

NOVEMBER 2024 NEWSLETTER



Welcome to this month's SAS newsletter! We're still buzzing from the excitement of SciX 2024, and we can't wait to share all the highlights and key takeaways with you in our next issue.

In the meantime, we've got a quick rundown of what's happening within the Society, including a report from our president and a fascinating exploration of microspectroscopy.

Enjoy this condensed update and get ready to the highlights from SciX in the next issue!

SAS Presidential Report Fall 2024

I can't believe my time as SAS president is winding to a close! So much has changed since 1 January, 2024. I'm happy to report that we have adjusted well to the biggest change...moving from our long-time friend and executive director, Bonnie Saylor, to Angela Gordon and the team at Cap Hill. With that big loss comes a lot of new friends and amazing gains! We now have access to:

- In-house finance/accounting help
- In-house expertise on legal questions
- In-house designers – look at that awesome new logo!!!
- In-house web expertise (no more paying extra and waiting for coding changes!!!) – a real website that's easier to update...www.s-a-s.org!

The other tough area we've been navigating is our finances. This is still work in progress, but we've had to take a hard look at all areas of income and expenses.

Income:

- Membership dues – stable...we need to keep growing...invite your colleagues
- Journal Subscriptions – mixed...all-digital open access growing (hurts print), but individual downloads of print are good
- Advertising – dropping...return on investment (ROI) is hard to quantify; philanthropy has decreased
- Sponsorships – great, but consider asking your industry to support us

Expenses:

- Print costs and postage rising – cuts or raise the dues to cover them
- Travel and entertainment costs rising – more cuts
- Hidden fees for business transactions rising – we are eliminating as many as we can

But, we have so much to celebrate too! Thanks to a long legacy of excellent editors, managers, and editorial board members, we have a high impact-factor peer-reviewed journal to be proud of and a new open-access journal to expand our content and audience. Our newsletter is timely and keeps our membership informed. Our workshops, courses, and webinars are helping us to fulfill our mission of advancing and disseminating knowledge and information concerning the art and science of spectroscopy and other allied sciences. We provide plenty of venues for our members to network - at our international meetings and even in our booth. We know how to engage people, and we certainly know how to party together. We support cutting-edge symposia at meetings our members and potential new members attend. We support students with venues to share their work, networking opportunities, awards for their growing CVs, and lots of friendships/mentors. We honor our long-time members with fellowships, awards, and other recognitions. We have a wonderful core team of volunteers that take on the hard jobs that need to be done to keep our Society thriving. We always encourage members to share their talent, time, and treasure with us. I personally feel we need to change how we ask people to remain members and to be members. Take a page from the core members that stay year after year. If you ask them why, they will tell you that they want to support their professional society. It isn't about what they get in return...it is what they can do to help. The message is...we need you! Will you help us fulfill our mission? I'd like to close by taking this opportunity to thank our team. This is always dangerous, as you tend to forget someone, but I'm going to do it anyway and beg forgiveness in advance. So, from your 2024 SAS President (blame or complain to her!), I wish to recognize and thank...

Your elected executives:

- Steven Ray – President-Elect – fills volunteer jobs; edits our Bylaws and Policies and Procedures; makes sure the president doesn't mess it up too bad so his job will be easier next year
- Peter Larkin – Past President – advises the president; key member of the finance committee; edits our Bylaws and Policies and Procedures
- Ellen Miseo – Secretary – keeps us honest; repository of the society's history; SAS FACSS liason
- Brandye Smith-Goettler – Treasurer – analytics extraordinaire keeping us above water as best as can be

Your elected governing board delegates (I'm writing this before the election is completed so the next set of 5 will be mentioned in a later report):

Term Ending 2024:

- Ben Manard
- Bhavya Sharma
- Derrick Quarles
- Heather Juzwa
- Lynn Zhang

Term Ending 2025:

- Daniel Willett
- Karl Booksh
- Linda Kidder Yarlott
- Lydia Breckenridge
- Nancy Pleshko

Appointed positions – Membership Affairs:

- Early Career Representative
 - Fay Nicolson
- Student Representative
 - Alexis Weber
- Parliamentarian
 - Jay Kitt
- Section Affairs coordinators
 - John Wasylyk, Debbie Peru, Dana Garcia
- Education/Training chair
 - Ellen Miseo
- Nominations chair
 - Matthieu Baudalet

Appointed positions – Awards:

- Awards chair
 - Katherine Bakeev
- Meggers Award chair
 - Alex Scheeline
- Lester Strock Award chair
 - Mauro Martinez
- Lippincott Award Committee
 - Rob Chimenti
- Fellows Committee chair
 - Peter Harrington

Appointed positions – Marketing and Publications:

- Marketing chair
 - Adam Hopkins
- Membership
 - John Bobiak
- Newsletter editor
 - Konnor Jones
- Web editor
 - Xiaoyun (Shawn) Chen
- Social Media coordinator
 - Kristen Frano
- Publications chair
 - Heather Juzwa

Finance Committee:

- Brandye Smith-Goettler - Treasurer

- Peter Larkin
- Karl Booksh
- Nancy Jestel
- Ian Lewis
- Diane Ashley
- Gloria Story
- Angela Gordon
- James Whitehead

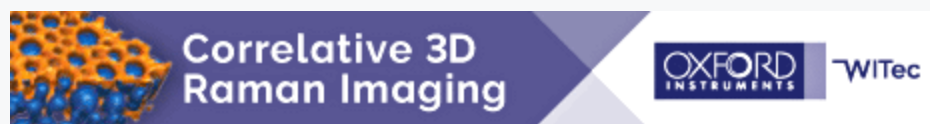
Your Journals Staff:

- Editor-in-Chief *Applied Spectroscopy*
 - Sergei Kazarian
- Editor *Applied Spectroscopy*
 - Michael Blades
- Editor-in-Chief *Applied Spectroscopy Practica*
 - Richard Crocombe
- Editor *Applied Spectroscopy Practica*
 - Mary Kate Donais
- Managing Editor
 - Kristin MacDonald

Your SAS Office Staff:

- Capital Hill
 - Executive Director
 - Angela Gordon
 - Administrator
 - Lindsey Weitz
 - Finance
 - James Whitehead
- Freelance
 - Advertising Sales
 - Ed MacMillan
 - Design (Journals)
 - Lori White
 - Design (Marketing Projects)
 - Tara Thomas

Gloria Story, 2024 SAS President



Microspectroscopy

Imagine being able to see not only the shapes and colors of tiny biological structures, like cells or proteins, but also precisely which molecules are at play and how they interact. In fluorescence microscopy, researchers use light-sensitive dyes or proteins to make specific molecules glow under a microscope. However, when studying complex samples with many different

molecules, it becomes tricky to see them all clearly at once. This is where spectral multiplexing—a technique that lets scientists capture several “colors” or spectral channels at once—comes into play.

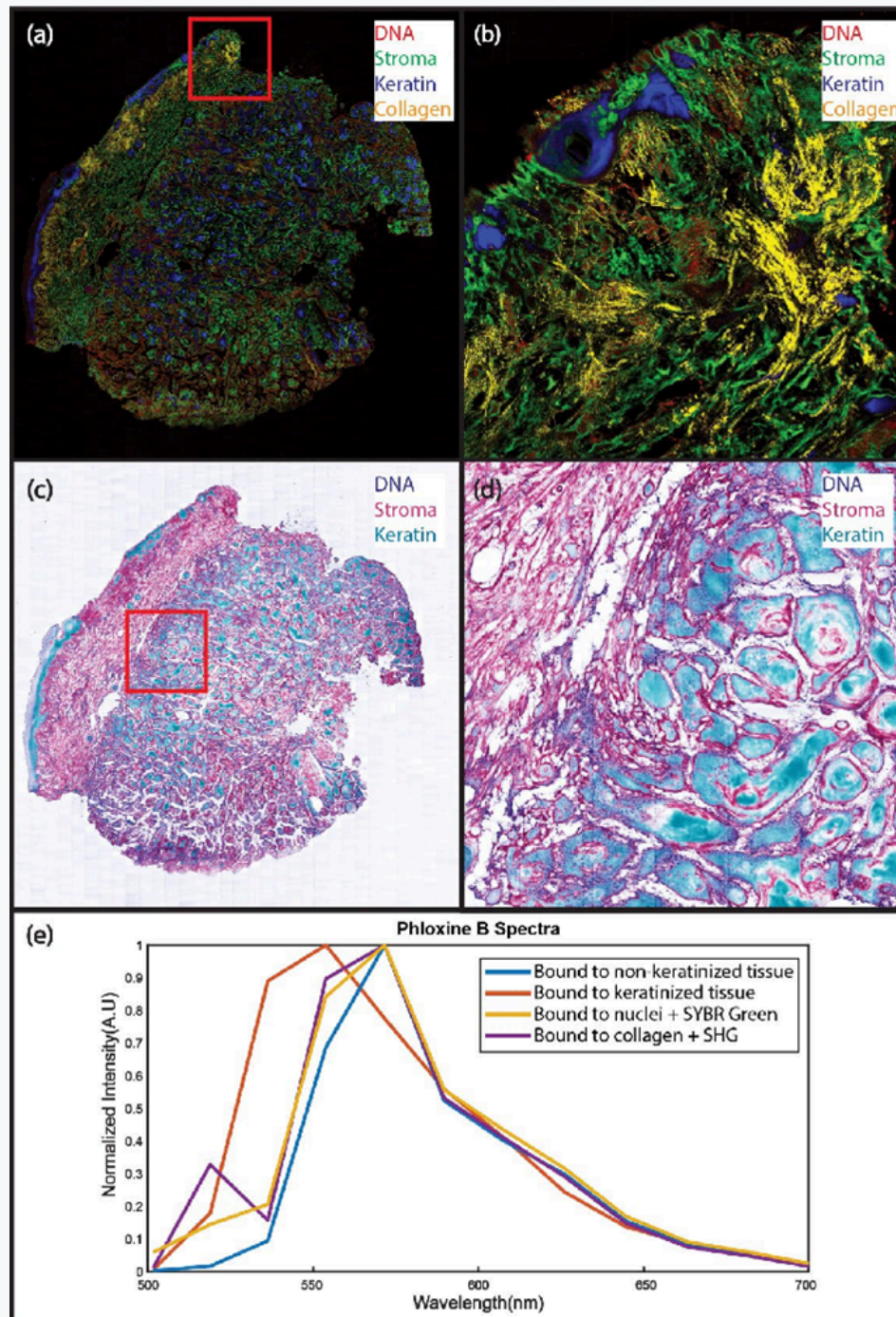
In traditional setups, each fluorescent dye used to stain different molecules has its unique color. By using separate light filters, a microscope can isolate the light from each dye, making it possible to study multiple molecules simultaneously. This method works well up to a point but quickly becomes challenging as more dyes are added: the more filters needed, the more complex and expensive the setup. Additionally, overlapping colors can make it hard to distinguish closely-related molecules.

To solve these issues, scientists are developing hyperspectral imaging techniques. Hyperspectral imaging goes beyond the limits of just a few colors. Instead of capturing three or four colors, it collects a detailed spectrum at each point, revealing dozens or even hundreds of subtle color differences. This detailed spectral information allows researchers to “unmix” overlapping signals, revealing distinct molecules even when their colors are similar.

A more advanced hyperspectral imaging approach uses a method called phasor-based snapshot microscopy. By using specially-designed filters, this technology can capture full spectral data at each point in the sample—often in less than a second. This rapid imaging capability has opened new doors in biological research, such as tracking cell structures or analyzing tissues in real-time with minimal light exposure, which reduces the risk of damaging sensitive samples.

Ultimately, innovations in spectral multiplexing and hyperspectral imaging are revolutionizing our ability to visualize molecular interactions, providing a clearer, richer picture of life’s inner workings. These advancements don’t just improve resolution; they pave the way for breakthroughs in understanding diseases, discovering new treatments, and even advancing fields like environmental science and industrial quality control, where hyperspectral imaging offers invaluable insights into complex materials.

Alejandro De La Cadena Perez Gallardo, newsletter committee member



Exemplary hyperspectral chemical imaging. Image adapted from <https://arxiv.org/pdf/2410.08936>.