

Society for Applied Spectroscopy – 2021 Awards

Barbara Stull Graduate Student Award

Recognizing graduate students for outstanding research in spectroscopy. Presented in honor and memory of longtime SAS staff member and colleague Barbara L. Stull.



Jeremy Schultz

Recognizing outstanding research efforts around chemically imaging single molecules using tip-enhanced Raman spectroscopy (TERS).

Jeremy Schultz is a PhD student in Chemistry at the University of Illinois at Chicago. He received his Bachelor of Arts in Chemistry from Northwestern University in 2014, where he was fortunate to take a course taught by Prof. Richard Van Duyne, who discovered surface-enhanced Raman spectroscopy. The ability to obtain Raman spectra of a single molecule fascinated him, as this represents the potential to study chemistry and nanostructures at the spatial limit, that of one individual species. As a result, following two years working as an analytical chemist in industry, he began his PhD studies with Asst. Prof. Nan Jiang. His work involves the development and application of a cryogenic ultrahigh vacuum scanning tunneling microscope coupled with tip-enhanced Raman spectroscopy (TERS).

Jeremy uses this unique tandem technique to perform simultaneous nanoimaging and nanospectroscopy to study molecules, nanostructures, and low-dimensional materials on surfaces with supreme spatial resolution, the ångström-scale. This work has resulted in five first author and twelve total publications. His work has been recognized by awards in different scientific communities. He received the Wayne B. Nottingham Prize in the 81st Physical Electronics Conference 2021 and also received a Graduate Research Award from the American Vacuum Society (AVS) and the Nanometer-scale Science and Technology Division Graduate Student Award at the AVS 66th International Symposium and Exhibition along with others. He received a Best Poster Award at the 26th International Conference on Raman Spectroscopy in 2018 in Jeju, Korea. He recently published a review in *Applied Spectroscopy* that examines the development and growing applications of TERS.

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SAS Atomic Technical Section Student Awards

Recognizing outstanding student research in the area of Atomic Spectroscopy



Kevin Finch

Kevin Finch is a current 4th year Ph.D. candidate at Texas Tech University (TTU) studying under the guidance of Prof. Dr. Gerardo Gamez. Prior to attending graduate school, he earned a dual major B.Sc. degree at Western New Mexico University in Silver City, NM, USA where he graduated cum laude with honors in Chemistry and Applied Mathematics. During this time, he performed proteomic research on tarantula hawk-wasp venom using novel mass spectrometry techniques with Prof. Dr. Shawn White and collaborated with Prof. Dr. Jennifer

Brodbelt who has a research group based at The University of Texas at Austin (UT Austin). His current research involves laser scattering and optical emission spectroscopy diagnostics to elucidate the fundamental parameters of various chemical analysis plasmas (e.g. glow discharge, dielectric barrier discharge, etc.) under several common operating conditions. One of the achievements he is most proud of is the design, construction, and characterization of a novel transmission-type triple grating spectrograph to allow for the improved diagnostics of low-density plasmas, as are commonly used for chemical analysis. His research has resulted in 6 peer-reviewed publications (2 first-author and 4 co-author) along with a pair of 2nd-place poster awards (one in the atomic spectroscopy poster section at SciX in 2019 and the other in the analytical chemistry poster division at TTU in 2020). He was also recently recognized by being the 2021 recipient of the Edward Steers Bursary Award by the Association of British Spectroscopists, which provides travel funding to attend a recognized scientific meeting or visit a place of learning internationally. In addition, he has received the Ming Sun Family Graduate Research Scholarship, the Ginny Shen Lin Endowed Scholarship, and an Outstanding Teaching Assistant Award for General Chemistry, all given by the TTU Department of Chemistry and Biochemistry in 2020. Furthermore, his dedication to scientific advancement was highlighted in 2019 by being the recipient of the Love of Learning Award, given by the honor society Phi Kappa Phi. In his spare time, he enjoys hiking, backpacking, fishing, hunting, and exploring nature's beauty that is all around us.



Sabrina Funke

Sabrina Funke is a current third year Ph.D. candidate in Analytical Chemistry in the research group of Prof. Dr. Uwe Karst at the University of Münster, where she also earned her B.Sc. degree in 2016 and her M.Sc. degree in 2018. During her master studies, Sabrina carried out a five months research internship at the University of Technology in Sydney under the guidance of Prof. Philip Doble. Her research was directed towards sensitivity improvements in immunohistochemistry-assisted applications of laser ablation-inductively coupled plasma-mass spectrometry (LA-ICP-MS). In her current work, Sabrina focuses on the development and application of

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SAS Atomic Technical Section Student Awards (continued)

molecular and elemental imaging techniques. Using LA-ICP-MS, she specifically targets the investigation of gadolinium retention within healthy organisms caused by gadolinium-based MRI contrast agents. The challenging aspects of this work are the balance between spatial resolution and detection sensitivity and the performance of accurate quantification, considering extremely wide dynamic ranges in imaging techniques. To address these challenges, Sabrina's work concentrates on the hyphenation of high-resolution laser ablation with high-sensitivity mass spectrometry and approaches different ways of data processing to improve accuracy in quantitative analysis.



Sarah Meyer

Sarah Meyer is a third year PhD student at the University of Technology Sydney (UTS), Australia. Under the supervision of Distinguished Professor Philip Doble, she is investigating the underlying chemical principles of radioresistance in cancer cells using immuno-mass spectrometry and elemental bio imaging. Sarah completed both her bachelor's (2016) and master's degree (2018) in Chemistry at the University of Münster, Germany in the group of Professor Uwe Karst. In 2017, Sarah was a visiting researcher at UTS where she conducted fundamental research on the effect of sensitivity when downscaling liquid chromatography column dimensions for inductively coupled plasma-mass spectrometry (ICP-MS) detection. In 2019 she commenced her PhD studies at UTS and joined the "Atomic Medicine Initiative" founded by Distinguished Professor Philip Doble. Sarah is devoted to developing novel and improved methods to understand the relationship between manganese and radioresistance in cancer cells and uses antibody-nanoparticle conjugates to identify and map manganese transporters in the tumor microenvironment. Her work on providing optimized methods for the characterization of upconversion nanoparticles by single-particle (SP) ICP-MS was awarded the "paper of the month" by the Faculty of Science at UTS.



Stefan Wagner

Stefan Wagner is currently a research associate with the Chair of General and Analytical Chemistry at the Montanuniversität Leoben, Austria, while concomitantly finalizing his Ph.D. studies in Analytical Chemistry under the supervision of Prof. Dr. Thomas Prohaska at the University of Natural Resources and Life Sciences Vienna (BOKU), Austria. Prior to his graduate studies, Stefan received a B.Sc. (2014) and M.Sc. (2017) degree in Environmental Sciences from BOKU, both passed with distinction. During his Ph.D. studies, he has specialized in method development and validation of diffusive gradients in thin films (DGT), a gel-based passive sampling technique, in combination with laser ablation- and multi collector inductively coupled plasma mass spectrometry, as well as planar

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SAS Atomic Technical Section Student Awards (continued)

fluorescent sensors, so-called planar optodes. The combined techniques are employed for the targeted analysis of elements and isotope ratios in bioavailable fractions of nutrients and contaminants in soil, along with chemical imaging of solutes in multidisciplinary applications ranging from terrestrial biogeochemistry to materials science and biomedical research. The analytical innovativeness of his work has been recognized with two best student talk awards at the 2018 ICP-User Meeting in Berlin, Germany, and the 2019 ASAC Forum in Linz, Austria, as well as one best poster award at the 2019 European Winter Conference on Plasma Spectrochemistry in Pau, France. In 2020, Stefan was further invited to give a talk at the TrisKem International User meeting to provide his expert knowledge on the DGT technique. In the future, he plans to pursue his scientific career and therefore aims at applying for an international postdoc grant upon successful completion of his Ph.D. studies in 2021.

Lester W. Strock Award

Established by the SAS New England section to recognize an author or authors of an outstanding paper or series of papers.



Uwe Karst

Recognizing contributions to the field of analytical atomic spectrometry, research across multiple disciplines, including areas such as medical, pharmaceutical, and environmental, and 39 papers on understanding Gd-based contrast agents from both a medical and environmental aspects.

Uwe Karst holds the Chair of Analytical Chemistry at the University of Münster, Germany, since 2005. Previously, he was appointed as Chair of Chemical Analysis at the University of Twente, The Netherlands, from 2001 until 2005. He is author of more than 350 publications in peer-reviewed scientific journals.

Uwe's research interests cover different aspects of mass spectrometry and hyphenated techniques, ranging from electrochemistry/mass spectrometry for the simulation of the oxidative metabolism of drugs to metal speciation analysis and elemental as well as molecular mass spectrometric bioimaging.

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William F. Meggers Award

*Recognizing the author(s) of an outstanding paper(s) appearing in Applied Spectroscopy.
Special thanks to Dr. Peter R. Griffiths for his generous sponsorship of the Meggers Award.*

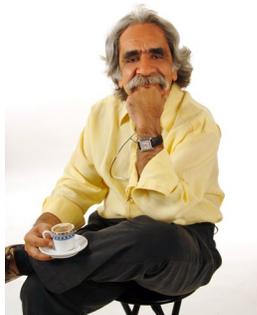
Presented to

Vartkess Ara Apkarian, Joonhee Lee, Nicholas Tallarida, and Laura Rios
for

*“The Raman Spectrum of a Single Molecule on an Electrochemically
Etched Silver Tip”*

Applied Spectroscopy Volume 74 Issue 11 Page(s) 1414-20

Vartkess Ara Apkarian



V. Ara Apkarian is the Distinguished Professor of Chemical Physics at the University of California, Irvine and a Foreign Member of the National Academy of Sciences of Armenia. After obtaining BS and PhD degrees in Chemistry from USC and Northwestern, respectively, and following a postdoctoral fellowship at Cornell, he joined the Chemistry Faculty at UCI in 1983. He has served as the founding co-Director of the Chemical and Materials Physics (ChaMP) program at UCI, as Chairman of the Department of Chemistry (2004-2007), and as Director of the National Science Foundation Center for Chemistry at the Space-Time Limit (2007-2020). His principle scientific contributions are in photophysics, ultrafast dynamics and nonlinear optics, quantum dynamics, plasmonics and spectro-microscopy. His work has appeared in ~200 peer-reviewed publications. His scholarly contributions and service have been recognized with awards, among them: Fellow of the American Physical Society (1994), the Humboldt Prize (1996), the ACS Award in Experimental Physical Chemistry (2014), and he holds an Honorary Doctorate from the University of Jyväskylä, Finland (2016).

Joonhee Lee



Dr. Joonhee Lee obtained his PhD in surface physics at Yonsei University, Korea in 2006, and moved to the United States to start his postdoctoral research at the University of California, Irvine. He continued to work in Irvine as project scientist and assistant researcher until 2019. He has been running his own research group in the department of physics at the University of Nevada, Reno since he started as an assistant professor in August of the same year. His research focus is to combine scanning tunneling microscopy and laser spectroscopy to visualize molecular and lattice vibrations associated with important chemical reactions and emergent physical phenomena such as superconductivity.

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William F. Meggers Award (continued)



Laura Ríos

Laura Ríos is currently an assistant professor of physics at California Polytechnic State University in San Luis Obispo CA. Laura received a B.A. in Chemistry from Oberlin College in 2012, and a Ph.D. in Chemistry from University of California, Irvine in 2017. At UC Irvine, Laura studied single molecule dynamics on surfaces using a scanning tunneling microscope in ultrahigh vacuum (UHV-STM) and Raman spectroscopy, and dabbled in computational investigations. Laura was awarded an NSF Graduate Research Fellowship during her graduate studies.

Laura went on to study physics education research (PER) in a postdoctoral appointment at the University of Colorado Boulder, focusing on assessment of lab course-specific learning goals and broadening participation of marginalized students in STEM.

In her current work, Laura combines her love of experimentation and instruments with learning science (e.g., experiential learning theory) to realign assessment structures with learning goals for upper-division physics laboratory courses. Her research builds upon a fundamental assumption that lab courses offer a unique learning environment to develop the skills for empirical inquiry, and should thus reflect the authentic practices of experimental physics.

In addition to her scholarly pursuits, Laura serves on the Executive Committee of the American Physical Society Forum on Education and the Committee on Physics in Undergraduate Education for the American Association of Physics Teachers.

In her free time, Laura enjoys the typical California fare: surfing and tacos.



Nicholas Tallarida

Nicholas Tallarida received his PhD in 2017 from the University of California Irvine under the guidance of Professor Ara Apkarian. During his time at UCI, he conducted research on combining optical spectroscopy techniques with scanning probe microscopy. Specifically, he focused on merging tip-enhanced Raman spectroscopy (TERS) with scanning tunneling microscopy (STM). Through the development of a TERS-optimized STM tip manufacturing approach, atomic resolution was achieved with Raman spectroscopy, enabling chemical analysis at the sub-molecular level. After finishing his PhD, he accepted a NASA Postdoctoral Fellowship at the Jet Propulsion Laboratory (JPL), working on the development of optical spectroscopy instruments, including Raman spectrometers and a flow cytometer, for future planetary science and life-detection NASA missions. Since becoming a full-time JPL employee in

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William F. Meggers Award (continued)

2019, he has been working on the development of various types of optical and laser spectroscopy instruments. Furthermore, he aided in the testing and validation of the PIXL instrument on NASA's Perseverance Mars rover. After the rover's successful landing in February 2021, he has been an active member of PIXL's surface operations engineering team, working to ensure the successful and safe operation of the instrument.

SAS/NASLIBS Award

Presented for the best paper published in Applied Spectroscopy in 2020 on the topic of Laser Induced Breakdown Spectroscopy.

Presented to

Daniel Diaz, Alejandro Molino Ochoa, and David W. Hahn

for

“Laser-Induced Breakdown Spectroscopy and Principal Component Analysis for the Classification of Spectra from Gold-Bearing Ores”

Applied Spectroscopy Volume 74 Issue 1 Page(s) 42-54



Daniel Diaz

Daniel Diaz holds a Postdoctoral position at the Department of Aerospace and Mechanical Engineering, University of Arizona where he participates in various research efforts at the Laser-based Diagnostics Laboratory since 2020. He is a mechanical engineer from Universidad Nacional de Colombia – Sede Medellin, and obtained his Ph.D. in Engineering from the same university in 2017. Dr. Diaz did a post-doctorate between 2017 and 2020 at the Department of Mechanical and Aerospace Engineering at the University of Florida where he performed research related to laser ablation, and the analysis of solids and aerosols with laser-induced breakdown spectroscopy.

His experience is in thermal sciences, materials engineering, laser-based diagnostic tools, and laboratory and industrial heating systems. Currently, he contributes to research projects related to the characterization of high-temperature environments in molten salt reactors and battery fires with laser-based diagnostic tools, as well as modeling the transport and fate of gases and aerosols. Dr. Diaz teaches undergraduate heat transfer.

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SAS/NASLIBS Award (continued)



Alejandro Molino Ochoa

Alejandro Molina is professor in Departamento de Procesos y Energía de la Facultad de Minas de la Universidad Nacional de Colombia - Sede Medellín. He is a chemical engineer from the Universidad Pontificia Bolivariana and obtained his Ph.D. in Chemical and Fuel Engineering from the University of Utah in 2002. He did a post-doctorate between 2003 and 2006 at the Combustion Research Facility at Sandia National Laboratory in Livermore, California where he conducted research related to laser diagnostics, coal combustion in oxygen-enriched environments, and glass production. In 2006 he became an associate professor at the Faculty of Mines where he is currently a tenured professor. His research areas revolve around the analysis of reactive flows using computational fluid dynamics (CFD) and laser diagnostics. He is a member of the Bioprocesses and Reactive Flows research group where he contributes to different fields of research that seek to improve the performance of the local industry. He has directed projects in the areas of oil exploration and refining, characterization of soils through laser induced breakdown spectroscopy, virtual laboratories for teaching chemical engineering, and CFD analysis applied to the improvement of industrial processes. Currently he is part of research projects related to the prevention of accidents due to fires and explosions and the optimization of plants to recycle spent lead-acid batteries. He is in charge of the undergraduate courses in Chemical Reaction Engineering and Introduction to Chemical Engineering. At graduate level he teaches different courses such as CFD, Process Intensification and Fire Dynamics.



David W. Hahn

David W. Hahn is the Craig M. Berge Dean of the College of Engineering, and Professor and Eminent Scholar at the Department of Aerospace and Mechanical Engineering, University of Arizona. He has more than two decades of experience in higher education and with national agencies and laboratories, and he is a champion of diversity in engineering. Dr. Hahn joined the University of Arizona after a 20-year career at the University of Florida, where he served most recently as chair of mechanical and aerospace engineering. Under his leadership, the university built a 4,000-square-foot student design center, his department grew to the largest on campus in terms of student enrollment, and the female student population in mechanical and aerospace engineering increased to 20%, about 50% above the national average. He was the Herbert Wertheim College of Engineering 2007-2008 Teacher/Scholar of the Year and 2009-2010 Advisor/Mentor of the Year, and he received the UF Society of Women Engineers 2016-2017 Outstanding Support of Women in Engineering Award. Dr. Hahn is a fellow of the American Society of Mechanical Engineers, the Optical Society and Society for Applied Spectroscopy. Dr. Hahn began his research career as an NRC postdoctoral associate in the electro-optics branch of the U.S. Food and Drug Administration Center for Devices and Radiological Health. He then spent

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SAS/NASLIBS Award (continued)

four years at Sandia National Laboratories, first as a postdoctoral researcher and then as a member of the technical staff. He studied mechanical engineering at Louisiana State University, graduating with a bachelor's degree in 1986 and a doctorate in 1992. In 2014 he received the Alumni Achievement Award from his home department.

Honorary Membership Award

Recognizing those individuals who have made exceptional contributions to spectroscopy



Rina K. Dukor

Recognizing Dr. Rina K. Dukor for her many years advocating for Vibrational Optical Activity (VOA) and helping to take this type of spectroscopy outside of the academy and into industry as well as her creation of a successful company, BioTools, that is on the cutting edge of industrial spectroscopy.

Rina Dukor is the President & CEO of BioTools. Rina received Ph.D. in physical chemistry from University of Illinois, Chicago in 1991. Upon graduation, she joined Amoco (now Abbvie) and while in industry pioneered the introduction of aqueous IR spectroscopy to the biopharmaceutical industry and development of reflection infrared micro-spectroscopy for cancer diagnostics. And by bringing VCD to the market, Rina helped cement the use of VCD by major pharmaceutical companies. Rina has co-authored over 50 peer-reviewed papers; several review chapters and is a holder of four patents. She is a recipient of several prestigious scientific Awards and serves on academic and commercial Boards including the Board of Visitors for LAS College at UIC and Scripps Florida. Rina began to volunteer for the Society during her graduate school education and over the last 20 plus years has served the Society in many capacities including President, Board Member, Focal Point Editor & numerous committees.

Emeritus Membership Award

Recognizing those individuals who have made exceptional contributions to spectroscopy



Stephen E. Bialkowski

Recognizing Dr. Stephen E. Bialkowski for his tireless dedication to the Society and to the field of spectroscopy, both through research and education.

Stephen Edward Bialkowski received his Ph.D. from the University of Utah in 1978, did postdoctoral research at the National Bureau of Standards, and started his university faculty career in 1980 at Michigan Technological University before moving to Utah State University in 1983. His interests include molecular spectroscopy, quantum

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Emeritus Membership Award (continued)

electrodynamics, digital and optical signal processing. He authored about 120 papers and a monograph on photothermal spectroscopy, the 2nd edition has two coauthors. His patent on all optical computing was issued in 1986.

He is fascinated by the quantum, photon, nature of light and has addressed the implications of photons in many of his publications. The interface between analytical and physics earned him adjunct faculty status recognition in the Physics and Electrical Engineering departments at Utah State University. He mentored and directed research for graduate students outside of chemistry. He was awarded the Utah Academy of Science's William Gardener Prize for the promotion of science and support of local photonics industry within the state.

His most recent research is on photon momentum transfer at dielectric interfaces. He has been an active member of SAS since the 80s, serving several terms as local section chairman, planning symposia, and acting as the web editor. He published 19 papers in *Applied Spectroscopy*, the most recent in 2020. He continues activity in science in collaborative research, by teaching through distance education and serving as Editor in Chief of Critical Reviews in Analytical Chemistry.

Fellows

Recognizing individual members for their outstanding service to the field of spectroscopy and the Society for Applied Spectroscopy.



Christian Huck

Christian Huck obtained his doctorate in chemistry in 1998 from the University in Innsbruck, Austria, where he continued to work as an assistant professor until the habilitation in 2006. In 2013, he received a call as a full professor to the University of Stuttgart, Germany and in 2015, a call to the University of Innsbruck, where he is currently vice-head of the Institute of Analytical Chemistry and Radiochemistry and head of the spectroscopy unit. From 2014 until 2017 he was a visiting professor at Kwansai-Gakuin University in Sanda, Japan, in the laboratory of Professor Yukihiro Ozaki. Christian has published more than 300 peer-reviewed manuscripts resulting in an h-index of 52 based on more than 10000 citations. Beside several numerous awards he was also the receiver of 2018 Tomas Hirschfeld Award. In his research he is mainly focusing on vibrational spectroscopic technologies (NIR, MIR, Raman) for life and material science in combination with separation technologies. Currently, he is editor-in-chief for *Spectrochimica Acta A* (Elsevier) and NIR news (Sage) as well as associate editor for several analytical journals including JNIRS.

Society for Applied Spectroscopy – 2021 Awards

Fellows (continued)



Ellen Miseo

Ellen V. Miseo, holds a Ph. D physical chemistry and concentrated on optical spectroscopy and instrument development. Her primary interest is in new applications of spectroscopic and imaging techniques. During her career, she has evaluated new technologies, developed new instrumentation, commercialized new techniques and anticipated new trends in the industry. Initially as a scientist at Arthur D. Little, Inc. she developed her skills in both spectroscopy and commercial products including foods and strategies to apply these skills to traditional and non-traditional problems. When she moved to Bio-Rad's Digilab division she was the product manager and champion for a new infrared imaging technology. When the business was acquired by Varian (later Agilent) she moved into a technical expert role, mentoring new people and providing technical expertise across the entire spectroscopy product line. At Hamamatsu she extended those skills into the OEM spectroscopy area. Her accomplishments include development of equipment as well as foreseeing customer trends and adapting to them. On moving to TeakOrigin she has gotten the opportunity to combine her interests in food and spectroscopy.

Dr. Miseo is actively involved in a number of professional societies related to spectroscopy. She is currently the president of the Coblenz Society and in 2014 she was elected to the Executive Committee of the Society for Applied Spectroscopy to serve as president in 2016. She currently chairs the education committee for SAS. She has taught training courses on spectroscopy within a corporate training framework, at conferences and as on-line courses.



Lawrence Ziegler

Professor Lawrence Ziegler received his Ph.D. in Chemistry from Cornell University in 1978 (advisor: A. C. Albrecht) where he carried out Raman experimental and theoretical studies. After an NIH Postdoctoral Fellowship (advisor: Bruce Hudson) at the University of Oregon, and an NRC Research Associateship at NRL, he held appointments of Assistant Professor and Professor in Chemistry at Northeastern University. In 1991 he moved to Boston University where he is currently Professor of Chemistry, an Associate Division Head of the BU Materials Science & Engineering program and a member of the BU Photonics Center. Professor Ziegler served as Chemistry Department Chair from 2012 -2019. He was a pioneer in the development of UV resonance Raman, resonance hyper-Raman, and resonance rotational Raman scattering for applications including the study of short-time chemical reaction dynamics. Current research interests include the characterization of ultrafast solvation dynamics in dense and supercritical fluids via 2DIR, plasmonically enhanced coherent vibrational spectroscopy, and the development of surface enhanced Raman spectroscopy for bioanalytical applications including rapid infectious

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Fellows (continued)

disease diagnostics, blood aging, cancer detection and forensics. He was co-Organizer of the 22nd International Conference on Raman Spectroscopy (Boston, August 2010) and is currently Senior Associate Editor for the Journal of Raman Spectroscopy.

SAS Undergraduate Student Awards

Given to junior or senior undergraduate students for outstanding research in spectroscopy

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Aldo Hernandez

Recognizing work in developing a new application for a currently existing plasma-based atomic emission technique and work on developing glow discharge optical emission spectroscopy (GDOES) for the elemental mapping of nanoparticles.

Aldo Hernandez is a recent Texas Tech University alumnus who completed his Bachelor of Science in Chemistry in May 2021 with a minor in philosophy. His work falls under the broad umbrella of analytical chemistry with a focus in atomic spectroscopy and statistical analysis. He has tackled the problem of low information throughput some techniques have in studying nanoparticles. Under the guidance of his mentor: Dr. Gerardo Gamez at Texas Tech, Aldo worked on the implementation of glow discharge optical emission spectroscopy (GDOES)- an already existing elemental mapping technique- on nanomaterial analysis, with the goal of showcasing the improved throughput in the orders of magnitude compared with competing techniques. As a recent graduate, Aldo hopes to apply his knowledge in analytical chemistry and instrumentation on future career prospects.



Laurin Lux

Recognizing work in FT-IR Imaging and analyses.

Laurin Lux is a student of Analytical Chemistry and Data Science at Technische Universität Wien. In his bachelor studies of Technical Chemistry he was working in the research group of Dr. Bernhard Lendl. Among other projects he was researching on ultrasonic particle manipulation combined with Raman sensing and changes of protein secondary structures monitored by QCL-spectroscopy. At the moment he is a Marshall Plan research scholar at Beckman Institute at University of Illinois Urbana-Champaign in the research group of Dr. Rohit Bhargava. In the chemical imaging and structures laboratory he is working on the determination of the limit of detection for IR imaging data. In this environment he can combine his passion for data processing with statistics and chemical sample preparation.

Society for Applied Spectroscopy – 2021 Awards

Undergraduate Student Awards (continued)



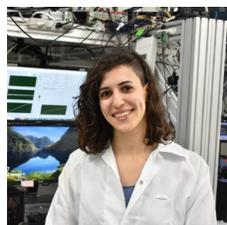
Robert Spiers

Recognizing work in chemometrics with a current focus on calibration sample selection to improve model predictions.

Robert Spiers is in his fourth year of studying Physics at Idaho State University, and two years into pursuing undergraduate research in chemometrics with Dr. John Kalivas. Spiers works on developing novel chemometric processes to model the relationship between the near infrared (NIR) spectra for samples and their corresponding constituent amounts (analyte). Spiers' first project provided a successful and robust mechanism to perform both model updating and model selection via model diversity and prediction similarity (MDPS) to new sample and measurement conditions without any target reference values. His second project deals with identifying matrix matched subsets from libraries of tens of thousands of samples (local modeling). Both these projects aim to make quantitative sample analysis simple, rapid, and accurate for consumer and industrial applications.

SAS Early Career Interest Group Travel Grant

Travel support for Early Career Scientists (within 5 years of earning a terminal degree) to SAS' National meeting during SciX. Awarded to Early Career scientists who demonstrate merit in the field of spectroscopy and/or those who demonstrate financial need.



Julia Gala de Pablo

Dr Julia Gala de Pablo studied a BSc in Physics and a BSc in Biochemistry at the University Complutense of Madrid (Spain). In 2015, she moved to the University of Leeds (UK), defending her PhD in Raman spectroscopy of live single colorectal cancer cells in 2019. She is currently a JSPS postdoctoral fellow at the University of Tokyo in Goda-lab working in Fourier-Transform Coherent anti-Stokes Raman Scattering for flow cytometry and sorting.



Rupali Mankar

Rupali Mankar is a postdoctoral fellow at the University of Houston. She holds a Ph.D. from the University of Houston. Her research focuses on combining IR spectroscopy and machine learning to improvise spectroscopy for clinical translation. She was awarded a postdoctoral fellowship award by the National Laboratory of Medicine (NIH-NLM) for her Biomedical Informatics and Data Science field. In her Ph.D. work, she has automated osteosclerosis (one type of bone marrow fibrosis) and currently working on overcoming the diffraction-limited spatial resolution of IR imaging for comprehensive evaluation of bone marrow fibrosis.

Society for Applied Spectroscopy – 2021 Awards

2021 SAS SERVICE AWARDEES



Richard Crocombe
President-Elect 2019
President 2020
Past President 2021



Ewelina Mistek-Morabito
Student Representative 2020-2021