August 2020

SAS eNews

SciX 2020 Virtual Meeting Update

SciX 2020 is the virtual conference you don't want to miss! Join us 12–15 October for the latest world-class scientific research in a format that features live Q&A sessions, on-demand presentations, and interactive oral posters! SciX 2020 features live Q&A sessions with awardees as well as live sessions in molecular and atomic spectroscopy, chemometrics, art and archaeology, pharmaceutics, biomedical/bioanalytical, and process analysis. On-demand oral sessions, pre-conference webinars, mini-oral posters, and an interactive format bring the best of the SciX program to your laptop whenever you're ready to learn and engage. Learn more at scixconference.org!

Contributed by Karen Esmonde-White,
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Announcing SciFest All Access!

For the past decade, the USA Science and Engineering Festival has been proud to offer the largest and only national science festival with thousands of hands-on activities, conversations with STEM mentors, and exciting stage shows. While we await the opportunity to bring back our in-person Expo, we hope you will join us this fall for a FREE Virtual Festival—SciFest All Access.

SciFest All Access will take place online from 16–23 September 2020. At SciFest All Access, attendees of all ages can engage directly with our sponsors and exhibitors to experience 100+ virtual STEM activities! This FREE virtual event will be a graphical depiction of the live Festival to include exhibitor booths, pavilions, videos, games, and more.

Register TODAY with the link below to receive important updates regarding this event!

https://t.e2ma.net/click/cootbd/cczdxt/4dvhkn

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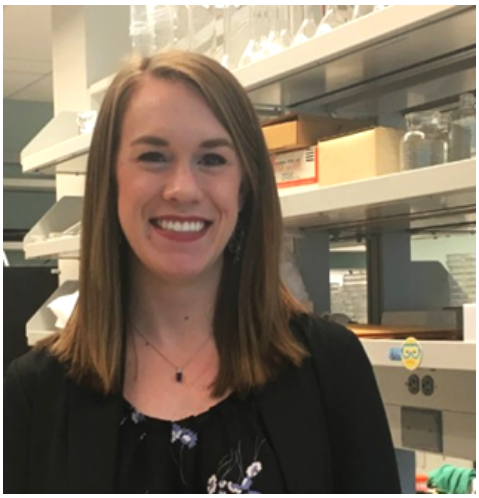
New York–New Jersey SAS Monthly Zoom Online Meeting Recap: 27 May 2020

As the country begins to unravel from the Covid-19 pandemic, many of our members are beginning to make plans to go back to work with an emphasis on personal health and safety. Companies are putting in place personnel protection plans that includes modification of how we interact with one another. We hope all our members, family, and colleagues remain healthy, and continue to do well during this stressful time. Although our in-person monthly meetings are postponed, we have developed an on-line meeting schedule, so that we can stay connected to provide you with spectroscopy news and developments.

To resume the new on-line schedule, the New York–New Jersey Regional Section of the Society for Applied Spectroscopy held a Zoom on-line meeting on Wednesday, 27 May 2020 from 11:00a.m.–12:00p.m. We are excited and pleased to announce that our speaker, Nicole Ralbovsky, was selected as the 2020 NY/NJ SAS Graduate Student Award winner. Ms. Ralbovsky is a fourth-year doctoral candidate in Dr. Igor K. Lednev's laboratory at the University at Albany, SUNY.



Nicole Ralbovsky
2020 NY/NJ SAS Graduate Student Award Winner

Ms. Ralbovsky's presentation discussed the use of machine learning modeling for noninvasive and early detection of several diseases simply by using the Raman fingerprint of biological fluids. To address the growing need for fast, noninvasive diagnostic tools that are also sensitive and selective, Raman spectroscopy in combination with machine learning is the focus of research in Albany by many of Dr. Igor Lednev's students. The combination of Raman and genetic algorithms has been applied for analyzing several different diseases including Alzheimer's disease, Duchenne muscular dystrophy, and Celiac disease in proof-of-concept studies. In each individual case, Raman spectral data was collected from biological samples of healthy and diseased donors. Machine learning algorithms were built and validated, each achieving over 95% diagnostic accuracy. The studies reported support the hypothesis that Raman spectroscopy in combination with machine learning analysis has enormous potential and is gaining support by the medical community as a minimally invasive, accurate and rapid universal medical diagnostic method.

Papers by Ms. Ralbovsky:

N.M. Ralbovsky, L. Halámková, K. Wall, C. Anderson-Hanely, et al. "Screening for Alzheimer's Disease Using Saliva: A New Approach Based on Machine Learning and Raman Hyperspectroscopy". J. Alz. Dis. 2019. 71(4): 1351-1359.

N.M. Ralbovsky, I.K. Lednev. "Raman Spectroscopy and Chemometrics: A Potential Universal Method for Diagnosing Cancer". Spectrochim. Acta. Part A. 2019. 219: 463-487.

N.M. Ralbovsky, V. Egorov, E. Moskovets, P. Dey, et al. "Deep-Ultraviolet Raman Spectroscopy for Cancer Diagnostics: A Feasibility Study with Cell Lines and Tissues". Cancer Studies and Molec. Med. J. (CSMMOJ). 5(1): 1–10.

N.M. Ralbovsky, P. Dey, A. Galfano, B.K. Dey, I.K. Lednev. "Diagnosis of a Model of Duchenne Muscular Dystrophy in Blood Serum of MDX Mice Using Raman Hyperspectroscopy". Sci. Rep. 2020. 10(1): 11734.

E. Ryzhikova, N.M. Ralbovsky, L. Halámková, D. Celmins, et al. "Multivariate Statistical Analysis of Surface Enhanced Raman Spectra of Human Serum for Alzheimer's Disease Diagnosis". Appl. Sci. 2019. 9(16): 3256.

E. Ryzhikova, N.M. Ralbovsky. J. Alz. Dis. 2020. In review.

Nicole Ralbovsky's research focuses on developing a novel method for medical diagnostics which uses Raman spectroscopy in combination with machine learning. Nicole has had great success in developing the technique and has published an article in Biophotonics magazine describing the methodology; she has successfully applied it for detecting Alzheimer's disease, Celiac disease, muscular dystrophy, and diabetes. Nicole has three

first-author manuscripts published, one under review, and two more submitted for review, with others in progress. Nicole received an NIH-funded RNA fellowship awarded by SUNY Albany to pursue this research.

In addition to the progress she has made regarding her research, Nicole has maintained an overall 4.0 GPA and was the two-time recipient of SUNY Albany's Harry L. Frisch Memorial scholarship in Chemistry and the Lawrence and Marie Shore Graduate Scholarship in Life Sciences as a result of her academic achievements. Nicole received the 2019 Coblentz Society student award, was an invited Symposium speaker at Pittcon 2019, received the Ford Foundation Initiatives for Women in Science Fellowship, and has been the recipient of ten different travel awards which resulted in 13 presentations at various conferences and symposia. Nicole additionally spends time participating in SUNY Albany's Graduate Student Club for Chemistry, where she is the secretary, SUNY Albany's Graduate Student Association, and volunteers with the Alzheimer's Association and her local church.

With the help of Chris Brais, we advertised the meeting using a variety of social media venues. WOW! We almost had twice the number of people compared to last month. A grand total of 45 people attended the ZOOM meeting including many new attendees within and outside our regional section and country! A big thank you to everyone who participated. NY/NJ SAS regional section will continue to offer their meetings on-line for all members who want to participate. If you have any feedback or would like to join our on-line meetings, please send an email to debperu@outlook.com and we will send you a link to the webinar.

More information about the NY/NJ SAS organization, including our past and future meeting schedule, please go to our website www.nysas.org.

Best wishes for good health and be safe!

Contributed by Howard Mark,
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Spam/Phishing Warning

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Do you have something spectroscopy-related you want to discuss in the newsletter? Or something that will help our membership such as career tips or application tips? Please let us know by emailing luisaprofeta@gmail.com.
