

SOT Risk Assessment Specialty Section (RASS)
ANNUAL REPORT: 2021-2022
[May 1, 2021 to April 30, 2022]

I. Officers/Committees:

Position	Fiscal Year 2021-2022	Fiscal Year 2022-2023
President	Laura M. Plunkett	Daniele Wikoff
Vice President	Daniele Wikoff	Cecilia Tan
Vice President Elect	Cecilia Tan	Bernard Gadagbui
Secretary	Jessica Wignall	Jessica Wignall
Treasurer	Jessica Wignall	Jessica Wignall
Past President	Barbara Wetmore	Laura Plunkett
Councilor (second year)	Li Yang	Miao Li
Councilor (first year)	Miao Li	Kimberly Zaccaria
Postdoctoral Representative	Yizhong Liu	Anna Kreutz
Graduate Student Representative	Alan Valvidiezo	Alan Valvidiezo
Volunteer Pool Coordinator	Alea Goodmanson	Alea Goodmanson
RASS Webinar Series Coordinator	Annie Jarabek	Annie Jarabek
RASS Training Syllabus Series Coordinating Committee	George Woodall Gary Minsavage Fabian Grimm Laura Plunkett Li Yang Jessica Wignall	George Woodall Gary Minsavage Fabian Grimm Laura Plunkett Li Yang Jessica Wignall
RASS Endowment Fund Steward Committee	Anne Loccisano David Szabo Tami McMullin Chiedu Onwordi	Anne Loccisano David Szabo Tami McMullin Chiedu Onwordi
Student and Postdoctoral Award Committee	Cecilia Tan (Chair)* Bindu Prabhakar Laurie Roszell Kel Hanson Melissa Heintz Miao Li* Jennifer Raynor	To be named
RASS Best Abstract Awards Committee	Cecilia Tan (Chair)* Bindu Prabhakar Nathan Pechacek Kim Zaccaria Evisabel Craig Matthew Wolter Jennifer Raynor	To be named

Position	Fiscal Year 2021-2022	Fiscal Year 2022-2023
	Jalissa Nguyen	
RASS Best Paper Awards Committee	Kelly Salinas Alberto Tohme Norm Healy Lisa Sweeney Miao Li* Elaine Freeman Nathan Pechacek Stefanie O'Neal Penny Fenner-Crisp Matthew Wolter Kim Zaccaria Jon Urban Laura Markley	To be named

II. 2021 Membership

Dues-paying members: 765 (as of March 2022)

Student members: 31 (5 International)

Postdoctoral members: 25 (1 International)

III. Key Accomplishments for 2021-2022

Fundraising for RASS Endowment Funds: A key accomplishment for RASS during the 2021-2022 term was due to the continuing efforts of our RASS Endowment Fund Steward Committee. We owe a debt of gratitude to the leadership and efforts of Anne Loccisano, Tami McMullin, Chiedu Onwordi, and David Szabo. The table below shows the status of our endowment funds that increased in amounts by about 4% over the year. Importantly, RASS has been able to maintain our funds at a level exceeding \$50,000 for each fund. Note that the Robert J., Rubin Student Travel Award is held jointly with the Mechanisms Specialty Section and the Andersen-Clewell Trainee Award is held jointly with the Biological Modeling Specialty Section. Since there was no travel to the 2021 SOT meeting, the RASS EC elected to award two awards instead of one for each RASS only student award (John Doull Student Award and the Perry J. Gehring Risk Assessment Award). This gave additional students the opportunity to travel to San Diego in March 2022.

RASS Endowment Fund

Financial Status

Fund	Joint	Assets	Assets		
		Dec 2020	Dec 2021	1 Year	%
John Doull Student Award	RASS only	\$59,665	64,237	\$4,572	7
Perry J. Gehring Risk Assessment	RASS only	\$59,766	61,277	\$1,511	2
Robert J. Rubin Student Travel Award	MSS	\$59,201	62,651	\$3,450	6
Andersen-Clewell Trainee Award	BMSS	\$67,702	69,513	\$1,811	3

*Total in RASS Endowment Funds: \$257,678
Total % growth over the year: 4.4 %*

RASS Mixer at SOT 2022: Despite the continued challenges of coordinating remotely in 2021-2022, RASS was able to actively engage with both our general and trainee membership during the year. Since the 2022 SOT Annual meeting in San Diego was a hybrid meeting (both in-person and virtual), RASS held its annual meeting reception in person in San Diego but also offered remote access for interested RASS members. There was a full room during the RASS reception, with RASS members and their guests enjoying the time together for the first time in over two years. Several members joined us via the remote access link as well and appreciated the opportunity to join us at the mixer's business meeting.

RASS Kicks Off Its Training Syllabus Series in 2021: Given the inherent complexity and often specific focus of the risk assessment process, the SOT/RASS Risk Assessment Syllabus was developed. The series of webinars is designed to address key concepts in risk assessment in a more comprehensive manner to allow trainees and post-graduate professionals alike to benefit from more in-depth discussions of key scientific principles that are critical to producing scientifically-based outcomes from risk assessment. The webinars were designed to incorporate speakers from academia, government, and/ or industry, and to provide perspectives on what the covered risk assessment topic means in their respective sectors. The long-planned and awaited first session in the RASS Training Syllabus Series kicked off in June 2021. Many thanks to our dedicated committee that is planning and holding the events. The first in the series (held June 9, 2021) was entitled *“Introduction to Human Health Risk Assessment”* and the presentation materials and recording are available for download (<https://www.toxicology.org/groups/ss/rass/downloads.asp>).

RASS had its second Training Syllabus webinar on June 7, 2022, that was entitled *“Animal Toxicology in Risk Assessment – Study Design and Evaluation Considerations”*. It focused on a common source of data for human health and ecological risk assessment, toxicology studies conducted in laboratory animals. The next topic in the Training Syllabus series is planned for the fall of 2022 and will address application of epidemiology and human studies in risk assessment. Two new Training Syllabus webinars are planned for each of the next few years.

IV. Yearly Activities of RASS

2022 Annual Awards were presented at the SOT Annual Meeting in San Diego: Three different categories of awards were given this year by RASS. They included student awards, Best Abstract awards, and Best Risk Assessment paper awards (one for application of risk assessment and one for advancing the science of risk assessment. The 2021-2022 award winners are listed below.

STUDENT AWARDS

There were two winners of the Perry J. Gehring Graduate Student Award in 2022. One winner was Alexandra Cordova of Texas A&M University. Her presentation was entitled *“Dosing Methods to Enable Cell-Based In Vitro Testing of Complex Environmental Samples and UVCB Substances”* [Advisor: Ivan Rusyn]. The second winner was Rachel Lacroix of University of Calgary, Canada. Her presentation was entitled *“Impaired Development of Social and Locomotor Behaviours in Zebrafish Exposed to Glyphosate During Primary Neurogenesis”* [Advisor: Deborah Kurrasch].

There were two winners of the Perry J. Gehring Postdoctoral Award in 2022. One winner was Anna Kreutz of the EPA. Her presentation was entitled *“In Vitro to In Vivo Extrapolation (IVIVE) for Neurodevelopment: Toxicokinetics and In Vitro Point of Departure Evaluation of Putative Developmental Neurotoxicants”* [Advisor: Barbara Wetmore]. The second winner was Bevin Blake also of the EPA. His presentation was entitled *“Synthesis of Mechanistic Evidence for Male Reproductive Toxicity of Benzo[a]pyrene Using the Key Characteristics Approach in Concert with the Mode of Action Framework”* [Advisor: Xabier Arzuaga].

There were two winners of the John Doull Student Award in 2022. One winner was Kruuttika Satbhai of Texas Tech University, and the presentation was entitled *“Comparative Toxicokinetics and Toxicity of PFOA and Its Replacement GenX In the Early Stages of Zebrafish”* [Advisor: Jordan Crago]. The second winner was Chao Ji of Indiana University, and the presentation was entitled *“Bayesian Benchmark Dose Estimation with BBMD: Inference from Genomic Data”* [Advisor: Kan Shao].

The winner of the 2022 Andersen-Clewel Trainee Award (presented jointly with Biological Modeling SS) was Long Yuan of the University of Florida, and the presentation was entitled *“Development and Application of a Web-Based Interactive Physiologically-Based Pharmacokinetic (iPBPK) Model for Meloxicam in Broiler Chickens and Laying Hens”* [Advisor: Zhoumeng Lin].

The winner of the 2022 Robert J. Rubin Award (presented jointly with Mechanisms SS) was Danielle Kozlosky of Rutgers University, and the presentation was entitled *“In Utero Cadmium Exposure Disrupts Development of the Placental Vasculature Leading to Growth Restriction in Male Offspring”* [Advisor: Lauren Aleksunes].

BEST ABSTRACT AWARDS

The RASS 2022 Best Abstract award was presented to M.W. Dzierlenga, T. Zurlinden, P. Schlosser, B. Jacobs, and V. Morozov (USEPA, Research Triangle Park) for their presentation entitled *“Pharmacokinetic (PK) Models for Chemical Risk Assessment of Perfluorooctanoic Acid (PFOA) and Perfluorooctanesulfonic Acid (PFOS)”*.

There were nine honorable mention award winners in this category as well as follows:

- [P337] Mark Daley et al. *Risk Assessment by Combined Three-Dimensional Human Cardiac Microtissues and Pharmacokinetic Modeling*
- [P351] Iris Muller et al. *An Integrated Approach for Testing Developmental and Reproductive Toxicity (DART) Endpoints for Next-Generation Risk Assessment (NGRA)*
- [P530] Jordan Kozal et al. *Risk Assessment of Organic Impurities Detected in Hand Sanitizers Marketed to Children during the COVID-19 Pandemic*
- [P161] Anju Maharjan et al. *Evaluation of Tumor Markers and Immune Parameters among Chicken Husbandry, Grape Orchard, and Rose Greenhouse Workers*
- [P714] James Rathman et al. *Estimation of No-Observed-Adverse-Effect Level (NOAEL) by Read-Across for Large Inventories of Structurally Related Chemicals and Metabolites*

- [P565] L. Li and D. Li. *Addressing Inter-individual Variabilities in Human Exposure and Toxicological Susceptibility in Environmental Risk and Impact Assessments*
- [(857] Shouqi Luo et al. *Lack of Reproductive and Developmental Toxicity for AT-527, an Oral Purine Nucleotide Prodrug for COVID-19 Infection*
- [P874] Bruno Filippi et al. *3D InSight Liver Microtissues as Promising Preclinical Safety Assessment In Vitro Tools: Mechanistic Investigation of Aflatoxin B1 Toxicity in Dog, Rat, and Human 3D InSight Liver Microtissues*
- [P188] Anand Ramalingam et al. *Device Type, Nicotine, and E-liquid Flavors Determine the Extent of E-cigarette-Induced Pulmonary Oxidative Stress in Mice*

BEST PAPER AWARDS

RASS gives two awards every year for Best Papers published in the area of advancing the science of risk assessment, one honoring a paper relevant to the science of risk assessment and the other honoring a paper describing an application of risk assessment. As always, the candidates were identified based on nomination and literature searches. Over 500 papers were screened, and 25 finalists were identified and further evaluated based on their utility, impact, significance, novelty and innovation, rigor of the research, and reporting quality. The Best Paper Advancing the Science of Risk Assessment that was published in 2021 was by J. Boberg, L. Bredsdorff, A. Petersen, N. Lobl, B.H. Jensen, A.M. Vinggaard, and E. Nielsen entitled *“Chemical Mixture Calculator: A Novel Tool for Mixture Risk Assessment”* (Food and Chemical Toxicology 2021; 152:112167). The Best Paper Demonstrating the Application of Risk Assessment that was published in 2021 was by W.C. Chou and Z. Lin entitled *“Development of a Gestational and Lactational Physiologically-Based Pharmacokinetic Model for Perfluorooctane Sulfonate (PFOS) in Rats and Humans and Its Implications in the Derivation of Health-Based Toxicity Values”* (Environmental Health Perspectives 2021; 129(3):37004).

Other Educational Activities Conducted (e.g., webinars, in person meetings):

- 1) RASS had its second Training Syllabus webinar on June 7, 2022, that was entitled “Animal Toxicology in Risk Assessment – Study Design and Evaluation Considerations”. Speaker: Margaret Pratt, PhD (Toxicologist, ORD, USEPA, Washington, DC); Facilitator/Moderator: George Daston, PhD (Victor Mills Society Research Fellow, Proctor & Gamble Co., Mason, OH); Panelists: John Lipscomb, PhD (Toxicologist, CTEH, North Little Rock, AR), Elaina Kenyon, PhD (Research Toxicologist, ORD, USEPA, Durham, NC), and Elaine Faustman, PhD (Professor, University of Washington). We had over 150 attendees.
- 2) Wednesday, May 11, 2022: Establishing Scientific Confidence in New Approach Methodologies (NAMs): Eye Irritation Testing and Beyond; Jointly Sponsored Webinar with the In Vitro and Alternative Methods Specialty Section (IVAM); Speakers: Hans A. Raabe, MS, VP and Chief Operating Officer, Institute for in Vitro Sciences (IIVS) Amy J. Clippinger, President, PETA Science Consortium International e.V. (PSCI) [37 attendees]
- 3) Wednesday, April 13, 2022: Climate Change and Vulnerable Populations: Complementary Approaches for Assessing Extreme Heat and Health; Jointly Sponsored Webinar with the Exposure Specialty Section (ESS) and International Society for Exposure

Science (ISES); Speakers: Dr. Madeleine Scammel, PhD and Dr. Gregory Wellenius, PhD. [69 attendees]

- 4) Wednesday, February 9, 2022: Natural Product Health Risk Assessment: Weaknesses and Potential Improvements; Speaker: James T. MacGregor, PhD, DABT. [116 attendees]
- 5) Wednesday, January 12, 2022: A Novel Framework to Form Sufficiently Similar Mixtures; Jointly Sponsored Webinar with the Mixtures Specialty Section (MSS); Speaker: Brianna N. Rivera, BS. [323 attendees]
- 6) Wednesday, December 8, 2021: Opportunities and Challenges Related to Saturation of Toxicokinetic (TK) Processes: Implications for Risk Assessment; Speaker: Michelle Embry, PhD. [99 attendees]
- 7) Wednesday, 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. [179 attendees]
- 8) Wednesday, October 13, 2021: The Environmental Health Language Collaborative: Using Harmonized Language to Address Environmental Health Challenges; Speakers: Stephanie Holmgren, MSLS, MBA, Michelle Angrish, PhD and Stephen Edwards, PhD. [50 attendees]
- 9) Wednesday, September 8, 2021: The Missing Link: Ex Vivo E-Cigarette Toxicity Modeling; Speaker: Jacklyn "Skye" Kelty, PhD. [45 attendees]

Communication Activities:

- 1) Newsletter publication frequency: November 2021 and March 2022
- 2) New or Significant Announcements/blogs: [RASS LinkedIn Account](#)
- 3) RASS actively distributed other Specialty Section webinar announcements that were of interest to the RASS membership.

V. Feedback and Ideas:

A. In what ways is your group fostering and maintaining an inclusive environment? *RASS EC strives to foster and maintain an inclusive environment by maintaining open communication with our membership. We periodically survey our membership to identify areas that we can best engage and support them. Typically, that has focused on professional development activities, but these efforts can be expanded in the future to ensure inclusivity is an important value of our Specialty Section.*

B. How might SOT better support your group's activities (perhaps something the Society should be doing that we currently do not do, or do not do effectively, that would be of importance/benefit to the members of your component group?):

Note: If funding is listed, please provide detail on the membership need that the funding would support.

At this point in time, we have nothing to recommend that needs to be changed. Our SS liaison has been an excellent, responsive, and respectful partner and deserves recognition for that. We would caution that SOT be mindful of email communications – how they are disseminated. The digests seem to work well currently but be sure and request feedback from members as government and organizational IT security practices are constantly evolving. What works now may require adjustment in the not so distant future.

C. What is one thing that the Society is currently doing that impacts your component group that should be changed (e.g., stopped, modified, etc.)?

ToXChange is still a challenge to navigate. One suggestion would be to offer a video that EC officers can view to familiarize themselves with how to use it.

D. What changes do your component group anticipate making in the way in which it operates in the coming year?

The RASS EC recently initiated the RASS syllabus, which is designed to provide educational and networking resources to our membership in a semi-regular manner. It is a separate activity from the webinar series to ensure its focus on professional development stays intact. We have established a separate committee to assist with maintaining this activity. With over 365 attendees during our inaugural event, and more than 150 at our second event, we feel we have addressed an unmet need and are planning to have the series run for several more years at least, and are considering offering some type of certificate to acknowledge the training for purposes of certifications that members hold (e.g., DABT, etc.). Other than this offering, there are no significant changes to our annual activities.