**A MESSAGE FROM THE GSLC**

Dear Students,

Welcome to the Winter Edition of the SOT student eLetter. This newsletter is published by the Communications Subcommittee of the SOT Graduate Student Leadership Committee (GSLC). This newsletter contains important information about the **BENEFITS** of SOT Graduate Student Membership and provides links to websites where you can get more information about the regional and national resources available from SOT.

- *The Graduate Student Leadership Committee*

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**ABOUT THE GSLC**

Each Regional Chapter (RC), Special Interest Group (SIG), and Specialty Section (SS) elects one graduate student member to represent their group in the GSLC. The GSLC Executive Board oversees the Committee. The GSLC was created to provide student leadership opportunities at the national SOT level. Our job is to address the needs of students in the Society and to promote student participation and membership. If you are interested in learning more about the GSLC, please visit us at the [graduate student page](http://www.sot.org) on the SOT website.
Virtual Annual Meeting News

The Virtual 2021 SOT Annual Meeting & ToxExpo will be held March 12–26, 2021. The virtual meeting will capture all the opportunities, activities, and scientific presentations that are hallmarks of the annual event such as:

- Access to over 70 Scientific & Featured Sessions held in semi-live and on-demand formats
- 14 Continuing Education courses
- Dedicated networking spaces allowing connection with friends & colleagues
- Service & product providers through ToxExpo exhibits

More details on how these interactive features will work and what to expect from the virtual meeting will be provided in the coming weeks. The 2021 Scientific Program is available through the Online Planner. You can use the online planner to learn more about the science being presented on each day of the meeting. Some key details about the schedule includes the following:

- Program content will be presented in approximately 5-hour time blocks each day, which will include:
  - Featured Session (1 hour)
  - Concurrent Scientific Session (165 minutes)
  - Concurrent Scientific and Exhibitor-Hosted Sessions (80-90 minutes)
  - Poster Sessions
  - Time for networking & visiting with exhibitors
- Day lengths shortened to reduce any online fatigue or frustration
- Fridays reserved exclusively for Continuing Education courses

The schedule for this virtual meeting has been developed with care to allow members and others from across the globe to participate simultaneously.

Due to the fact the Virtual Annual Meeting & ToxExpo will include many of the aspects of the in-person event, as well as the bonuses of on-demand viewing and no expenses for travel and hotel, the registration fees and deadlines for the Virtual Meeting are the same as the 2020 Annual Meeting registration fees.

Register by **January 22** to ensure you save and receive the LOWEST registration rate.

More information on the Virtual 2021 SOT Annual Meeting & ToxExpo can be found at: [https://www.toxicology.org/events/am/AM2021/index.asp](https://www.toxicology.org/events/am/AM2021/index.asp)
Career Development

Job Bank
Are you in the job market? The Job Bank is a useful online service provided by SOT that is free for all SOT members. Prospective employers and recruiters post positions in industry, academia, and government making this a useful tool for everyone. Additionally, you can use the job bank to manage your resume, and contact employers and recruiters directly. Check it out!

Career Development Webinars
The SOT Education and Career Development Committee works to develop information and produce webinars and SOT Annual Meeting sessions designed to provide career guidance to SOT members. We encourage students to explore these webinars, especially those in the Graduate Student category! Student members can access all the webinars dated back to September 2009 here.

Trainee Discussions

Blogs:
Keep up with what’s going on! As an SOT Graduate Student Member, you have access to news, articles, and important announcements. Bookmark the SOT Blogs page on your browser and check in often to stay informed. Check out past blogs published by members of the GSLC Professional Development Subcommittee which are of interest to trainees, such as “Manuscripts 101” and “Advisor Relationships”

Webinars and Other Events:
Trainee opportunities abound year-round, including SOT Regional Chapter, Special Interest Group, and Specialty Section events. Find up-to-date event information here.

Missed a Webinar?
View recorded webinars at https://www.toxicology.org/education/pw/webinars.asp
Don’t miss out on this excellent webinar from GSLC Professional Development Subcommittee. Upgrade your virtual posters, presentations, and learn how to give a 3-Minute Thesis! “Presentations with a Twist: a Poster 2.0/Virtual/3MT Cocktail”

Graduate Student Resources:
Take advantage of your student membership! Find opportunities for awards, leadership, volunteer work, and training support at the SOT Graduate Student Membership page: https://www.toxicology.org/groups/gs/graduates.asp

#YOUTox MEDIA CAMPAIGN
The purpose of the #YouTox media campaign is to increase awareness and share our love for toxicology and toxicology-related activities using the hashtag #YouTox (Follow on Twitter). While we won’t be able to see each other in person this year, the #YouTox hashtag is an excellent way to stay connected and continue building our strong community! We encourage all SOT members (professionals, postdocs, students) to participate by using the #YouTox hashtag on Facebook, Twitter, and Instagram. Use the #YouTox hashtag to share pictures or your thoughts about virtual workshops, seminars, and posters during the virtual meeting.
GSLC Communications Update

The GSLC Communications Subcommittee has been working to improve communication with Student members by reducing the length of the Winter eLetter and sharing the extra information in the form of short updates posted throughout the year. These short updates can be found as ToXchange posts which are titled “GSLCorner.” The updates are sent to the email address that you have registered with SOT. If you miss any of the email updates, they are stored in ToXchange on the graduate student page under “Graduate Student Announcement Topics.” Updates that have been posted already this year include announcements of award winners and notable seminar topics/events from RC, SS, and SIG fall meetings, #YouTox media campaign announcements, upcoming travel award deadlines, Continuing Education opportunities, toxicology conferences of interest, and Annual Meeting alerts. Other useful and interesting topics are continuously posted via graduate student related blogs, the “Interview with an Expert” podcast series, and other GSLC hosted webinars.

Student Membership Information

Not a Member? Apply today! Already a Graduate Student member of SOT, renew your dues online.

Being a Graduate Student Member of SOT provides excellent opportunities to interact with other Student members and toxicology experts in SOT. You will gain access to ToXchange, the SOT Online Job Bank, and student award information. You will be a part of a larger community of scientists and gain eligibility for student leadership positions. Furthermore, with student memberships, many students stay involved throughout the year by participating in their SOT Regional Chapter (RC), and staying connected to their professional networking by participating in Specialty Sections (SS) and Special Interest Groups (SIG). Membership in SOT facilitates communication that can open the door for new research collaborations. It also is a great way to network with future employers!
Share a laugh! When you’re having one of THOSE days, we get it. Send your “Funniest/Worst Grad School Moment” story, plus ideas for memes and comics to GLSC Communications Subcommittee, Belkys (belkys.gonzalez06@my.stjohns.edu) or Jennifer (j.toyoda@louisville.edu).

**The GSLC Community**

**GSLC Officers:**
- Benjamin Kistinger (GSLC Chair)
- Krisa Camargo (GSLC Secretary)
- Belkys Gonzalez (Communications Subcommittee Chair)
- Sumira Phatak (Professional Development Subcommittee Chair)
- Esther Omaiye (Programming Subcommittee Chair)
- Lillie Barnett (Programming Subcommittee Secretary)
- Thea Golden (Professional Development Subcommittee Secretary)
- Jennifer Toyoda (Communications Subcommittee Secretary)
SOT wants YOU!
Yes, you. Don’t look behind you, I’m speaking to you personally. Did you know there is so much more you can be doing as a graduate student SOT member than presenting your research and attending symposia at the Annual Meeting? These things are super important, but the Society needs dedicated graduate students such as yourself to take on leadership roles to help it run. As a graduate student representative you can provide valuable insight that helps the SOT enrich the experience of its graduate student members! There are still some Specialty Sections (SS), Special Interest Groups (SIG), and Regional Chapters (RC) without a student representative, and these empty spots have your name on them!

Past President Dr. Ronald N. Hines recently wrote a blog about qualifications defining effective SOT leaders (Read it here!). In this blog he describes SOT leaders as having a “willingness to devote time to the position, and an ability to work in collaborative teams...Good organizational skills, agility, good problem-solving skills, and an ability to effectively multi-task...”. Do those qualities match up with your own qualities? I bet they do!

With bench work, literature searches, and coursework, do you even have the time to be a Student Rep? You may be surprised to find that you actually do! Your one-year term would begin May 1 and end April 30. As a graduate student representative, you might spend some time on teleconferences (usually 1-2 hours per month). Depending on the SS/RIG/RC, you may be helping to plan meetings or graduate student events. You also become a part of the Graduate Student Leadership Committee (GSLC) and one of three subcommittees: Communications, Professional Development, and Programming. These three subcommittees work together to create blogs, webinars, and social events catered to graduate students. Once on the GSLC, you can later choose to participate on the GSLC Executive board or SOT Committee. SOT Committee appointments are made to start their office on May 1. Elections for GSLC Executive Board are held during the Annual Meeting for the upcoming year.

I served as Student Rep for Ethical, Legal, and Social Issues (ELSI, now ELFSI) and later as Student Rep for the Mid-Atlantic Society of Toxicology (MASOT). I participated in both Professional Development and Programming Subcommittees, as well as what was then known as the Education Committee and Career Resource and Development Committee (CRAD). Following this, I became Programming Subcommittee Chair and now Chair of GSLC. My experience has allowed me to grow my network on a more personal level with career toxicologists. I have had the opportunity to work on projects with toxicologists working in industry, government, academia, consulting, and even non-profit. Being a graduate student representative is a great opportunity to create and foster mentoring relationships and learn about careers in toxicology in a unique way.

So, when you see your RC/SIG/SS call for nominations (usually due in December) I hope I have convinced you to send your Biosketch, because you never know what relationships you will create and where that leadership opportunity will take you!
You can learn more here: https://www.toxicology.org/groups/gs/graduates.asp

-Ben Kistinger
Chair, Graduate Student Leadership Committee (2020-2021)
BECOME INVOLVED IN YOUR REGIONAL CHAPTER

There are 18 RCs within SOT whose purpose is to foster scientific exchange at the local level. These chapters sponsor regional meetings throughout the year that offer exceptional scientific programs, renowned speakers, and opportunities for student involvement in poster and seminar sessions. Additionally, RCs provide an invaluable tool to network with individuals who have careers in academia, government, and industry positions within those specific regions of the United States. Also be sure check out the **poster, seminar and travel AWARDS** that are given annually to dedicated and gifted student regional chapter members!

PARTICIPATE IN SPECIALTY SECTIONS (SS)

There are 29 SSs within SOT designed to bring together scientists of similar interests, expertise, and experience. The SSs are primary sponsors of many of the scientific sessions during the SOT Annual Meeting. Students are encouraged to join a SS because such groups provide students with opportunities for future employment and collaborations, as well as providing a platform for students to suggest scientific sessions and symposia for the Annual Meeting. The SSs encourage student involvement by providing funds for competitive student travel awards and best abstract awards that recognize their accomplishments. Learn more about each Specialty Section by visiting the SS homepage.

PARTICIPATE IN SPECIAL INTEREST GROUPS (SIGs)

SOT has established 8 SIGs to promote the recruitment of toxicologists who share a common interest in issues germane to specific communities. The goals of these 8 groups are to develop and conduct programs and opportunities that promote career development and recognize accomplishments of the toxicologists in each SIG. Learn more about the workshops, seminars, student awards, and focus of each Special Interest Group by visiting the SIG homepage.
ATTENTION GRADUATE STUDENTS!

Graduate Intern Fellowship in Toxicology (GIFT)

The Graduate Intern Fellowship in Toxicology (GIFT) enables graduate students to engage in internships within industry, government, and nonprofit organizations to advance their professional and scientific development.

Awards of up to $3000 each
Pre-application Submission: December 31, 2020
Full Application Submission: February 20, 2021

www.toxicology.org/awards

Professional Development Subcommittee

Presentations with a Twist:

Poster 2.0 // Virtual // 3MT Cocktail.

Mike Morrison
ASU: PhD student
Poster 2.0 Developer

Elie Diner
CG Life/Science Writer
SlideTalk Founder

Trinh Hua
UQ: PhD student
3MT: People’s Choice 2020 3MT

Manuscripts 101
by Jeffrey Chen

Advisor Relationships
by Courtney McClure

Graphical Abstracts
by Rachel Baur

contact

Sumira Phatak
PD Chair
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Thea Golden
PD Secretary
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I work with the fungicide Mancozeb (manganese zinc ethylene thiocarbamate). The main focus of my dissertation relates altered protein and metal homeostasis, and glutathione response system changes as a result of oral mancozeb exposure in the liver, kidney, and gastrointestinal tract of rats. To elucidate what changes are caused by the EBEC backbone, and what are caused by the metal moieties, I also dose separate groups of rats with NABAM (the sodium salt of the EBEC backbone) and a mixture of manganese and zinc chloride (to mimic the metal content of mancozeb). I also study the role metal transporters and chaperones play in altered metal levels as a result of EBEC exposure. My specific metals of interest are manganese, zinc, iron, and copper.

Ochratoxin A (OTA) is a widespread mycotoxin produced by several fungal species that causes nephrotoxicity and renal tumors in a variety of animal species. OTA exposure mainly occurs via contaminated foodstuffs like grains and dried vine fruits and is present at all stages of the food chain. OTA’s main nephrotoxic effect is lesions on the proximal tubule leading to degeneration. The kidney is not only susceptible to damage by OTA, but according to the National Kidney Foundation, diabetes is the leading cause of kidney failure. Both OTA exposure and diabetes frequently lead to chronic kidney disease. Due to the rising occurrence of diabetes and the prevalence of OTA in food, there is a need to assess the possible synergistic effects of a diabetic disease state in concurrence with OTA toxicity with regard to nephrotoxicity. The purpose of this study is to assess the nephrotoxic effects of ochratoxin A in a diabetic disease state.

Hexavalent chromium [Cr(VI)] is a lung carcinogen causing numerical chromosomal instability and centrosome amplification. Centrosome amplification is a hallmark of cancers and a potential key in carcinogenesis, as it drives aneuploidy. The goal of my project is to identify the mechanism of Cr(VI)-induced centrosome amplification. Specifically, my data show Cr(VI) disrupts securin expression and causes abnormal separase activity, including centrosome linker cleavage. I use human lung cells to investigate Cr(VI)-induced molecular changes and translate these outcomes to rat aspiration studies and Cr(VI)-induced human lung tumors to confirm in vivo responses to Cr(VI) relevant to the main routes of exposure. According to the One Environmental Health philosophy, I also use a wildlife species comparison to yield supportive evidence for key mechanisms of centrosome amplification and offer insight into strategies against metal-induced carcinogenesis. Through in vitro, in vivo, and multi-species studies, my project aims to elucidate a critical component of Cr(VI) carcinogenesis.
My dissertation project focuses on the interactions between cadmium and high-fat diet in the development of liver disease and the use of dietary zinc to stop disease initiation and progression. This project takes into consideration that environmental exposures are typically multi-generational and life-long, and that factors, such as diet, are involved in the development of disease. My long-term research interests involve developing insight into metal-induced diseases, which will improve health and reduce the risk for exposed individuals and to leverage my discoveries and create a platform for unique and targeted diagnostic tools and therapies to advance the field of environmental metal-induced diseases.
**Meet the GSLC**

**Zunwei Chen**
Texas A&M University
AACT Rep

In this research, a panel of human induced pluripotent stem cells (iPSC)-derived cells (hepatocytes, neurons, cardiomyocytes, and endothelial cells) and primary cells (HUVECs) were used to screen environmental chemicals from different classes, "designed" mixtures, and real-life environmental mixtures. This research demonstrates that novel iPSC-cell-based in vitro bioassays with traditional cytotoxicity endpoints and physiologically-relevant phenotypes can be used as a rapid hazard screening tool for environmental chemicals and mixtures, providing a practical solution that yields highly informative data for risk assessment.

**Megan Knuth**
UNC, Chapel Hill
NCSOT Rep
WIT

Vitamin D deficiency serves as a precursor to stunted growth and central adiposity in zebrafish.

**Colin Anderson**
CU, Anschutz
MechSS Rep

I am studying the molecular mechanisms of the fungicide maneb in a toxicant model of Parkinson's disease.

**Brianna Rivera**
Oregon State University
PANWAT Rep

My dissertation is very diverse, with a focus on chemical mixtures. One aspect of my work involves developing novel approaches to prioritize chemicals to form sufficiently similar mixtures from environmental sampling data and characterizing the hazard of these mixtures. Other aspects of my research involve identifying sources of chemical contamination, and its impacts on human and animal health, through monitoring of indoor and outdoor air and well water.
The considerable plasticity of the developing brain renders it exceptionally vulnerable to genetic and environmental perturbations. Autism Spectrum Disorder (ASD) is a common neurodevelopmental disorder with a strong but complex genetic component, associated with key molecular pathways early in development. Yet genetic risk factors seem insufficient to explain an increase in ASD prevalence over the past 15 years, raising the possibility that nonheritable risk factors are also at play. Exposure to exogenous agents during a critical developmental period has been suggested to contribute to ASD etiology. However, given the evidence on ASD heritability, environmental factors that play a role in ASD development likely influence mechanisms also involving some element of genetic susceptibility. Thus, there is an urgent need to identify mechanisms by which nonheritable factors may interact with susceptibility genes. I investigate how genetic susceptibility to ASD can influence pesticide-induced neurotoxicity and manifest in intellectual impairments.

Triclosan is an antimicrobial chemical used in the healthcare field and exposure has been associated with an increased incidence of food and aerallergy and asthma exacerbation in humans. Although triclosan is not classified as a sensitizer itself, dermal exposure to triclosan augmented the allergic response to an experimental allergen in a mouse model of asthma, demonstrating that exposure to triclosan is immunomodulatory and can contribute to the development of allergic disease. Disruption of the skin barrier has been associated with allergic diseases, suggesting that the skin barrier may influence the immune response. The goal of my dissertation research is to investigate the connection between disruption of the skin barrier and the immune response following dermal exposure to triclosan.
My doctoral research focuses on understanding the developmental neurotoxic potential of halogenated pyrroles. Compounds in this chemical class have been recently isolated in wastewater treatment sites as disinfection byproducts, but are not well-characterized in terms of their toxicity profile and potential risk to human populations. I am using the zebrafish model to determine whether halogenated pyrroles are developmental neurotoxins in vivo. Halogenated pyrroles have been reported to dysregulate calcium dynamics in vitro by stabilizing responsive receptors (RYRs) to intracellular calcium, which stabilizes the RYR in the open configuration. RYRs are calcium-regulated calcium release channels embedded in the membrane of the sarcoplasmic endoplasmic reticulum that function to regulate calcium homeostasis in cells. When considered in light of the importance of RYR function in vertebrate neurodevelopment, these observations raise the question of whether halogenated pyrroles interfere with neurodevelopment in vertebrates, and if so, whether this adverse outcome is causally linked to dysregulated calcium homeostasis.

The broad goal of my dissertation is to assess the potential for endocrine disruption and adverse reproductive health outcomes by neonicotinoid pesticides. Neonicotinoids are found across all agricultural systems, as well as in flea and tick preventatives that we apply to our pets. Their ubiquitous and rapidly increasing use results in chronic exposure of non-target species including humans, fish, birds, and pollinators. Using a female mouse model, I am characterizing the toxic endpoints and mechanisms of toxicity of imidacloprid, the most popular neonicotinoid, on the ovary. I am also identifying mechanisms of imidacloprid detoxification within the ovary.