Risk Assessment Specialty Section
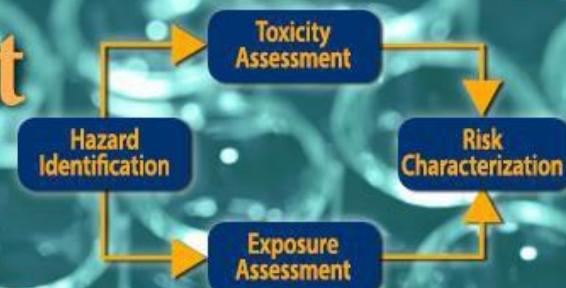## of the Society of Toxicology

RASS OFFICERS

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Alan Valdiviezo, PhD candidate

Postdoctoral Representative
Yizhong Liu, PhD

Newsletter Editors
Li Yang, PhD, DABT
Miao Li, PhD

PRESIDENT'S MESSAGE

Dear SOT RASS Colleagues,

To any of you that I have not formally met yet, I wanted to introduce myself and welcome all to RASS. I also wanted to update the membership on RASS activities that are ongoing or planned for this year. After two consecutive years of virtual meetings, the RASS Executive Committee (EC) is preparing for a long waited in person meeting in San Diego in March 2022. Over the last few months, the RASS EC and volunteers have been brainstorming and discussing how we can provide all of you with opportunities to grow as scientists. Here are a few of the RASS activities that are ongoing and were designed to provide RASS members with opportunities for both personal and professional growth.

LinkedIn: RASS has a RASS LinkedIn account which serves as an additional means of communication to all of you. Please check out our LinkedIn page.

Mentoring and Training: Thanks to the efforts of many over the past two years, in particular Fabian Grimm, George Woodall, and Gary Minsavage, the first RASS Trainee event that was long in planning was held in June. The webinar was entitled "RASS Webinar: Syllabus - Introduction to Human Health Risk Assessment" and was targeted to trainees. As a result of its success, RASS has formed a permanent subcommittee (headed right now by Jessica Wignall and Li Yang) to develop at least two more trainee programs for the next year. Any suggestions for topics are welcome.

Webinar Collaborations: Annie Jarabek (RASS Webinar Coordinator) has pulled together another highly valuable RASS Webinar Series, with several cross-specialty section webinars.

Sharing Ideas: The SOT's Specialty Section Collaboration and Communication Group (SS-CCG) has performed a survey of SOT Specialty Sections to develop a plan for ways to provide additional support and promote better interaction among Specialty Sections. Results of this survey will be available in the next few months.

The EC is interested to hear about how you might be able to help RASS initiatives. Please email or send us a note on our LinkedIn page to let us know how you can help and/or what new ideas you might have for RASS activities. Also, be on the lookout for information about RASS Awards (deadlines in December 2021) and also for information about the San Diego RASS mixer (planning is underway).

We look forward to hearing about any other ideas you may have!

Best regards,

Laura Plunkett, PhD, DABT
RASS President 2021–2022
lplunkett@biopolicysolutions.com

2022 RASS OFFICER NOMINATIONS

RASS is one of the largest SOT Specialty Sections. Our members have a broad spectrum of scientific experience and influence and participate in many of the most important decisions for applying toxicology for the greater good. This standing is and will continue to be only as strong as the RASS leadership. If you or someone you know would be interested in helping direct RASS's continuing presence in the field, then there are officer opportunities for which you may be a terrific fit. Serving as an officer presents a great opportunity to get involved in our specialty sections and SOT, and most importantly, serving on the Executive Committee is fun!

There are four upcoming RASS officer vacancies for which nominations are being received: Vice President-Elect (Presidential chain: 4-year commitment), Junior Councilor (2-year commitment), Graduate Student Representative (2-year commitment) and Postdoctoral Representative (1-year commitment). This year's RASS officer nominations committee is headed by our RASS immediate Past President, Dr. Barbara Wetmore (wetmore.barara@epa.gov). Please submit your nomination of yourself or a colleague to Dr. Wetmore by November 15, 2021.

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.

If anyone is interested in reviewing the roles and responsibilities of each position before committing, these can be found on the RASS webpage at:
https://www.toxicology.org/groups/ss/RASS/officers.asp.

Sample Biosketch:

[Full Name, including degrees and affiliations]
Dr. [Last Name] is a/the [Current position] at [Place of employment], where he/she/they [Summary of work]. He/She/They received a doctorate in [Field] from [School/University] in [Year] and was a postdoctoral scholar at [Institution] from [Years, i.e., 1995-1998]. Dr. [Last Name] has served on the [Study sections, Panels, etc.] at the [Organization, i.e., NIH, EPA, etc.]. He/She/They is author/co-author of [Number] [Publications including peer-reviewed articles and/or book chapters, etc.]. He/She/They has been a member of the SOT since [Year] and has served the SOT in the following capacities: [Offices/positions held].

RASS WEBINAR SERIES

RASS webinars are held from Fall through Spring, generally on the 2nd Wednesday of each month. If you cannot participate in any of the live RASS webinars, links to the past webinar slides and recordings are available on the RASS website:
https://www.toxicology.org/groups/ss/RASS/downloads.asp

June 9, 2021

RASS Syllabus: Introduction to Human Health Risk Assessment

Speakers: Laura Carlson, PhD
George Woodall, PhD
United States Environmental Protection Agency (US EPA)

Panelists: Jessica Hawes, PhD
US Food and Drug Administration (FDA)
David M. Reif, PhD
North Carolina State University
Daniele Wikoff, PhD
ToxStrategies, Inc.

September 8, 2021

Co-sponsored with the Mixtures Specialty Section (MixSS)

The Missing Link: Ex Vivo E-Cigarette Toxicity Modeling

Speaker: Jacklyn "Skye" Kelty, PhD
Environmental and Occupational Health Sciences Institute
Rutgers University

October 13, 2021

The Environmental Health Language Collaborative: Using Harmonized Language to Address Environmental Health Challenges

Speakers: Stephanie Holmgren, MSLS, MBA
National Institutes of Environmental Health Sciences (NIEHS)
Michelle Angrish, PhD, US EPA
Stephen Edwards, PhD, RTI International

November 10, 2021

Updates to the Cramer et al. Decision Tree and the Threshold of Toxicological Concern: The Expanded Decision Tree and Its Use in Safety Assessments

Speaker: Szabina Stice, PhD, Senior Toxicologist
Center for Food Safety and Applied Nutrition
Office of Food Additive Safety
Division of Science and Technology
U.S. FDA

December 8, 2021

Opportunities and Challenges in Using the Kinetically Derived Maximum Dose Concept to Refine Risk Assessment

Speakers: Michelle Embry, PhD
Health and Environmental Sciences Institute
Cecilia Tan, PhD
Office of Chemical Safety and Pollution Prevention
US EPA

2021 SOT ANNUAL MEETING HIGHLIGHTS

Risk Assessment Specialty Section Events at the 2021 SOT Virtual Annual Meeting & ToxExpo :

RASS Virtual Reception: March 15: 4:30 pm – 5:30 pm
> Keynote Speaker: Dr. Scott Ratzan "Communicating Risk During a Pandemic: Approaches and Multisector Engagement"

Rapid Chemical Assessment Using Open Computational Methods: March 19: 11:00 am – 2:45 pm
> Chairperson(s): Michelle Angrish, US EPA; and Shannon Bell, Integrated Laboratory Systems Inc.

> *Primary Endorser: Risk Assessment Specialty Section*

> *Other Endorsers: Computational Toxicology Specialty Section; In Vitro and Alternative Methods Specialty Section*

- Welcome and Introduction: Michelle Angrish, US EPA, Durham, NC.
- Identifying Data on Your Chemical: Neepa Choksi, Integrated Laboratory Systems Inc., Durham, NC.
- An Introduction to Structure-Based Cheminformatics: Data Clustering and Visualization, Read-Across and Predictive Modeling, and Accessing Data through the US EPA CompTox Chemicals Dashboard. Antony Williams, US EPA, Durham, NC.
- httk and HTTK-Pop: Open-Source Software for Simulation of Population Variability in High-Throughput Toxicokinetic Modeling for In Vitro to In Vivo Extrapolation and Rapid Chemical Prioritization. Caroline Ring, US EPA/CCTE, Research Triangle Park, NC.
- Open-Source Approaches to Calculating a Point of Departure. Lyle Burgoon, Raptor Pharm & Tox Ltd., Apex, NC.
- Use of Specialized Software to Improve the Efficiency of Conducting Chemical Assessments and Interoperability with the US EPA CompTox Chemicals Dashboard. Kristina Thayer, US EPA, Durham, NC.

Risk Assessment Poster Session: March 22: 1:00 pm - 2:45 pm

Congratulations to 2021 Award Winners:

Best Paper Awards:

Best Paper Advancing the Science of Risk Assessment Published in 2020 – Tied Winners

- Deisenroth C, Soldatow VY, Ford J, Stewart W, Brinkman C, LeCluyse EL, MacMillan DK, Thomas RS. **Development of an In Vitro Human Thyroid Microtissue Model for Chemical Screening**. Toxicol Sci. **(2020)** 174: 63-78.

- Hatherell S, Baltazar MT, Reynolds J, Carmichael PL, Dent M, Li H, Ryder S, White A, Walker P, Middleton AM. **Identifying and Characterizing Stress Pathways of Concern for Consumer Safety in Next-Generation Risk Assessment**. Toxicol Sci. **(2020)** 176: 11-33.

Best Paper Demonstrating the Application of Risk Assessment Published in 2020

- Baltazar MT, Cable S, Carmichael PL, Cubberley R, Cull T, Delagrange M, Dent MP, Hatherell S, Houghton J, Kukic P, Li H, Lee MY, Malcomber S, Middleton AM, Moxon TE, Nathanail AV, Nicol B, Pendlington R, Reynolds G, Reynolds J, White A, Westmoreland C. **A Next-Generation Risk Assessment Case Study for Coumarin in Cosmetic Products**. Toxicol Sci. **(2020)** 176: 236-252.

2021 Student and Postdoc Award Winners

John Doull Award
Long Yuan, Kansas State University
Development of a Physiologically Based Pharmacokinetic (PBPK) Model for Meloxicam in Broiler Chickens and Laying Hens

Perry J. Gehring Postdoc Award
Katie O'Shaughnessy, US EPA
Bypassing the Brain Barriers: Identification of Serum microRNAs Reflective of Developmental Neurotoxicity

Perry J. Gehring Student Award
Brianna Rivera, Oregon State University
A Novel Framework to Form Sufficiently Similar Mixtures from Environmental Exposure Data

Robert J. Rubin Student Travel Award
Itishree Kaushik, Texas Tech University
A novel anthelminthic drug suppresses the growth of medulloblastoma tumors by inhibiting PKA/Gli1 signaling axis
Shengjie Xu, Rutgers, The State University of New Jersey
Inhibition of Glycolysis Attenuates Excitation Contraction Coupling in Human Airway Smooth Muscle Cells

Andersen-Clewell Trainee Award
Md Mahbubul Huq Riad, Kansas State University

Development and application of a physiologically based pharmacokinetic model to predict Oxytetracycline tissue distribution and withdrawal intervals in market-age sheep

2021 Best Abstract Award

Amber Goetz, Syngenta Crop Protection LLC
Assessing Human Carcinogenicity Risk without the Rodent Cancer Bioassay

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2022 SOT ANNUAL MEETING

The **SOT 61st Annual Meeting and ToxExpo** will be held from March 27 – 31, 2022 at San Diego Convention Center, San Diego, California. Seventy (70) Scientific Sessions, 12 Continuing Education courses, more than 2,000 presentations, as well as over 250 exhibitors will share the latest products and technology in toxicology.

More details on these sessions, as well as the official schedule, will be available in the SOT website: https://www.toxicology.org/events/am/am2022/index.asp.

RASS Awards Application and Deadlines

Nominate yourself or a well-deserving Toxicologist for the awards:

Please Contact: [RASS](sotrassawards@gmail.com) (sotrassawards@gmail.com) to apply for one of the following awards:

- Best Overall Abstract Award
- Best Published Paper Advancing the Science of Risk Assessment Award
- Best Published Paper Demonstrating an Application of Risk Assessment Award
- Perry J. Gehring Best Graduate Student Abstract Risk Assessment Endowment Award
- Perry J. Gehring Best Postdoctoral Fellow Abstract Risk Assessment Endowment Award
- Robert J. Rubin Student Risk Assessment SS Travel Award
- John Doull Risk Assessment Endowment Award
- Andersen-Clewell Trainee Award

The deadline for application is December 31st!
Application details can be found here

RASS TRAINEE SPOTLIGHT

Dr. Yizhong Liu, the current RASS Postdoctoral Representative, received his PhD in Biomedical Engineering from the State University of New York at Binghamton and he is currently an ORISE postdoctoral fellow working in the Center for Devices and Radiological Health (CDRH), US FDA. Dr. Liu's research is focused on utilizing advanced *in vitro* alternative testing methods in biocompatibility evaluation and risk assessment on FDA-regulated products to reduce the relances on animal testing and increase the physiological relevance of traditional *in vitro* approaches. More specifically, Dr. Liu is working on developing an endothelium-on-a-chip model for nanomaterial toxicity evaluation that incorporates the dynamic flow parameter to mimic the interaction between nanomaterials and blood flow in physiological circulation. As a continuation of this project, Dr. Liu is also looking to adapt the model for other biomaterial evaluations, for example, the degradation of the absorbable polymers in biomedical products under a more physiologically relevant flow microenvironment. The goal of Dr. Liu's research is to provide a valid *in vitro* approach with improved predicting power for the toxicity evaluation and risk assessment of FDA-regulated products.

In his spare time, Dr. Liu really enjoys cooking, hiking, and a new hobby he picked up since pandemic, Lego building!

Mr. Alan Valdiviezo is currently serving as the RASS Graduate Student Representative. Of the more than 80,000 chemicals currently used in the United States, most have not been adequately tested for their effects on human health. Additionally, human exposure is not limited to one chemical at a time. Instead, humans are constantly exposed to multiple chemicals in the form of mixtures. In order to address these uncertainties, Mr. Valdiviezo's dissertation project focuses on evaluating kinetics and exposure pertaining to mixtures to help advance risk assessment. His research focuses on applying *in vitro* methodologies to characterize hazard, kinetics, and inter-individual variability of responses to chemical mixtures. The ultimate goal of Alan's project is to develop a tiered translational experimental testing strategy for evaluating inter-tissue and inter-individual variability in responses to mixtures. Mr. Valdiviezo's work is critical in providing innovative methodologies that do not rely on using traditional animal models to determine hazardous effects associated with environmental chemicals. Alan is grateful to be a part RASS because it provides SOT members with a variety of resources to engage with other toxicologists interested in improving risk assessment for human health. Alan was first introduced to toxicology in his undergraduate course work. The combination of biology and chemistry disciplines sparked his interest and ultimately guided him towards pursuing a doctorate degree in toxicology at Texas A&M. When he is not in

lab, Alan likes to spend time outdoors and attend concerts with his friends. He plans on defending his thesis in Spring of 2022.

TREASURY UPDATE

The RASS Executive Committee would like to thank our sponsors for helping to make RASS 2020-2021 activities possible. RASS had a successful year in member registrations and net assets, with modest expenses. The RASS net assets are a total of $ 92,120 by the end of August 2021.

RASS ENDOWMENT FUNDS

RASS has four endowments funds supporting awards to students and postdocs – the John Doull Student Award Endowment Fund, Perry J. Gehring Risk Assessment Student Award Endowment Fund, Robert J. Rubin Student Travel Award Endowment Fund, and the Andersen-Clewell Trainee Award Endowment Fund. We encourage our members to contribute to our endowment funds, as they provide stipends to graduate student and postdoc members who display excellence in Risk Assessment.

We have currently met our 2021 goal to raise all of our endowment funds to $50,000. Our goal in the next year is to increase each fund by at least $2,000 ($8,000 in total). With your help to reach this goal, the annual RASS merit-based Endowment Fund awards will continue to increase each year. Please help us meet this goal and continue to support the next generation of toxicologist. Please visit the Endowment website to see current contributors and learn more about the endowments. Contributing is easy: http://www.toxicology.org/endowment/contribute/donate.asp.

Initiatives are being undertaken to increase awareness of our endowment funds and share stories about how their contributions help our Trainees:

- The endowment fund committee will be sending out quarterly updates to RASS membership to share status updates and reminding us to consider contributing to our endowment awards. As donations come in, the committee will use a "thermometer" graphic in order to illustrate the progress and target goal for each fund.

- Each member that contributes $50 or more to the endowment funds will receive a congratulatory "Endowment Contributor Toast" at the annual RASS reception with a group photo posted on the website and in the following RASS newsletter.

Anne Loccisano
Exponent

Tami McMullin
CTEH

Chiedu Onwordi
Lagos State University

David Szabo
PPG

RISK ASSESSMENT SYLLABUS

The Society of Toxicology RASS leadership committee proposes the development of a dedicated "Risk Assessment Syllabus," a new training series that will complement the existing RASS webinar series and other RASS-related mentoring initiatives.

The objective of this syllabus is to provide participants with an introduction to the fundamental concepts and terminology associated with chemical risk assessment, as well as a practical perspective on the application of risk assessment principles to inform decision making. Each event in the series will be focused on a selected risk assessment-related topic, and will have speakers from academia, government, and/ or industry, with each speaker providing their perspective on what risk assessment means in their respective sector.

Trainees will be provided with valuable insights that will enhance their awareness of the potential importance and sector-specific aspects of risk assessment in their professional careers as well as required skills for the respective job profiles. For current professionals, the syllabus will provide an opportunity to refresh and advance understanding of risk assessment principles and an opportunity to develop sector-specific perspectives on contemporary topics in human and environmental health sciences.

RASS currently envisions a web-based format to maximize attendance; combining webcasts with local in-person events may be considered for future training events. Individual events may be structured to contain a formal presentation focusing on a specific aspect relevant to risk assessment, followed by an open panel discussion with invited experts in the field.

The first RASS Syllabus webinar, with the title of "Introduction to Human Health Risk Assessment", was held on June 9, 2021. Dr. Laura Carlson and Dr. George Woodall from US EPA were the instructors. With over 320 participants and over 500 initial registered participants, tremendous interest was demonstrated. RASS is currently seeking experts in any of the disciplines associated with chemical risk assessment to consider volunteering to participate as panelists and

share their experiences and perspectives in one of the open discussions. In addition, we would like to use this opportunity to collect feedback on additional input and suggestions from the RASS.

Please take a moment to complete our Risk Assessment Syllabus survey, and provide feedback by Tuesday, December 15, 2021: **https://www.surveymonkey.com/r/F68BCZZ**

RASS Syllabus Planning Committee
Fabian Grimm, RASS Councilor 2019-2021
Miao Li, RASS Councilor 2021-2023
Gary Minsavage, RASS Past President 2019-2020
Nathan Peckacek, RASS Secretary/Treasurer 2019-2021
Laura M. Plunkett, RASS President 2020-2021
Jessica Wignall, RASS Secretary/Treasurer 2021-2023
George Woodall, RASS Past President 2018-2019
Li Yang, RASS Councilor 2020-2022

VOLUNTEER POOL

There are numerous opportunities for RASS members to get involved with RASS-related activities. Fall and Winter are busy times in the RASS year, as the reviewing and judging of best papers as well as award applications are moving into full force. Your help is greatly needed! Benefits of serving as a RASS volunteer include the following:

--**Getting your name and your ability to help recognized**. When you get involved, your willingness to serve and help out get recognized. This is especially important for graduate students and post-docs who are looking to get more involved in SOT.

--**Working with colleagues**. In volunteering, you have the opportunity to work on committees with people that you might not otherwise have the opportunity to work with, in a fun and collegial way.

--**It is an AWESOME learning opportunity**. When you review award applications and candidates for best paper, you have the opportunity to learn about recent developments in risk assessment. Helping out and learning about risk assessment—what more can one ask for?

If you would like to enter your name into the RASS Volunteer Pool, please email Alea Goodmanson (aleagoodmanson@chevron.com).