



# Exposure Specialty Section Newsletter

## Fall 2023

### A Note from the President

Dear Exposure Specialty Section (ESS) Members,

How did it get to be fall already? Believe it or not, it's that time of the year when we start preparing for next year's Annual Meeting. I am looking forward to meeting you all at the SOT meeting in Salt Lake City in March 2024. This newsletter will provide a summary of the ESS events since May 2023 and what we have planned for the remainder of the year.

In May 2023, we received ten session proposals for review and endorsement. Out of the 10 proposals endorsed by ESS, 5 were selected by the Scientific Program Committee for presentation at the 2024 Annual Meeting. To encourage and support the next generation of scientists studying exposure science, the ESS Fundraising Committee, in collaboration with the Awards Committee, is supporting travel awards (\$500 each) for one student and one postdoc to attend the 2024 SOT Annual Meeting, sponsored by a generous contribution from the American Chemistry Council. Any additional contributions that you or your organization provide would be used to fund additional awards. All contributions are appreciated, no matter how small! Contributors will be recognized by ESS at our in-person meeting, in our newsletter, and on our website. If you are interested in helping to support these awards or would like to learn more, please contact the chair of the Fundraising Committee, Michelle Embry at [membry@hesiglobal.org](mailto:membry@hesiglobal.org).

Since May of last year, the Webinar Committee has organized two webinars with the Risk Assessment Specialty Section (RASS). The RASS-ESS combined webinar titled "Bayesian Inference of Chemical Exposures from NHANES Urine Biomonitoring Data" by Zachary Stanfield is scheduled for February 2024. More details coming soon! This received Runner-up for the ESS 2023 Best Paper. The joint RASS-ESS webinar "An Introduction to Chemical Exposure Estimation" by Jon Arnot was held on May 25, 2023. A recording of that event is available on our website. If you are interested in joining the Webinar Committee or have ideas for future webinars, please contact the chair of Webinar Committee, Esra Mutlu at [Mutlu.Esra@epa.gov](mailto:Mutlu.Esra@epa.gov).

As we get ready for 2024, we have issued a request for nominations for ESS officer positions. If you are interested in running for an officer position or would like to nominate someone, please reach out to the chair of Nominations Committee, Mansi Krishan at [mansi.krishan@outlook.com](mailto:mansi.krishan@outlook.com). Also, we encourage you to submit your nominations for best abstract and best publication awards. More details can be found on page 4.

Many thanks to the ESS Executive Committee members for your leadership, hard work, and commitment while juggling full time jobs. I am honored to be a part of this Executive Committee, full of energy, new ideas, and always ready to explore new opportunities. Also, thanks to current and new members for your continued support. If you would like to be more involved with ESS activities or would like to volunteer for a committee or have any thoughts and suggestions to help improve our Specialty Section, please email Catherine Wise at [Catherine.wise@duke.edu](mailto:Catherine.wise@duke.edu), co-chair of the Communications Committee.

Sincerely,

Christine Whittaker, PhD  
President, ESS (2023-2024)

## What does the Exposure Specialty Section do?

- Promotes exposure science critical for risk decisions across Society members
- Brings together experts from industry, academia, and government to discuss existing and emerging methods for characterizing chemical exposure
- Provides insight into toxicological needs relevant to advances among exposomics, biomonitoring, non-targeted screening, high-throughput and fit-for-purpose models, and exposure pathways

# 2023-2024 Executive Committee



**Christine Whittaker,**  
PhD  
President



**Neha Sunger,**  
PhD  
Vice President



**Esra Mutlu,**  
PhD  
Vice President-  
Elect



**Mansi Krishan,**  
PhD  
Past President



**Paul DeLeo,**  
PhD  
Secretary/Treasurer



**Danielle Carlin,**  
PhD  
Councilor



**Michelle Embry,**  
PhD  
Councilor



**Catherine Wise,**  
PhD  
Postdoctoral  
Representative



**Samantha Samon,**  
PhD  
Vice Postdoctoral  
Representative



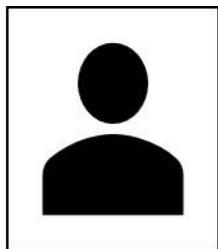
**Taylor Hoxie**  
Graduate Student  
Representative



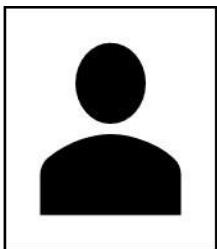
**Mariana Saitas**  
Vice Graduate  
Student  
Representative

A HUGE THANK YOU to our outgoing 2022-2023 officers Elke, Dingsheng, Judy, Sam, and Vrinda for all their hard work and dedication during their commitment with ESS!

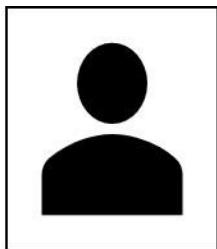
# Want to Become a New Officer for 2024-2025?



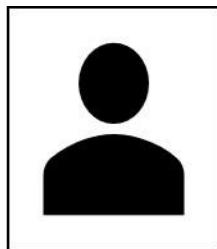
Vice President  
-Elect



Junior  
Councilor



Vice  
Postdoctoral  
Representative



Vice Graduate  
Student  
Representative

## Call for nominations!

The ESS is seeking nominations for officers for 2024-2025. Please consider running for a position, since it is a great way to impact exposure science within SOT and to meet new colleagues!

To nominate, please send your biosketch and a headshot to our current secretary, Paul DeLeo ([paul\\_deleo@americanchemistry.com](mailto:paul_deleo@americanchemistry.com)), by November 10<sup>th</sup>, 2023.

The open positions include:

- Vice President-Elect
- Junior Councilor
- Vice Postdoctoral Representative
- Vice Grad Student Representative

To learn more about each position, please see the [ESS Roles and Responsibilities](#) on our website.

Please note: all candidates in the presidential or treasurer chain must be Full, Associate, Retired, or Emeritus members of SOT, and Student and Postdoctoral Representatives must be Student or Postdoc members of SOT.

More information on the requirements and nomination process can be found on [ToXchange](#).

# 63<sup>rd</sup> Annual SOT Meeting is almost Here!



Taking place in Salt Lake City, Utah, the SOT 63<sup>rd</sup> Annual Meeting and ToxExpo will include more than 70 Featured and Scientific Sessions, 2,000+ presentations, 250 exhibitors, and over 5,000 attendees. To view some of the early information on the meeting, check out [their website](#)!



**Abstracts:** Abstract submissions are due at 11:59 pm (US EST) on November 13, 2023.

**Awards:** Nominations for [ESS awards](#) for best publication and best abstract, and applications for our new student travel award and postdoctoral travel award are due by January 15, 2024.

**Program:** The program for the meeting will be released soon but a list of [tentatively accepted sessions](#) is available.

**Registration:** Early bird registration ends January 19.

**Housing:** SOT has reserved rooms and negotiated exclusive rates at many hotels near the Salt Palace Convention Center. You can find out more about the options available on the [housing website](#). You will also find information there about the room-share program for registrants who have shown an interest in sharing a room.

**On-site services:** SOT also provides several on-site services during the conference including those for childcare, inclusivity & accessibility, food, internet, first-aid & emergencies, coat/luggage check, and other business services. More information can be found at the [on-site services website](#).

**Salt Lake City:** Salt Lake City boasts many restaurants, museums, music venues, shopping areas, and more for the enjoyment of meeting attendees. The city also has discount passes available for those interested in a wide variety of dining and entertainment experiences. The “[Visit Salt Lake](#)” microsite for the SOT meeting has more information.

# Important Dates for the 63<sup>rd</sup> Annual SOT Meeting!

November 13, 2023: SOT 63<sup>rd</sup> Annual Meeting Abstract Submission Deadline at 11:59 PM EST

January 15, 2024: Exposure Specialty Section Awards Application Deadline

January 19, 2024: Early-Bird Registration Deadline

January 20, 2024: Standard Registration Period Opens

February 1, 2024: Housing Deadline

After February 16, 2024: Final Registration Period Begins

March 10-14, 2024: SOT 63<sup>rd</sup> Annual Meeting Salt Lake City, Utah

## Exposure Specialty Section Awards

The ESS is now accepting nominations for the 2024 awards.

# WANTED!

## LOOKING FOR

Trainees, Papers, and Abstracts OH MY!

for

## EXPOSURE SCIENCE AWARD NOMINATIONS

by

15 Jan 2024

- Best Publication Award

- Best Abstract Award

### NEW THIS YEAR!

- Student and Postdoctoral Travel awards

The [American Chemistry Council \(ACC\)](#) is pleased to sponsor two SOT Exposure Specialty Section \$500 travel awards for the for the upcoming 2024 Annual Meeting for one graduate student and one postdoctoral researcher who are planning to present their work.

**Trainee Eligibility:** Any abstract accepted by SOT for the Annual Meeting which indicates an application of exposure science with regards to toxicology that has a student or postdoctoral researcher as the PRESENTING author. Students must be enrolled in a post-baccalaureate program leading to second bachelors, masters, or doctoral degree. All trainee applicants must be members of SOT (or pending membership).

**Application process:** Detailed application requirements for all awards can be found on the [SOT Apply Awards System](#).

Please submit your applications before January 15, 2024 through the [SOT Apply](#) Awards System.

## Financial Update

The Exposure Specialty Section began Fiscal Year 2024 (July 1, 2023) with net assets of \$6,268. The primary expenses anticipated for FY 2024 are associated with the Specialty Section luncheon during the 63<sup>rd</sup> Annual Meeting of SOT in Salt Lake City, UT, which are typically on the order of \$3,500.

## Membership Update

As of September 2023, ESS has 136 members. We very much appreciate your membership and interest in exposure science and look forward to increasing our membership through outreach in the coming months.

ToxScholar Outreach', and 'Faculty United for Toxicology Undergraduate Recruitment and Education (FUTURE) Committee'. There is also a white icon of a person pointing at a screen." data-bbox="113 553 875 887"/>

**HELP US RECRUIT EMERGING TOXICOLOGISTS!**

**SOT ToxScholar Program**

Goal: Increase awareness of toxicology as a science and as a career field

How: Toxicology and career presentations to primarily undergraduate academic audiences

We need YOU to be a ToxScholar.

More information: [ToxScholar Outreach](#)

Faculty United for Toxicology Undergraduate Recruitment and Education (FUTURE) Committee

# Trainee Spotlights

Samantha Samon, PhD

Affiliation: Duke University

Member Type: Postdoc

**Research Interests:** Both my PhD research, and the research I am doing now through my postdoctoral position have centered around the use of silicone wristbands as passive sampling devices. Under the leadership of Dr. Kim Anderson I evaluated the use of silicone wristbands to assess personal chemical exposure disaster scenarios and largely used Hurricane Harvey as a case study. I additionally have published on best practices for reporting chemical exposure results. Currently, under the direction of Dr. Heather Stapleton and Dr. Kate Hoffman I am studying exposure levels to susceptible populations including pregnant women, and the occupational exposures of fire fighters.



**What inspired your interest in chemical exposure assessment:** When I took organic chemistry in undergrad and learned that everything was composed of chemicals, I became interested in how those chemicals can interact. From there I joined an environmental chemistry lab group and studied how different chemicals such as pesticides and antibiotics might impact plant growth.

**Future research/professional goals:** I plan on continuing my education in medical school, so in the future I can more thoroughly study how chemical and microbial interactions impact human health.



Mariana Saitas

Affiliation: Texas A&M University

Member Type: Graduate Student

**Research Interests:** I am a 3rd year toxicology doctoral student at Texas A&M University and my research focuses on characterizing volatile organic compound mixtures through the application of mobile air sampling. In the mobile laboratory, I use a proton transfer reaction time-of-flight mass spectrometer (PTR-ToF-MS 4000) which is a highly sensitive instrument that can portray VOC concentrations in high resolution and in real-time. I am particularly interested in exposure assessments, especially as they relate to environmental disasters. During a disaster, it is important to quickly assess and communicate any significant chemical concentrations to the exposed community. To measure and translate the concentration data into an easy to understand presentation is very helpful for the affected community.

**What inspired your interest in chemical exposure assessment:** I became interested in chemical exposure from early conversations with my father, an environmental consultant and later, during my internship with Dr. Michael Honeycutt at the Texas Commission on Environmental Quality.

**Future research/professional goals:** I aspire to pursue a career specializing in air quality.

*Are you a trainee and want to showcase your research and network?!*

*Are you a mentor with great mentees that deserve a spotlight?!*

*Please reach out to the Communications Committee to be included in a future newsletter.*

# A YEAR IN REVIEW

## 62<sup>nd</sup> Annual SOT Meeting Highlights

Our members had a chance to catch up with fellow exposure scientists in Nashville, Tennessee for the SOT 62<sup>nd</sup> Annual Meeting and ToxExpo. We had a great turnout at our annual Luncheon where we shared highlights and updates from the year and presented awards for the winners of the Best Abstract and Best Paper. The ESS Executive Committee graciously thanks everyone who attended.

### ESS Sponsored Sessions

- Microplastics: Factors to Consider When Assessing Potential Environmental and Human Health Risks
  - Chair/Co-Chair: John Norman, American Chemistry Council Inc. / Christie Sayes, Baylor University
- Placenta as a Target of Environmental Exposures: From Bench to Society
  - Chair/Co-Chair: Almudena Veiga-Lopez, University of Illinois at Chicago / Rita Strakovsky, Michigan State University
- Toxicology 2.0: Moving from Reductionist to Holistic Paradigms
  - Chair/Co-Chair: Weihsueh Chiu, Texas A&M University / Ana Navas-Acien, Columbia University
- Grappling with the Grim Reaper: Epigenetics of Aging
  - Chair/Co-Chair: Sumira Phatak, Nutrilite / Kari Sant, San Diego State University
- Emerging Environmental Contaminants and Issues of Concern: Developing Toxicologic Strategies to Identify and Address Tomorrow's Public Health Issues
  - Chair/Co-Chair: Esra Mutlu, US EPA / Suzanne Fenton, NIEHS/NTP



## Our 2023 Award Winners

### BEST PAPER

Presented to Pawel Lorkiewicz of the University of Louisville for their work “Electron Cigarette Solvents, JUUL E-liquids, and Biomarkers of Exposure: In Vivo Evidence for Acrolein and Glycidol in E-Cig-Derived Aerosols” in *Chemical Research in Toxicology*, January, 2022 (Vol. 35, No. 2). To read this fascinating work, please follow this link:

<https://doi.org/10.1021/acs.chemrestox.1c00328>

### BEST PAPER RUNNER UP

Presented to Zachary Stanfield of the US Environmental Protection Agency for their work “Bayesian Inference of Chemical Exposures from NHANES Urine Biomonitoring Data” in *the Journal of Exposure Science & Environmental Epidemiology*, August, 2022 (Vol. 32). To read this fascinating work, please follow this link: <https://doi.org/10.1038/s41370-022-00459-0>.

**Chemical Research in Toxicology**

**Electronic Cigarette Solvents, JUUL E-Liquids, and Biomarkers of Exposure: In Vivo Evidence for Acrolein and Glycidol in E-Cig-Derived Aerosols**

Pawel Lorkiewicz, Rachel Keith, Jordan Lynch, Lesso Jin, Whitney Thors, Tatiana Krikorishina, Daniel Rigg, Arun Bhambhani, Sanjay Srivastava, and Daniel J. Cooklin\*

**ACCESS** | Metrics & Metrics | Article Recommendations | Supporting Information

**ABSTRACT** Despite the increasing popularity of e-cigarettes, their long-term health effects remain unknown. In animal models, exposure to e-cigarettes has been reported to result in pulmonary and cardiovascular injury, and in humans, the acute use of e-cigarettes increases heart rate and blood pressure and induces endothelial dysfunction. In these animal models and humans, endothelial dysfunction and cardiotoxicity with e-cigarettes has been attributed to volatile organic chemicals and acrolein generated in e-cigarette aerosols. These aldehydes are known products of heating and degradation of vegetable glycerine (VG) present in e-cigarette aerosols. We report that in mice, acute exposure to a mixture of propylene glycol/vegetable glycerine (PG/VG) or to e-cigarette-derived aerosols containing 10% propylene glycol (PG) and 90% VG results in increased levels of 3-hydroxypropenaldehyde (3HMPA) and 3,5-dihydroxypropenaldehyde (3DHPA) as measured by EFLC-MS/MS. In humans, the use of e-cigarettes led to an increase in the urinary levels of 3HMPA, but not 3DHPA. Stable isotope dilution mass spectrometry (<sup>13</sup>C-NMR and <sup>13</sup>C-ESI-MS) and stable isotope tracing experiments provide further evidence that thermal decomposition of vegetable glycerine in the e-cigarette solvent leads to generation of acrolein and glycidol. This suggests that the adverse health effects of e-cigarettes may be attributable in part to these reactive compounds formed through the process of thermal decomposition. Our findings also support the notion that 3HMPA, but not 3DHPA, may be a urinary biomarker of e-cigarette use.

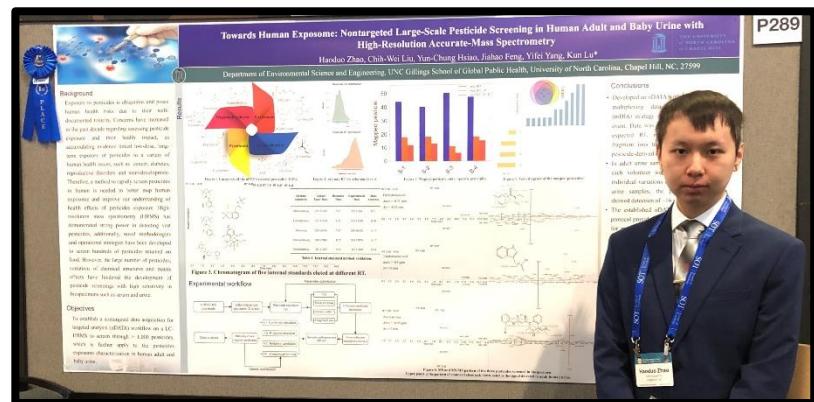
**BEST OVERALL ABSTRACT**

“Toward Human Exposome: Nontargeted Large-Scale Pesticide Screening in Human Adult and Baby Urine with High-Resolution Accurate-Mass Spectrometry”

Haoduo Zhao

University of North Carolina

Chapel Hill, NC



P289

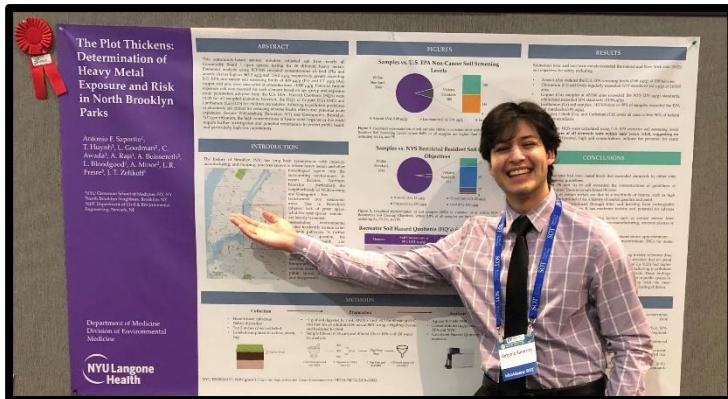
**BEST OVERALL ABSTRACT HONORABLE MENTION**

“The Plot Thickens: Determination of Heavy Metal Exposure in North Brooklyn Park”

Antonio Saporito

NYU Grossman School of Medicine

New York, NY



Congratulations to all our winners!

The ESS Executive Committee would like to thank the volunteers that took the time to judge these awards.

## ESS-Sponsored Webinars

Since the 2023 SOT Annual Meeting, ESS has held multiple webinars in coordination with the Risk Assessment Specialty Section (RASS). The recordings from previous webinars are available through the ESS or RASS websites. Join us for our upcoming webinar on February 14th featuring the 2023 ESS best paper runner up. Zachary Stanfield, US EPA, will be discussing his work titled “Bayesian Inference of Chemical Exposures from NHANES Urine Biomonitoring.”

Exposure/Risk Assessment Specialty Section Sponsored Webinar  
**Bayesian Inference of Chemical Exposures from NHANES Urine Biomonitoring Data**

**Speaker: Zachary Stanfield, PhD, US EPA**

**February 14, 2024, 3:00 PM - 4:30 PM (EST)**

**Mark your calendars!**

(Registration link will be posted as we get closer to the event date.)

Be sure to check the Events Tab on the [ESS website](#) to view recordings of past webinars and for information on those that are upcoming!

### Highlighted Webinars to View

**When it happened:** August 3, 2023

**Speakers:** Nicolle Tulve, PhD, US EPA; Dan Vallero, PhD, US EPA

**Title of Presentation:** [Risk Assessment Syllabus: Basics of Exposure Assessment](#)

**When it happened:** May 25, 2023

**Speakers:** Jon Arnot, PhD, Arnot Research and Consulting Inc.

**Title of Presentation:** [An Introduction to Chemical Exposure Estimation](#)



## HELP SUPPORT EXPOSURE SCIENCE GRADUATE STUDENTS AND POSTDOCS!

ESS set a goal to raise funds to support two \$500 travel awards for one student and one postdoc to attend the SOT Annual Meeting. This is a great opportunity to support the next generation of scientists studying exposure science! Thanks to the generosity of the American Chemical Council, we have met that goal!

Any additional contribution that you or your organization may provide would be used toward additional travel awards. All contributions are greatly appreciated, no matter how small! All contributions will be recognized by the Specialty Section at our in-person meeting, in our newsletter, our website, and on our LinkedIn page.

If you are interested in helping to support these awards or would like to learn more, please contact the chair of the fundraising committee, Michelle Embry ([membry@hesiglobal.org](mailto:membry@hesiglobal.org))

# Want to Contribute to the ESS? Volunteer!

There are numerous opportunities for ESS members to get involved with ESS-related activities. You can get involved by volunteering to serve on any of the following committees:

**Awards Committee:** provide feedback on yearly ESS Best Abstract and Best Publication Awards

Chairs: Senior Councilor (Best Abstract), Junior Councilor (Best Publication)

**Communications Committee:** distribute ESS news through updating the Website, posting LinkedIn notices, and preparing newsletters

Chairs: Postdoctoral Representative (Newsletter), Graduate Student Representative (Website, LinkedIn)

**Fundraising/Endowment Committee:** seek fundraising opportunities

Chair: Senior Councilor

**Membership Committee:** maintain and grow the ESS membership

Chair: Junior Councilor

**Webinar Committee:** identify and schedule speakers bringing exposure science to the broader SOT community

Chair: Vice President-Elect

## Why volunteer?

**Recognition.** When you get involved, your willingness to assist gets recognized. This is especially beneficial for graduate students and postdocs who are looking to get more involved in SOT.

**Networking.** By volunteering, you become a part of a committee with people that you might not otherwise interact with, in an enjoyable and collegial manner.

**Knowledge.** When you review award applications, you expand your knowledge on recent developments in exposure science.

Please reach out to Michelle Embry ([membry@hesiglobal.org](mailto:membry@hesiglobal.org)) and Danielle Carlin ([danielle.carlin@nih.gov](mailto:danielle.carlin@nih.gov)) if you are interested in volunteering.

## NEED MORE INFORMATION?

### *Visit our Website!*

<https://www.toxicology.org/groups/ss/ESS/index.asp>

### *Join the ESS LinkedIn group!*

<https://www.linkedin.com/groups/12209697/>

### *Questions?*

Contact us by sending an email to anyone on the executive committee or through SOT Headquarters at [SOTHQ@toxicology.org](mailto:SOTHQ@toxicology.org)