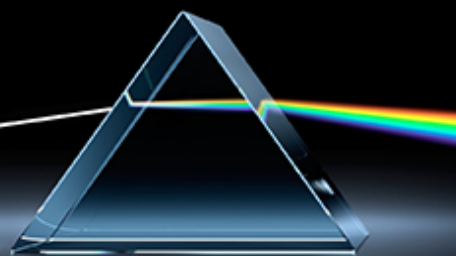




SAS eNews



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John Wiley & Sons are delighted to support the Society of Applied Spectroscopy through a collaboration in sharing content and offering members discount on **all Wiley books**, with an extended discount on a specific selection of spectroscopy-related titles.

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- 25% discount to members off all Wiley books.
- 40% discount to members off a specific selection of spectroscopy books.
- 15 articles free to download, for personal use, selected from the *Handbook of Vibrational Spectroscopy*.

To take advantage of these discounts you have as an SAS member. Log into the SAS web site and go to <https://www.s-a-s.org/new-sas-member-benefit-from-john-wiley-2020-07-11/> for details, and follow the link "See the member-only page for the code."

SAS would like to thank Jenny Cossham at John Wiley for arranging this benefit.

Richard Crocombe
2020 SAS President

WILEY

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Next-Generation Spectroscopic Technologies at SPIE.DCS Virtual Meeting Recap

The in-person meeting for SPIE.DCS in Anaheim was predictably cancelled in March due to the rapid COVID-19 outbreak in California. With this development, SPIE staff worked diligently and rapidly to set up a virtual SPIE.DCS conference with speakers pre-recording and uploading their talks to presented during their allotted time slots each day during the last week of April 2020 when the meeting was originally planned.

The Next-Generation Spectroscopic Technologies Conference XIII, co-Chaired by SAS members Steve Barnett and Luisa Profeta, had several good quality sessions arranged, including ones on terahertz (THz) spectroscopy, novel laser spectroscopy and instrumentation, infrared and Raman applications, monitoring and process technology, and even a joint conference session on "Spectroscopy for CBRNE Detection and Warning" with Jason Guicheteau. There were 45 original paper submissions, with 18 authors graciously volunteering to previously record and upload their presentations to the SPIE library for the online virtual conference. Registrations for the conference was free prior to the start of the meeting, however as with all SPIE meetings, access to the conference recordings and subsequent proceedings (being finalized now) must be purchased after the fact. Direct link for NGST XIII: <https://www.spiedigitallibrary.org/conference-proceedings-of-SPIE/11390.toc>

Steve and Luisa encourage SAS members to consider submitting abstracts starting in October for the 2021 SPIE.DCS meeting in Orlando, Florida. We would love to see more technical talks from applications groups, technical developers, and academics alike.

*Contributed by Steve Barnett and Luisa Profeta
Co-Chairs of the Next-Generation Spectroscopic Technologies Conference*

COVID-19: Reflux of Graduate School Mental Suffering?

Typically, the SAS August Newsletter is bustling with information relating to local, national, or international meetings occurring in the fall and early winter. As this Newsletter comes out, there is an eerie, deafening silence amongst the spectroscopy community and the world as a whole. Understandably, albeit depressingly, the cancellation of the in-person meeting of SciX 2020 in Sparks, Nevada, has just been announced. SciX (formerly FACSS to many of us older SAS members) has been a foundational meeting for the spectroscopy community for over 40 years now, with it being the national meeting of the Society of Applied Spectroscopy. This year's SciX officers are working hard to see if a virtual meeting is feasible, and such news will likely be announced prior to the publication of this Newsletter. We hope that SAS members will be able to reconvene in-person at SciX 2021 in Providence, Rhode Island.

Compounding this lachrymose news, many reading this have been working from home in excess of three months now as this writing. Webinars, Zoom video conferences, teleconferences, and FaceTime calls are all the primary means of communication between colleagues and management. Dogs barking and children hollering and squealing, or worse, naked photobombing in the background, have all become normal aspects of our daily work routine with most people granting grace to one another, being in all-to-familiar boats. For those readers who have not have the fortune of playing primary or secondary educator to your own children for more than two months, consider yourself lucky to not be juggling three full time jobs at once!

The societal and even familial isolation harkens back to a similar time for many scientists reading this—graduate school. Specifically, the mental health stressors of graduate school. Isolation in the laboratory, working long hours on competing tasks such as paper or grant writing, grading undergraduate tests, or data processing. Aggravating these tasks are the existence of puzzling or stringent demands placed on your time and whereabouts; these are all events that those of us who have been through it can see repeating in the last four months. For those readers who already have the MS or PhD degrees under our belts, it behooves us to not ignore the newest impending mental health inundation as a direct effect of COVID-19. Especially since most reputable sources note we will be dealing with the effects of [COVID-19 for upwards of another 24 months of time](#), very few in the spectroscopy community will come through this unscathed mentally.

It remains to be argued how many in the spectroscopy community are introverts or extroverts, but the social distancing and quarantining practices certainly stresses both classes of people. Extroverts, who recharge and rejuvenate by interacting with others, find themselves without the physical company of those who help them during this process. Introverts, who require true alone time for reviving their energy reserves and long for periods of solitude, even when surrounded by those they most love. Worse yet for any members reading this is the position of significant preexisting illness forcing them to keep away from anyone, even their own families. Isolation is a major contributing factor to suicidal ideation and attempts as recently noted by Dr. Mike deBoisblanc, head of trauma at John Muir Medical Center, in the San Francisco, CA area. He noted, "[\[W\]e've seen a year's worth of suicide attempts in the last four weeks.](#)" The isolation is just one facet of the complex topic of mental health, and the working scientist.

The topic of mental health is finally surfacing in the scientific community in a more formal manner. In 2014, a paper solely devoted to studying the mental health state of graduate students concluded that:

"Graduate students experience significant amounts of stress and anxiety, and their suicidal behavior is strongly characterized by depression, hopelessness, desperation, lack of control, and eating problems. Future work with this population should focus on the development and evaluation of mental health and wellness interventions and on ways to promote help-seeking, especially among male students."

From: A.G. Garcia-Williams, L. Moffitt, N.J. Kaslow. "Mental Health and Suicidal Behavior Among Graduate Students." *Acad. Psychiatry*. 2014. 38: 554–560. <https://doi.org/10.1007/s40596-014-0041-y>.

Four years later, these findings would be further substantiated by another study published in 2018, where the authors noted:

"Our studies show a high prevalence of anxiety and depression in a diverse graduate student sample. The strikingly high rates of anxiety and depression support a call to action to establish and/or expand mental health and career development resources for graduate students through enhanced resources within career development offices, faculty training and a change in the academic culture."

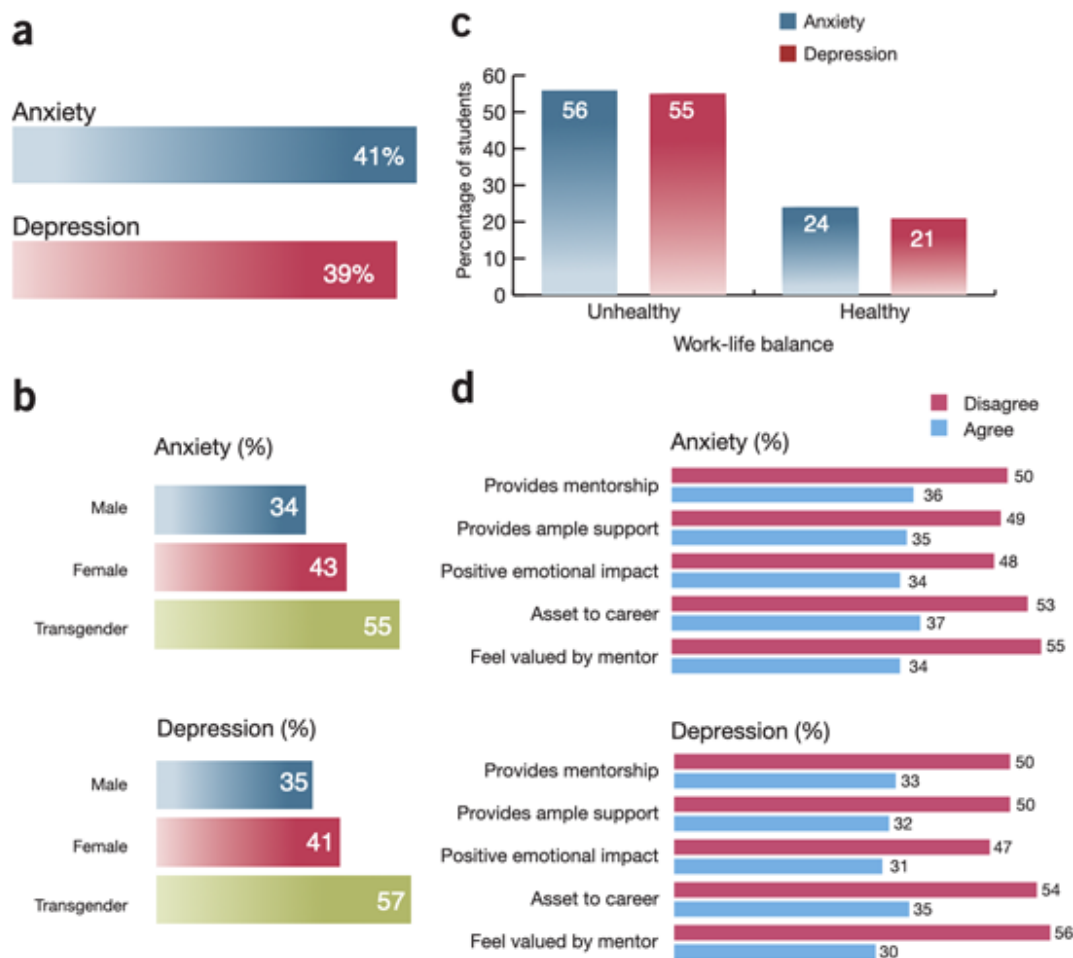


Figure 1 The prevalence of anxiety and depression within the population of graduate students studied. (a) Overall prevalence. (b) Prevalence of anxiety and depression by gender. (c) Effect of perceived work-life balance. (d) Effect of relationship with mentor (see **Supplementary Data**).

Metrics assembled by Evans et al. in their study of mental health of graduate students.

From: T. Evans, L. Bira, J. Gastelum, et al. "Evidence for a Mental Health Crisis in Graduate Education." *Nat. Biotechnol.* 2018. 36: 282–284. <https://doi.org/10.1038/nbt.4089>.

These studies and articles are weighted towards the mental health of graduate students, but unfortunately the mental health effects of graduate school linger for years to come. Professionals have well-documented that long-lasting repetitive stressful events can generate short- and long-term responses to scarring experiences which can be subtle, insidious, or outright destructive. Unfortunately repetitions of stressful events, even decades after the initial exposure can re-trigger a mental health crisis with little warning.

It is beyond the scope of this Newsletter to discuss at length the psychiatric requirements to help individuals overcome and manage their mental health requirements. But, as scientists, we seek solutions, manage the risks, and mitigate problems. The quandaries of coping with mental health are no different, especially in light of the constant stressors COVID-19 brings to us daily with "our new normal." For anyone who has never seriously considered their mental health, or the effects of graduate school on their psychological well-being, I challenge the reader to take time to reflect upon their experience. You might be surprised to find parallels between the stressors of graduate school and COVID-19. For now, I leave our readers with the charge to be kind: not only to the mental state of their friends and colleagues, but especially their own mental state.

Be Kind to Your Mind (from the CDC)
Tips to cope with stress during COVID-19:

PAUSE. Breathe. Notice how you feel.

TAKE BREAKS from COVID-19 content

MAKE TIME to sleep and exercise

REACH OUT and stay connected

SEEK HELP if overwhelmed or unsafe

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.

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