

February 2025 Newsletter



Deadline Approaching: 2025 SAS Gold Medal Award Nominations

Nominations for the 2025 New York/New Jersey Society for Applied Spectroscopy (SAS) Gold Medal Award are being accepted. A nomination letter(s), a biographical (CV) sketch, and a list of publications can be submitted directly to the SAS [website](#). Nominations must be **received by 15 February 2025**. The award symposium will be held at the Eastern Analytical Symposium (17–19 November). For more information about the Gold Medal Award Program and previous award winners, go to [SAS Awards](#).

Contributed by Deborah A. Peru, NY/NJ SAS Secretary

Charting Your Course: An Early Career Exploration Roundtable

If you are an Early Career member planning to go to Pittcon this year, consider attending the special session being organized by two of our committee members, Fay Nicolson and Sam Mabbott. The session is titled “So Many Opportunities - Demystifying Career Paths for Early Career Spectroscopists”, and it will take place on Tuesday, 4 March, from 1:30–3:00 PM in Room 204A. This session is considered a “Networking Roundtable”, which means there will be opportunities for attendees to ask lots of questions and to share their personal perspectives on the session’s topic. Of course, there will be lots of valuable information and insights shared by the presenters as well. Please come out and support our session if you plan to be at Pittcon in Boston!

Contributed by Anthony Stender, SAS Early Career Interest Group

Pittcon 2025: Key Events and Information for SAS Members

Pittcon 2025 is coming up fast ... 1–5 March at the Boston Convention and Exhibition Center. Come visit the SAS booth (327)! Here is a list of symposia, short courses, and network discussions that may be of interest to our members. For the latest information on Pittcon, visit the official conference [website](#).

Symposia

Sunday, 2 March 2025

Around the World and Across the Spectrum: New Directions in Art and Archaeology Analysis Using Portable Devices

Room 109B, 9:30 AM–11:40 AM EST

Organizer: Mary Kate Donais

- Marcos Martinon-Torres –University of Cambridge, “Reverse Engineering Archaeological Traditions Using Portable Devices: Chemical and Geometric Morphometric Analysis of Pre-Hispanic Ceramics from Nariño, Colombia”
- Laure Dussubieux–Field Museum, “Portable XRF and Mobile Raman in Museum Environment”
- Aaron Shugar – Queen's University, “Development and Use of Portable XRF for Scanning Art and Archaeological Artifacts at Sub-Micron Resolution”
- Mary Kate Donais – Saint Anselm, “Portable Spectrometry Characterization of Etruscan Weaving Tools: Exploring Women’s Roles, Migration, and Ceramic Production”

Next-Generation Vibrational Spectroscopy: The Path Ahead

Room 104B, 9:30 AM–12:00 PM EST

Organizers: Justyna Grabska

- Christian W. Huck – University of Innsbruck, “The Near-Infrared and Imaging Spectroscopy in Food and Bioanalysis: Current and Future Directions”
- Juergen Popp – Leibniz Institute of Photonic Technology, “Raman Spectroscopy as a Versatile Analytical Tool in Biomedical Research and Clinical Diagnostics”
- Miriam Unger – Photothermal Spectroscopy Corp., “Multimodal Sub-Visible Vibrational Micro-spectroscopy of Biopharma and Environmental Particulates”
- Boris Mizaikoff – Ulm University & Hahn-Schickard, “Mid-Infrared Sensors in Clinical Practice: Tool or Dream?”
- Igor Lednev – University at Albany, State University of New York “Raman Hyperspectroscopy of Saliva and Machine Learning for Sjögren’s Disease Diagnostics”
- Justyna Grabska – University of Innsbruck, “Efficient Microplastic Detection in Environmental Matrices: Portable NIR Spectroscopy for Soil Analysis”

Shining New Light: Entrepreneurs in Vibrational Spectroscopy (Coblentz Society Organized Session)

Room 106, 2:30 PM–4:40 PM EST

Organizer: Luisa Profeta

- Belinda Pastrana – Protein Dynamic Solutions, Inc., “A Compelling Case Towards De-Risking Pre-Clinical Candidate Selection, while

- Accelerating Speed to Market: A Transformative Solution for the Biopharma Industry”
- Don Kuehl – Cerno Bioscience, “My Personal Journey as a Entrepreneur in Vibrational Spectroscopy and Analytical Chemistry”
- Ryan Priore – Thorlabs, “Entrepreneurial Pathways in Spectroscopy and Hyperspectral Imaging: Insights from the Laboratory to the Boardroom”
- Marshall Scott – Alakai Defense Systems Inc., “UV Standoff Raman for Threat Chemical Detection, from Zero to Market.”
- Richard Crocombe – Crocombe Spectroscopic Consulting, “Start-ups, Established Companies, Mergers and Acquisitions”

Nano-Infrared and Nano-Raman Imaging in Biology, Chemistry and Material Science

Room 107B, 2:30 PM–4:40 PM EST

Organizer: Dmitry Kurouski – Texas A&M University

- Andrea Centrone – National Institute of Standards and Technology, “Understanding Signal Intensity and Spatial Resolution in Resonance-Enhanced AFM-IR: Experimental and Theoretical Insights”
- Ayanjeet Ghosh – The University of Alabama, “Spatially Resolved Infrared Spectroscopy of Amyloid Aggregates in Alzheimer’s Disease”
- Renato Zenobi – ETH Zurich, “Nanoscale Chemical Imaging using Tip-Enhanced Raman Spectroscopy”
- Zachary Schultz – The Ohio State University, “Super-Resolution SERS spectral Imaging”
- Nan Jiang – University of Illinois Chicago, “Single-Molecule Spectroscopic Probing of N-heterocyclic Carbenes on a Two-Dimensional Metal”

Monday, 3 March 2025

Detection and Analysis of Counterfeit Pharmaceutical and Cannabis Products Via Portable Instruments in the Field

Room 209, 9:30 AM–11:40 AM EST

Organizer: Richard Crocombe

- *(Tentative)* David Jenkins—FHI 360, "Efforts Towards Securing the Supply Chain: Challenges with Falsified / Substandard Medications and the Role of Portable Spectrometers"
- *(Tentative)* Hannah LaRoy—U.S. Food and Drug Administration, "Analysis of Drug Products by an International Mail Facility Satellite Laboratory Equipped with Rapid Screening Devices"
- Brooke Kammrath—University of New Haven, "Combating Counterfeit Cannabis Edibles with Laboratory and Portable Spectroscopy"
- Pauline E. Leary, Nobel, Inc. "Fentanyl – A Deadly Counterfeit Problem"

Technical Developments and Applications of Mid-infrared Photothermal (MIP) Microscopy

Room 107A, 9:30 AM–12:00 PM EST

Organizer: Caitlin Davis

- Cassio Lima – University of Liverpool, “Monitoring the Uptake of Microplastics by Cells with Vibrational Spectroscopy”
- Yeran Bai – University of Arizona, “Advancing Metabolic Understanding Through Photothermal Infrared Microscopy in Biomedical Research”
- Michelle Sander – Boston University, “Time-Resolved Mid-Infrared Photothermal Imaging”

New Life Science Applications of Vibrational Spectroscopy

Room 107A, 2:30 PM-5:00 PM EST

Organizer: TBA

- David Punihaole – University of Vermont, “Raman Chemical Imaging as a Tool to Visualize the Molecular-level Interactions and Structural Dynamics of Biological Macromolecules in Cells”
- Cassio Lima – University of Liverpool, “Monitoring the Uptake of Microplastics by Cells with Vibrational Spectroscopy”
- Madeline Harper (Hatch) – University of Vermont, “Using Low Frequency Vibrations to Characterize the Long-Range Structure of Amyloid Fibril Polymorphs”
- Rahuljeet Chadha – California Institute of Technology (Caltech), “Shining a Light on Metabolic Susceptibilities in Diabetes-Induced Endothelial Dysfunction Using SRS Microscopy and Transcriptomics”
- Steven Quarin – University of Cincinnati, “Expanding the Capabilities of Reagentless SERS Sensors through Machine Learning and Automated Design”
- Roy Goodacre – University of Liverpool, “Scaling Metabolomics Down to the Single Cell Level with O-PTIR Spectroscopy”
- Rusul Mustafa – University of Vermont, “Polymeric Vectors for Gene Therapy Applications: An In-depth Structural Analysis of Nucleic Acid Interactions using Vibrational Spectroscopy”

Mid-infrared Photothermal (MIP) Microscopy: A New Frontier of Chemical Imaging

Monday, March 3, 2025, Room 109B 2:30 PM – 5:00 PM EST

Organizer: Ji-Xin Cheng

- Caitlin Davis – Yale University, “Optical Photothermal Infrared Imaging Using Metabolic Probes in Live Biological Systems”
- Takuro Ideguchi – The University of Tokyo, “Mid-infrared Photothermal Quantitative Phase Microscopy for High-speed and High-resolution Chemical Imaging”
- Roy Goodacre – University of Liverpool, “Scaling Metabolomics Down to the Single Cell Level with O-PTIR Spectroscopy”

Tuesday, 4 March 2025

Vibrational Spectroscopy in Defense and Security (Coblentz Society Organized Session)

Room 155, 9:30 AM – 12:00 PM EST

Organizers: Luisa Profeta and Michael Hargreaves

- Chris Kendziora – Naval Research Laboratory, “Standoff Detection of Threat Chemicals by Active Infrared Backscatter Imaging”

PAI-NET Cutting-edge IR Spectroscopy for Studying Organic Thin Films, Sensing Surfaces and Material Recycles

Room 109B, 9:30 AM – 12:00 PM EST

Organizer: Takeshi Hasegawa

- Takeshi Hasegawa – ICR, Kyoto University, “Process of Material Recycle of PTFE Analyzed by Infrared Spectroscopy”
- Kenichi Ataka – Freie Universität Berlin, “Surface Enhanced IR Absorption Spectroscopy (SEIRAS) as a Tool to Investigate Interaction Between Protein and Membrane”
- Takayuki Oka – ICR, Kyoto University, Japan, “Aggregation Properties of Liquid Crystalline Organic Semiconductors in Thin Film Revealed by Infrared Spectroscopy”
- Takao Yasui – Institute of Science, Tokyo, “Cutting-edge IR Spectroscopy for Studying Organic Thin Films, Sensing Surfaces and Material Recycles”
- Sae Nagai – Sony Semiconductor Solutions Corporation, “Substrate-Dependent Orientation Barriers of Organic Thin Films Revealed by pMAIRS”
- Boris Mizaikoff – Hahn-Schickard & Ulm University, “Infrared Cascade Laser Spectroscopy: Potential and Challenges”
- Toru Shimada – Hirotsuki University, “Infrared Absorption Enhancement on Periodic Nanostructures”

Artificial Intelligence and Vibrational Spectroscopy: From the Cutting-edge Research to Practical Applications

Room 211, 2:30 PM–5:00 PM EST

Organizers: **Jürgen Popp**

- Jürgen Popp – Leibniz Institute of Photonic Technology, “Enhancing Medical Diagnostics with AI-driven Raman Spectroscopy”
- Igor Lednev – University at Albany, State University of New York, “New Horizons in Forensic Applications of Raman Spectroscopy Enabled by Artificial Intelligence”

Wednesday, 5 March 2025

Williams-Wright Award (Presented by The Coblenz Society)

Room 104A, 8:30 AM–11:40 AM EST

Luisa Profeta

- David Schiering – 908 Devices, Inc., “Fostering the Application of Vibrational Spectroscopy through New Instruments and Methods”
- Christopher Brown – 908 Devices, Inc., “Dave is Delightful, and Other Tales from the Fringe”
- Keith Carron - SKM Instruments, “45 Years of Developing Raman Instrumentation: Cadillacs to Big Macs”
- Bob Messerschmidt – COR Health Inc., “A 40 Year Spectroscopy Hardware Journey”

- André Sommer – Molecular Microspectroscopy Laboratory, “From Extraterrestrial to Intracorporeal: 45 Years of Molecular Spectroscopy and the Molecular Microspectroscopy Laboratory”

SAS/Coblentz Society Pittcon 2025 Short Course Offerings

Saturday, 1 March 2025

SC-4914 ABC to PMP: A Project Management Crash Course (LAPTOP HIGHLY RECOMMENDED)

Luisa Profeta – Rigaku Analytical Devices
Room 135A, 8:30 AM – 5:00 PM EST

SC-4777 Modern Raman Microscopy for Applications in the Material and Life Sciences

Alexander Rzhevskii – Thermo Fisher Scientific
8:30 AM – 5:00 PM EST

Monday, 3 March 2025

SC-4775 Problems with FT-IR Spectra and How to Avoid Them (LAPTOP REQUIRED)

Ellen Miseo – Miseo Consulting
1:00–5:00 PM EST

Networking/Roundtable of Interest

Tuesday, 4 March 2025

NT-10 So Many Opportunities - Demystifying Career Paths for Early Career Spectroscopists

Room 204A, 1:30 PM–3:00 PM EST
Fay Nicolson - Dana-Farber Cancer Institute; Samuel Mabbott – Texas A&M University

Contributed by Gloria Story, 2024 SAS President and Richard Crocombe
Editor of *Applied Spectroscopy Practica*

Hear from Pittcon President Heather Juzwa!



Heather Juzwa, a member of the Early Career planning committee, is also the 2025 President for Pittcon. Congratulations to Heather for her many years devoted to Pittcon as well as for this accomplishment! Heather was interviewed last year about Pittcon 2025 and what it means to her to be the president of Pittcon. We encourage everyone to check out the interview at the [Pittcon website](#). We also encourage our members, especially those in the Northeast, to consider going to Pittcon this March. Pittcon is always a wonderful opportunity to connect with scientists!

Contributed by Anthony Stender, Early Career Interest Group

Join the Newsletter Team!

The SAS Newsletter committee is seeking dedicated volunteers to join our team to help create the monthly SAS newsletter.

What's in it for you?

- Connect with fellow SAS enthusiasts: **Build valuable relationships within the Society.**
- Make a meaningful impact: **Contribute to a vital resource for the entire SAS community.**
- Gain valuable skills: **Develop your writing, editing, and communication abilities.**
- Commitment: **A modest time commitment of a few hours per month is all that's required.**

No experience needed! **We welcome individuals from all backgrounds and skill levels.**

If interested, please contact Konnor Jones at konnorkjones@gmail.com to learn more and get involved.

Contributed by Konnor Jones, SAS Newsletter Editor

SAS Joins BlueSky!

We're excited to announce that SAS is now on Bluesky!

Follow us at **@SASspectroscopy** for the latest updates on spectroscopy research, insights from our experts, and engaging discussions within the scientific community.

Click the link [here](#) to join the SAS spectroscopy community on Bluesky!

Contributed by Konnor Jones, SAS Newsletter Editor



“The 2024 Generation” in *Nature Cancer*: An Open Access Article

Fay Nicolson, chair of the Early Career committee, was recently asked to share her viewpoint in the December 2024 issues of *Nature Cancer*. In Fay’s section of the viewpoint, which is titled “Crafting a Lab for Success”, she explains the challenges and accomplishments she experienced in her first nine months as an assistant professor. Fay’s viewpoint, as well as those of several other young scientists, can be found [here](#). This is an open access article, so please take a few minutes to check out the many insightful viewpoints that are shared by “The 2024 Generation”. And congratulations to Fay for being asked to share her viewpoint!

Contributed by Anthony Stender, SAS Early Career Interest Group

Remembering Henry Matsch

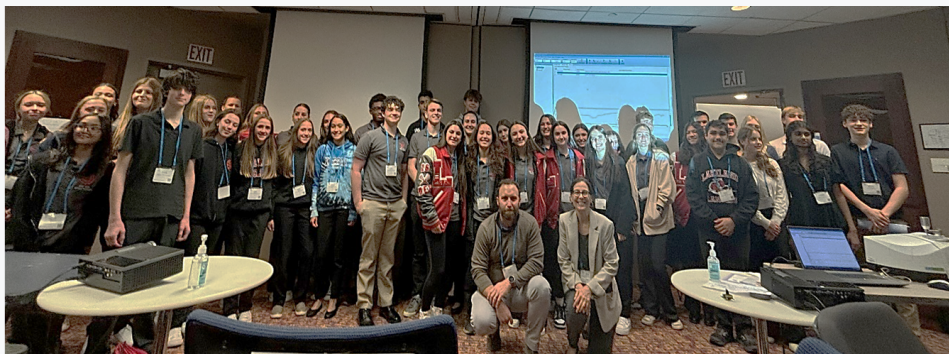
Prof. Henry H. Mantsch, a renowned scientist who made significant contributions to the field of biomolecular spectroscopy, particularly in the application of vibrational spectroscopy to the study of biomolecules and the detection of diseases, has sadly passed away. An account of his remarkable life and contributions can be found [here](#).

Contributed by Rina Dukor

Inspiring Young Scientists at the Eastern Analytical Symposium

On Wednesday, 20 November 2024, Ms. Peru hosted a seminar for high school STEM research scientists at the Eastern Analytical Symposium in Plainsboro, NJ. Over 50 students from the Lakeland Regional High School Research program and the Kinnelon STEM program in NJ attended the

seminar. The first part included a lecture on careers in science and technology that highlighted various research experiences and projects available in the petrochemical, specialty chemical, and consumer products industries. The second half featured Justin Linehan from Perkin Elmer, who brought a Spectrum-Two FT-IR for demonstration purposes and discussed the importance of good sampling techniques and how to collect a proper spectrum. Lakeland has recently installed a Spectrum-One FT-IR in their laboratory, and many students are interested in using the instrument to identify microplastics collected in local lakes.



High School Students that attended Ms. Peru's seminar.

The seminar was an overwhelming success, and the students learned more about careers in science and the importance of proper sample preparation techniques when analyzing microplastic-type materials.

Anyone interested in volunteering time to help these young researchers should contact Jared Slusarczyk, lead STEM instructor at Lakeland High School: jslusarczyk@lakeland.k12.nj.us.

Contributed by Deborah A. Peru, NY/NJ SAS Secretary