EAS 2022 – Embracing Analytical Diversity for a Sustainable Future
November 14-16, 2022
Crowne Plaza Princeton Conference Center, Plainsboro, NJ
Barbara Hillery, EAS 2022 President

Welcome to the 2022 Eastern Analytical Symposium! We are extremely excited to be back and fully in-person in 2022, providing an opportunity for intellectual exchange and networking *par excellence*. Our EAS theme this year is Embracing Analytical Diversity, a requirement for a sustainable future, and the EAS Governing Board has been working all year to create a truly remarkable symposium, with something for everyone. Just a few of the highlights are mentioned here, so be sure to explore!

Our Monday Keynote Speaker, Dr. Raychelle Burks, will speak on *Making Progress with Social Justice and Sensing*. Dr. Burks is an analytical chemist, forensic scientist, Associate Professor at American University, and renowned science communicator. In addition to being featured in a documentary featured at the Tribeca Film Festival, she is a regular columnist, podcaster, and speaker at genre cons (e.g. GeekGirlCon) -- helping to bring together STEM and pop culture. Among her many awards is the American Chemical Society's Grady-Stack Award for Interpreting Chemistry for the Public.

Early risers and traffic-avoiders will be rewarded with our Tuesday Breakfast Lecture, featuring Dr. Elizabeth Bik speaking on *The Dark Side of Science: Misconduct in Research*. Dr. Bik is a microbiologist, science-sleuth, and science integrity volunteer, working to expose poor quality research that may contribute to wide-spread misinformation and mistrust of science. Her work on science communication and integrity have earned her the Peter Wildy Prize, the John Maddox Prize, and the Ockham Award.

Join us Wednesday for our Plenary Lecture, given by Dr. Angela Belcher, James Mason Crafts Professor at MIT and head of the Biological Engineering Department there. Dr. Belcher's many awards include a 2004 MacArthur Foundation Fellowship and the 2013 Lemelson-MIT Prize. She also has a very popular TED Talk on using nature to grow batteries, with over a million views!

EAS is proud to sponsor several awards recognizing distinguished career achievements across analytical subdisciplines. I congratulate all our awardees this year, and encourage attendees to get to the award sessions. This is an incredible opportunity to hear from some of the very best analytical chemists in the world, brought together here in Princeton.

Since you are here, consider a Short Course if you haven't already signed up for one. We have a new feature this year in a few of our spectroscopy courses, with a Spectroscopy Sandbox. And we have extended our Exhibit hours into the evening, and included a reception, so everyone will have time to visit our vendors. Several coffee and snack breaks, sponsored by exhibiting vendors, will be set up in the Exhibit area each day. We are grateful to all our sponsors, and particularly thank our Diamond level sponsor – Waters; our Silver level sponsors – S-Matrix, Bruker, and Merck & Co., Inc.; and our Bronze level sponsor – Thermo Fisher Scientific.

There are many ways to benefit from EAS attendance, as we offer a diverse array of opportunities for education, professional development, and fun. There is something for everyone, and all within a friendly and convivial symposium. On behalf of the entire EAS Governing Board, thank you for attending, and enjoy the 2022 symposium!!

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Please note our email, address, & phone number are as follows:
P.O. Box 185, Spring Lake, NJ 07762
EAS HOTLINE: 732-449-2280
EAS WEBSITE: www.eas.org
Send e-mail to: askEAS@EAS.org

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Parking & Shuttle Services
Parking is available at the nearby Princeton Alliance Church at 20 Schalks Crossing Road, Plainsboro which is just 0.7 miles away. EAS Trolley shuttle service will be available every 10 min. from 7:00am to 6:30pm daily to transport you from the overflow Church parking lot to & from the Conf. Center.

2022 EAS Conferences-in-Miniature

BIOANALYSIS & SENSING TECHNOLOGY

Breakfast Lecture: Nov. 15, 8:00 AM
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 Developments in Separation Science (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)

CANNABIS ANALYSIS

Technical Sessions

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

EDUCATION

Technical Session

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

Keynote Lecture: Nov. 14, 4:15 PM
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)

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)

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)
- Advances in Proteomics & Metabolomics Research (11/16 AM)
- **EAS Award for Outstanding Achievements in Mass Spectrometry, Honoring Martin Jarrold, Indiana University (11/16 PM)**

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

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, 11:45 AM
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

- Practical NMR Spectroscopy (11/13)
- An Introduction to Quantitative Spectroscopic Analysis (11/14)
- Modern Raman Spectroscopy Techniques and Applications in the Material and Biological Sciences (11/14)
- Problems with FT-IR Spectra and How to Avoid Them (11/16)

2022 Technical Program

Monday Morning, November 14, 2022

EAS Award for Outstanding Achievements in the Fields of Analytical Chemistry
Honoring Richard Crooks, University of Texas-Austin
Sponsored by Bristol Myers Squibb
Chair: Frank Zamborini, University of Louisville

9:00	1	Oxidation and Deposition Processes with Metal Nanoparticles, Frank Zamborini, University of Louisville
9:30	2	Integration of Dielectrophoretic Selective Single-Cell Capture at a Wireless Electrode Array with On-Chip Analysis of Single Circulating Tumor Cells, Robbyn Anand, Iowa State University
10:00		Break
10:30	3	Serial and Parallel Approaches to High-Throughput Electro-Chemistry, Lane Baker, Texas A&M University
11:00		Presentation of the EAS Award for Outstanding Achievements in the Fields of Analytical Chemistry
11:05	4	Magnetic and Electrochemical Preconcentration: A Route to Home-Based, Picomolar Detection of a Heart Failure Biomarker, Richard Crooks, University of Texas-Austin

Innovative Approaches to Liquid Chromatography in Drug Development: From Small Molecules to New Modalities;
Sponsored by the Chinese American Chromatography Association
Chair: Yi He, John Jay College of Criminal Justice

9:00	5	Novel Strategies for Targeted Protein Quantification in Biomatrices, Bo An, Sichuan Huiyu Pharmaceutical Co.
9:30	6	In Silico Multifactorial Modeling for Streamlined Development and Optimization of Chromatography Methods, Imad Haidar Ahmad, Merck & Co., Inc.
10:00		Break
10:30	7	Improving Oligonucleotide Separations and Impurity Analysis Using LC Systems and Columns with Hybrid Surface Technology, Martin Gilar, Waters Corporation
11:00	8	Empower mRNA-Based Medicines by HPLC, Penggao Duan, Moderna

STEM Education Innovations
Chair: Shirley Fischer-Drowos, Widener University

9:00	9	BCEENET: Creating a Collaborative Network to Support Course-Based Undergraduate Research Experiences (CUREs) Using Digitized Natural History Collections, Janice Krumm, Widener University
9:30	10	Student Outcomes and Perceptions of Specifications Grading in a First Semester General Chemistry Course, Stephen Habay, Salisbury University
10:00		Break
10:30	11	Thinking Outside the Classroom – Coursework Using Current Environmental Case Studies, Gina Plantz, Haley & Aldrich
11:00	12	Transforming the Chemistry Lab Experience, Shirley Fischer-Drowos, Huy Dao, Widener University

Advances in NMR Data Science
Chair: David Rovnyak, Bucknell University

9:00	13	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
9:30	14	Characterization of Biotherapeutics by Chemometrics and Machine Learning Analysis of NMR Spectra, Frank Delaglio, National Institute of Standards and Technology
10:00		Break
10:30	15	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
11:00	16	Using Deep Learning to Unleash the Potential of NMR Spectroscopy, D. Flemming Hansen, University College London

Forensic Analysis: Innovations and Technological Advancements
Chair: Penny Moore

9:00	17	Forensics and Innovative Technologies (FIT): How FIT Fits in Bristol-Myers Squibb, Ravi Kalyanaraman, Bristol Myers Squibb
9:30	18	HPTLC Separation of Novel Psychoactive Substances, Thomas Brettell, Marianne Staretz, Cedar Crest College
10:00		Break
10:30	19	Identification of Fibers Using Raman Microspectroscopy: A Case Study, Sergey Mamedov, HORIBA Scientific
11:00	20	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

9:00	21	Raman Spectroscopy of TiO2, WO3, and Y2O3 Nanoparticles, Sergey Mamedov, HORIBA Scientific
9:30	22	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
10:00		Break
10:30	23	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
11:00	24	Root Cause Spectroscopic Failure Investigation Aided by High Resolution SEM/EDS, FT-IR, XPS Instruments, Jeanette vajki Vass, Auto & Materials

Bioanalysis: New Technology Advances and Developments
Chair: Mary Lynn Grayeski

9:00	25	Smart Biosensors with Machine Learning for Objective Pain Assessment, Omowunmi Sadik, New Jersey Institute of Technology

9:30 26 Light-Addressable Electroanalysis with Semiconductor/ Metal Nanoparticle Junctions, Glen O'Neil, Montclair State University

10:00 Break

10:30 27 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

11:00 28 Novel LC-MS-based Platform for Extensive Investigation on Antibody-Drug Conjugates Induced Ocular Toxicity by Integrating Global Proteomics and Targeted Drug Disposition Analysis, Xiaoyu Zhu, Ming Zhang, Sangita Patel, Jun Qu, SUNY at Buffalo, Min Ma, Roswell Park Comprehensive Cancer Institute

Applications and Technologies Addressing Environmental Concerns
Chair: Neil Jespersen and Christina Robb, United States Food & Drug Administration SANFL

9:00 29 Green Chemistry Initiatives at MilliporeSigma for a Sustainable Future, Ettigounder Ponnusamy, Milliporesigma

9:30 30 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

10:00 Break

31 Withdrawn by the author.

10:30 32 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

Advancements of Mass Spectrometry and Applications Diversity
Chair: Peter Bratin, ECI Technology

9:00 33 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

9:30 34 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

10:00 Break

10:30 35 Quantitation of Antibody Deamidation Degradation and Host Cell Proteins by Coulometric Mass Spectrometry, Yongling Ai, Hao Chen, New Jersey Institute of Technology

11:00 36 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

Applied Data Science: Expanding the Chemometrics Toolbox
Chair: Brandye Smith-Goettler, Merck & Co., Inc.

9:00 37 Tall Versus Wide Data and the Promise of Machine Learning, Peter Harrington, Ohio University

9:30 38 Tools for Final Model Selection, Barry M. Wise, Robert T. Roginski, Lyle Lawrence, Eigenvector Research

10:00 Break

10:30 39 Pharmaceutical Applications of Machine Learning, Brandye Smith-Goettler, Merck & Co., Inc.

11:00 40 How Machine-Learning Tools Complement Applications of Absorbance-Transmittance Excitation-Emission Matrix (A-TEEM) Spectroscopy for Food, Pharma and Water Quality, Adam Gilmore, HORIBA Scientific

Monday, November 14: E-Poster Session; 11:30 AM – 12:25 PM

41 Withdrawn by the author.

42 Cannabis Potency Testing - Which Column Dimension is Right for You?, Justin Steimling, Jamie York, Melinda Urich, Cathy Hetrick, Restek

43 Shape and Frequency-Based Peak Identification Techniques for Chromatography, Cable Warren, Purnendu Dasgupta, University of Texas at Arlington, Akinde Kadjo, Thermo Fisher Scientific

44 Electrochemical Method for the Detection of Gunshot and Metal Residues, Molly Trautman, Donald Dahlberg, Michelle Rasmussen, Lebanon Valley College

45 The Separation of Dextro- and Levomethorphan on CHIRALPAK® Immobilized Chiral Columns, Jay Ferraro, Weston Umstead, Daicel Chiral Technologies

46 Non-Invasive Discrimination Between Pregnancy and Pseudopregnancy in Giant Panda Using Near-Infrared Spectroscopy (NIRS), Qingyu Sheng, Andrew Kouba, Carrie Vance, Mississippi State University

47 Understanding Photo-Chemical Properties and Degradation Pathways of Cadmium-based Pigments Using Pump-Probe Microscopy, Yue Zhou, Warren Warren, Martin Fischer, Duke University, Marta Ghirardello, Daniela Comelli, Politecnico di Milano

48 Kinetic and Equilibrium Studies on the Adsorption Cadmium and Lead Adsorption with Biowaste Adsorbent from Aqueous Solutions for Environmental Pollution Contro, Taha Allah, Enju Wang, Ali Shohatee, Louis Trombetta, St. John's University, Kaltrina Jusuf, University of Prishtina

49 The Commercialization Effort for a Universal Method for Body Fluid Identification for Forensic Purpose, Alexis Weber, Igor Lednev, University at Albany

50 Considerations for HILIC Method Migration, Elom Pedanou, Kevin Witter, Lise Gauthier, Paula Hong, Waters Corporation

51 Investigation of RPLC Method Migration Risks using Chromatographic Simulator, Norris Wong, Zhimin Li, Lise Gauthier, Kaveh Amini, Corey Reed, Fabrice Gritti, Martin Gilar, Waters Corporation

52 Automation of Analytical Methods for Oral Compressed Tablets, Calvin Huang, Merck & Co., Inc.

53 Digitalization of Laboratory Processes with Cloud Based Solution, Tablets, and QR Codes, Henry Tat, Merck & Co., Inc.

54 Development of a Dual Electrospray Ionization Source with In-Line Absorbance-Based Voltage Control, Samuel Foster, Christopher Piccolo, Deklin Parker, Matthew Will, James Grinias, Rowan University

55 Application of Trapped-Ion-Mobility Spectrometry (TIMS) Time-of-Flight (TOF) Mass-Spectrometry in Expediting Conventional Food Analysis of Simple and Complex Carbohydrates, Artem Filipenko, Bruker

Monday, November 14: E-Poster Session; 12:30 PM – 1:25 PM

56 The Detection of Flavonoids in Hemp Flower by LC-MS/MS, Justin Steimling, Jamie York, Cathy Hetrick, Restek

57 Cannabinoid Extraction Efficiency for Potency Analysis: An in Depth Look of Multiple Techniques, Justin Steimling, Cathy Hetrick, Melinda Urich, Restek Corporation

58 Understanding Dispersion in HPLC Absorbance Detectors, Cable Warren, Charles Shelor, Purnendu Dasgupta, University of Texas at Arlington

59 Non-Destructive Discrimination of Starch Adulteration in Ginger Powder Using Digital Images and Tree-Based Algorithms, David Stefany, Thomas Hartman, Rutgers University

60 Investigation into Noise-Suppressed First Derivatives for Rapid Symmetrization and Deconvolution of Peaks in Chiral Chromatography, Troy Handlovic, M. Farooq Wahab, Daniel Armstrong, The University of Texas at Arlington

61 Adsorption of Amine Compounds on Glass Surface and Their Impact on the Development of Analytical Method and Pharmaceutical Process, Xuejun Xu, Jennifer Lott, Kathleen Kelly, Zhongping Shi, Bristol Myers Squibb

62 Performance Improvement of Ultra-High Pressure Liquid Chromatography Mass Spectrometry Using Vacuum Jacketed Column Technology, Fabrice Gritti, Sornanathan Meyyeppan, Jason Hill, Thomas McDonald, Rob Plumb, Waters Corporation

63 Characterization of the Composition of 3-D Printed Devices by Using Pulsed Gas Direct Analysis in Real Time Mass Spectrometry, Brian Musselman, William Fatigante, Artem Filipenko, Bruker, Jenna Covey, University of New Haven

64 Targeted Analysis of Per- and Polyfluoroalkyl Substances (PFAS) in Seawater, Plankton, and Shellfish Tissue Using UPLC-MS/MS, Anthony Provatas, Kaitlyn Campbell, Jessica Brandt, Christopher Perkins, Isabella McGrath, University of Connecticut

65 Determination of Total Chlorine in Palm Trees for Early Detection of 3-MCPD in Refined Oil Using ICP-OES, Brady Frill, PerkinElmer

66 Determination of Total PFOS/PFOA: Evaluation of Calibration Standard and Integration Technique, Cynthia Srigley, Susan Genualdi, Wendy Young, Lowri DeJager, United States Food & Drug Administration

67 High-Throughput Analysis of Small Molecules Using Custom Capillary LC Instrumentation, Deklin Parker, Samuel Foster, James Grinias, Rowan University

68 Impact of Instrument Design on Absorptive Carryover, Kaveh Amini, Lise Gauthier, Corey Reed, Paula Hong, Waters Corporation

69 Method Optimization and Validation of PFAS in Human Serum Using On-line SPE UHPLC-MS/MS, Elizabeth Pelczar, Carrie Xu, Linbin Zhong, Shawn O'Leary, Chang Ho Yu, Tina Fan, New Jersey Department of Health

70 Applications for Microscale Separations of Small Molecules at Genentech, Crystal Ye, Mengling Wong, Genentech

71 Cloud-Based Enterprise Solution for Visualization and Reporting of Liquid Chromatography Data, Jonathan Fine, Pankaj Aggarwal, Amanda Mann, Jim Cotrotsios, Merck & Co., Inc.

72 An Investigation of Robust Sample Preparation on an Automated Tablet Processing Workstation, and Lesson Learned, Ujala Patel, Merck & Co., Inc.

Monday Afternoon, November 14, 2022

EAS Award for Outstanding Achievements in Magnetic Resonance

Honoring Philip Grandinetti, The Ohio State University
Sponsored by Bruker BioSpin and New Era Enterprises
Chair: Lyndon Emsley, École Polytechnique Fédérale de Lausanne

1:30 73 Higher Resolution and Higher Sensitivity for Solid-State NMR Spectroscopy, Lyndon Emsley, École Polytechnique Fédérale de Lausanne

2:00 74 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

2:30 Break

3:00 75 Custom-Made Magnetic Resonance: An Application-Driven Instrumentation Approach, Dimitrios Sakellariou, KU Leuven

3:30 Presentation of the EAS Award for Outstanding Achievements in Magnetic Resonance

3:35 76 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
Sponsored by New York Microscopical Society
Chairs: Brooke Kammrath, University of New Haven, John Reffner, John Jay College

1:30 77 Frugal Science: Bringing Tools of Creativity to Global Communities, Manu Prakash, Stanford University

2:00 78 From Ideas to Globally Accessible Instruments, Benedict Diederich, Leibniz-IPHT

2:30 Break

3:00 79 PlanktoScope: Affordable Modular Quantitative Imaging Platform for Citizen Oceanography, Thibaut Pollina, Adam Larson, Hongquan Li, Manu Prakash, Stanford University, David Le Guen, Colomban De Vargas, Plankton Planet, Fabien Lombard, Laboratoire d'Océanographie de Villefranche, Sebatien Colin, Max-Planck-Institute Tübingen

3:30 Panel Discussion

POWERHOUSE SESSION:

Challenges of Counterfeit Detection in Pharmaceutical Industry
Chairs: Pauline Leary, NOBLE and Kim Huynh-Ba, Pharmalytik, LLC

1:30 80 Analytical and Operational Challenges in Counterfeit Case Studies, Ravi Kalyanaraman, Bristol Myers Squibb

2:00 81 Microscopical Analysis Applied to the Detection and Sourcing of Counterfeit Products, Christopher Palenik, Microtrace LLC

2:30 Break

3:00 82 Unsafe Pharmaceuticals: Fake or Counterfeit, Dale Purcell, Chemical Microscopy, LLC

3:30 Panel Discussion

Sustainable Separations, Sponsored by the Chromatography Forum of Delaware Valley

Chair: Mary Ellen McNally, FMC Corporation

1:30 83 The Role of Instrument Detection Level in the Development of Sustainable Trace Level Methods, James Stry, FMC Corporation

2:00 84 Greening Separation Science, Christopher J. Welch, ICASE

2:30 Break

3:00 85 A Rapid Automated Extraction Platform to Assess Drug Product Potency by Online Liquid Chromatography, Stephen Groskreutz, Grodon Lambertus, Eli Lilly and Company

3:30 86 Transferring Analytical-Scale LC Separations to Compact Capillary LC Instrumentation, James Grinias, Rowan University

Electrochemical Analysis

Chair: Michelle Rasmussen, Lebanon Valley College

1:30 87 Functional Biosensors for Infectious Disease, Ariel Furst, Massachusetts Institute of Technology

2:00 88 Using Bioelectrocatalysis for Analysis, Shelley Minteer, University of Utah

2:30 Break

3:00 89 Revealing the Heterogeneity in Metal Dissolution Reaction via Colocalized Electrochemical and Structural Imaging, Hang Ren, University of Texas at Austin

3:30 90 Electrochemically Recyclable NAD+/NADH Biomimetics for Analytical Bioelectrocatalysis, David Hickey, Michigan State University

Innovations in Vibrational Spectroscopy as an Essential Tool in Chemical Analyses
Chair: Kate Jackson, Colgate Palmolive

1:30 91 Determining the Time Since Deposition of Menstrual Blood Stains Utilizing Raman Spectroscopy, Alexis Weber, Igor Lednev, University at Albany-SUNY
2:00 92 The Role of Micro Spectroscopic Analysis Tools in Industrial Problem Solving, Jeanette vajki Vass, Auto & Materials
2:30 Break
3:00 93 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
3:30 94 Biophysical Characterization of Advanced Therapeutic Modalities: Antibodies, Nucleic Acids and AAVs, Yelena Pyatski, Kimberly Quinn, Rina Dukor, BioTools, Maksim Mezhericher, Princeton University

Food Spectroscopy - It's not Just Near Infrared
Chair: Ellen Miseo, Miseo Consulting

1:30 95 Adapting Portable XRF Spectroscopy for Field and Laboratory Use in Agriculture, Jill Clapperton, Edacious PBC
2:00 96 Exploring the Contours of A-TEEM Spectroscopy for Food Analysis, Linda Kidder, Adam Gilmore, Cary Davies, HORIBA Scientific Instruments
2:30 Break
3:00 97 Mid-Infrared Solutions for Rapid Sensing of Food Contaminants, Luis Rodriguez-Saona, The Ohio State University
3:30 98 Raman Spectroscopy for Food Applications, Zili Gao, Lili He, University of Massachusetts-Amherst

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.

1:30 99 HRMS on Small Molecule Impurity Identification in Pharmaceutical Development, Jiaxuan Yan, Xing Yin, Wendy Zhong, Douglas Richardson, Hillary Schuessler, Merck & Co., Inc.
2:00 100 2-Pyridine Carboxaldehyde for Semi-Automated Soft Spot Identification in Cyclic Peptides, Joe Cannon, Haiying Zhang, Zhigang Lyu, Silvi Chacko, Bristol Myers Squibb
2:30 Break
3:00 101 Host Cell Protein Characterization Methodology and Use within Downstream Process Development Pipeline, Stephanie Lehman, Josue Baeza, GlaxoSmithKline
3:30 102 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.

Analytical Schemes in Forensic Science; *organized by the New Jersey Association of Forensic Scientists*
Chair: David Fisher, New Jersey Institute of Technology

1:30 103 Forensic Capabilities for US Trade Enforcement at the USDHS Customs and Border Protection's New York Laboratory, Adam Hutter, United States Department of Homeland Security
2:00 104 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
2:30 Break
3:00 105 Illicit Drugs: A Guide for Analysis, Kristi Bartok, Union County Prosecutor's Office Forensic Laboratory
3:30 106 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

KEYNOTE LECTURE
Monday, November 14, 4:15 PM

Paper #107
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 in the Exposition Rooms.

Tuesday Morning, November 15, 2022

BREAKFAST LECTURE
Tuesday, November 15, 8:00 AM

Paper #108
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.

EAS Award for Outstanding Achievements in Vibrational Spectroscopy
Honoring Richard Crocombe, Crocombe Spectroscopic Consulting
Chair: Ellen Miseo, Miseo Consulting

9:00 Presentation of the EAS Award for Outstanding Achievements in Vibrational Spectroscopy
9:05 109 Spectrometers in Wonderland: Shrinking, Shrinking, Shrinking, Richard Crocombe, Crocombe Spectroscopic Consulting
9:30 110 Safety and Security Dependence on Vibrational Spectroscopy, Pauline Leary, NOBLE
10:00 Break
10:30 111 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
11:00 112 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

9:00 113 Quantitative Mass Spectrometry for Understanding Chromatin Mutations in Human Disease, Benjamin Garcia, Washington University in St. Louis

9:30 114 Proteomics Analysis Combined with Pulsed-Metabolic Labeling Reveals New Targets and Mechanisms of Host Protein Degradation Mediated by Herpes Simplex Virus Type 1, Katarzyna Kulej, Matthew Charman, Joseph M. Dybas, Namrata Kumar, Edwin Halko, Matthew D. Weitzman. Children's Hospital of Philadelphia, Simone Sidoli, Albert Einstein College of Medicine, Benjamin A. Garcia, Washington University - St. Louis

10:00 Break

10:30 115 Global Protein-Turnover Quantification in Escherichia coli Reveals Cytoplasmic Recycling under Nitrogen-Limitation, Martin Wuhr, Princeton University

11:00 Presentation of the EAS Young Investigator Award

11:05 116 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

9:00 117 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.

9:30 118 Case Studies Where Regulations Drive Laboratory Failure, Susan Audino, S.Audino & Assoc. LLC

10:00 Break

10:30 119 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

11:00 Panel Discussion

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

9:00 120 Expanding the PROVEDIt Set with Next Generation Sequencing Data: Supporting Foundational Forensic Research Initiatives, Ami Reader, Jessica Dominguez Lopez, Catherine Grgicak, Rutgers University-Camden

9:30 121 Optimization of Fellatio Sample Analysis, Brianna Gregory, Janine Kishbaugh, Cedar Crest College

10:00 Break

10:30 122 Development and Validation of a GC-QQQ Method for Smokeless Powder Additives, Blake Kerstetter, Monica Joshi, West Chester University of Pennsylvania

11:00 123 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

Frontiers in Pharmaceutical Analysis: Technology and Applications
Chair: Michelle Case, Bristol Myers Squibb

9:00 124 Sustainable Analytical Methodology for Residual Dextran Sulfate in Biopharmaceutical In-process Samples by UV-Vis Spectrophotometry, Lee Oliver, GlaxoSmithKline

9:30 125 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

10:00 Break

10:30 126 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.

11:00 127 Withdrawn by the author.

Accelerating Innovation with Machine learning, Predictive Technologies and Lab Automation
Chairs: Yongchao Su, Merck & Co., Kim Huynh-Ba, Pharmalytik, LLC

9:00 128 Predicting Pharmaceutical Product Performance through Modeling, Machine Learning and Statistics, Timothy Rhodes, Merck & Co., Inc.

9:30 129 Automated High-Throughput Biophysical Methods for Higher Order Structure Analysis of Protein Biopharmaceuticals, Anne Kim, Pfizer

10:00 Break

10:30 130 Computational Tools for Modeling Critical Quality Attributes in Biologics, Naresh Chennamsetty, Bristol Myers Squibb

11:00 131 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

Managing the Analytical Laboratory: The New "Normal;" Sponsored by ALMA
Chair: Dennis Swijter, Association of Laboratory Managers (ALMA)

9:00 132 Laboratory Automatization is no Silver Bullet, Pascal Wambua, Pwani Oil Limited

9:30 133 Empowering Staff through a Constructive Performance Review, Scott Hanton, Lab Manager Magazine

10:00 Break

10:30 134 A Diverse and Collaborative Workforce: Starting it and Keeping it, Maria Dennis, Weill Cornell Medicine

11:00 135 Motivating and Retaining Staff, May Adaeze Chinda, University of Ghana Medical Centre

Recent Developments in Separation Science, sponsored by the Chromatography Forum of Delaware Valley
Chair: Joe Foley, Drexel University

9:00 136 Recent Developments in Tandem-Column Liquid Chromatography and Chiral Capillary Electrophoresis, Joe Foley, Zhiyang Liu, Eric Buchhalter, Drexel University

9:30 137 Capillary Electrophoresis Coupled to Mass Spectrometry through Vibrational Sharp-Edge Spray Ionization, Lisa Holland, West Virginia University

10:00 Break

10:30 138 Liquid Chromatography Column Considerations in Pharmaceutical & Biopharmaceutical Analysis, James Grinias, Rowan University

11:00 139 Improving the Performance of Second Dimension Separations in 2D-LC - Vignettes about Recent Progress, Dwight Stoll, Gustavus Adolphus College

Tuesday, November 15: E-Poster Session; 11:30 AM – 12:25 PM
STUDENT AWARDEES

140 Investigation of the Presence and Migration of Perfluoroalkyl Substances (PFAS) from Nonstick Cookware, Kaylie Kirkwood, North Carolina State University, James Dodds, Erin Baker, The University of North Carolina at Chapel Hill

141 Next Generation Infrared Matrix-Assisted Laser Desorption Electrospray Ionization Source for Mass Spectrometry Imaging and High-Throughput Screening, Kevan Knizner, Jacob Guymon, Kenneth Garrard, David Muddiman, North Carolina State University, Guy Bouvrée, GB Conseil & Services, Jeffrey Manni, JGM Associate, Inc., Jan-Peter Hauschild, Kerstin Strupat, Kyle Fort, Lee Earley, Eloy Wouters, Thermo Fisher Scientific, Fan Pu, Andrew Radosevich, Nathaniel Elsen, Jon Williams, AbbVie Inc.

142 Evaluation of Figures of Merit that Define a Mass Spectrometry Imaging Platform by Matrix-Assisted Laser Desorption Electrospray Ionization Mass Spectrometry, Olivia Dioli, Hongxia Bai, Kenneth P. Garrard, David C. Muddiman, North Carolina State University

143 Modeling and Optimization of Multiple-Quantum Magic-Angle Spinning NMR Spectra, Lexi McCarthy, Brendan Wilson, Deepansh Srivastava, Philip Grandinetti, Ohio State University, Jay Baltisberger, Berea College

144 Mrsimulator: An Object-Oriented and Open-Source Software Package for Fast Solid-State NMR Spectral Simulation and Analysis, Matthew D. Giammar, Philip J. Grandinetti, The Ohio State University, Maxwell C. Venetos, University of California Berkeley, Deepansh Srivastava, Hyperfine, Inc.

145 Functionalized Gold Nanoparticles with Halogen Bonding Capability – an Avenue for Molecular Detection Schemes, Quang Minh (Harry) Dang, Samuel T. Gilmore, Karthik Lalwani, Richard Conk, Jeffrey Simpson, Michael C. Leopold, University of Richmond

146 Impact of Electrolyte Formulations on Potassium Deposition Morphology in Potassium Ion Batteries, Naiara A. Munich, Barnard College, Lauren E. Marbella, Columbia University

147 Elucidating Pseudomonas aeruginosa Infection Biomarkers Using Proteomics, Metabolomics, MALDI, and Cyclic-IM-MS, Samuel Krug, Saba Shahzad, William Temple Andrews, Ludovic Muller, Weiliang Huang, Angela Wilks, Maureen Kane, University of Maryland

Tuesday, November 15: E-Poster Session; 11:30 AM – 12:25 PM

148 Investigation and Identification of an Atypical Ghost Peak in a Gas Chromatography Analysis Involving Dimethylsulfoxide (DMSO) as Diluent, Van Truong,
Merck & Co., Inc.

149 Multiple Analyte Quantitation Using a Polyarc® for Universal Carbon Detection, Dana Zeigler, Arkema Inc.

150 A Comparison of Normal versus Reversed-Phase Chiral Methodology for an Agrochemical Compound, Austin Whittington, Gloria Chung, Mary Ellen McNally, FMC Corporation

151 Simple Green Synthesis and Characterization for Nano-Sized ZnO, Nazharie Brandon, Uche Udeochu, The University of the District of Columbia

152 Diffusion-Ordered NMR Spectroscopy of Sweet Sorghum Bagasse Lignin Isolated After Low Moisture Anhydrous Ammonia (LMAA) Pretreatment, Gary Strahan, Charles Mullen, Ryan Stoklosa, United States Department of Agriculture

153 Effect of Organic Solvent in Mobile Phase on Dipole-Dipole Interaction Using Biphenyl Phase, Norikazu Nagae, Tomoyasu Tsukamoto, Ryuji Koyama, Chromanik Technologies, Scott Silver, Pyvot

154 Monoclonal Antibody Analysis with Compact Capillary LC Instrumentation, Benjamin Libert, Taylor Harmon, Barry Boyes, Advanced Materials Technology, Samuel Foster, James Grinias, Rowan University

155 Tandem Column-High Performance Liquid Chromatography Achiral Separation of Non-Steroidal Anti-Inflammatory Drugs (NSAIDs), Megan Malvoisin, Joe Foley, Drexel University

156 Elucidation and Rejection of a New Process Impurity Formed in the Commercial Route to a GMP Pharmaceutical Intermediate, Alison McQuilken, Erin McCarthy, Nelo Rivera, Ben Turnbull, Justin Newman, Taylor Behre, Ryan Cohen, Samantha Burgess, Jiaxuan Yan, Zhixun Wang, Nadine Kuhl, Jimmy DaSilva, Erik Regalado, Derek Henderson, Fuh-Rong Tsay, Merck & Co., Inc.

157 Separation of Bispecific Antibody Variants Using Wide Pore, Small Particle Reversed Phase Chromatography,
Erin Wilson, Jeff Roberts, Byron DiPaolo, GlaxoSmithKline

Tuesday, November 15: E-Poster Session: 12:30 PM – 1:25 PM

158 Development of Tandem-Column Liquid Chromatographic Methods for Pharmaceutical Compounds Based on Hydrophobic Subtraction Model Simulations, Zhiyang Liu, Joe Foley, Drexel University, Yiyang Zhou, Qinggang Wang, Jonathan Shackman, Bristol Myers Squibb, Dwight Stoll, Gustavus Adolphus College

159 Spectroscopic and HPLC-UV Studies: Porphyrin Aluminum Metal-Organic Framework Reacting with Organosulfur Compound Diethyl Sulfoxide, Amarachukwu Agbim, Alexander Samokhvalov, Morgan State University

160 UHPLC-QToF Detection, Identification and Quantification of PFAS in Face Masks, James Stuart, Hannah Levasseur, Noah Liguori-Bills, Anthony Provatas, University of Connecticut

161 Selectivity Examination of Stationary Phases for Hydrophilic Interaction Chromatography (HILIC) and Use of Multivariate Analysis to Classify Materials Based on Their Chemical Modification, Clinton Corman, Cory Muraco, Michael Ye, Martin Ross, Alok Kuma, MilliporeSigma

162 Study on Matrix Preparation for MALDI-Imaging of Synthetic Polymer Samples, Artem Filipenko, Bruker

163 Analysis of Perfluoroalkyl and Polyfluoroalkyl Substances in Drinking Water: Validation Studies of EPA Method 537.1 Using the QSight 220 UHPLC/MS/MS, Cole Strattman, PerkinElmer

164 Simultaneous Quantification of Methotrexate and its Metabolites via Coated Blade Spray-Tandem MS, Diego Lopez, Ryan Micklitsch, Shane Stevens, German Gomez-Rios, Tom Kane, Restek Corporation

165 Multiplicity-Edited 19F-13C Heteronuclear Single Quantum Coherence Experiment, Sara Maute, Alexander Marchione, Elizabeth Diaz, Chemours

166 Spatially Resolved and Operando Detection of Cathode Degradation in Li-Ion Batteries, Julia Hestenes, Richard May, Lauren Marbella, Columbia University, Jurek Sadowski, Brookhaven National Laboratory, Naiara Munich, Barnard College

167 A Comparison of Techniques for Sampling of Plant Volatiles in Four Plant Varieties, Megan Harper, Jack Stuff, GERSTEL, Inc.

168 Structure Elucidation of Three Non-Ionizable Impurities Formed in an Alternate Processing Route, Xiaoyan Wang, Dawn Pierce, Carlos Amezcua, FMC Corporation

169 Development of an Open-Source Automated Derivatization Process for Fatty Acid Analysis by GC-MS, Joeachin Obasi, Mita Ray, Leah Notarfrancesco, James Grinias, Rowan University

170 Signal Enhancement of Organic Acids in Supercritical Fluid Chromatography-Mass Spectrometry Using a Piperidine-Aniline Derivatization Tag, John Boughton, Faith Wroniuk, Yih Ling Saw, Lark Perez, James Grinias, Rowan University

171 Experimental Design and Chemometrics in Undergraduate Quantitative Analysis, Emily Manna, Michelle Rasmussen, Lebanon Valley College

172 Sensing Biothiols Using Luminescent Water-Soluble Au(I) Complexes Through Photoluminescence and Electrochemical Studies, SunJin Kim, Michelle Rasmussen, Mukunda Ghimire, Lebanon Valley College

173 Large-Scale Supercritical Fluid Chromatography Purification of Unstable STING Agonist Intermediates, Dawn Sun, Dauh-Rurng Wu, Peng Li, Henry Yip, Bei Wang, Xiaoping Hou, Rulin Zhao, Huiping Zhang, James Kempson, Arvind Mathur, Bristol Myers Squibb

174 Development of a Spectroscopic Screening Tool to Determine Optimal Sampling Sites for DNA Recovery from Human Skeletal Remains, Cody Silverman, The University at Albany - SUNY, Kathleen Smith, The University of New Haven

175 The Importance of a Comprehensive Raman Spectral Library for the Identification of Minerals in Soil, Chase Notari, University of New Haven, Brooke Kammrath, Henry C. Lee Institute of Forensic Science

176 Investigating Pharmaceutical Frozen Solution Using 31P and 1H Solid-State NMR, Yong Du, Yongchao Su, Merck & Co., Inc., Jinghan Li, Raj Suryanarayanan, University of Minnesota

Tuesday Afternoon, November 15, 2022

EAS Award for Outstanding Achievements in Separation Sciences, Honoring Fabrice Gritti, Waters Corporation
Sponsored by Restek Corporation
Chair: Mark Schure, Kroungold Analytical, Inc.

1:30 177 Innovative Chromatographic Approaches to Improve the Characterization of Complex Biopharmaceutical Products, Davy Guillarme, Amarande Murisier, University of Geneva, Szabolcs Fekete, Waters Corporation
2:00 178 Three More Chromatographic Questions Needing to be Answered, Mark Schure, Kroungold Analytical, Inc.
2:30 Break
3:00 179 Fabrice Gritti: Chromatographic MythBuster, Martin Gilar, Waters Corporation
3:30 Presentation of the EAS Award for Outstanding Achievements in Separation Sciences
3:35 180 Retention Mechanism in Reversed-Phase Liquid Chromatography: Past, Recent, and Future Research Investigations, Fabrice Gritti, Waters Corporation

How to Crack the Glass Ceiling: Diversity and Inclusion in Chemistry
Chairs: Gene Hall, Rutgers University, Dana Garcia

1:30 181 How to Crack the Glass Ceiling: Diversity and Inclusion in Chemistry, Kevin Middleton, Cannabiz Labs
2:00 182 My Journey to Discovery Chemistry and Drug Regulatory Affairs, Sherrie Pietranico-Cole, Novartis Pharmaceuticals Corporation
2:30 Break
3:00 Panel Discussion
3:30 Panel Discussion

Forensics on the Go: Portable Instruments in the Field, *sponsored by SAS New England and Rigaku Analytical Devices*
Chair: Suzanne Schreyer, Rigaku Analytical Devices

1:30 183 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
2:00 184 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
2:30 Break
3:00 185 Portable Instrumentation for the Screening of Explosives, Gina Guerrera, Federal Bureau of Investigation
3:30 186 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

Novel Applications of Electron-Based Dissociation for Proteomics
Chair: Jeremy L. Balsbaugh, University of Connecticut

1:30 187 Application of Electron Transfer Dissociation in Phosphoproteomics to Identify Rewiring of Kinase Substrate Specificity, Danielle Caefer, University of Connecticut
2:00 188 ETD and Glycoproteomics, Stacy Malaker, Yale University
2:30 Break
3:00 189 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
3:30 190 Addressing Biological Questions with Electron-Transfer Dissociation and High Field Fourier Transform Ion Cyclotron Resonance Mass Spectrometry, Lissa Anderson, Chad Weisbrod, National High Magnetic Field Laboratory

Green Chemistry from Fundamentals to Applications
Chairs: Shirley Fischer-Drowos, Widener University, Christina Robb, United States Food & Drug Administration SANFL

1:30 191 Creating more Efficient, Less Hazardous Syntheses of Pharmaceutical Using the 12 Principles of Green Chemistry, Loyd Bastin, Widener University
2:00 192 Green Chemistry: From Fundamentals to Applications, John Wasylyk, Robert Wethman, Ming Huang, Bristol Myers Squibb
2:30 Break

Cannabis - CBD Product Testing
Chair: Gregory Sotzing, University of Connecticut

1:30 193 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
2:00 194 Is it Marijuana? Is it Hemp? Perhaps? A Brand's Perspective on Cannabinoid Analysis, Robert Rankin, Nice Cannabis
2:30 Break
3:00 195 Leveraging Advanced Mass Spectrometry Tools to Explore Complex Cannabinoid Distributions, Alexander Aksenov, Alexey Melnik, University of Connecticut
3:30 196 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

1:30 197 Systematic RPLC Method Development for an Important Class of Pharmaceutical Compounds Possessing Ketoamide Group, Nilusha Padivitage, Charlie Wolstenholme, Steve Castro, Brittany Kassim, Yong Liu, Jinjian Zheng, Paul Bulger, Merck & Co., Inc.
2:00 198 Exploring the Improvements Enabled by 1.5 mm ID UHPLC SPP Columns, Stephanie Schuster, Peter Pellegrinelli, Conner McHale, Benjamin Libert, Advanced Materials Technology, Inc.
2:30 Break
3:00 199 Trace Corrosion of Stainless Steel HPLC Components from Common Mobile Phase Additive and the Deleterious Impact on Separations, Jesse Bischof, SilcoTek Corporation
3:30 200 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

1:30 201 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

2:00 202 Hair, Hair Follicle, and Sebum Lipids Evaluation Using HPTLC, Ernesta Malinauskyte, Katerin Mateo, TRI Princeton

2:30 Break

3:00 203 Psilocybe: Potency of Active Compounds, Psilocybin and Psilocin. A Single Lab Validation Using HPTLC, LC/MS/MS, Sidney Sudberg, Alkemist Labs

3:30 204 HPTLC 4.0 - The Future of Planar Chromatography?, Wilmer Perera, CAMAG Scientific, Inc., Eike Reich, HPTLC Association

Probing the Microbiome Using Mass Spectrometry
Chair: Roy Martin, Waters Corporation

1:30 205 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

2:00 206 Toward High-Throughput Metabolic Phenotyping in Synthetic Biology with Desorption Electrospray Ionization-Mass Spectrometry Imaging, Hawkins Shepard, Jody May, John McLean, Vanderbilt University

2:30 Break

3:00 207 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

3:30 208 Metabolomics - A Discovery-Based Approach in the Infection Relevant Environment, Neha Garg, Andrew Mcavoy, Georgia Institute of Technology

Wednesday Morning, November 16, 2022

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

11:00 209 Infrared Chemical Imaging: Uniting Theory, Modeling and Instrumentation for New Capabilities, Rohit Bhargava, University of Illinois-Urbana-Champaign

9:00 210 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

9:30 211 Stimulated Raman Scattering Microscopy: From Label Free to Metabolic and to Super-Multiplex Imaging, Wei Min, Columbia University

10:00 Break

10:30 212 Advancing Development of Biotherapeutics: New Tools for Emerging Modalities, Rina Dukor, BioTools, Inc.

You Are What You Eat as Viewed Through the Eyes of High-Resolution Mass Spectrometry Analyses of Foods; *organized by the NJ Mass Spectrometry Discussion Group*
Chair: Gene Hall, Rutgers University

9:00 213 Fast Food to a Slow Cooked Home Meal: Non-Targeted Analyses as Seen Through the Eyes of a High-Resolution Mass Spectrometer, Gene Hall, Hyunji Yu, Alexi Ermakov, Rutgers University

9:30 214 Non-Targeted Analysis of Foods Using Liquid Chromatography High-Resolution Mass Spectrometry, Christine Fisher, Ann Knolhoff, United States Food and Drug Administration

10:00 Break

10:30 215 Authentication and Standardization of Botanicals by MALDI-TOF Mass Spectrometry, Christian Krueger, Complete Phytochemical Solutions, LLC

11:00am 216 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

9:00 217 Microelectrophoretic Separations for Studies of Microbial Stress Response, Michelle Kovarik, Trinity College

9:30 218 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

10:00 Break

10:30 219 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

11:00 220 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

Addressing PFAS Total Analytical Challenges
Chair: James D. Stuart, University of Connecticut

9:00 221 Leveraging Advances in Mass Spectrometry Instrumentation and Techniques to Address PFAS Contamination, Craig Butt, Karl Oetjen, Simon Roberts, Megumi Shimizu, SCIEX, Amy Rand, Carleton University

9:30 222 Remediation of PFAS from a Variety of Environmental Matrices, Jay Meegoda, New Jersey Institute of Technology

10:00 Break

10:30 223 Collaborative PFAS Research Using High Resolution Mass Spectrometry: Challenges and Progress, Sara Nason, Connecticut Agricultural Experiment Station

11:00 224 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

The Utility of Supercritical Fluid Chromatography in Challenging Separations
Chair: Enju Wang, St. John's University

9:00 225 Screening for Generality in Asymmetric Catalysis, Spencer McMinn, Merck & Co., Inc.

9:30 226 Chiral Method Development and Optimization on Daicel Polysaccharide Chiral Stationary Phases, Weston Umstead, Chiral Technologies

10:00 Break

10:30 227 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.

11:00 228 Application of Functionalized Cyclofructan for Enantioselective Sub/Supercritical Fluid Chromatography of Ru(II) and Os(II) Coordination Complexes, Troy Handlovic, M. Farooq Wahab, Houston Cole, Nagham Alatrash, Elamparuthi Ramasamy, Frederick MacDonnell, Sherri McFarland, Daniel Armstrong, The University of Texas at Arlington

Handheld Instrumentation and Chemometrics as Diverse Analytical Tools
Chair: Caelin Celani, University of Delaware

9:00 229 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

9:30 230 Handheld Laser Induced Breakdown Spectroscopy, Chemometrics, and the Supply Chain, Nancy McMillen, New Mexico State University

10:00 Break

10:30 231 Self-Optimizing Support Vector Machines, Peter Harrington, Ohio University

11:00 232 Chemometrics & Portable Instrumentation: From Environmental Forensics to Art Conservation, Caelin Celani, Rachel McCormick, Jocelyn Alcantara-Garcia, Karl Booksh, University of Delaware, James Jordan2, Ty Coplen, United States Geological Survey, Carolyn Chen, Eurofins PCC Insourcing Solutions, Olivia Jaeger, Noramco Inc., Amelia Speed, Army Public Health Center

Liquid Chromatography Applications for Better Separations
Chair: Pankaj Aggarwal, Merck & Co., Inc.

9:00 233 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.

9:30 234 LPH-C18: A C18 Column Alternative, Conner McHale, Advanced Materials Technology

10:00 Break

10:30 235 Clear As a Diamond: Fundamentals and Strategies for Using Porous Graphitic Carbon Columns in Liquid Chromatography, Cory Muraco, Michael Ye, Clinton Corman, MilliporeSigma

11:00 236 Development of Robust 2D RPLC-NPLC Methods to Support Simultaneous Achiral-Chiral Analysis in High-Throughput Experimentation, Steven Chin, Karissa Cruz, Kenji Kurita, Genentech

Advances in Proteomics & Metabolomics Research
Chair: Costel Darie, Clarkson University

9:00 237 Optimization of the In-Gel Sample Preparation for Mass Spectrometry-Based Proteomics, Mary Donnelly, Hannah Yorkey, Danielle Whitham, Costel Darie, Clarkson University

9:30 238 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

10:00 Break

10:30 239 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 Darie, Clarkson University, Brian Pentecost, Kathleen F. Arcaro, University of Massachusetts Amherst

11:00 240 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

PLENARY LECTURE
Wednesday, November 16, 11:45am – 12:45 PM
Paper # 241

Engineering Phage to Grow and Assemble Materials for Energy, the Environment and Medicine

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

All registered Attendees are invited to attend.

Wednesday Afternoon, November 16, 2022

Wednesday, November 16: E-Poster Session:
12:30 PM – 1:25 PM

242 Assessing the Limit of Linearity of Cannabinoid Analogs (Δ8-THC, Δ10-THC, and CBD) and their Major Metabolites in Six Commercial Homogeneous Cannabinoid Urine Screening Kits, Ashley Pokhai, Justin Poklis, Grace Williams, Carl Wolf, Virginia Commonwealth University

243 Analysis of Cannabis Plant Materials by Near Infrared (NIR) Spectroscopy and Multivariate Data Analysis for Differentiating Low-THC and High-THC Cannabis, Aaron Urbas, Walter Wilson, NIST, Ewelina Mistek-Morabito, Igor Lednev, University at Albany

244 Peak Tailing Investigation of Organic Acids in Reverse Phase Liquid Chromatography, Yiyang Zhou, Qinggang Wang, Bristol Myers Squibb

245 New Porous Monodisperse Particles for Increasing Resolution in Liquid Chromatography, Edward Faden, MAC-MOD Analytical, Yvonne Walsh, Ken Butchart, Mark Woodruff, Fortis Technologies

246 New Porous Monodisperse HPLC Particles, Edward Faden, MAC-MOD Analytical, Yvonne Walsh, Ken Buchart, Mark Woodruff, Fortis Technologies

247 Optimizing Your Ion Exchange Chromatography Instrument and Process, James King, Jodie Wall, Inorganic Ventures

248 Proteomic Analysis of Human Breast Milk using Mass Spectrometry to Reveal Protein Biomarkers for Early Breast Cancer Detection, James Lowe, Danielle Whitham, Roshanak Aslebagh, Devika Channaveerappa, Costel C. Darie, Clarkson University, Brian Pentecost, Kathleen F. Arcaro, University of Massachusetts

249 A Proteomics Investigation of Human Sera from African American Donors with Invasive Ductal Carcinoma Breast Cancer and Matched Controls, Norman Haaker, Panashe Mutsengi, Danielle Whitham, Costel C. Darie, Clarkson University, Brian Pentecost, Kathleen F. Arcaro, University of Massachusetts-Amherst

250 Structural Characterization of Snakes Skins: A Proteomics Investigation, Celeste Darie, Danielle Whitham, James Wait, Alisa G. Woods, Arzu Colak, Costel C. Darie, Clarkson University

251 Investigation of the Effects of Human Jumping Translocation Breakpoint (hJTB) Protein for Potential Use as a Cancer Biomarker, Taniya Jayaweera, Madhuri Jayathirtha, Danielle Whitham Whitham, Shelby Alwine, Hannah Yorkey, Costel C. Darie, Clarkson University

252 Low-Cost Microfluidic Platform to Assay Bacterial Biofilm Formation in Flow, Christopher Piccolo, Dylan Winkens, Tajrian Khan, Aarsh Patel, James Grinias, Lark Perez, Rowan University

253 The Impact of Pomalyst® Capsule Size Change on API Release – A Comparative Dissolution Study, Lyudmila Khalatyan, Minshan Shou, Naseer Alam, Emma Ianutolo, Evan Bekos, Bristol Myers Squibb

254 Determination of Impurity Profile for Vidaza (Azacitidine for Injection) by Forced Degradation, Matthew Feliciano, Sangeeta Dey, Minshan Shou, Evan Bekos, Bristol Myers Squibb

255 Risk and Control Strategy Development for Small Molecule Drug (API-1) Potential Aldehyde Adducts Through the Disruptive qNMR Method in Combination of Small-Scale Formulation Processing, Zhengyang (Allen) Xin, Ryan Cohen, Zhixun Wang, Kweku Amponsah-Efah, Cyndi Qixin He, Merck & Co., Inc.

256 Assessing Syringe Filter Performance for Liquid Chromatography Samples, Geoff Faden, MAC-MOD Analytical, Mark Fever, Matt James, Tony Edge, Avantor

257 Optimizing Sample Throughput in Bioanalytical Workflows, Geoff Faden, MAC-MOD Analytical, Matt James, Tony Edge, Avantor

258 The Impact of Plasmonically Driven Hot Carrier Generation on Surface Enhanced Raman Spectroscopy (SERS) Signal, Chelsea Goetzman, Zachary Schultz, The Ohio State University

259 Evaluation of Pump Performance for Long Shallow Gradient Peptide Mapping Analysis, Andrew Steere, Norris Wong, Paula Hong, Waters Corporation

EAS Award for Outstanding Achievements in Mass Spectrometry
Honoring Martin Jarrold, Indiana University
Sponsored by the American Microchemical Society
Chair: David Clemmer, Indiana University

1:30 260 David Clemmer, Indiana University

2:00 261 Advanced Mass Spectrometric Approaches to Pharmaceutical Product Development, Elizabeth Pierson, Josey Topolski, Alyssa Stiving, Dave Foreman, Huaming Sheng, Merck & Co., Inc.

2:30 Break

3:00 262 Native Ion Mobility-Mass Spectrometry for Studies of Membrane Protein Complexes, David Russell, Texas A&M University

3:30 Presentation of the EAS Award for Outstanding Achievements in Mass Spectrometry

3:30 263 Charge Detection Mass Spectrometry: Past, Present, and Future, Martin Jarrold, Indiana University

Optical Technologies in the Fight Against Disease
Session Chair: Fay Nicolson, Dana-Farber Cancer Institute

1:30 264 A-TEEM - A Spectroscopic Tool for the Rapid Characterization of Low Concentration Therapeutics, Linda Kidder, Adam Gilmore, HORIBA Scientific

2:00 265 Point-of-Care Diagnostics Devices for Targeting Emerging Biomarkers, Samuel Mabbott, Texas A&M University

2:30 Break

3:00 266 Chemically Defined Media Analysis by Absorbance-Transmission & Fluorescence Excitation Emission Matrix (A-TEEM), Andrew Lewis, Janssen

3:30 267 Exendin-4 Analog for Optoacoustic Imaging of the GLP-1 Receptor, Sheryl Roberts, Crystal Choi, Jan Grimm, Thomas Reiner, Memorial Sloan Kettering Cancer Center, Eshita Khera, Tejas Navaratna, Greg Thurber, University of Michigan

Data Integrity and Security in Pharmaceuticals
Chairs: Mariann Neverovitch, Bristol Myers Squibb, Brandy Young, University of Rochester

1:30 268 LIMS, Automation Software and Data Integrity: Why it Matters, Christine Paszko, Accelerated Technologies Laboratories

2:00 268 Data Integrity and Compliance - A Lab Scientist's Perspective, Sharla Wood, Bristol Myers Squibb

2:30 Break

3:00 270 Delivering Secure and Reliable Data with LIMS, David Manning, Thermo Fisher Scientific

3:30 271 Data Security in Gene Therapy, Lake Paul, BioAnalysis LLC

Enhanced Approaches to LC Method Development, sponsored by Waters Corporation
Chair: Isabelle Vu Trieu, Waters Corp.

1:30 272 USP <1220> and ICH Q14: Differences and Similarities, Horacio Pappa, United States Pharmacopeia

2:00 273 Phase-Appropriate Implementation of AQbD Method Development, Jinjian Zheng, Xiaohua Zhang, Pankaj Aggarwal, Merck & Co., Inc.

2:30 Break

3:00 274 Expanding the Use of AQbD Tools to Address Small Molecule Pharmaceutical Development Challenges, Fadi Alkhateeb, Paul Rainville, Waters Corporation

3:30 275 Effective Use of Strategic Analytical Quality-by-Design Tools in Stage 1 of the Analytical Procedure Lifecycle Management Workflow, George Cooney, S-Matrix Corporation

Solving your PAT Problems with Technology
Chair: James Rydzak, Specere Consulting

1:30 276 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

2:00 277 The Driving Sustainable Research: Maximizing Spectroscopy and Spectrometry Tools, John Wasylyk, Robert Wethman, Ming Huang, Bristol Myers Squibb

2:30 Break

3:00 278 Highly Selective Small Molecule Impurity Monitoring Using Molecular Rotational Resonance: From Residual Solvents to Challenging Isomers, Alexander Mikhonin, Reilly Sonstrom, Justin Neill, Brightspec, Inc.

3:30 279 Do You Really Understand Your Crystallization - The Value of PAT, Norman Wright, Brian Wittkamp, Charlie Rabinowitz, Mettler-Toledo

1+1=3: Applications of Automated Particle Imaging Combined with Raman Spectroscopy
Chair: Brooke Kammrath, University of New Haven

1:30 280 Follow that Particle: Applying Morphological and Spectral Analysis to Pharmaceutical Product Development and Process Understanding, Anne Virden, Deborah Huck-Jones, Malvern Panalytical Ltd.

2:00 281 Automated Particle Correlated Raman Spectroscopy: Case Studies from Microplastics and Pharma to Illustrate Correct Methodology for Diverse Samples, Bridget O'Donnell, HORIBA

2:30 Break

3:00 282 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

3:30 Panel Discussion

New Advances and Trends in HPLC/UHPLC
Chair: Robert Menger, Bristol Myers Squibb

1:30 283 Cannabinoid Separation: A New HPLC System Suitable for Cannabis Research, Alicia Stell, Benedict Liu, Candice Cashman, CEM Corporation

2:00 284 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

2:30 Break

3:00 285 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

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

1:30 287 Microscopy & Microanalysis of Temporary Tattoos, Michelle Miranda, Farmingdale State College-SUNY

2:00 288 Hammer Bounce, Peter Diaczuk, John Jay College of Criminal Justice

2:30 Break

3:00 289 The Application of Electron Backscatter Diffraction to the Forensic Analysis of Minerals, Tiffany Millett, John Jay College & The Graduate Center, CUNY

3:30 290 Look Before You Leap, Peter DeForest, Forensic Consultants

Proteomics & Metabolomics: Challenges and Recent Developments
Chair: Debopreeti Mukherjee, Merck & Co., Inc.

1:30 291 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

2:00 292 Enhanced Sensitivity for Peptide and Protein Applications Using the 1.5mm ID Column, Peter Pellegrinelli, Stephanie Schuster, Conner McHale, AMT

2:30 Break

3:00 293 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

3:30 294 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 Speaker

Monday, November 14, 4:15 PM

Making Progress with Social Justice and Sensing

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

Reception immediately following

Breakfast Lecture

Tuesday, November 15, 8:00 AM
Einstein Room; 1st Floor

The Dark Side of Science: Misconduct in Research

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

Plenary Lecture

Wednesday, November 16, 11:45 AM
Amphitheatre; 1st Floor

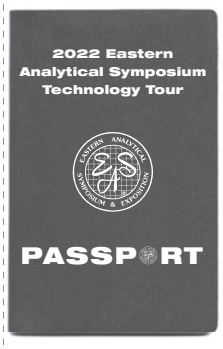
Engineering Phage to Grow and Assemble Materials for Energy, the Environment and Medicine

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

Exposition Highlights

Monday, November 14th	**10:00 AM to 6:30 PM**
Tuesday, November 15th	**10:00 AM to 5:30 PM**
Wednesday, November 16th	**10:00 AM to 4:00 PM**

Technology Tour



Your Technology Tour Passport contains the names, logos, and exhibit locations of the companies participating this year. As you visit each company, make sure to get your Passport marked! If you visit all the participating companies, you can bring your Passport to the Souvenir Booth located in Stockton C, to redeem it for a special EAS-logoed item and be entered into a daily drawing! Winners of the Monday and Tuesday drawing will receive a free 2023 EAS Full Conferee Registration and on Wednesday, the winner will receive a free 2023 Short Course Registration. Be sure to visit all the companies to give yourself the best chance to win!

On Your Mark - Glassware Calibration Challenge!

Are you a master analytical chemist whose skills can't be matched? Are you also looking to win some dough at EAS 2022? Come visit us in the Student Booth loactated on the 2nd floor, for your chance to win! This year you can compete to see who can calibrate a 25 mL volumetric flask most accurately! Stop by, calibrate a flask, report your answer, and at the end of the day, the most accurate participant will win a gift card! It's that simple.

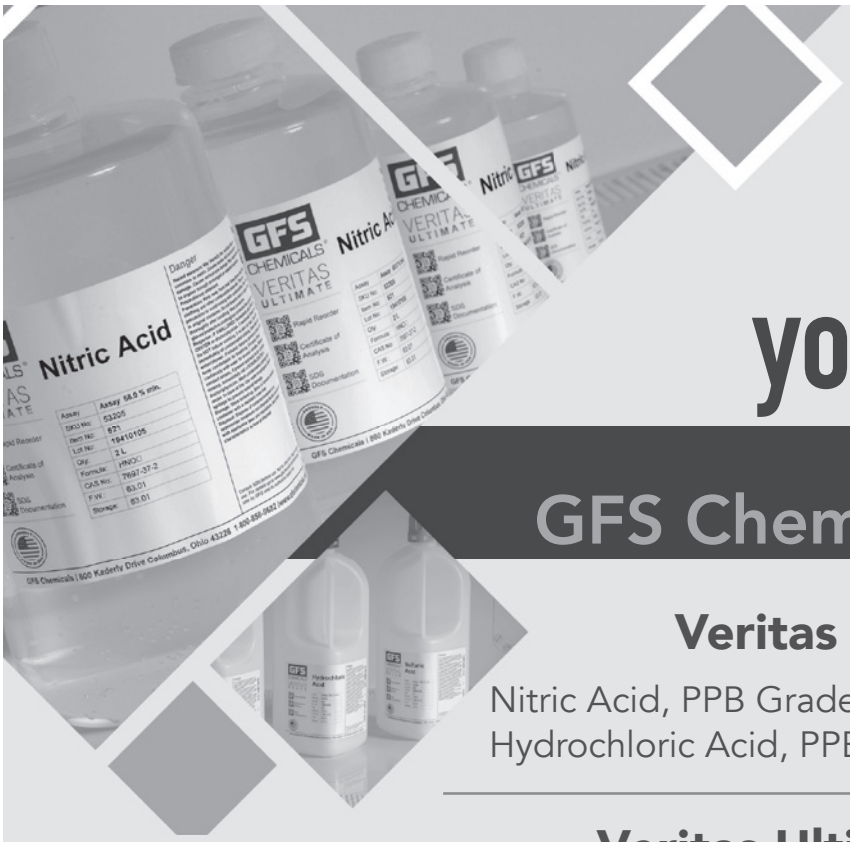
Back by popular demand: Tie Dye T-Shirts!

If money isn't enough to draw you in, while you're at the Student Booth loacated on the 2nd floor, we will also be tie-dyeing again this year and have stickers of this year's pet mascot: Butters! Stop by and say hi! Attendees can bring their own item to tie dye.

EXPOSITION MIXER

Tuesday, November 15th, 4:00 PM to 5:30 PM

EAS invites all registered attendees to join us at our annual Exposition Mixer. While visiting with the exhibiting companies and learning about the newest developments in analytical instrumentation, supplies, technologies, and services, you can sample passed hors d'oeuvres, appetizers, and refreshments. The Exposition Mixer is the perfect opportunity to connect with technology, network and end the day at EAS in a fun environment.



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Special Exposition Events

Demonstration Room

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Waters Demo Room: The Evolution of Analysis

Waters Corporation will be showcasing the Andrew+ robot and the ACQUITY Premier UPLC system on Monday, Tuesday and Wednesday, 9:00 AM - 4:00 PM in Room 109 Visit the Waters Demo Room to see our state-of-the-art technologies and to interact with our scientists. And don't miss our reception on Tuesday, 12:30 PM – 1:30 PM in the Waters Demo Room with Dr. Fabrice Gritti – recipient of the EAS Award for Outstanding Achievements in Separation Sciences.

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

Lunchtime Seminar

ThermoFisher SCIENTIFIC

Tuesday, November 15th
11:45 AM – 12:45 PM

The abstract for this event can be found on the mobile app or EAS.org.
For more information or to register please visit **www.thermofisher.com/EAS.**

Exhibitor Workshop

BRUKER

The Advantages of FT-IR, FT-NIR, and Mass Spectrometry with Polymeric and Pharmaceutical Materials

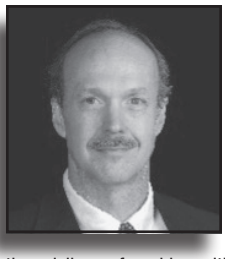
Wednesday, November 16th
9:00 AM – 1:00 PM
Room 207

The abstract for this event can be found on the mobile app or EAS.org.
Pre-registration required: **https://mbopt.bruker.com/acton/media/4159/easlunchandlearn**

2022 EAS Awards

EAS Award for Outstanding Achievements in the Fields of Analytical Chemistry, *sponsored by Bristol Myers Squibb*

On Monday, November 14, 2022, **Professor Richard M. Crooks**, University of Texas-Austin, will receive the EAS Award for Outstanding Achievements in the Fields of Analytical Chemistry.



Richard M. Crooks received a B.S. degree in Chemistry from the University of Illinois at Urbana-Champaign in 1981. During his undergraduate studies he was a member of Prof. Larry Faulkner's research group and studied adsorption of organic molecules onto mercury electrodes. His doctoral studies with Prof. Allen J. Bard at The University of Texas in Austin focused on the examination of electrochemical processes in supercritical fluids. He studied chemical sensors in the group of Prof. Mark S. Wrighton at MIT from 1987-1989. Prof. Crooks started his independent career in 1989 as an assistant professor of chemistry at the University of New Mexico and then moved to Texas A&M University in 1993. In 2005 he returned to The University of Texas where he is presently the Robert A. Welch Chair in Materials Chemistry. His interests include synthesis, characterization, and electrocatalytic properties of nanoparticles, microelectrochemical sensors, and bioelectrochemistry. He has published about 330 peer-reviewed research papers and is the recipient of several awards including the Carl Wagner Memorial Award of the Electrochemical Society, the American Chemical Society Electrochemistry Award, the Society for Electroanalytical Chemistry C. N. Reilley Award, the Pittsburgh Award in Analytical Chemistry, and the Faraday Medal of the Royal Society of Chemistry. He has had the privilege of working with about 125 graduate students and postdocs, plus a number of undergraduate students, during his career. Crooks is a co-founder of a start-up company, Galvanyx, LLC, which seeks to commercialize a sensor technology that emerged from his lab. He also founded the Gordon Research Conferences Graduate Research Seminars, which now serve thousands of graduate students per year. He splits his time between Austin and a small ranch in east-central Texas, which he shares with his wife and two German Shepherds.

EAS Award for Outstanding Achievements in Magnetic Resonance, *sponsored by Bruker BioSpin and New Era Enterprises*

On Monday, November 14, 2022, **Professor Philip Grandinetti**, The Ohio State University, will receive the EAS Award for Outstanding Achievements in Magnetic Resonance.

Philip J. Grandinetti was born and grew up in Clarksburg, WV. He received his B.S in chemistry in 1982 and M.S. in physical chemistry in 1984 at West Virginia University. At WVU, he worked on electron paramagnetic resonance studies of phase transitions in ferro- and anti-ferroelectric materials under Professor Nar S. Dalal. He moved to the University of Illinois, Urbana-Champaign, for a Ph.D. in physical chemistry under Professor Jiri Jonas. He developed and applied in-situ high-pressure nuclear magnetic resonance (NMR) methodologies to study the dynamics of elastohydrodynamic lubricants and pressure-induced phase transitions in lipids. After finishing his Ph.D., he took a post-doctoral position at the University of California, Berkeley, in the lab of Professor Alex Pines from 1989 to 1993. During this period, he made contributions to a new class of solid-state NMR methods for obtaining high-resolution spectra of half-integer quadrupolar nuclei. He began his career at Ohio State University as an Assistant Professor in 1993, was promoted to Associate Professor in 1999, and full Professor in 2005. His research interests currently focus on magnetic resonance to probe dynamics and structure in disordered and heterogeneous materials. He received the NSF CAREER award in 1995 and an NSF Creativity Award in 2004. He was a visiting Professor at the Ecole Normale Superieure de Lyon in 1999, a visiting Professor and Le Studium Researcher at the CNRS, Orléans, France in 2005-06, the Allan Cox Visiting Professor in the School of Earth Sciences, Stanford University in 2009, and a visiting Professor at the École Polytechnique Fédérale de Lausanne, Switzerland. He served on the Editorial Board of the journal Solid-State Nuclear Magnetic Resonance and was a council member of the International Society of Magnetic Resonance.

EAS Award for Outstanding Achievements in Vibrational Spectroscopy

On Tuesday, November 15, 2022, **Dr. Richard Crocombe**, Crocombe Spectroscopic Consulting, will receive the EAS Award for Outstanding Achievements in Vibrational Spectroscopy.

Richard Crocombe graduated from Oxford University (BA, MA, chemistry) and the University of Southampton (PhD, chemistry & spectroscopy) in the UK. His thesis work involved classical infrared and Raman studies of small inorganic molecules, including matrix-isolation and isotopic substitution. He moved to the US, initially for a postdoctoral fellowship, working on early applications of FT-IR including time-resolved spectroscopy and GC-IR, as well as infrared laser photolysis. He then joined Digilab (Bio-Rad) working on laboratory FT-IR instrumentation. He held numerous positions at Digilab over the years, but concentrated on product, software and applications development, including step-scan FT-IR applications, and spectroscopic imaging using two-dimensional focalplane array detectors. Following that, he had positions at Axsun Technologies, Thermo Fisher Scientific, and finally PerkinElmer, concentrating on miniature, portable and handheld spectroscopic instruments, their development and applications. These spanned the range from NIR, XRF, Raman, FT-IR to GC-MS. In 2017 he left the corporate world to set up his own consulting company, helping to commercialize new miniature spectroscopic technologies. He has been a co-chair of SPIE's 'Next-Generation Spectroscopic Technologies' conference for over ten years, and is an SPIE Senior Member. He was selected for the Williams-Wright Award for Industrial Spectroscopy in 2012, is a Fellow of the Society for Applied Spectroscopy, and was President of the Society in 2020. He has published extensively on the technologies and applications for miniature and portable spectrometers, including a comprehensive review article in Applied Spectroscopy in 2018. Richard Crocombe, Pauline Leary and Brooke Kammrath are the joint editors of the two-volume book, 'Portable Spectroscopy and Spectrometry', published by John Wiley in April 2021..

EAS Award for Outstanding Achievements in Separation Science, *sponsored by Restek*

On Tuesday, November 15, 2022, **Dr. Fabrice Gritti**, Waters Corporation, will receive the EAS Award for Outstanding Achievements in Separation Science.

Fabrice Gritti received a B.S. degree in Chemistry and Physics from the University Joseph Fourier of Grenoble (France) in 1995 and a Graduate Engineering School degree in Chemistry and Physics from the University of Bordeaux I (France) in 1997. He then became in 1998 a Professor of Chemistry, Physics, and Mathematics at the Helicopter Land Force Application School in Luc-en-Provence (France) before earning a Ph.D. in Chemistry and Physics of Condensed Matter from the University of Bordeaux I (France) in 2001. He came to the U.S. in 2002 for a post-doctoral visit at the University of Tennessee (Knoxville, TN) in the research group of Prof. Georges Guiochon. He worked there as a Research Scientist in the Department of Chemistry until 2014. In 2015, he joined Waters Corporation as a principal research scientist in the Instrument/Core research/Fundamentals department. In 2019, he became principal consulting scientist in the same institution. Dr. Gritti's research interests involve liquid/solid adsorption thermodynamics and mass transfer in heterogeneous media for characterization and design optimization of new liquid chromatography columns/instrument technologies. He developed experimental protocols that helped (1) refine the models of adsorption isotherms used in preparative chromatography for the prediction of the band profiles of neutral and ionizable compounds, (2) develop the detailed theory of band broadening along modern analytical columns in close relationship with the observations made in linear chromatography, and (3) reshape columns and instruments designs to maximize performance and sensitivity in the field of separation science by liquid and supercritical fluid chromatography. Dr. Gritti has been invited to give 30 seminars, workshops, or tutorials on general chromatographic sciences at universities, discussion groups, or at international meetings. He has delivered over 90 invited keynote lectures at international Symposia and published over 300 peer-reviewed scientific papers. Dr. Gritti was the recipient of the 2013 Chromatographic Society Jubilee Medal and of the 2019 JFK Huber Lecture Award presented by the Austrian Society of Analytical Chemistry for his important contribution to the development of chromatographic science.

EAS Award for Outstanding Achievements in Mass Spectrometry

On Wednesday, November 16, 2022, **Professor Martin Jarrold**, Indiana University, will receive the EAS Award for Outstanding Achievements in Mass Spectrometry.

Martin Jarrold obtained his PhD from the University of Warwick in the UK. He was a NATO Postdoctoral Fellow at the University of California, Santa Barbara, and then joined the Physics Research Division of AT&T Bell Laboratories in Murray Hill, New Jersey. His work at Bell Laboratories focused on investigating the physical and chemical properties of semiconductor nanoclusters, particularly silicon clusters. He moved to Northwestern University to become a Professor in the Chemistry Department. While at Northwestern he performed pioneering work developing methods to extract structural information from mobility measurements, and used ion mobility mass spectrometry to investigate the structures of peptides and proteins. In 2002 he moved to Indiana University as Professor and Robert & Marjorie Mann Chair in the Chemistry Department. At Indiana, his research group investigated phase transitions in size-selected metal nanoclusters and charge separation in natural phenomena like the bursting of bubbles. Jarrold's recent research in charge detection mass spectrometry (CDMS) has transformed mass spectrometry, allowing accurate molecular weight information to be determined for high mass ions into the gigadalton regime, such as viruses, vaccines, and nanoparticles. This work has had translational applications to assessing virus assembly and the analysis of gene therapies.

EAS Young Investigator Award

On Tuesday, November 15, 2022, **Professor Simone Sidoli**, Albert Einstein College of Medicine, will receive the EAS Young Investigator Award.

Simone Sidoli is an Assistant Professor at the Department of Biochemistry of the Albert Einstein College of Medicine, and Scientific Director of the Einstein Proteomics Core. His group develops and utilizes biochemical methods mostly based on mass spectrometry (MS) to time-resolve changes in the state, dynamics, and macromolecular interactions of chromatin during aging, cancer, and other conditions. Dr. Sidoli approached MS as a trainee in the laboratory of Dr. Careri at the University of Parma (Italy), where he established methods to detect protein biomarkers of allergens in food. In 2010, he moved to the University of Southern Denmark (Odense, DK) for his PhD in the group of Dr. Ole N. Jensen, where he developed methods for analyzing the cross-talk between histone post-translational modifications. In 2014, he joined Dr. Benjamin A. Garcia's lab, located within the Epigenetics Institute at the University of Pennsylvania (Philadelphia, PA, USA). There, he applied his MS methods to link cell signaling cascade (protein phosphorylation) with chromatin changes (histone modifications). These methods include improvements in quantification accuracy of histone codes, enhancement of throughput, quantification of chromatin accessibility and multi-omics data integration. During these years, Dr. Sidoli has been a member of the American Society for Mass Spectrometry (ASMS) and the Human Proteome Organization (HUPO). To date, Dr. Sidoli co-authored approx. 120 scientific publications, mostly in the field of proteomics and chromatin biology. He received awards like the Umberto Mortari and the Healthy Longevity Grand Challenge. His lab has been funded by the NIH, AFAR, the Leukemia Research Foundation, and the Japan Agency for Medical Research and Development. The research of Dr. Sidoli also receives financial support from the companies Merck, Relay Therapeutics and Deerfield, and non-financial collaboration from CelVivo IVS, Medivac, and Immagina Biotechnology. Finally, Dr. Sidoli's lab is member of the Einstein Cancer Center, the Nathan Shock Institute for Aging Research, the Einstein-Rockefeller-CUNY Center for AIDS Research and the Einstein Institute for Neuroimmunology and Inflammation.

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

On Wednesday, November 16, 2022, **Professor Rohit Bhargava**, University of Illinois-Urbana-Champaign, will receive the New York Society for Applied Spectroscopy Gold Medal Award.

Rohit Bhargava is the Founder Professor of Bioengineering at University of Illinois Urbana-Champaign. He received a B. Tech. dual degree (Chemical Engineering and Polymer Science) from the Indian Institute of Technology, New Delhi and his PhD from Case Western Reserve University (Macromolecular Science and Engineering) under Prof. Jack L. Koenig, developing IR imaging techniques applied to polymer composites. Following his PhD, Prof. Bhargava was a Research Fellow at the National Institutes of Health with Dr. Ira W. Levin developing IR imaging tools for molecular digital pathology. Prof. Bhargava joined University of Illinois in 2005. Prof. Bhargava research in optical theory and numerical methods formed the theoretical foundation of IR imaging leading to new instrumentation and technologies. He has opened the field of using high performance IR imaging for pathology and led the first large-scale validation of spectroscopic imaging for prostate cancer pathology, which is often cited as the gold standard protocol in the field. His current research interests include developing IR chemical imaging, high quality tissue classification using artificial intelligence methods including deep learning, nanoscale IR chemical imaging, and applications in cancer pathology. He has authored and co-authored more than 200 publications and book chapters. Prof. Bhargava's research has been recognized by several national and international awards: Pittsburgh Spectroscopy Award (2022), Ellis R. Lippincott Award, Optica, Coblentz Society, and Society for Applied Spectroscopy (2021), Fellow, American Association for the Advancement of Science (2020), Beckman Vision and Spirit Award (2017), Agilent Thought Leader Award (2016), Fellow, American Institute for Medical and Biological Engineering (2015), Fellow, Society for Applied Spectroscopy (2015), William F. Meggers Award, Society for Applied Spectroscopy (2014), Craver Award (2013), and FACSS Innovation Award (2012).

New York Microscopical Society Ernst Abbe Award, *sponsored by the New York Microscopical Society*

On Monday, November 14, 2022, **Professor Manu Prakash**, Stanford University, will receive the New York Microscopical Society Ernst Abbe Award.

Manu Prakash is being honored for his contributions to the field of microscopy, especially through his development of the Foldscope. The Foldscope is an optical microscope made from simple components, including a sheet of paper and a lens that costs less than $1 to build. It was designed to be portable and durable, while performing on par with conventional research microscopes (140X magnification and 2 micron resolution). As part of the "frugal science" movement, the Foldscope enables communities around world to experience the wonders and excitement of microscopy. Manu Prakash is a physical biologist applying his expertise in soft-matter physics to illuminate often easy to observe but hard to explain phenomena in biological and physical contexts and to invent solutions to difficult problems in global health, science education, and ecological surveillance. His many lines of research are driven by curiosity about the diversity of life forms on our planet and how they work, empathy for problems in resource-poor settings, and a deep interest in democratizing the experience and joy of science globally. His lab works on "Frugal science" – building, designing. and deploying tools for scientific explorations globally. His work in frugal science spans disciplines with applications in global health, environmental monitoring and biodiversity discovery. The lab works in an open-source framework; so much of our work in frugal science is rapidly available to communities around the world and hence can be scaled. We have demonstrated that in the past with deployments of tools like Foldscope, Paperfuge, Octopi, Planktonscope and Pufferfish.

2022 EAS Student Awards

Sponsored by Merck & Co., Inc.

EAS continues to actively support a Student Awards program to recognize students involved in research in the broad field of analytical chemistry. 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. 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. Philip 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

Lexi McCarthy
The Ohio State University
Nominated by Prof. Philip 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 11:30 AM – 12:30 PM.

WORKSHOPS

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

Tuesday, November 15, 12:15 PM - 1:15 PM
Career Change – Unlocking your Potential
Reno DeBono, Ph.D., QC Manager – Analytical & Metals, EMD Electronics
Location: 3rd Floor

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

EMPLOYMENT BUREAU

EAS continues to be invested in connecting employers with skilled scientific minds. New for this year's symposium, all registered and onsite hiring manager's will have an opportunity to submit positions for posting on the employment bureau bulletin board. For consideration, submit your single page job posting including clearly identifiable on-site contact information to job_postings@eas.org. EAS will print and post the job postings on the employment bureau bulletin board for easy access to attendees. Using the provided posting contact information, EAS attendees will be able to contact the hiring managers directly to express their interest or to provide your application materials. There is no fee to post jobs.

Employer:

- Advance registration of employers is permitted for the Employment Bureau. Someone from your company must register and attend EAS. Job postings may be submitted on your Company stationery (please include job title, description, location, and contact information).
- Job postings will be accepted any time after your company has registered for EAS. These may be submitted in a hard copy form with the Employment Bureau on site.

Employee:

- Postings of current job openings will be available for private review in Room 201 located on the 2nd Floor.
- Access to these postings is offered Monday through Wednesday from 9:00am to 4:00pm to all registered attendees of EAS.
- If you wish to contact an employer regarding a job posting, you may contact them directly using the information provided on the job posting.
- Room 203 is available from 9:00am to 4:00pm for on-site interviewing.
- EAS will not be collecting resumes; you can submit it directly to the contact person per the instructions listed for that job opening.

ALVIN BOBER SEMINAR SERIES

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

Cheese Chemistry
Monday, November 14; 10:00 AM to 12:00 PM
Location: Princeton Room; 1st Floor

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; 10:00 AM to 12:00 PM
Location: 3rd Floor

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 questions 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.

Visit These Exhibitors at the 2022 EAS

Last updated October 31, 2022

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ACS New York Section
Advanced Materials Technology
Affinisep USA LLC
Agilent Technologies
Alliance Calibrations Group
ALMA
Axios Research
Bruker
CDS Analytical, LLC
Chromatography Forum of the Delaware Valley
Coblentz Society
DAICEL Chiral Technologies
Dissolution Technologies
ELGA LabWater
GERSTEL, Inc.
GFS Chemicals
Infinity Laboratories
Inorganic Ventures
JEOL USA, Inc.
Labcompare
LCGC and Spectroscopy
MAC-MOD Analytical
Mandel Scientific Inc.
Martel Instruments LLC
Mestrelab Research
Metrohm USA
Mettler Toledo
MicroSolv Technology Corporation
MilliporeSigma
Molnár-Institute for Applied Chromatography
New Jersey - Mass Spectrometry Discussion Group
New York Microscopical Society
NJ Labs
Organomation
Park Systems Inc.
PDR-Separations
Peak Scientific, Inc.
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For more information, please contact Janine Kishbaugh at exposition@eas.org or 610-509-2354

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