkyu Lee, Chung-Ang University
3:30pm	*Metabolomics - A Discovery-Based Approach in the Infection Relevant Environment*, Neha Garg, Andrew Mcavoy, Georgia Institute of Technology

Forensics on the Go: Portable Instruments in the Field, *sponsored by SAS New England* Chair: Suzanne Schreyer, Rigaku Analytical Devices	
1:30pm	*Portable Raman Spectroscopy for Screening of Phthalate Plasticizers in Food Contact Materials via Chemometrics and Library Spectral Matching*, Joshua Moskowitz, University of Maryland, Katherine Carlos, Luke Lindahl-Ackerman, Kristen Reese, Betsy Yakes, United States Food & Drug Administration
2:00pm	*Rapid Field Screening of New Psychoactive Substances in Suspect Counterfeit Tablets Using SERS, FT-IR and DART-TD-MS*, Kimani Martin, United States Food & Drug Administration
2:30pm	Break
3:00pm	*Portable Instrumentation for the Screening of Explosives*, Gina Guerrera, Federal Bureau of Investigation
3:30pm	*Street Chemistry: How are Portable Handheld Raman and Infrared Spectroscopy are being used by Law Enforcements to Solve Crimes*, Pakorn Patimetha, New Jersey State Police

Green Chemistry from Fundamentals to Applications Chairs: Shirley Fischer-Drowos, Widener University, Christina Robb, United States Food & Drug Administration	
1:30pm	*Creating more Efficient, Less Hazardous Syntheses of Pharmaceutical Using the 12 Principles of Green Chemistry*, Loyd Bastin, Widener University
2:00pm	*The Driving Sustainable Research: Maximizing Spectroscopy and Spectrometry Tools*, John Wasylyk, Robert Wethman, Ming Huang, Bristol Myers Squibb
2:30pm	Break
3:00pm	To be announced
3:30pm	Panel Discussion

2022 Preliminary Technical Oral Program

Tuesday Afternoon continued

Cannabis - CBD Product Testing **Chair: Gregory Sotzing, University of Connecticut**	
1:30pm	*Raising Awareness: The Successful Implementation of Natural Plant Based Medicines Used as Adjunct Therapies with Standard Treatments for Metastatic Breast Cancer*, Jaime Brambilla, Grace Health and Wellness
2:00pm	Robert Rankin, Nice Cannabis
2:30pm	Break
3:00pm	*Leveraging Advanced Mass Spectrometry Tools to Explore Complex Cannabinoid Distributions*, Alex Aksenov, University of Connecticut
3:30pm	*Cannabinoid Composition Analysis by Nuclear Magnetic Resonance Spectroscopy and Mass Spectrometry,* Gregory Sotzing, University of Connecticut

HPLC/UHPLC Separations in Pharmaceutical Applications **Chair: Oscar Liu, Silver Spring Scientific LLC**	
1:30pm	*Systematic RPLC Method Development for an Important Class of Pharmaceutical Compounds Possessing Ketoamide Group*, Nilusha Padivitage, Yong Liu, Brittany Kassim, Jinjian Zheng, Paul Bulger, Merck & Co., Inc.
2:00pm	*Exploring the Improvements Enabled by 1.5 mm ID UHPLC SPP Columns*, Stephanie Schuster, Peter Pellegrinelli, Conner McHale, Benjamin Libert, Advanced Materials Technology, Inc.
2:30pm	Break
3:00pm	*Trace Corrosion of Stainless Steel HPLC Components from Common Mobile Phase Additive and the Deleterious Impact on Separations*, Jesse Bischof, SilcoTek Corporation
3:30pm	*Characterization of Zwitterionic HILIC Columns Based on Ethylene-Bridged Hybrid Particles*, Thomas Walter, Bonnie Alden, Kenneth Berthelette, Waters Corporation

HPTLC: A Powerful Technique Addressing Analytical Challenges **Chair: Leonel Santos**	
1:30pm	*High-Performance Thin-Layer Chromatography and Morpho-Anatomy and of Monteverdia Ilicifolia "Espinheira-Santa" and its Adulterants,* Wilmer Perera, Christopher Howard, Eike Reich, CAMAG Scientific, Inc., Kevin Antunes, Valter Paes de Almeida, Luciane Mendes Monteiro, Vera Lúcia Pereira dos Santos, Jane Manfron, State University of Ponta Grossa, Gustavo Heiden, Ernestino de Souza Gomes Guarino, Embrapa, Vijayasankar Raman, University of Mississippi
2:00pm	*Hair, Hair Follicle, and Sebum Lipids Evaluation Using HPTLC*, Ernesta Malinauskyte*, Katerin Mateo, TRI Princeton
2:30pm	Break
3:00pm	*HPTLC 4.0 - The Future of Planar Chromatography?*, Eike Reich, HPTLC Association
3:30pm	*Psilocybe: Potency of Active Compounds, Psilocybin and Psilocin. A Single Lab Validation Using HPTLC, LC/MS/MS*, Sidney Sudberg, Alkemist Labs

NMR Spectroscopy as a Versatile Analytical Tool in Chemical Characterizations **Chair: Cecil Dybowski, University of Delaware**	
1:30pm	*2D NMR Peak Profiling to Compare Chemical Differences between Batches of Pentosan Polysulfate Sodium*, Kang Chen, United States Food & Drug Administration
2:00pm	*Investigating Pharmaceutical Frozen Solution Using ^{31}P and ^{1}H Solid-State NMR*, Yong Du, Yongchao Su, Merck & Co., Inc., Jinghan Li, Raj Suryanarayanan, University of Minnesota
2:30pm	Break

WEDNESDAY MORNING, NOVEMBER 16

New York/New Jersey Sections of the Society for Applied Spectroscopy Gold Medal Award **Honoring: Rohit Bhargava, University of Illinois-Urbana-Champaign** **Chairs: Dana Garcia, Deborah Peru, DP Spectroscopy and Training**	
9:00am	*Nanoscale IR Spectroscopy: From Recent Technical Advances to Nanoscale Mapping and Identification of Metal Soaps in Oil Paints*, Andrea Centrone, National Institute of Standards & Technology
9:30am	*Stimulated Raman Scattering Microscopy: From Label Free to Metabolic and to Super-Multiplex Imaging*, Wei Min, Columbia University
10:00am	Break
10:30am	Rina Dukor, BioTools, Inc.
11:00am	*Infrared Chemical Imaging: Uniting Theory, Modeling and Instrumentation for New Capabilities*, Rohit Bhargava, University of Illinois-Urbana-Champaign

2022 Preliminary Technical Oral Program

Wednesday Morning continued

Handheld Instrumentation and Chemometrics as Diverse Analytical Tools **Chair: Caelin Celani, University of Delaware**	
9:00am	*Challenges in Applying Chemometrics to Data from Handheld Instrumentation*, Barry Lavine, Collin White, Oklahoma State University, William Gilbert, Wesley Carson, Karl Booksh, University of Delaware, James Jordon, United States National Geodetic Survey
9:30am	*Handheld Laser Induced Breakdown Spectroscopy, Chemometrics, and the Supply Chain*, Nancy McMillen, New Mexico State University
10:00am	Break
10:30am	*Self-Optimizing Support Vector Machines*, Peter Harrington, Ohio University
11:00am	*Chemometrics & Portable Instrumentation: From Environmental Forensics to Art Conservation*, Karl Booksh, University of Delaware

Addressing PFAS Total Analytical Challenges **Chair: James D. Stuart, University of Connecticut**	
9:00am	*Leveraging Advances in Mass Spectrometry Instrumentation & Techniques to Address PFAS Contamination,* Craig Butt, SCIEX-Danaher Corporation
9:30am	*Remediation of PFAS from a Variety of Environmental Matrices,* Jay Meegoda, New Jersey Institute of Technology
10:00am	Break
10:30am	*Collaborative PFAS Research Using High Resolution Mass Spectrometry: Challenges and Progress,* Sara Nason, Connecticut Agricultural Experiment Station
11:00am	*Challenges in Method Development of PFAS in Food,* Susan Genualdi, Cynthia Srigley, Wendy Young, Christine M. Fisher, Lowri deJager, United States Food and Drug Administration

You Are What You Eat as Viewed Through the Eyes of High-Resolution Mass Spectrometry Analyses of Foods **Chair: Gene Hall, Rutgers University**	
9:00am	*From Fast Food to a Slow Cooked Home Meal Non-Targeted Analyses as Seen Through the Eyes of a High-Resolution Mass Spectrometer*, Gene Hall, Rutgers University
9:30am	*Non-Targeted Analysis of Foods Using Liquid Chromatography High-Resolution Mass Spectrometry*, Christine Fisher, Ann Knolhoff, United States Food and Drug Administration
10:00am	Break
10:30am	Christina Krueger, Complete Phytochemical Solutions, LLC
11:00am	*Ensuring Food Ingredient Quality with Mass Spectrometry,* Uwe Nienaber, David Bolliet, James Redwine, Kalsec Inc.

Recent Applications of Separations for Chemical Analysis and Physical Characterization, *sponsored by ACS Division of Analytical Chemistry* **Chairs: James Grinias, Rowan University & Jonathan Edelman, Restek**	
9:00am	*Microelectrophoretic Separations for Studies of Microbial Stress Response*, Michelle Kovarik, Trinity College
9:30am	*Development of Gas and Liquid Chromatographic Methods for the Determination of Cannabinoids in Cannabis Samples*, Walter Wilson, Jerome Mulloor, Andrea Yarberry, National Institute of Standards and Technology
10:00am	Break
10:30am	*Rapid Screening and Confirmation of Target Analytes in Biological Fluids with CBS-MS Using a Modified Automated Liquid Handling Robot*, Thomas Kane, Ryan Micklitsch, Shane Stevens, Tracey Peters, Matt Lininger, Restek Corporation
11:00am	*Building Robustness into a Drug Substance Stability-Indicating Method with QbD – A Case Study*, Elizabeth Yuill, Yande Huang, Jonathan Shackman, Hua-Chia Tai, Peter Tattersall, Jia Zang, Bristol Myers Squibb

Liquid Chromatography Applications for Better Separations **Chair: Pankaj Aggarwal, Merck & Co., Inc.**	
9:00am	*HPLC- and UHPLC-MS Analysis of Pharmaceutically Relevant Bio-Macromolecules on the Analytical and Capillary Scale*, Hayley Herderschee, Robert Kennedy, University of Michigan, Tian Lu, James Deng, Ping Zhuang, Merck & Co., Inc.
9:30am	*LPH-C18: A C18 Column Alternative*, Conner McHale, Advanced Materials Technology
10:00am	Break
10:30am	*Clear As a Diamond: Fundamentals and Strategies for Using Porous Graphitic Carbon Columns in Liquid Chromatography*, Cory Muraco, Michael Ye, Clinton Corman, MilliporeSigma
11:00am	*Development of Robust 2D RPLC-NPLC Methods to Support Simultaneous Achiral-Chiral Analysis in High-Throughput Experimentation,* Steven Chin, Karissa Cruz, Kenji Kurita, Genentech

2022 Preliminary Technical Oral Program

Wednesday Morning continued

The Utility of Supercritical Fluid Chromatography in Challenging Separations **Chair: Enju Wang, St. John's University**	
9:00am	*Screening for Generality in Asymmetric Catalysis*, Spencer McMinn, Merck & Co., Inc.
9:30am	*Chiral Method Development and Optimization on Daicel Polysaccharide Chiral Stationary Phases,* Weston Umstead, Chiral Technologies
10:00am	Break
10:30am	*Accelerating Chiral Supercritical Fluid Chromatography with 3- and sub-2-um Fully Porous Particles and 2.7-um Superficially Porous Particles*, Edward Franklin, Melissa Wilcox, Regis Technologies, Inc.

Advances in Proteomics & Metabolomics Research **Chair: Costel Daria, Clarkson University**	
9:00am	*Optimization of the In-Gel Sample Preparation for Mass Spectrometry-Based Proteomics*, Mary Donnelly, Hannah Yorkey, Danielle Whitham, Costel Darie, Clarkson University
9:30am	*Investigation of the Effects of Human Jumping Translocation Breakpoint (hJTB) Protein for Potential use as a Cancer Biomarker*, Madhuri Jayathirtha, Danielle Whitham, Shelby Alwine, Hannah Yorkey, Costel Darie, Clarkson University
10:00am	Break
10:30am	*Proteomic Analysis of Human Breast Milk Using Mass Spectrometry to Reveal Protein Biomarkers for Early Breast Cancer Detection*, Danielle Whitham, Roskanak Aslebagh, Devika Channaveerappa, Costel C. Darie, Clarkson University, Brian Pentecost, Kathleen F. Arcaro, University of Massachusetts Amherst
11:00am	*Proteomics Analysis of Sera from an Asian American woman with Triple Negative Breast Cancer and a Matched Control: A Case Study Investigation for Biomarker Discovery,* Isabelle Sullivan, Panashe Mutsengi, Danielle Whitham, Costel Darie, Clarkson University, Brian Pentecost, Kathleen F. Arcaro, University of Massachusetts Amherst

WEDNESDAY AFTERNOON, NOVEMBER 16

PLENARY LECTURE
Wednesday, November 16, 12:00pm – 1:00pm

Professor Angela Belcher
Materials Chemist & Biological Engineer
Massachusetts Institute of Technology

All registered Attendees are invited to attend.

Time	Title, Author(s)
EAS Award for Outstanding Achievements in Mass Spectrometry **Honoring Martin Jarrold, Indiana University** **Chair: David Clemmer, Indiana University**	
1:30pm	David Clemmer, Indiana University
2:00pm	*Advanced Mass Spectrometric Approaches to Pharmaceutical Product Development*, Elizabeth Pierson, Josey Topolski, Alyssa Stiving, Dave Foreman, Huaming Sheng, Merck & Co., Inc.
2:30pm	Break
3:00pm	David Russell, Texas A&M
3:30pm	Martin Jarrold, Indiana University

Solving your PAT Problems with Technology **Chair: James Rydzak, Specere Consulting**	
1:30pm	*Visualizing Reactions and Particle Transformations Using Online and Offline Raman, FTIR and Optical Microscopy*, Charles Goss, Daniel Green, Anthony Nocket, Andrew DiPietro, Kevin Chu, Swetha Ainampudi, Alexis Venere, Alicia Potuck, Kaitlyn Lehman, Nick Radziul, Connor Faith, Luke Huelsenbeck, GlaxoSmithKline, Anjan Pandey, Mettler Toledo AutoChem
2:00pm	*Driving Sustainable Research by Maximizing Spectroscopy and Spectrometry Tools*, John Wasylyk, Bristol Myers Squibb
2:30pm	Break
3:00pm	*Highly Selective Small Molecule Impurity Monitoring Using Molecular Rotational Resonance: From Residual Solvents to Challenging Isomers*, Alex Mikhonin, Brightspec
3:30pm	*Do You Really Understand Your Crystallization - The Value of PAT*, Norman Wright, Brian Wittkamp, Charlie Rabinowitz, Mettler-Toledo

2022 Preliminary Technical Oral Program

Wednesday Afternoon continued

Optical Technologies in the Fight Against Disease **Session Chair: Fay Nicolson, Dana-Farber Cancer Institute**	
1:30pm	*A-TEEM - A Spectroscopic Tool for the Rapid Characterization of Low Concentration Therapeutics*, Linda Kidder, Adam Gilmore, HORIBA Scientific
2:00pm	*SERS-Active Diagnostic Platforms for the Early Detection of Preeclampsia*, Samuel Mabbott, Texas A&M University
2:30pm	Break
3:00pm	*Chemically Defined Media Analysis by Absorbance-Transmission & fluorescence Excitation Emission Matrix (A-TEEM)*, Andrew Lewis, Janssen
3:30pm	*Targeting the Oncogene HPV16 E7 with Affibody Molecules in Head and Neck Cancer*, Sheryl Roberts, Karmanos Cancer Institute, Wayne State University

Data Integrity and Security in Pharmaceuticals **Chairs: Mariann Neverovitch, Bristol Myers Squibb, Brandy Young, University of Rochester**	
1:30pm	*Data Security in Gene Therapy*, Paul Lake, BioAnalysis LLC
2:00pm	*LIMS, Automation Software and Data Integrity: Why it Matters*, Christine Paszko, Accelerated Technologies Laboratories
2:30pm	Break
3:00pm	*Data Integrity and Compliance – A Lab Scientist's Perspective*, Sharla Wood, Bristol Myers Squibb
3:30pm	*LIMS Data Security*, Melissa Magliola, Thermo Fisher

Forensic Microscopy "What is it? Who does it?, *sponsored by ACS New York Section* **Chair: Thomas A. Kubic, John Jay College & The Graduate Center, CUNY**	
1:30pm	*Microscopy & Microanalysis of Temporary Tattoos*, Michelle Miranda, Farmingdale State College-SUNY
2:00pm	*Hammer Bounce*, Peter Diaczuk, John Jay College of Criminal Justice
2:30pm	Break
3:00pm	*The Application of Electron Backscatter Diffraction to the Forensic Analysis of Minerals*, Tiffany Millett, John Jay College & The Graduate Center, CUNY
3:30pm	*Look Before You Leap*, Peter DeForest, Forensic Consultants

1+1=3: Applications of Automated Particle Imaging Combined with Raman Spectroscopy **Chair: Brooke Kammrath, University of New Haven**	
1:30pm	*Follow that Particle: Applying Morphological and Spectral Analysis to Pharmaceutical Product Development and Process Understanding*, Anne Virden, Deborah Huck-Jones, Malvern Panalytical Ltd.
2:00pm	*Automated Particle Correlated Raman Spectroscopy: Case Studies from Microplastics and Pharma to Illustrate Correct Methodology for Diverse Samples*, Bridget O'Donnell, HORIBA
2:30pm	Break
3:00pm	*Raman Spectroscopy of Sedimentary Grains Shows Potential for Use in Provenance Analysis*, Tim Prusnick, Sarah Shidler, Lucy Grainger, Renishaw Inc., Achim Hermann, Louisiana State University
3:30pm	*Panel Discussion*

Enhanced Approaches to LC Method Development, *sponsored by Waters Corporation* **Chair: Isabelle Vu Trieu, Waters Corp.**	
1:30pm	*USP <1220> and ICH Q14: Differences and Similarities*, Horacio Pappa, United States Pharmacopeia
2:00pm	*Phase-Appropriate Implementation of AQbD Method Development*, Jinjian Zheng, Xiaohua Zhang, Pankaj Aggarwal, Merck & Co., Inc.
2:30pm	Break
3:00pm	*Expanding the Use of AQbD Tools to Address Small Molecule Pharmaceutical Development Challenges*, Fadi Alkhateeb, Waters Corporation
3:30pm	*Panel Discussion*

New Advances and Trends in HPLC/UHPLC **Chair: Robert Menger, Bristol Myers Squibb**	
1:30pm	*Cannabinoid Separation: A New HPLC System Suitable for Cannabis Research*, Alicia Stell, Benedict Liu, Candice Cashman, CEM Corporation
2:00pm	*Addressing Secondary Interactions in Size Exclusion Chromatography of Protein Therapeutics,* Lavelay Kizekai, Stephen Shiner, Matthew Lauber, Szabolcs Fekete, Mathew Delano, Yeliz Sarisozen, Nicole Lawrence, Waters Corporation
2:30pm	Break
3:00pm	*Applying Method Operable Design Region (MODR) and Replication Strategy Optimization Results to Support Analytical Procedure Lifecycle Management (APLM) Stage 2 Method Validation and Transfer and APLM Stage 3 Procedure Monitoring*, Richard Verseput, S-Matrix Corporation
3:30pm	*Alternative Approach to HPLC Instrumentation*, Yury Zelechonok, Bradley Widawer, Olga Kolesnik, Denis Vakulenko, SIELC Technologies

2022 Preliminary Technical Oral Program

Wednesday Afternoon continued

Proteomics & Metabolomics: Challenges and Recent Developments **Chair: Debopreeti Mukherjee, Merck & Co., Inc.**	
1:30pm	*Automated Platform Analytical Method to Determine Polysorbate 80 Content in Biopharmaceutical Drug Product Using the Andrew Robot: A Practical Approach to Automation*, Sharon Matamoros, Katie Carnes, Dao Nguyen, Kaitie Grinias, GlaxoSmithKline
2:00pm	*Enhanced Sensitivity for Peptide and Protein Applications Using the 1.5mm ID Column*, Peter Pellegrinelli, Stephanie Schuster, Conner McHale, AMT
2:30pm	Break
3:00pm	*A Proteomic Investigation of Human Serum from Donors with Triple Negative Breast Cancer and Matched Controls to Identify Protein Biomarkers for Breast Cancer Detection,* Danielle Whitham, Panashe Mutsengi, Costel Darie, Clarkson University, Brian Pentecost, Kathleen F. Arcaro, University of Massachusetts Amherst
3:30pm	*A Proteomics Investigation of Human Sera from African American Donors with Invasive Ductal Carcinoma Breast Cancer and Matched Controls*, Panashe Mutsengi, Danielle Whitha, Costel Darie, Clarkson University, Brian Pentecost, Kathleen F. Arcaro, University of Massachusetts Amherst

KEYNOTE, PLENARY & BREAKFAST LECTURES

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

Keynote Lecture

Monday, November 14, 4:15pm

Making Progress with Social Justice and Sensing

Dr. Raychelle Burks - @DrRubidium
Analytical Chemist, Forensic Scientist & Science Communicator
American University
(click here for bio)

Breakfast Lecture

Tuesday, November 15, 8:00am

The Dark Side of Science: Misconduct in Research

Dr. Elisabeth Bik - @MicrobiomeDigest
Science Consultant - Microbiome, Science Integrity & Image Forensics
Harbers Bik LLC
(click here for bio)

Plenary Lecture

Wednesday, November 16, 11:45am

Professor Angela Belcher
Materials Chemist & Biological Engineer
Massachusetts Institute of Technology
(click here for bio)

2022 EAS Short Course Schedule

Pricing for 2022 Short Courses is $575 one-day and $850 two-day **before Oct. 15th** and $775 one-day and $1,175 two-day **after Oct. 15th** in addition to the Full Conferee registration fee. Full-Time Student Conferees – registration rates for short courses are $70.00 for one-day and $140.00 for a two-day course before Oct. 15th; regular pricing after Oct. 15th 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. 13 – Monday, Nov. 14 8:30am - 5:00pm	Instructor(s)
E22-01	HPLC and UHPLC for Practicing Scientists 1 and 2: Fundamentals, Method Development, and Troubleshooting	Michael Dong, MWD Consulting
E22-04	Chemometrics without Equations Part 1 & 2	Donald Dahlberg, Lebanon Valley College Neal Gallagher, Eigenvector Research

Code	~ 2-Day Course ~ Monday, Nov. 14 – Tuesday, Nov. 15 8:30am - 5:00pm	Instructor(s)
E22-12	Practical LC-MS Method Development and Sample Preparation	Perry Wang, LC-MS Technical Expert

One-Day Courses

Code	Sunday, November 13 8:30am - 5:00pm	Instructor(s)
E22-02	HPLC and UHPLC for Practicing Scientists Part 1 ONLY	Michael Dong, MWD Consulting
E22-05	Chemometrics without Equation Part 1 ONLY	Donald Dahlberg, Lebanon Valley College Neal Gallagher, Eigenvector Research
E22-07	Supercritical Fluid Chromatography: A Powerful and Greener Tool for Analytical and Preparative Separations	Yingru Zhang, Lotus Separations Michael Hicks, Merck & Co., Inc.
E22-08	Prepare Your Analytical Laboratory for Quality Audit and Inspection	Kim Huynh-Ba, Pharmalytik, LLC
E22-09	Practical NMR Spectroscopy	Damodaran Achary, University of Pittsburgh
E22-10	The Importance of Microscopy in Microspectroscopy	Dale Purcell, Chemical Microscopy, LLC Brooke Kammrath, University of New Haven
E22-11	Portable Spectroscopy and Its Application in Forensic Science	Richard Crocombe, Crocombe Spectroscopic Consulting Pauline Leary, Federal Resources

Code	Monday, November 14 8:30am - 5:00pm	Instructor(s)
E22-03	HPLC and UHPLC for Practicing Scientists Part 2 ONLY	Michael Dong, MWD Consulting
E22-06	Chemometrics without Equation Part 2 ONLY	Donald Dahlberg, Lebanon Valley College Neal Gallagher, Eigenvector Research
E22-13	Modern Raman Spectroscopy Techniques and Applications in the Material and Biological Sciences	Alex Rzhevskii, Thermo Fisher Scientific
E22-14	The Fundamentals of Laboratory Management – Managing People	Scott Hanton, Lab Manager
E22-15	An Introduction to Quantitative Spectroscopic Analysis	Debbie Peru, DP Spectroscopy and Training, LLC
E22-16	Lifecycle Approach to Analytical Methods: Incorporating Quality by Design Concepts into Method Development, Validation, Verification and Transfer	Gregory Martin, Complectors Consulting

2022 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 15 8:30am - 5:00pm	Instructor(s)
E22-17	Intact and Top-Down Protein Characterization and Quantitation by Mass Spectrometry: Approaches for Pharmaceutical Drug Discovery, Development, & Bioanalysis	John Kellie, GlaxoSmithKline
E22-18	How to Develop Validated HPLC Methods: Rational Design with Practical Statistics and Troubleshooting	Brian Bidlingmeyer, Analytical Acumen Inc. Stanley Deming, Statistical Designs
E22-19	Process Analytical Technology: Out of the Lab & into the Line	James Rydzak, Specere Consulting
E22-20	Getting the most from GC and GC/MS	Gregory Slack, Boston Analytical Nicholas Snow, Seton Hall University
E22-21	Analytical Challenges of Emerging Contaminants for Young Research Professionals	Satinder Kaur Brar, York University Rama Pulicharla, York University
E22-22	Analytical Atomic Spectroscopy and its Environmental Applications	Dula Amarasiriwardena, Hampshire College

Code	Wednesday, November 16 8:30am - 5:00pm	Instructor(s)
E22-23	Systematic Chromatography Maintenance and Troubleshooting	Merlin Bicking, ACCTA, Inc. Douglas Raynie, SD State University
E22-24	Problems with FT-IR Spectra and How to Avoid Them	Ellen Miseo, TeakOrigin Jeff D'Agostino, Specac
E22-25	Quality by Design (QbD) Fundamentals for Analytical Chemists: A Continuous Improvement Paradigm for the Analytical Laboratory	Zenaida Otero Gephardt, Otero Associates

AWARDS PROGRAM

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. Visit our website for more details and their biographies.

Professor Richard Crooks
University of Texas-Austin
EAS Award for Outstanding Achievements in the Fields of Analytical Chemistry

Professor Philip Grandinetti
The Ohio State University
EAS Award for Outstanding Achievements in Magnetic Resonance

Dr. Richard Crocombe
Crocombe Spectroscopic Consulting
EAS Award for Outstanding Achievements in Vibrational Spectroscopy

Dr. Fabrice Gritti
Waters Corporation
EAS Award for Outstanding Achievements in Separation Science

Professor Martin Jarrold
University of Indiana
EAS Award for Outstanding Achievements in Mass Spectroscopy

Professor Simone Sidoli
Albert Einstein College of Medicine
EAS Young Investigator Award

These other awards will be presented at the Annual Symposium in November under the auspices of the EAS Sponsoring Organizations

Professor Manu Prakash
Stanford University
New York Microscopical Society Ernst Abbe Award

Professor Rohit Bhargava
University of Illinois Urbana-Champaign
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. The deadline for all 2023 award nominations is September 1, 2022.

2022 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 2022, four undergraduates and four graduate students have been selected based on these criteria to receive EAS Student Awards. The following outstanding students have been chosen from a very worthy field of candidates:

UNDERGRADUATE STUDENTS

Quang Minh (Harry) Dang
University of Richmond
Nominated by Prof. Michael Leopold

Olivia Dioli
North Carolina State University
Nominated by Prof. David Muddiman

Matthew Giammar
The Ohio State University
Nominated by Prof. Phillip Grandinetti

Naiara Munich
Barnard College
Nominated by Prof. Lauren Marbella

GRADUATE STUDENTS

Kaylie Kirkwood
North Carolina State University
Nominated by Prof. Erin Baker

Kevan Knizner
North Carolina State University
Nominated by Prof. David Muddiman

Samuel Krug
University of Maryland
Nominated by Prof. Maureen Kane

Lexie McCarthy
The Ohio State University
Nominated by Prof. Phillip Grandinetti

The Governing Board of the 2022 EAS congratulates these awardees for their outstanding achievements.

The Student Awardees' posters will be presented on Tuesday, November 15, 2022 in the Poster Area on the Bridge to the hotel from 11:30pm – 12:30pm

The Governing Board of EAS would like to thank the following sponsors for their support!

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There are numerous opportunities for Corporate Sponsorship of technical sessions, awards, and other activities at the 2022 EAS as well as advertising opportunities. For information, please contact the EAS Executive Secretary at askeas@eas.org

2022 Registration Types & Rates	Before Oct. 15	After Oct. 15
Full Conferee	$250	$325
Exposition/Networking/Posters	$100	$100
Full-Time Student Conferee	$30	$30
High School Student with Seminar *(must register for a seminar)*	$0	$0
Wednesday Only Full Conferee *(available onsite only 11/16)*		$150
One-Day Short Course (must register as *Full Conferee* in order to take course)	$575	$775
One-Day Short Course - Student Rate (must be a *Full-Time Student* in order to take course at Student Rate)	$70	$775
Two-Day Short Course (must register as *Full Conferee* in order to take course)	$850	$1,175
Two-Day Short Course - Student Rate (must be a *Full-Time Student* in order to take course at Student Rate)	$140	$1,175

2022 EAS Exhibitors

We welcome our latest exhibitors* to the exposition. Reserve your space soon!

Click on each exhibitor to visit their website.

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*SCIEX
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Sirius Automation Group Inc.
Society for Applied Spectroscopy NY/NJ Section
SOTAX
TA Instruments
*Ted Pella, Inc.
Thermo Fisher Scientific
VICI DBS USA
Waters Corporation

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

2022 Exposition Highlights

Technology Tour

Your Technology Tour Passport contains the names, booth / table locations, and logos of the Technology Tour sponsors. If you visit half of the participating companies and get your Passport marked, you are eligible to redeem it for a special EAS-logoed item. If you visit all of the participating companies, in addition to the special gift, you will be eligible to enter a daily drawing to win a $50 gift card. Participating exhibitors will be announced in late summer.

Thermo Fisher Scientific Seminar
Tuesday, November 15th
11:45am to 12:45pm

Thermo Fisher Scientific will be hosting presentations in the Einstein Meeting Room from 11:45am through 12:45pm on Tuesday. You'll have the opportunity to learn more about their newest products and technologies and its benefits. Lunch will be provided.

Exposition Mixer
Tuesday, November 15th
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.

Waters Corporation Demonstration Room
Monday November 14th - Wednesday November 16th
Open during Expo Hours

Waters Corporation invites all attendees to visit their booth ***Wilson 1*** and demo room ***#109*** to learn about our innovative products and services in liquid chromatography, mass spectrometry and laboratory informatics.

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

WORKSHOPS

Workshops are FREE to all registered attendees.

Tuesday, October 18, 12:00pm – 1:00pm

Resume and Interview Hints Helpful for Obtaining Positions at Any Level

Roy Helmy -Executive Director at Merck & Co.
Gino Salituro – Principle Scientist and Hiring Manger at Merck & Co.
Live ONLINE workshop

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.

Tuesday, November 1, 12:00pm – 1:00pm;

Building and Nurturing a Professional Network

Stephen Scypinski, Ph.D., Vice President, VBI Vaccines Inc.
Live ONLINE workshop

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 an up to date network 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 business with? In this workshop you will learn how to build, expand, and nurture an up to date scientific professional network that is so 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.

Tuesday, November 15, 12:00pm – 1:00pm

Career Change – Unlocking your Potential

Reno DeBono, Ph.D., QC Manager – Analytical & Metals, EMD Electronics
IN-PERSON at the Crowne Plaza Conference Center

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 experienced technical person to identify and win opportunities outside their current area of specialty.

- 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

SPEED MENTORING

The Coblentz Society will offer an in person Speed mentoring event on Monday of the conference.

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. The Speed Session will be approximately 1.5 hours on November 14. Space is limited and we encourage you to register in advance. EAS registration is now open www.eas.org

ALVIN BOBER STUDENT SEMINARS

November 13-15, 2022
Crowne Plaza Princeton – Conference Center
Plainsboro, NJ

Eastern Analytical Symposium (EAS) offers **three** seminars for college and high school students and high school teachers during the November meeting. Each seminar has outstanding presenters from academia and industry. The goal of each seminar is to demonstrate the advantages of a career in chemistry. The 2022 seminar registration is **FREE** for middle & high school students with their teachers; seminars are included in the **college student full registration fee of $30.** *We encourage all students to attend the **Exposition** after the seminar & pick up an EAS souvenir.*

Introduction to Forensic Chemistry
Sunday, November 13, 2022
Registration Limited to TEACHERS ONLY
1:00 pm to 4:00 pm

Dr. Michelle Carlin, Rutgers University, will give an introductory lecture on forensic toxicology and drug analysis followed by an interactive series of experiments that could be transferred to your own classroom. The experiments have been designed with readily available glassware and chemicals that you will already have or would be easy to obtain.

Cheese Chemistry
Monday, November 14, 2022
10:00 am to 12:00 pm

Join Jeanne Berk of Cedar Crest College to learn about cheese making chemistry. In this lecture you will learn about the steps involved in making cheese, the texture and the flavors of cheese, and the important chemical reactions and compounds which give one of our favorite foods its unique taste!

'Wow, it can be used to analyze that!'
Taking Advanced Analytical Tools and Applying Them to Everyday Life
Tuesday, November 15, 2022
10:00 am to 12:00 pm

Dr. John Wasylyk, Bristol-Myers Squibb, will explain how chemistry is the science that investigates the composition, the properties and transformations of the atoms that form matter. Analytical chemistry is one of the branches of chemistry that best integrates the complex theories into everyday practical applications. It is the process of isolating specific compounds, identifying those compounds, and determining how much of the compounds are in a product. Analytical chemistry is used in many different areas of science and even what may be considered non-science. It can be used to answer a wide range of question such as: how much cholesterol is in your blood, to identify an unknown compound found at a crime scene, to find out what the surface of Mars is made of or to determine if that painting an original or a fake. Whether you see a scientific instrument in action (think of airport screening when they take a swab of your luggage) or know that someone analyzed your soda to make sure they added real and not artificial sugar, you know those instruments are always doing something for us. We will cover applications involving a wide range of spectroscopy-based analytical instruments and have hands-on instruments that are used every day in the world around us, that keep us safe and knowing that what we pay for is what we are getting

*Students and teachers must **pre-register** to reserve a space. Registration is now open. Please contact Eastern Analytical Symposium at askeas@eas.org or visit our website at www.EAS.org for more information.*

Housing at the 2022 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

2022 Room rate - $159.00 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.**

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) 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

2022 EASTERN ANALYTICAL SYMPOSIUM

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FOR A SUSTAINABLE FUTURE

Crowne Plaza Princeton Conference Center
Plainsboro, NJ
November 14–16, 2022

CALL FOR PAPERS!

Oral Presentations: Mar 1–May 8
Poster Presentations: Mar 1–Sept 4
Online Submission at 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

Sample Areas of Interest

• Bioanalysis • Cannabinoid Analysis • Capillary Electrophoresis • Chemometrics • Conservation Science • Counterfeit Analysis • Environmental Analysis • Food Analysis • Forensic Analysis • Gas Chromatography • Liquid Chromatography • 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