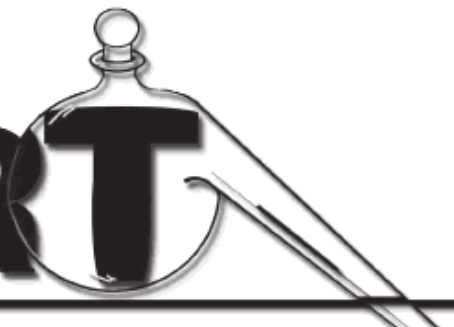




# RETORT



April 2019

Newsletter of the Eastern Analytical Symposium & Exposition



2019 EASTERN ANALYTICAL SYMPOSIUM & EXPOSITION

**ENHANCING ANALYTICAL CHEMISTRY  
WITH SUSTAINABLE SOLUTIONS**

Crowne Plaza Princeton  
Conference Center  
Plainsboro, NJ  
November 18-20, 2019



Spring has arrived! Trees are blossoming and flowers are blooming. Outdoor activities will soon abound everywhere. The EAS committee however, has been active all winter with the preparation of the 2019 Eastern Analytical Symposium which will be held at the Crowne Plaza Princeton Conference Center. We have been working with our exhibitors, invited speakers and short course instructors to prepare another interesting and enjoyable symposium. Our program chair, Matt Wood, has finalized the invited speaker sessions which are included in this newsletter. Don't despair, however, there is still time to submit an abstract for a **contributed oral session before our May 1<sup>st</sup> deadline.**

The theme for EAS 2019 is **Enhancing Analytical Chemistry with Sustainable Solutions**. EAS continues the **Going Green** theme to lead the way to focus the innovation and chemical solutions for our global sustainability. Our 2019 Program will feature our Keynote speaker, Dr. Susan Olesik, Dow Professor and Chair of the Chemistry and Biochemistry Department of The Ohio State University. Professor Olesik will speak on enhancing our sustainable practices in analytical chemistry. Our plenary lecture will be delivered by the 2019 EAS Awardee for Outstanding Achievements in the Fields of Analytical Chemistry, Distinguished Professor Joel Harris of the University of Utah. You will want to plan on attending our breakfast session which will kick off with Inspector David Bowers of the United States Postal Service speaking on the Amerithrax investigation.

If you have attended our symposium the last two years you are aware of how wonderfully the exhibitors are integrated with the program and short courses under one roof at the Crowne Plaza Princeton Conference Center. If you were not able to attend the last two years, we hope you will come this year to experience how great a venue it is! The exhibitors will have on display their most recent state-of-the-art instrumentation, products and services for all three days of the symposium. So you can browse the exhibition to learn about the newest of technologies that may solve your practical solutions for your workplace. We will continue with our highly successful technology tour and our very popular green tour which will allow you to interact with the participating exhibitors that are helping *enhance our analytical chemistry future with sustainable solutions.*

I encourage you to follow us on LinkedIn or Facebook for news and information on the symposium and look forward to welcoming you to the Crowne Plaza Conference Center in Princeton in November for the 58<sup>th</sup> EAS.

**Enhancing Analytical Solutions to the World's Problems.**

See you in November!

**Thomas Brettell**  
EAS 2019 President



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# PLENARY, KEYNOTE & BREAKFAST LECTURES

The theme for EAS 2019 is *Enhancing Analytical Chemistry with Sustainable Solutions* with a focus on *Going Green*. To address the issue of environmental awareness from a global perspective, our 2019 technical program has been strengthened with three special lectures: Our keynote speaker, **Professor Susan Olesik**, The Ohio State University, has agreed to speak on enhancing our sustainable practices in analytical chemistry. Our plenary lecture will be delivered by this year's winner of the EAS Award for Outstanding Achievements in the Fields of Analytical Chemistry, **Professor Joel M. Harris**, University of Utah. To entice you to come early and avoid traffic, EAS will offer a breakfast lecture on 2D-LC by **Dr. David Bowers**, Deputy Chief Inspector, United States Postal Service, a renowned expert on the Antrax and other cases.

Join us to hear these experts:



## Plenary Lecture

**Professor Joel M. Harris**

University of Utah

Title: *Spectroscopy through the Microscope: Chemical Analysis at Liquid/Solid Interfaces*

[Click here for bio](#)



## Breakfast Lecture

**Dr. David Bowers**

United States Postal Service

Title: *Dangerous Mail: Threats and Responses Over the Years*

[Click here for bio](#)



## Keynote Speaker

**Professor Susan Olesik**

The Ohio State University

Title: *Green HPLC*

# 2019 EAS Invited Technical Sessions

*Preliminary List as of April 25, 2019*

Note: List does **not** include contributed oral or poster Sessions – these will be posted in the EAS Preliminary Program. Contributed abstract submission deadlines are **May 1 for oral papers** and **September 1 for electronic poster**. Submit at [www.eas.org/asubmit](http://www.eas.org/asubmit)

## AWARD SESSIONS

### EAS AWARD FOR OUTSTANDING ACHIEVEMENTS IN THE FIELDS OF ANALYTICAL CHEMISTRY

*Sponsored by Bristol-Myers Squibb*

**Honoring Joel M. Harris, University of Utah**

Chair: Mary Wirth, Purdue University

*Closed Bipolar Electrochemistry - A Versatile Strategy for Coupling Electron Transfer to Optical Phenomena*, Paul Bohn, University of Notre Dame

*Chemical Sensors Based on 2D Materials*, Frank Bright, University of Buffalo

*Measuring Brain Activity: Getting Better but not Good Enough Yet*, Tim Harris, Howard Hughes Medical Institute

*Polymer Brush Layers for Protein Separations*, Mary Wirth, Purdue University

#### Plenary Lecture:

***Spectroscopy through the Microscope: Chemical Analysis at Liquid/Solid Interfaces*, Joel M. Harris, University of Utah**

### EAS AWARD FOR OUTSTANDING ACHIEVEMENTS IN MASS SPECTROMETRY

**Honoring Jennifer Brodbelt, University of Texas-Austin**

Chair: Jim Shen, Bristol-Myers Squibb

Victoria Cotham, Regeneron

*Imaging Mass Spectrometry: Impacting Biology*, Michelle Reyzer, Vanderbilt University

*From Crown Ethers to Proteins, 35 Years of Mass Spec Innovations*, Jim Shen, Scott Robotham, Bristol-Myers Squibb

*Development of Ultraviolet Photodissociation Mass Spectrometry for Proteins and Protein Complexes*, Jennifer Brodbelt, University of Texas-Austin

### EAS AWARD FOR OUTSTANDING ACHIEVEMENTS IN SEPARATION SCIENCES

**Honoring Joseph J. Pesek, San Jose State University**

Chair: Kylene Whitaker, Procter & Gamble Co.

*Separating both Polar and Nonpolar Compounds Using Aqueous Normal Phase Chromatography: A more Versatile Approach than Mixed-Mode Chromatography*, Joseph J. Pesek, San Jose State University

*The Utility of Silica Hydride Stationary Phases for the Separation of Positional Isomers of Emerging Drugs*, Ira Lurie, George Washington University

*Chromatographic Approaches and Challenges for OTC Cough-Cold Products*, Kylene Whitaker, Procter & Gamble Co.

*The Challenge of Tween Analysis in Protein Formulations*, Gregory Webster, AbbieVie

## AWARD SESSIONS

### EAS AWARD FOR OUTSTANDING ACHIEVEMENTS IN CHEMOMETRICS

**Honoring Peter de Boves Harrington, Ohio University**

Chair: Paul Gemperline, Eastern Carolina University

*Artificial Intelligence, Big Data, and the End of Science*, Peter de Boves Harrington, Ohio University

*Recent Advances in Projection Pursuit Analysis*, Peter Wentzell, Dalhousie University

*Assessment of Matrix Effects*, John Kalivas, Idaho State University

*The Analysis of Ignitable Liquids by DART-MS and Chemometrics*, Mengliang Zhang, Middle Tennessee University

### EAS AWARD FOR OUTSTANDING ACHIEVEMENTS IN MAGNETIC RESONANCE

**Honoring Lucio Frydman, Weizmann Institute of Science**

Chair: Warren S. Warren, Duke University

*Spreading the Hype: Sensitivity-Enhanced Biomolecular NMR via Hyperpolarized Water*, Lucio Frydman, Weizmann Institute of Science

*Making Hyperpolarization Simple, Fast and Cheap*, Warren S. Warren, Duke University

*NMR of Glycans On and Off Cells*, Daron Freedberg, United States Food & Drug Administration

*Better Battery Diagnostics with MRI*, Alexej Jerschow, New York University

### EAS YOUNG INVESTIGATOR AWARD

**Honoring Ishan Barman, Johns Hopkins University**

Chair: Manoharan Ramasamy, Merck & Co.

*Raman Hyperspectroscopy for Biomedical Diagnostics and Forensic Purposes*, Igor Lednev, University of Albany-SUNY

*Light Scattering in Pharmaceutical Manufacturing Innovation*, Manoharan Ramasamy, Merck & Co.

*Optical Scattering for Probing Cellular Dynamics and Cytopathology*, Nada Boustany, Rutgers University

*Decoding Molecular Pathology of Cancer with Raman Spectroscopy*, Ishan Barman, Johns Hopkins University

### NEW YORK MICROSCOPICAL SOCIETY ERNST ABBE AWARD

**Honoring Fran Adar, HORIBA Scientific**

Chairs: John Reffner, John Jay College of Criminal Justice, Brooke Kammrath, University of New Haven

*Why Work for an Analytical Instrument Company Anyway?*, Andrew Whitley, HORIBA Scientific

*Raman Spectroscopy of Crystalline Materials*, David Tuschel, HORIBA Scientific

*The Symbiotic Relationship between Application Development and Raman Instrument Innovation*, Bridget O'Donnell, HORIBA Scientific

*My Path from Physics to the Application of the Raman Microscope: From Studying the Mysteries of the Universe to Solving Analytical Problems*, Fran Adar, HORIBA Scientific



# 2019 EAS Invited Technical Sessions

*Preliminary List as of April 25, 2019*

## AWARD SESSION *continued*

### NEW YORK SECTION OF THE SOCIETY OF APPLIED SPECTROSCOPY GOLD MEDAL AWARD

Honoring: Prof. John Lombardi - City College, CUNY, NY

Chair: Dana Garcia, Arkema, Inc.

### AMERICAN MICROCHEMICAL SOCIETY BENEDETTI PICHLER AWARD

Chair: Robert Vetrecin

## CHEMOMETRICS

### Chemometrics in Forensic Science

Chair: Brooke Kammrath, University of New Haven

*A Picture is Worth a Thousand Words: The Potential of Hyperspectral Imaging in Forensic Science*, Donald Dahlberg, Lebanon Valley College

*Targeted Anomaly Detection in Hyperspectral Imaging for Forensic Applications - Finding a Needle in a Haystack*, Neal Gallagher, Eigenvector Research

*A Regression-Based Algorithm to Maximize the Confidence in Mass Spectral Identifications*, Glen Jackson, West Virginia University

*Classification with Regression: The Ridge and the Lasso*, Stephen Morgan, University of South Carolina

## CHROMATOGRAPHY

### Keynote Lecture:

**Green HPLC, Susan Olesik, The Ohio State University**

### Multidimensional and Hyphenated Techniques: From Development to Routine Analysis, Part I, sponsored by the Chromatography Forum of the Delaware Valley

Chair: Mary Ellen McNally, FMC

*Methods for the Analysis of Polar and Ionic Chemical Classes by Hydrophilic Interaction Liquid Chromatography with Zwitterionic Phase (HILIC-Z) Coupled to High-Resolution Mass Spectrometry*, Sergio Nanita, DuPont Industrial Biosciences

*LC-MS/MS Analysis of Folate in Food*, Cynthia Srigley, United States Food & Drug Administration

*Multi-Dimensional Chromatography with Quadrupole Parallel Mass Spectrometry (LC2MS4 & LC3MS4)*, Wm. Craig Brydwell, USDA Agricultural Research Service

*Hyphenated Techniques for Real Life Problems in the Ag Industry*, Xiaoyan Wang, FMC Agricultural Solutions

### Industrial and Medical Innovation Involving Odor Analysis and GC Instrumentation

Chair: Michelle Gallagher, The Dow Chemical Company

*The Analysis of Odorants as Mixtures*, Terry Acree, Cornell University

*Using Odor Profiles to Diagnose Hidden Cancer*, George Preti, Monell Chemical Senses Center

*Very Low Odor Threshold Compounds Responsible for Costly Industrial Problems*, Russell Bazemore, Volatile Analysis Corporation

*Reducing the Burden on Olfactory Sensory Panels: Analysis of Trace VOCs and Off-Odor Compounds in Finished Product Materials by GCxGC/FID/TOFMS*, Chris Siegler, The Dow Chemical Company

## CHROMATOGRAPHY *continued*

### Novel Concepts and Unique Applications of High-Performance Thin-Layer Chromatography (HPTLC)

Chair: Maged Sharaf, The International Association for the Advancement of High Performance Thin Layer Chromatography

*High-Performance Thin-Layer Chromatography (HPTLC) Today and in the Future*, Bernd Spangenberg, Offenburg University of Applied Sciences, Germany

*Recent Contributions of HPTLC to the Analysis of Complex Samples Covering Wide Ranges of Polarity. The Cases of Biofuels, Petroleum and Lipidomic Analysis*, Vicente Cebolla, Spanish National Research Council

*The Capabilities of Effect-Directed Analysis with HPTLC in Environmental Analysis*, Stefan Weiß, Association for Long Distance Water Supply of the State of Baden-Wuerttemberg, Germany

*Comprehensive HPTLC Fingerprinting - A New Approach to Quality*, Eike Reich, The International Association for the Advancement of High Performance Thin Layer Chromatography, Switzerland

### Women in Chemistry

Chair: Lauren Castelli

### Multidimensional and Hyphenated Techniques: From Development to Routine Analysis, Part II, sponsored by the Chromatography Forum of the Delaware Valley

Chair: Marcelo Filgueira, Dow Chemical Company

## CULTURAL HERITAGE

*Organized by the New York Conservation Foundation*  
Chaired by John Scott, New York Conservation Foundation

- "Traditional" Analyses for Cultural Heritage
- DNA Analysis for Cultural Heritage
- Proteomics for Cultural Heritage
- Analytical Science in Cultural Heritage

## FORENSIC ANALYSIS

### Breakfast Lecture:

***Dangerous Mail: Threats and Responses Over the Years, Dave Bowers, Deputy Chief Inspector, US Postal Service***

### The Research from our Emerging Forensic Scientists, sponsored by New Jersey Association of Forensic Scientists

Chair: Monica Joshi, West Chester University of PA

*Best Practices in Vaginal Secretion Identification as a Function of Female Age*, Melissa Rogers, Cedar Crest College

*LCMS Method Development for the Identification and Quantification of Illicit Drugs Introduced into Correctional Facilities*, Erica Maney, Duquesne University

*Method Development for Analysis of Organic Gunshot Residue*, Connor McCausland, West Chester University of PA

*Stability of U-47700 in Solvents and Biological Samples*, Melanie Murphy, Arcadia University

# 2019 EAS Invited Technical Sessions

*Preliminary List as of April 25, 2019*

## FORENSIC ANALYSIS *continued*

### **Advances in Forensic Toxicology and Counterfeit Pharmaceutical Analysis**

Chair: Yi He, John Jay College of Criminal Justice

*Cracking Down on Counterfeit Drugs – Evaluation of Field Portable Instrumentation for Rapid Analysis*, Sara Kern, United States Food & Drug Administration

*A High-Throughput Drug Testing Analysis in Independent Toxicology Laboratory*, Gary Milman, National Spine and Pain Centers, LLC

*Cannabis Exposure during Pregnancy: Analytical Methods and Toxicological Findings*, Marta Concheiro-Guisan, John Jay College of Criminal Justice

*Hair Testing in Forensic Toxicology, from the Lab to the Courtroom*, Karen Scott, Arcadia University

### **Chemical Considerations in the Transportation Industry, sponsored by New Jersey Association of Forensic Scientists**

Chair: Vincent Desiderio, US Postal Service

## GREEN ANALYSIS

### **Role of Analytical Chemistry in Greening Chemistry**

Chair: Satinder Ahuja, Ahuja Consulting

*Role of Analytics in Greening Chemistry*, Satinder Ahuja, Ahuja Consulting

*Natural Products from Swine Waste Lagoons: A Carotenoid Antioxidant*, Larry Cahoon, University of North Carolina

*Impacts of GenX in Oysters, Crassostrea Virginia: Uptake and Deputation*, Aswani Voley, University of North Carolina

*Green Chemistry and Water Treatment: From Vision to Action*, Rakesh Sharma, University of Delhi

## LABORATORY ANALYSIS

### **A Career in Management**

Chair: Dennis Swijter, ALMA

*So You Want to be a Manager? Making the Transition from Scientist to Technical Manager*, Christie Bowden, Arkema

*Managing Expectations as an Emerging Lab Leader*, Richard Durand, Sun Chemical

*Building Employee Engagement*, Scott Hanton, Intertek Chemicals & Materials

*Strategies for Effectively Managing a Culturally Diverse Multigenerational Laboratory Work Force*, Ephraim Muchada Govere, Pennsylvania State University

## MASS SPECTROMETRY

### **Applications of High Resolution Mass Spectrometry in Food Safety: Cannabis, Dietary Supplements, and Drinking Water**

Chair: Gene Hall, Rutgers University

*Characterization of Dietary Supplements Using Un-Targeted High Resolution Mass Spectrometry with Ion Mobility*, Gene Hall, Rutgers University

*Incorporation of a High Resolution Mass Spectrometer for Food Manufacturing Challenges*, Minren Wu, Watson Inc.

*Identification of Beta-Carotene Degradation Compounds and their Structural Elucidation by High Resolution Accurate Mass Spectrometry*, Diana Aga, University of Buffalo

*Applications of High-Resolution LC-MS<sup>E</sup> in the Characterization of Different Cannabis Sativa L. Strains*, Margie Diaz, Breakwater Treatment & Wellness

## MASS SPECTROMETRY *continued*

### **Applications of High Resolution Mass Spectrometry in the Pharmaceutical Industry**

Chair: Carolina Cabral, Prolong Pharma

*High Resolution Mass Spectrometry in Pharmaceutical Application: From Structure Characterization to Molecular Imaging*, Wendy Zhong, Merck & Co., Inc.

*Combined Short Term Glucose Starvation and Chemotherapy in 3D Colorectal Cancer Cell Culture Decreases 14-3-3 Family Protein Expression and Phenotypic Response to Therapy*, Amanda Hummon, Ohio State University

*In-Sample Calibration Curves Using Multiple Isotopologue Reaction Monitoring Technique in LC-MS-MS Bioanalysis*, Ryan Gu, Bristol-Myers Squibb

*Applications of High-Resolution LC-MS-MS in Cancer Research and Therapy Development*, Vitor Faca, Cornell University

### **Mass Spectrometry for Biopharmaceutical Discovery and Development**

Chair: Xi Qiu, Agilent Technologies

*Early-Stage Mass Spectrometric Characterization of Biologics in Pre-Clinical Development*, Harsha Gunawardena, Johnson & Johnson

*Spent Media Analysis Walk-Up Platform for Upstream Process Development*, Yeqing Tao, GlaxoSmithKline

*LC-MS-Based Workflows for Targeted Protein Quantitation in Biopharmaceutical R&D: Automation, Micro and Nano Flow Chromatography, and Integrated Data Analytics*, Daniel Spellman, Merck & Co.

*Toward Simple & Reliable Biologics ID Testing - Current Status of Biologics ID Strategy & Future Directions*, Li Xue, Bristol-Myers Squibb

## MICROSCOPY

### **Forensic Microscopy "What is it? Who does it?"**

Chair: Thomas Kubic, John Jay College

*Forensic Implications of Injection Molded Polymer Bullets for Microscopical Examination*, Peter Diaczuk, John Jay College of Criminal Justice

*Micro Spectroscopy and Fluorescence of Synthetic Wig Fibers*, Jaclyn Beshlian, John Jay College of Criminal Justice

*Microscopy and Microanalysis of Glitter Capsules*, Michelle Miranda, Farmingdale State College -SUNY

*Forensic Microscopy of the "Last" Pollack*, Nicholas Petraco, Petraco Consulting

## NMR SPECTROSCOPY

### **Innovative Applications of NMR Spectroscopy to Materials**

Chair: Cecil Dybowski, University of Delaware

*High-Resolution Solid State NMR of Quadrupole Nuclei at Fields up to 36T*, Zhehong Gan, Florida State University

*Understanding Transport from Molecular to Micron Scales in Soft Materials*, Louis Madsen, Virginia Polytechnic Institute

*Probing the Surfaces and Interfaces of Nanomaterials with Sensitivity Enhanced Solid-State NMR Spectroscopy*, Aaron Rossini, Iowa State University

Robert Schurko, University of Windsor

# 2019 EAS Invited Technical Sessions

*Preliminary List as of April 25, 2019*

## NMR SPECTROSCOPY *continued*

### Pharmaceutical Solid-State NMR: Moving Beyond Carbon

Chair: Joseph Lubach, Genentech

*<sup>1</sup>H-Detected Solid-State NMR Spectroscopy of Pharmaceutical Materials under 60-110 kHz Ultrafast Magic Angle Spinning*, Yongchao Su, Merck & Co.

*Opportunities and Challenges in <sup>19</sup>F Detection of Fluorinated Pharmaceuticals*, Matthew Nethercott, Kansas Analytical Services

Anuji Abraham, Bristol-Myers Squibb

Aaron Rossini, Iowa State University

## PHARMACEUTICAL ANALYSIS

### Method Lifecycle Management, sponsored by Waters Corporation

Chair: Isabelle Vu Trieu, Waters Corporation

*Practical Application of Lifecycle Concepts to LC Methods*, Kimber Barnett, Pfizer

*Design Quality into an HPLC Method: Chemistry, Chromatography and Statistics*, Jinjian Zheng, Merck & Co.

*A Fresh Look at Analytical Quality-by-Design*, Rosario LoBrutto, Sandoz, Inc.

*Considerations for Phase Appropriate Validation*, Jason Matthews, Biogen, Inc.

### Challenges Working with Organic Impurities and Genotoxic Impurities Found in Pharmaceutical Products

Chair: Kim Huynh-Ba, Pharmalytik

*What is New in ANDA - Impurities in Generics*, Bing Cai, United States Food & Drug Administration

*Unanticipated External Factors Impacting Drug Product Stability: A Case Study*, Christopher Zordan, Bristol-Myers Squibb

*Assay and Impurities: Setting Specifications for DS and DP*, Christopher Riley, Riley and Rabel Consulting

*History and Review on Genotoxic N-Nitroso Compounds in the Environment*, Robert Johnson, Consulting Services

### Analytical Challenges Impacting Biologics Drug Development

Chairs: Kim Huynh-Ba, Pharmalytik and Karen Lucas, J&J Janssen

*Setting Specs for Biologics in Drug Development* Ashutosh Rao, United States Food & Drug Administration

*Forced Degradation Studies for Biologics*, Nando Subbarao, Biologics Consulting

*Challenges on Biologics Development or CAR-T Development* Weiguo Dai, Janssen

*FDA Initiatives to Combat the Opioid Crisis*, Adam Lanzarotta, United States Food & Drug Administration

### Automation and Process Analytical Technology (PAT) in Pharmaceutical Related Applications

Chair: David J. Schenk, Merck & Co.

*Applications of Automation Across Discovery and Scale-Up*, Jason Hein, University of British Columbia

*Multi-Scale PAT Capabilities to Enhance Small Molecule Development*, Zachary Dance, Merck & Co.

*Automated Sample Preparation for Drug Product Commercialization: Formal Stability Studies*, Joanna Everitt, Merck & Co.

*Capitalizing on Lab Automation Capabilities by Workflow and System Integration for Bioanalytical Sciences*, Zheng Ouyang, BMS

## PHARMACEUTICAL ANALYSIS *continued*

### Challenges and Innovations in Analytical Assays for Cell and Gene Therapy Products

Chair: Robert Dodge, Novartis

*Development of Potency Assays for Gene Editing and Gene Therapy Products: Success & Challenges*, Zhu Z. Pirot, Sangamo Therapeutics

*Quantitation of Empty and DNA-Containing Adeno-Associated Virus Capsids*, Jeffrey K. Glenn, Spark Therapeutics

*Application and Validation of qPCR Methods in a GMP Setting for Cell & Gene Therapies*, Stuart Macnab, Novartis

*Cell Therapy Flow Cytometry GMP Release Assays: Overview and Deviation Case Studies*, Jeffrey Turner, Celgene

## SPECTROSCOPY

### Applications of Lasers in Analytical Chemistry

Chair: Lydia Breckenridge, Bristol-Myers Squibb

*LA-ICP-MS/AES*, Jhanis Gonzalez, Applied Spectra

*Laser-Induced Breakdown Spectroscopy*, Chinni Rosemarie, Alvernia

*Pharmaceutical Applications of LA-ICP-MS*, Lydia Breckenridge, Bristol-Myers Squibb

### PAT Eyes in the Process Line, organized by The Coblenz Society

Chair: James Ryzak, Specere Consulting

*PAT in API Development*, Norman Wright, Mettler-Toledo Autochem

*Predictive Dissolution of Pharmaceutical Tablets*, Sara Mantegna, Vertex Pharmaceuticals

### PAT Enabled Continuous Manufacturing, organized by The Coblenz Society

Chair: Brandye Smith-Goettler, Merck & Co.

*Tracer Selection and Detection for RTD Experimentation in Continuous Manufacturing*, Billy Blincoe, Merck and Co., Inc.

*Data Fusion Methods for Improved Process Monitoring*, Stephen Hoag, University of Maryland

### Applying Data Science to Spectroscopy, organized by The Coblenz Society

Chair: Brandye Smith-Goettler, Merck & Co.

*On-the-Go Spectroscopy and Sensor Data Fusion for Soil Health Assessment*, Kristen Veum, United States Department of Agriculture

## SURFACE SCIENCE

### Analytical Techniques for Surface and Interfacial Characterization

Chair: Michael Clark, The Dow Chemical Company

*Surface and Interface Analysis of Electronic Materials by Time-of-Flight Secondary Ion Mass Spectrometry (TOF-SIMS)*, Conor Thomas, IBM Systems

*Applications of XPS from Batteries to Historical Documents*, Karen Gaskell, University of Maryland-College Park

*Applications of Low Energy Ion Scattering Spectrometry in Chemical, Material and Mechanical Engineering*, Henry Luftman, Lehigh University

*Applications of SPM Methods in Polymer Industry – Overview of Recent Advances*, Johnpeter Ngunjiri, The Dow Chemical Company





# ENHANCING ANALYTICAL CHEMISTRY

WITH SUSTAINABLE SOLUTIONS



Crowne Plaza Princeton  
Conference Center  
Plainsboro, NJ  
November 18-20, 2019

EAS invites YOU to be a part of  
the 2019 Technical Program  
this November.

Contribute a paper for oral or  
poster consideration via our  
website: [www.eas.org/asubmit](http://www.eas.org/asubmit)

Bioanalysis  
Capillary Electrophoresis  
Chemometrics  
Conservation Science  
Environmental Analysis  
Forensic Analysis  
Gas Chromatography  
Liquid Chromatography  
Immunochemistry  
Industrial Hygiene  
IR/NIR/Raman Spectroscopy  
Laboratory Automation  
Laboratory Management  
Mass Spectrometry  
Microchemistry  
Microscopy  
NMR Spectroscopy  
Pharmaceutical Analysis  
Process Analytical Science  
Quality by Design  
Quality/Regulatory/Compliance  
Sample Preparation  
Science Education  
Separation Sciences  
SFC & Size Exclusion Chromatography  
Surface Science  
Vibrational Spectroscopy

## CALL for PAPERS 2019

Deadlines: Oral Abstracts is May 1<sup>st</sup>  
Paper Abstracts is September 1<sup>st</sup>

## 2019 PRELIMINARY LIST OF SHORT COURSES

EAS short courses are designed to help the practicing analyst develop new skills and enhance knowledge. Taught by experts, the short courses emphasize practical knowledge of a variety of important topics to help one keep current with best practices and new techniques.

**Richard Nguyen, 2019 Short Course Chair**

*Course descriptions are posted on our website; [click on course title](#) to link to the description.*

TWO-DAY COURSES	INSTRUCTORS
Modern Mass Spectrometry: Fundamentals to Frontiers <b>(NEW)</b>	Athula Attygalle, Stevens Institute of Technology
HPLC/UPLC For Practicing Scientists Part 1 &/or Part 2: Fundamentals, & Best Practices in Method Development and Operation/Troubleshooting	Michael W. Dong, MWD Consulting
Practical LC/MS Method Development for Small Molecules	Perry Wang, LC/MS Technical Expert
Quality-by-Design: A New Paradigm for the Analytical Laboratory Part 1&2	Zenaida Otero Gephardt, Otero Associates
Systematic LC and GC Troubleshooting	Merlin K.L. Bicking, ACCTA, Inc. Douglas E. Raynie, SD State University
LC/MS: Theory, Instruments, and Applications	Guodong Chen, Bristol-Myers Squibb Ragu Ramanathan, Pfizer
How to Develop Validated HPLC Methods: Rational Design with Practical Statistics and Troubleshooting	Brian Bidlingmeyer, Analytical Acumen Inc. Stanley Deming, Statistical Designs
Chemometrics without Equations Part 1 &/or Part 2	Donald Dahlberg, Lebanon Valley College Neal Gallagher, Eigenvector
ONE-DAY COURSES	INSTRUCTORS
High-Performance TLC, Planar Chromatography Beyond the Ordinary! <b>(NEW)</b>	Eike Reich, HPTLC Association Maged Sharaf, HPTLC Association
Faster HPLC Method Development and Optimization of Polar and Nonpolar Analyte Mixtures <b>(NEW)</b>	Joseph Pesek, San Jose State University Maria Matyska-Pesek, San Jose State University
A Systematic Way to Prepare Your Laboratory for Pre-Approval Inspections (PAIs) and Compliance Audit <b>(NEW)</b>	Kim Huynh-Ba, Pharmalytik, Consulting
The Chromatographic & Spectroscopic Tools of an Analytical Chemist for Measuring Polycyclic Aromatic Compounds in Complex Samples <b>(NEW)</b>	Andres Campiglia, University of Central Florida Walter Brent Wilson, NIST
Raman Microscopy Imaging <b>(NEW)</b>	Carlos Morillo, JASCO Inc.
Polymers: An Introduction and Characterization Techniques <b>(NEW)</b>	Diep Nguyen, Illinois Institute of Technology
Effective Utilization of PDA and MS Data in LC & SFC Method Development <b>(NEW)</b>	Joseph Turpin, S-Matrix Corporation
Process Analytical Technology and Quality-by-Design Integration for Effectiveness in the Analytical Lab <b>(NEW)</b>	Zenaida Otero Gephardt, Otero Associates
Headspace-Gas Chromatography Fundamentals, Method Development and Method Transfer <b>(NEW)</b>	Matthew Klee, XO Associates LLC
GC/MS Fundamentals for Operators <b>(NEW)</b>	Matthew Klee, XO Associates LLC
HPLC and UPLC Troubleshooting	Imad Haidar Ahmad, Merck & Co.
Practical NMR Spectroscopy	Damodaran Achary, University of Pittsburgh
Analytical Sampling and Sample Preparation for Chromatography	Douglas E. Raynie, SD State University
How Liquid Chromatography Works: Separation Principles Explained in Chromatograms	Martin Gilar, Waters
Intact and Top-Down Protein Characterization and Quantitation by Mass Spectrometry: Approaches for Pharmaceutical Drug Discovery, Development, and Bioanalysis	John Kellie, GlaxoSmithKline Wenying Jian, Janssen R&D
Physical Characterization of Pharmaceuticals and Biopharmaceuticals Using Synchrotron Methods	Stephen Byrn, University of Purdue Sean Chen, Antares Pharma
Modern Size Exclusion Chromatography of Synthetic Polymers and Biopolymers	Howard Barth, Analytical Chemistry Consultants Brian Bidlingmeyer, Analytical Acumen Inc.
Modern Portable Analytical Spectroscopy	Richard Crocombe, Crocombe Spectroscopic Consulting Pauline Leary, Federal Resources
Supercritical Fluid Chromatography: A Powerful and Greener Tool for Analytical and Preparative Separations	Yingr Zhang, Bristol-Myers Squibb Mike Hicks, Merck & Co.
Life Cycle Management of Analytical Validation for Pharmaceutical Products	Kim Huynh-Ba, Pharmalytik Consulting
Getting the most from GC and GC/MS	Gregory Slack, PharmAssist Nicholas Snow, Seton Hall University
Interpretation of Mass Spectra with Practical Solutions to Problems	Mike Lee, Milestone Development
Lifecycle Approach to Analytical Methods for Drug Products, Incorporating Quality-by-Design Concepts	Gregory Martin, Complectors Consulting
Process Analytical Technology: Out of the Lab and into the Line	Jim Rydzak, Specere Consulting



## EAS Awards Program

### Gregory Slack, 2019 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 Joel M. Harris**  
University of Utah  
*EAS Award for Outstanding Achievements in the Fields of Analytical Chemistry*



**Dr. Lucio Frydman**  
Weizmann Institute of Science  
*EAS Award for Outstanding Achievements in Magnetic Resonance*



**Professor Peter de Boves Harrington**  
Ohio University  
*EAS Award for Outstanding Achievements in Chemometrics*



**Professor Joseph J. Pesek**  
San Jose State University  
*EAS Award for Outstanding Achievements in Separation Science*



**Professor Jennifer S. Brodbelt**  
University of Texas - Austin  
*EAS Award for Outstanding Achievements in Mass Spectroscopy*



**Professor Ishan Barman**  
Johns Hopkins University  
*EAS Young Investigator Award*

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



**Dr. Fran Adar**  
HORIBA Scientific  
*New York Microscopical Society Ernst Abbe Award*



**Professor John Lombardi**  
City College, CUNY, New York  
*NY/NJ Section of the Society for Applied Spectroscopy Gold Medal Award*

**To Be Announced**

*American Microchemical Society  
Benedetti-Pichler 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 or by the jury members. Each award consists of an honorarium, travel expenses to EAS, a plaque, and the opportunity for the Awardee to present his or her work at EAS at an Award Symposium in his/her honor. Visit our website for full biographies for each Awardee.

Persons wishing to make a nomination for any of the awards given by EAS should send complete documentation of the candidate (nominating letter summarizing achievements, curriculum vita or resume, a statement of the nominee's willingness to present an address as part of an EAS Award Symposium, and arrange for at least one seconding letter) electronically (**single PDF file is preferred**) to: [awards@eas.org](mailto:awards@eas.org). The length of the nomination packet should be commensurate with the nominee's accomplishments, but should be limited to eight to ten pages. The deadline for all 2020 award nominations is September 1, 2019.

## Speed Mentoring at EAS

This year the Coblenz Society is bringing their Speed Mentoring activity to EAS!

What is speed mentoring you ask? Speed Mentoring is a fun, fast past session that enables a structured interaction with a dozen or more Analytical Chemists with different specialties 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.

How does it work? Mentees and Mentors need to sign up for the speed session in advance so we can get a number of people that are participating (spots are limited). If you sign up you get a free lunch at the session. We need professionals with various technical disciplines and from various industries, academia, and government labs to sign up as mentors. Graduate students and young professionals who are interested in finding out more about working in the various areas of chemistry also need to sign up.



- We start with a quick lunch and explanation of the process
- Mentors and mentees take seats facing one another
- Mentors start by introducing themselves, what their specialty (FTIR, NMR...), what industry etc., key jobs
- Mentees respond with their University, thesis area and begin asking questions
- A five-minute discussion ensues enabling mentees to learn about possible career avenues
- After five minutes mentees rotate a seat and the process starts up again.

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 in the various industries, government labs or academic institutions. It's also a way for chemists to give back to the community by sharing your experiences. 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 offered one day and will be approximately 1.5 hours; date/time to be announced. Space is limited and we encourage you to register in advance. Mentors and mentees can sign up just by sending your information (Name, title, affiliation/school, preferred email address) to Bernadette Taylor, EAS Executive Secretary at [askeas@eas.org](mailto:askeas@eas.org)

## 2019 Student Seminars

The Eastern Analytical Symposium has an Outreach Program for high school chemistry and science teachers, collegiate undergraduates, as well as high school students.

On Sunday, November 17th, EAS will hold a **FREE** professional development seminar offered exclusively to high school teachers. EAS will also offer one Outreach Seminar each day, Monday, November 18 and Tuesday, November 19 for college undergraduate students and high school students. Each seminar will have recognized leaders from academia and industry presenting perspectives on careers in chemistry and fields of interest.

Registration for the Outreach Seminars is required to reserve a space. High school students attending with their teacher may register for a Seminar for free; the EAS registration fee, valid for all three days for college students is \$30 and it includes all the seminars. Information on course descriptions and schedules will be posted on our website as soon as they are finalized. Registration will open in early July.

Please contact 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.

**Peter Bratin**  
**Seminar Chair**

## EAS Workshops

EAS is committed to your professional development, as well as the enhancement of knowledge. Our workshops include topics to help develop your professional skills, as well as to hone other skills critical for career success. These workshops such as “**Effective Communication Skills for Professionals in Chemistry**,” and “**The Importance of an Impressive Social Profile, Whether You are Looking for Your Next Career Move or Not**,” will provide insight into the best techniques for presenting your background and relevant experience using both social media and traditional resume formats. Skills such as these are essential today, and EAS is the place to begin or continue developing them.

All workshops are included with your EAS registration! Workshop descriptions and registration details will be posted on the EAS website in early June - stay tuned!

## Employment Bureau

An Employment Bureau is available to provide ample opportunity for employees to meet prospective employers. The Employment Bureau is free to all registered attendees; *for those who are unemployed, please contact us about discounted registration rates.*

The Employment Bureau will operate from 9:00am until 4:00pm on Monday and Tuesday. On Wednesday, the hours will be 9:00am to 1:00pm. Job postings will be available for applicant review beginning at 11:00am on Monday morning. Interviews will not be scheduled until after 12:00noon on Monday. Job postings are continually updated during EAS and applicants are encouraged to visit the Job Posting bulletin boards on a regular basis.

### **Back by Popular Demand!**

- ◆ All resumes can be submitted and sent via email once you have registered for the conference! Resumes must be submitted in a SEARCHABLE PDF file format. This is to make it easier and faster for employers to find prospective applicants.
- ◆ Employers will be given access to EAS's secure portal to search and review resumes on-line.

**Brandye Smith-Goettler**  
**Workshop & Employment Committee Chair**

## Expo News

### *Explore Sustainable Solutions to Your Analytical Problems at the 2019 EAS Exposition*

The 2019 Eastern Analytical Symposium & Exposition is deliberately arranged to encourage easy interaction between meeting attendees and exhibitors. At the Crowne Plaza Princeton - Conference Center, the exposition, technical program, short courses, workshops, employment bureau, and seminars are all under one roof. This permits attendees to easily move from one function to another, maximizing productive use of their time at the show. The exposition is located in the Lakeside Terrace Ballroom, Madison Room, and Wilson Room on the first floor, and the Waterfront Room and Bridgeview Room on the lower level. The expo was reconfigured in 2018 to improve visibility, accessibility, and traffic flow, and the feedback was overwhelmingly positive from both exhibitors and attendees. EAS provides a relaxed environment for attendees and exhibitors to interact and discuss analytical instrumentation, products, services, and supplies. Instrument demo rooms, hospitality suites, and exhibitor seminar rooms are easily accessible to both exhibitors and attendees. Limited booth and tabletop space is available at this time. For information on exhibiting at the 2019 EAS, please contact Sheree Gold, EAS Exposition Director, at 610-742-4981 (cell) or easinfo@aol.com. I look forward to a productive and pleasant expo in November. Hope to see you there.

**Sheree R. Gold,**  
**Exposition Director**

## Explore Sustainable Solutions to Analytical Problems at the 2019 EAS With These Exhibitors

*Last updated April 9, 2019*

ACS New York Section	MilliporeSigma
Activated Research	Molnar Institute
Agilent Technologies	New Era Enterprises
Airgas USA	New York Microscopical Society
Alliance Calibrations Group	New York Section of SAS
American Chromatography Supplies	NJ Mass Spec Discussion Group
American Laboratory	Omicron Scientific
American Pharmaceutical Review	Pace Analytical Service
AMETEK Arizona Instruments	Parker Hannifin
Analytik Jena	PerkinElmer Inc.
Bruker Corporation	Photothermal Spectroscopy Corporation
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Chiral Technologies Daicel	Renishaw
Chromatography Forum of DE Valley	Restek
Coblentz Society	Rigaku Americas Corp.
Cornerstone Scientific	Rudolph Research Analytical
Distek	Sciex
Dissolution Technologies	SCP SCIENCE
DWK Life Sciences	Shimadzu Scientific Instruments
Eigenvector Research Inc.	S-Matrix Corporation
GenTech Scientific	Sotax
GERSTEL, Inc.	Spex Sample Prep
Inorganic Ventures	TA Instruments
JASCO	Teledyne Princeton Instruments
JEOL	Thermo Fisher Scientific
Lab Manager/LabX	Thomson Instrument Company
LCGC and Spectroscopy Magazines	Trajan Scientific and Medical
LGC Standards	USP
Mac-Mod Analytical	VUV Analytics
Martel Instruments LLC	Waters Corporation
Metrohm USA	Wyatt Technology
Mettler Toledo	YMC America
MicroSolv	

Don't Miss Your Chance to Exhibit at the 2019 EAS.

For information, please contact Sheree Gold, Exposition Director at [easinfo@aol.com](mailto:easinfo@aol.com) or 610-742-4981 (cell).



## Housing at the 2019 Eastern Analytical Symposium

EAS has a block of rooms reserved at The Crowne Plaza Princeton Hotel & Conference Center and the Holiday Inn Express Princeton Southeast – both are located on Scudders Mill Road in Plainsboro, NJ. These hotels are 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

2019 Room rate - \$161.00 per night plus tax  
(you must mention **Group Code: EAS**)  
*[Click here for on-line reservations](#)*

### Holiday Inn Express Princeton Southeast



870 Scudders Mill Rd  
Plainsboro, NJ 08536  
1-609-936-6600

2019 Room rate - \$149.00 per night plus tax  
(you must mention **Group Code: EAS**)  
*[Click here for on-line reservations](#)*

The Governing Board of EAS would like to thank the following sponsors for their support in 2019

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NJ Association of Forensic Scientists  
New England Society for Applied Spectroscopy  
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Shimadzu Scientific Instruments

*Corporate Sponsors actively participate in the Eastern Analytical Symposium and Exposition. There are numerous opportunities for Corporate Sponsorship of technical sessions, awards, and other activities at the 2019 EAS as well as advertising opportunities in our Final Program. For information, please contact the EAS Executive Secretary at [askeas@eas.org](mailto:askeas@eas.org)*

2019 EAS

November 18-20, 2019

Plainsboro, NJ

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**EXPOSITION DIRECTOR**

Sheree Gold at [easinfo@aol.com](mailto:easinfo@aol.com)

**EXECUTIVE SECRETARY**

Bernadette Taylor at [askeas@eas.org](mailto:askeas@eas.org)

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**IMPORTANT DATES**

**March 1** Abstract submission opens for contributed oral and poster abstracts  
**May 1** Abstract submission deadline for contributed **oral** abstracts  
**June 15** Presenters of invited presentations are contacted by email with session schedules & instructions for the submission of final abstracts  
**July 1** Presenters of contributed oral presentations are contacted by email with session schedules and presentation guidelines  
**July 15** Registration opens  
**July 31** Deadline for receipt of final abstracts for invited presentations  
**Aug. 1** Preliminary Program posted on [www.EAS.org](http://www.EAS.org)  
**Sept. 1** Abstract submission deadline for contributed **poster** abstracts  
**Oct. 15** Deadline to register for 2019 EAS at a reduced price  
**Nov. 18-20** **58th Eastern Analytical Symposium & Exposition**

**How to contact us....**

General Information

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