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2022 Council
President: Ragnar Lofstedt
President-Elect: Katherine von Stackelberg
Secretary: Amanda Boyd
Treasurer: Ben Trump
Treasurer-Elect: Jonathan Welburn
Past President: Robyn Wilson
Ex-Officio Students and Young Professionals Chair: Ben Rachunok
Executive Secretary: Brett Burk
Managing Director: Jill Drupa

2022 Award Winners
Distinguished Achievement Award
John (Jack) Fowle III
Outstanding Practitioner Award
Robin Cantor
Chauncey Starr Award
Benjamin Trump
Distinguished Educator Award
Vicki Bier
Richard J Burk Outstanding Service Award
Dong-Chun Shin
Fellow
Frederic Bouder
Jeff Keisler
Seda Kundak
Adam Rose
Donald Schaffner
Jun Zhuang

SRA Worldwide Headquarters
950 Herndon Parkway, Suite 450
Herndon, VA USA 20170
+1.703.790.1745; FAX: 703.790.2672
www.SRA.org, SRA@BurkInc.com
2022 Specialty Group Winners

**Advanced Materials and Technologies**
Mumtahina Riza

**Applied Risk Management**
Rosemary Langford

**Engineering and Infrastructure**
Tessa Swanson

**Exposure Assessment**
Pei-Chen Chao

**Justice, Equity and Risk**
Mitchell Anderson

**Microbial Risk Analysis**
Madeline Lewis

**Occupational Health and Safety**
Mokam Mepa Mayelle

**Resilience Analysis**
Jack Watson

**Risk Policy and Law**
Scarlett Tannous

**Security and Defense**
Ian Unson

---

Student and International Travel Award Winners

Ahmed M. Abdelmagid
Mitchell Anderson
Pei-Chen Chao
Kuan In Chong
Lien-Yao Chou
Hung-Yang Chu
Yema Conteh
Naseem Dillman-Hasso
Xinxia Dong
Sarah Duckett
Sergio García Mejía
Erica Goto
Gabriella Gurney
Natalie Herbert
Pin Yi Hsu
Lisa Ito
Rajesh Kandel
MIN HSIU KE
Maksim Kitsak
Yeqing Kong
Rosemary Langford
Runwei Li
Myriam Merad
Nobuto Moriguchi
Thi Mui Nguyen
Brayton Noll
Zaira Pagan Cajigas
Gianluca Pescaroli
Md Rasheduzzaman
Andres Ruiz-Tagle
Anca Rusu
Prerna Shah
Olga Shashkino
Olatokunbo Shoyemi
Joana Sipe
Nathan Smith
Tessa Swanson
Scarlett Tannous
Yidi Wang
Jack Watson
Zhiyuan Wei
Alexander Wimbush
Committee Meetings and Events

Sunday, December 4

12:00 PM – 5:00 PM
Council Meeting and Lunch
Terrace Room (1st Floor)

4:00 PM – 6:00 PM
Student and New Member Welcome and SYP Committee Meeting
Meeting Room 5 (2nd Floor)

Monday, December 5

7:00 AM – 8:00 AM
New Member, Student/Young Professionals Breakfast
Terrace Room (1st Floor)

5:00 PM – 6:00 PM
World Congress Meeting
Meeting Room 3 (2nd Floor)

5:15 PM – 6:00 PM
Risk Science Committee Meeting
Meeting Room 1 (2nd Floor)

Tuesday, December 6

7:00 AM – 8:00 AM
Grad Student Breakfast
Meeting Room 1 (2nd Floor)

7:30 AM – 8:30 AM
Communications Committee Meeting
Meeting Room 2 (2nd Floor)

8:00 AM – 10:00 AM
Regions Committee Meeting
Meeting Room 3 (2nd Floor)

9:00 AM – 10:00 AM
Finance Committee Meeting
Meeting Room 2 (2nd Floor)

6:00 PM – 9:30 PM
Council Meeting and Dinner
Terrace Room (1st Floor)

Quiet/Work Space
Meeting Room 12 (3rd Floor)

Childcare
Meeting Room 6 (2nd Floor)

Monday, December 5 ........................................... 8:00 AM – 5:00 PM
Tuesday, December 6 ......................................... 8:00 AM – 5:00 PM
Wednesday, December 7 ................................. 8:00 AM – 5:00 PM

Speaker Ready Room Hours
Meeting Room 4 (2nd Floor)

Sunday, December 4 ........................................ 3:00 PM – 6:00 PM
Monday, December 5 ...................................... 7:00 AM – 5:00 PM
Tuesday, December 6 ...................................... 7:00 AM – 5:00 PM
Wednesday, December 7 ................................. 7:00 AM – 12:00 PM

Registration Desk Hours
Grand Ballroom Foyer (2nd Floor)

Sunday, December 4 ........................................ 4:30 PM – 6:00 PM
Monday, December 5 ...................................... 7:30 AM – 4:00 PM
Tuesday, December 6 ...................................... 8:00 AM – 3:00 PM
Wednesday, December 7 ................................. 8:00 AM – 3:00 PM
 Specialty Group Meetings

Monday, December 5

All specialty group meetings will take place during lunch time. Pick up your box lunch near the registration desk and attend the meeting(s) of your choice.

12:10 PM – 12:45 PM
- Dose Response (DRSG)
  Grand Ballroom Salon A (2nd Floor)
- Economics & Benefits Analysis (EBASG)
  Grand Ballroom Salon B (2nd Floor)
- Occupational Health & Safety (OHSSG)
  Grand Ballroom Salon C (2nd Floor)
- Risk, Policy & Law (RPLSG)
  Grand Ballroom Salon D (2nd Floor)
- Security & Defense (SDSG)
  Meeting Room 8 (3rd Floor)
- Resilience Analysis (RASG)
  Meeting Room 9 (3rd Floor)
- Ecological Risk Assessment (ERASG)
  Meeting Room 10 (3rd Floor)
- Foundational Issues in Risk Analysis (FRASG)
  Meeting Room 11 (3rd Floor)

12:50 PM – 1:25 PM
- Exposure Assessment (EASG)
  Grand Ballroom Salon A (2nd Floor)
- Risk Communication (RCSG)
  Grand Ballroom Salon B (2nd Floor)
- Applied Risk Management (ARMSG)
  Grand Ballroom Salon C (2nd Floor)
- Decision Analysis and Risk (DARSG)
  Grand Ballroom Salon D (2nd Floor)
- Advanced Materials and Technologies (AMTSG)
  Meeting Room 8 (3rd Floor)
- Justice, Equity and Risk (JERSG)
  Meeting Room 9 (3rd Floor)
- Engineering & Infrastructure (EISG)
  Meeting Room 10 (3rd Floor)
- Microbial Risk Analysis (MRASG)
  Meeting Room 11 (3rd Floor)

Specialty Group Mixers

Tuesday, December 6

6:00 PM – 7:30 PM
- Dose Response, Microbial Risk Analysis, Exposure Assessment and Advanced Risk Management SG
  Meeting Room 1 (2nd Floor)
- Security and Defense, Decision Analysis and Risk, Engineering and Infrastructure, Foundational Issues in Risk Analysis SG
  Florida Ballroom I (2nd Floor)
- Ecological Risk Assessment, Risk Communication, Occupational Health and Safety, Resilience Analysis SG
  Florida Ballroom II (2nd Floor)
- Economics and Benefits Analysis, Advanced Materials and Technologies, Justice, Equity and Risk, and Risk, Policy and Law SG
  Florida Ballroom II (2nd Floor)
8:00 AM – 12:00 PM

Eliciting Judgements from Experts and Non-experts
Frank Hearl
Meeting Room 8 (3rd Floor)

Decision makers must frequently rely on data or information that is incomplete or inadequate in one way or another. Judgment, often from experts and occasionally from nonexperts, then plays a critical role in the interpretation and characterization of those data as well as in the completion of information gaps. But how experts or non-experts are selected, and their judgments elicited matters – they can also strongly influence the opinions obtained and the analysis on which they rely. Several approaches to eliciting judgments have evolved. The workshop will cover topics ranging from recruitment, elicitation protocol design, different elicitation techniques (e.g., individual elicitations, Delphi method, nominal group technique, and focus groups) to aggregation methods for combining opinions of multiple individuals. The role of judgment elicitation and its limitations, problems, and risks in policy analysis will also be addressed. The workshop will include presentation of two case studies that will include a discussion of the selection process; elicitation protocol development, elicitation technique utilized, and the various issues that arose before, during, and after the elicitation process and the way they were resolved. The class will also include two hands-on exercises where participants will 1) learn about calibration of experts using a mobile application and 2) apply the Delphi and nominal group techniques to examine risk management issues associated with a popular topic.

8:30 AM – 5:30 PM

Approaches to Assessing Environmental Justice: Perspectives from the Scientific, Regulatory and Regulated Communities
Uni Blake, Anna White, Valerie Washington, Amina Wilkins, and Jacqueline Gibson
Meeting Room 10 (3rd Floor)

The environmental justice (EJ) movement arose from community concerns surrounding how people of color and/or low-socioeconomic status have borne the disproportionate impacts of environmental hazards, contributing to disease and health disparities. Risk assessors, risk modelers, and regulatory analysts are tasked with addressing these concerns and finding solutions to address environmental injustice. This workshop explores how the regulators, the scientific community, and the regulated community navigate the complex EJ landscape. The objective of the workshops is to provide practical tools and methods to better equip attendees to implement EJ analysis within their risk assessment, modeling, and regulatory analysis workflows.

This workshop will present a series of three learning modules, each module covering approaches from communities charged with responding to environmental justice:

Module 1: Regulators: Introduction to EJ Tools used by Agencies to identify EJ Communities and support cumulative impact assessments (Instructor – Ann Verwiel)
Module 2: Available Science and Tools for Assessing Cumulative Impacts: Case Studies (Instructors Bill Rish and Ann Verwiel)
Module 3: Regulated Community: Practical Solutions to Identifying Inequities and Responding to EJ Policy (Instructor: Rich Hamel)

1:00 PM – 5:00 PM

Risk Analysis Quality Test (RAQT) and Two Applications to Microbial Risk Analysis
Peg Coleman, John Lathrop, and Rob Waller
Meeting Room 8 (3rd Floor)

The Applied Risk Management Specialty Group (ARMSG), led by John Lathrop and Robert Waller, partnered with risk practitioners spanning the full spectrum of risk analysis topics from assessment to communication, management, and governance to develop a unique tool, the Risk Analysis Quality Test (RAQT) of the Society for Risk Analysis. The RAQT arose from the experience of diverse risk practitioners with pitfalls and shortcomings of risk analyses as applied to decision making. RAQT includes a comprehensive battery of 76 ‘experienced-pitfall-based’ questions. The tool can be used to generate a report that can be shared with colleagues, critics, and external reviewers. Reports generated from the RAQT beta testing are offered for deliberation and reflection, consistent with the goal of creating a culture of quality analysis, full disclosure, and detailed consideration of shortfalls as opportunities to improve risk analysis processes. The architects of the RAQT will introduce it to workshop participants. Two other SRA leaders will present a report from application of the tool to two historical microbial risk assessments and engage in deliberations with participants in light of 21st century risk science.
Workshops

Thursday, December 8

8:30 AM - 5:30 PM

Dose-Response Modeling: Benchmark Dose Modeling Approach’s Using EPA’s BMDS Online and NIEHS’ ToxicR
J. Allen Davis, Matthew Wheeler, Jay Zhao, Andy Shapiro, Todd Blessinger and Jeff Gift
Meeting Room 9 (3rd Floor)

For years, EPA’s Benchmark Dose Software has been available as a stand-alone Windows desktop application for the dose-response analysis of toxicological data for risk assessment. In addition to the updated BMDS Excel release in 3.3; the EPA and NIEHS have expanded dose-response capabilities to Online (Web) and an R-package (free software for statistical computing) environments. BMDS-Online reimplements the existing BMDS software in a web-based application, allowing users to run BMDS on any computer with access to the internet. ToxicR is a R-based Bayesian modeling platform developed by NIEHS/NTP that “untethers” BMDS and other models from standard parameterizations, expanding its capabilities for research applications.

This workshop will cover dose-response analyses (frequentist and Bayesian); participants will learn and practice (through hands-on exercises) dose-response modeling of dichotomous and continuous response data using BMDS-Online. Following these introductory analyses, participants will learn and practice the use of Bayesian models, including the application of a Bayesian framework for model averaging using ToxicR. Participants will explore model averaging approaches for dichotomous and continuous data, including new model averaging capabilities for continuous data that include the European Food Safety Authority’s (EFSA) suite of continuous models currently only available in ToxicR.

The research functionality and modeling capacity of the ToxicR platform will be demonstrated. Hands-on exercises in ToxicR will be provided. Participants will be shown how to modify prior assumptions and perform sensitivity analyses to investigate the default prior’s effect on a given analysis. Additional features of the package that allow for scripted batch processing, advanced graphics, and custom BMD analysis will also be highlighted.

8:30 AM – 5:30 PM

Monte Carlo Simulation and Probability Bounds Analysis in R or Python with Hardly and Data
Scott Ferson and Nick Gray
Meeting Room 10 (3rd Floor)

This full-day workshop features hands-on examples worked in R or Python (whichever you prefer) on your own laptop, from raw data to final decision. The workshop introduces and compares Monte Carlo simulation and probability bounds analysis for developing probabilistic risk analyses when little or no empirical data are available. You can use your laptop to work the examples, or just follow along if you prefer. The examples illustrate the basic problems risk analysts face: not having much data to estimate inputs, not knowing the distribution shapes, not knowing their correlations, and not even being sure about the model form. Monte Carlo models will be parameterized using the method of matching moments and other common strategies. Probability bounds will be developed from both large and small data sets, from data with non-negligible measurement uncertainty, and from published summaries that lack data altogether. The workshop explains how to avoid common pitfalls in risk analyses, including the multiple instantiation problem, unjustified independence assumptions, repeated variable problem, and what to do when there’s little or no data.

The numerical examples will be developed into fully probabilistic estimates useful for quantitative decisions and other risk-informed planning. Emphasis will be placed on the interpretation of results and on how defensible decisions can be made even when little information is available. The presentation style will be casual and interactive. Participants will receive handouts of the slides and electronic files with software for the examples.
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Toxicology Excellence for Risk Assessment (TERA)
1250 Ohio Pike, Suite 197
Cincinnati, OH 45102
513-542-7475
tera.org

Toxicology Excellence for Risk Assessment (TERA) is organized for scientific research, and educational purposes has provided sponsors with independent, transparent science since 1995. TERA solves human health risk challenges for diverse government and private sponsors through research and collaboration that emphasizes partnership building across scientific expertise and multiple perspectives.

Exhibitors

Exhibition
Grand Ballroom Salon E-J (2nd Floor)
Tuesday, December 5 .......................... 10:00 AM - 3:30 PM
Poster Session .............................. 6:00 PM - 8:00 PM
Tuesday, December 6 .......................... 9:30 AM - 4:00 PM
Wednesday, December 7 .......................... 9:30 AM - 4:00 PM

Coffee Breaks
Grand Ballroom Salon E-J (2nd Floor)
AM Coffee Breaks .......................... 10:00 AM – 10:30 AM
PM Coffee Breaks .......................... 3:00 PM – 3:30 PM

Thank you to our sponsor
Keynote Sessions

Monday, December 5
8:30 AM – 10:00 AM
Systemic Risks in a Global Context
Grand Ballroom Salon E-J (2nd Floor)

Pandemics, climate change, the water-food-energy nexus: Understanding and managing systemic risk is more important than ever due to our immense global connectivity, whether between sectors, countries and continents, or even between individuals. Systemic risk is associated with cascading impacts that spread within and across systems and sectors (e.g., ecosystems, health, infrastructure, the food and energy sectors) via the movements of people, goods, capital and information within and across boundaries (e.g., regions, countries and continents). Addressing contemporary challenges in terms of systemic risk requires integrating different systems perspectives and fostering system thinking, while implementing key intergovernmental agendas, such as the Paris Agreement, the Sendai Framework for Disaster Risk Reduction and the Sustainable Development Goals.

This interactive panel examines perspectives of climate, environmental and disaster risk science and practice regarding systemic risk. The panellists address issues such as information and data requirements that are essential for a better and more actionable understanding of the systemic nature of risk, the opportunities to connect research and policy for addressing systemic risk as well as recommendations for future work in science, policy and practice on systemic risk. A point of departure for the discussion is the briefing note on systemic risk by the International Science Council, UNDRR, and Risk-KAN Working Groups.

Moderator
Pia-Johanna Schweizer

Panel
Jessica Boakye, Sirkku Juhola, Kai Kornhuber, Nidhi Nagabhatla

Tuesday, December 6
12:00 PM - 1:30 PM
Linkages Across Cumulative Risk, Environmental Justice and Climate Change
Grand Ballroom Salon E-J (2nd Floor)

There is a lot of discussion around cumulative risk assessment frameworks, environmental justice issues in overburdened communities, and the implications of climate change across communities. Cumulative risk is a function of the combined effects of exposure to multiple contaminants from multiple sources and the interaction of those exposures with social and other factors in the community. In already overburdened communities, cumulative risk can be much higher as social determinants of health interact with other kinds of exposures, and the impacts of climate change in many cases felt more acutely. This interactive panel discussion will talk through these issues with reference to recently proposed EPA cumulative risk guidance, environmental justice efforts, and a recent National Academies panel on the same topic. In addition, panelists will provide perspectives from other agencies, risk practitioners looking to implement regulatory guidelines, and researchers who are trying to better understand these kinds of interrelationships.

Moderator
Katherine von Stackelberg

Panel
Christopher Frey, Felicia Wu

Wednesday, December 7
12:00 PM - 1:30 PM
Risk Regulation and the Law: Implications of Recent SCOTUS Rulings and Luncheon
Grand Ballroom Salon E-J (2nd Floor)

Recent decisions by the Supreme Court have constrained risk regulation, climate policy and environmental law in the United States. The Court has relied on the major questions doctrine, and nodded toward the nondelegation doctrine. Meanwhile, lower courts have seen litigation over the social cost of carbon. How will these judicial decisions affect risk regulation? Join us for a discussion with legal experts on these issues.

Moderator
Jonathan B. Wiener

Panel
Elissa Philip Gentry, Jonathan H. Adler
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<th>Time</th>
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<tr>
<td>Monday</td>
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<tr>
<td>7:00 AM-8:00 AM</td>
<td>New Member, Student/Young Professional Breakfast, Terrace Room (1st Floor)</td>
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<tr>
<td>8:30 AM-10:00 AM</td>
<td>Keynote Session – Systemic Risks in a Global Context, Grand Ballroom Salon E-J (2nd Floor)</td>
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<td>10:00 AM-10:30 AM</td>
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<td>Grand Ballroom Salon A (2nd Floor)</td>
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| 12:00 PM – 1:30 PM  | Pick up your box lunch near the registration desk and attend the specialty group meeting(s) of your choice.  
12:10 PM-12:45 PM - Dose Response (DRSG), Economics & Benefits Analysis (EBASG), Occupational Health & Safety (OHSSG), Risk, Policy & Law (RPLSG), Security & Defense (SDSG), Resilience Analysis (RASG), Ecological Risk Assessment (ERASG), Foundational Issues in Risk Analysis (FRASG)  
12:50 PM-1:25 PM - Exposure Assessment (EASG), Risk Communication (RCSG), Applied Risk Management (ARMSG), Decision Analysis and Risk (DARSG), Advanced Materials and Technologies (AMTSG), Justice, Equity and Risk (JERSG), Engineering & Infrastructure (EISG), Microbial Risk Analysis (MRASG)  
1:30 PM-3:00 PM      | M3-A: Resilience Against Emerging and Extreme Threats  
M3-B: Misinformation & the Politicization of Risk  
M3-C: Global Systemic Risks and Polycrises in the Anthropocene  
M3-D: Poster Platform: Information Processing |                                                                      |
| 3:00 PM-3:30 AM     | Coffee Break                                                       |
| 3:30 PM-5:00 PM     | M4-A: Risk Assessment at Scale for Critical Infrastructure  
M4-B: Natural Hazards  
M4-C: Risks from Extreme Storm Events  
M4-D: Poster Platform: Advanced Topics in Risk Analysis |                                                                      |
| 6:00 PM-8:00 PM     | Poster Reception, Grand Ballroom Salon E-J (2nd Floor)              |
## Monday

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<td>Keynote Session – Systemic Risks in a Global Context</td>
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<td>specialty group meeting(s) of your choice.</td>
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<td>12:10 PM-12:45 PM - Dose Response (DRSG), Economics &amp; Benefits</td>
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<td>Risk Analysis (FRASG)</td>
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<td>12:50 PM-1:25 PM</td>
<td>Exposure Assessment (EASG), Risk Communication (RCSG), Applied Risk</td>
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<td>Engineering &amp; Infrastructure (EISG), Microbial Risk Analysis (MRASG)</td>
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<td>1:30 PM-3:00 PM</td>
<td>M3-E: Wildfire Risk Analysis</td>
<td>M3-F: Cybersecurity, Digital Environment &amp; Web3.0</td>
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<td>3:30 PM-5:00 PM</td>
<td>M4-E: Public Responses to Climate Change Risks</td>
<td>M4-F: Cybersecurity</td>
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<td>6:00 PM-8:00 PM</td>
<td>Poster Reception</td>
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**Notes:**
- Exposure Assessment (EASG) includes Exposure Assessment, Risk Communication (RCSG), Applied Risk Management (ARMSG), Decision Analysis and Risk (DARSG), Advanced Materials and Technologies (AMTSG), Justice, Equity and Risk (JERSG), Engineering & Infrastructure (EISG), Microbial Risk Analysis (MRASG).
<table>
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<tr>
<th>Time</th>
<th>Grand Ballroom Salon A (2nd Floor)</th>
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<th>Grand Ballroom Salon D (2nd Floor)</th>
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<tr>
<td>8:30 AM-10:30 AM</td>
<td>T1-A: Towards Enhancing Power Grid Resilience under Climate Change and Extreme Weather Events</td>
<td>T1-B: Risk of the Year</td>
<td>T1-C: Symposium: Management of Security and Safety Risks: A Cost and Benefits Perspective</td>
<td>T1-D: How Low Can You Go? Examining the Basis, Reliability, and Interpretation of Continuous Dose-Response Projected to Low Exposures for Noncancer Endpoints</td>
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<td>10:30 AM-12:00 PM</td>
<td>T2-A: Adaptation Planning of Engineered Systems for Climate Change</td>
<td>T2-B: COVID-19 Vaccine Information and Decision-Making for At-Risk and Equity-Deserving Populations</td>
<td>T2-C: SRA/MORS Collaboration in U.S. National Security Risk Analysis Challenges</td>
<td>T2-D: Communicating Disease Risk</td>
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<td>12:00 PM – 1:30 PM</td>
<td>Keynote Session -- Linkages Across Cumulative Risk, Environmental Justice and Climate Change, Grand Ballroom Salon E-J (2nd Floor)</td>
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<td>3:30 PM-5:00 PM</td>
<td>T4-A: Roundtable: Incorporating Risk Equity into the Distribution of New Federal Infrastructure Funding</td>
<td>T4-B: Symposium: Enhanced Geothermal Energy: New Research Findings and Implications for Renewable Energy Acceptance</td>
<td>T4-C: Symposium: Risk Informed Decision and Benefit Analysis in Cybersecurity</td>
<td>T4-D: Risk and Human Factors Impacting Assessment</td>
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<tr>
<td>6:00 PM-8:00 PM</td>
<td>Specialty Group Mixers, see page 5</td>
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## Tuesday

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<th>Meeting Room 11 (3rd Floor)</th>
<th>Meeting Room 5 (2nd Floor)</th>
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<tr>
<td>8:30 AM-10:30 AM</td>
<td>T1-E: Another Natural Hazards Session</td>
<td>T1-F: Supply Chain &amp; Cyber Risks</td>
<td>T1-G: Evaluating Risks of Novel Food and Agriculture Technologies through Interdisciplinary Approaches</td>
<td>T1-H: Risk Analysis of Emerging Advanced Materials and Technologies</td>
<td>T1-I: SRA’s Risk Analysis Quality Test: 3 Surprise Spinoff Insights and How to Apply Them</td>
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<td>10:00 AM-10:30 AM</td>
<td><strong>Coffee Break</strong></td>
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<tr>
<td>12:00 PM-1:30 PM</td>
<td><strong>Keynote Session</strong> – Linkages Across Cumulative Risk, Environmental Justice and Climate Change, Grand Ballroom Salon E-J (2nd Floor)</td>
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<tr>
<td>1:30 PM-3:00 PM</td>
<td>T3-E: Risk Perception &amp; Information Processing</td>
<td>T3-F: Symposium: Current Supply-Chain Risks and Impacts</td>
<td>T3-G: Foodborne Illness &amp; Microbial Risk Modeling</td>
<td>T3-H: Wastewater and Water Quality</td>
<td>T3-I: Lightning Session: Risk Communication/Perception</td>
</tr>
<tr>
<td>3:00 PM-3:30 AM</td>
<td><strong>Coffee Break</strong></td>
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<tr>
<td>3:30 PM-5:00 PM</td>
<td>T4-E: Climate Change Adaptation and Resilience</td>
<td>T4-F: Roundtable: In Memory of Dr. Sharon Dunwoody - Research Based on the RISP Model</td>
<td>T4-G: Innovative Approaches in Food Safety Risk Management</td>
<td>T4-H: Symposium: Risk Analysis for Arctic Systems</td>
<td>T4-I: Lightning Session: Emerging Topics in Risk, Engineering, and Public Policy</td>
</tr>
<tr>
<td>6:00 PM-7:30 PM</td>
<td><strong>Specialty Group Mixers</strong>, see page 5</td>
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### Wednesday

<table>
<thead>
<tr>
<th>Time</th>
<th>Grand Ballroom Salon A (2nd Floor)</th>
<th>Grand Ballroom Salon B (2nd Floor)</th>
<th>Grand Ballroom Salon C (2nd Floor)</th>
<th>Grand Ballroom Salon D (2nd Floor)</th>
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<tbody>
<tr>
<td>10:00 AM-10:30 AM</td>
<td>Coffee Break</td>
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</tr>
<tr>
<td>10:30 AM-12:00 PM</td>
<td>W2-A: Risk Tradeoffs in Policy and Technology</td>
<td>W2-B: Roundtable: Why We Need an SRA Chapter for the MENA Region</td>
<td>W2-C: Decision-making for Climate Change Adaptation</td>
<td>W2-D: Chemicals and Human Health Risks</td>
</tr>
<tr>
<td>12:00 PM – 1:30 PM</td>
<td>Keynote Session – Risk Regulation and the Law: Implications of Recent SCOTUS Rulings and Luncheon, Grand Ballroom Salon E-J (2nd Floor)</td>
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<tr>
<td>1:30 PM-3:00 PM</td>
<td>W3-A: Roundtable: Major Questions at the Supreme Court: Implications for Risk Analysis</td>
<td>W3-B: Applied Risk Analysis &amp; Management</td>
<td>W3-C: Critical Infrastructure Risk and Resilience</td>
<td>W3-D: Artificial Intelligence</td>
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<td>3:00 PM-3:30 AM</td>
<td>Coffee Break</td>
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<tr>
<td>3:30 PM-5:00 PM</td>
<td>W4-A: Roundtable: Is There Something Else the Governments Could do to Improve their Communication with the Civil Society when Communicating about an Emerging Technology?</td>
<td>W4-B: Roundtable: Risk Science Perspectives on Information, Misinformation and Disinformation</td>
<td>W4-C: Natural Hazards and Infrastructure</td>
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## Wednesday

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<tr>
<th>Time</th>
<th>Meeting Room 8 (3rd Floor)</th>
<th>Meeting Room 9 (3rd Floor)</th>
<th>Meeting Room 10 (3rd Floor)</th>
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<td>10:00 AM – 10:30 AM</td>
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<td>Coffee Break</td>
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<tr>
<td>3:30 PM – 5:00 PM</td>
<td>W4-E: Informing Exposure: PFAS and other Chemicals</td>
<td>W4-F: Symposium: Emerging Risks and Consumer Products</td>
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</table>
**Monday Technical Program**

### M2-A: Symposium: Closing Risk Perception Gaps: Insights from Cross-National Perspective

**Grand Ballroom Salon A (2nd Floor)**
Chair: Catherine Wong

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Speaker</th>
<th>Institution</th>
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<tbody>
<tr>
<td>10:30 am</td>
<td>Public perceptions of nuclear energy in relation to climate change in China</td>
<td>Catherine Wong</td>
<td>University of Amsterdam</td>
</tr>
<tr>
<td>10:50 am</td>
<td>Do They See the Same Risks? Gaps between Engineers and the Ethics Community on AI Ethics</td>
<td>Cornelius Kalenzi</td>
<td>KAIST</td>
</tr>
<tr>
<td>11:10 am</td>
<td>Social Perception of Systemic Risk</td>
<td>Pia-Johanna Schweizer</td>
<td>Institute for Advanced Sustainability Studies</td>
</tr>
<tr>
<td>11:30 am</td>
<td>A Conceptual Framework and Research Agenda for Risk Perception Gaps</td>
<td>Leonard Lee</td>
<td>National University of Singapore</td>
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### M2-B: Infrastructure Risk, Resilience, and Natural Hazards

**Grand Ballroom Salon B (2nd Floor)**
Chair: TBD

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<tr>
<th>Time</th>
<th>Title</th>
<th>Speaker</th>
<th>Institution</th>
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<tbody>
<tr>
<td>10:30 am</td>
<td>Surprise is inevitable: How do we train and prepare to make our critical infrastructure more resilient?</td>
<td>David Alderson</td>
<td>Naval Postgraduate School</td>
</tr>
<tr>
<td>10:50 am</td>
<td>Assessing Exposure of Healthcare Facilities and Emergency Management Critical Infrastructure to Flooding Across Canada</td>
<td>Liton Chakraborty</td>
<td>University of Waterloo</td>
</tr>
<tr>
<td>11:10 am</td>
<td>Evaluating the Risk and Complexity of Pluvial Flood Damage in the U.S.</td>
<td>Gina Tonn</td>
<td>Verdantas</td>
</tr>
<tr>
<td>11:30 am</td>
<td>Cell phone data for quantifying disaster recovery</td>
<td>Tessa Swanson</td>
<td>University of Michigan</td>
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### M2-C: Symposium: Advances in Disaster Research for Infrastructure, Capabilities, and Objectives

**Grand Ballroom Salon C (2nd Floor)**
Chair: Cameron MacKenzie

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<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Speaker</th>
<th>Institution</th>
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<tbody>
<tr>
<td>10:30 am</td>
<td>A Bayesian approach to reconstructing interdependent infrastructure networks</td>
<td>Hiba Baroud</td>
<td>Vanderbilt University</td>
</tr>
<tr>
<td>10:50 am</td>
<td>Assessing interdependency among capabilities for emergency preparedness</td>
<td>Matthew Gabriel</td>
<td>Iowa State University</td>
</tr>
<tr>
<td>11:10 am</td>
<td>Assessing Goals and Objectives for Emergency Preparedness</td>
<td>Curtis Peters</td>
<td>Iowa State University</td>
</tr>
<tr>
<td>11:30 am</td>
<td>Retrieving and disseminating information about disasters through natural language processing tools</td>
<td>Parastoo Akbari</td>
<td>Iowa State University</td>
</tr>
<tr>
<td>11:50 am</td>
<td>Towards advancing disaster preparedness: a data-driven spatiotemporal analysis to forecast mobility patterns at critical facilities</td>
<td>Zhiyuan Wei</td>
<td>University of Buffalo</td>
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### M2-D: Poster Platform: COVID-19

**Grand Ballroom Salon D (2nd Floor)**
Chair: MargUt Kuttschreuter

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<tr>
<th>Time</th>
<th>Title</th>
<th>Speaker</th>
<th>Institution</th>
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<tbody>
<tr>
<td>10:30 am</td>
<td>Examining predictors of COVID-19 vaccine hesitancy to promote vaccination</td>
<td>Nagwan Zahry</td>
<td>The University of Tennessee-Chattanooga</td>
</tr>
<tr>
<td>10:35 am</td>
<td>A retrospective assessment of COVID-19 model performance in the US</td>
<td>Kyle Colonna</td>
<td>Harvard University</td>
</tr>
<tr>
<td>10:40 am</td>
<td>Public discussion of secondary risks related to covid-19 vaccines: what can we learn from the pause of J&amp;J vaccine?</td>
<td>Yeqing Kong</td>
<td>University of North Carolina Wilmington</td>
</tr>
<tr>
<td>10:45 am</td>
<td>Predicting vaccination intentions for COVID-19, HPV, and monkeypox</td>
<td>Haoran Chu</td>
<td>University of Florida</td>
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</table>

Society For Risk Analysis Annual Meeting
Monday

Technical Program

10:30 AM – 12:00 PM

M2-E: Symposium: Managing Risk from Megafires
Meeting Room 8 (3rd Floor)
Chair: Alison Cullen

10:30 am
International cooperation for managing wildfire risk
Sunniva Bloem
University of Washington

10:50 am
Risk Management Through Megafire Response
Alison Cullen
University of Washington

11:10 am
Fire Weather Forecasting in the Pacific Northwest
Reed Humphrey
University of Washington

11:30 am
Optimizing and Managing Prescribed Fire Usage in Mitigating Wildfires
Jun Zhuang
University at Buffalo

10:30 AM – 12:00 PM

M2-F: Symposium: Resilience in Cyber-Energy Systems
Meeting Room 9 (3rd Floor)
Chair: Igor Linkov

10:30 am
Edge Computing and Resilience
Fiondella
ERDC

10:50 am
Simulation of infrastructure resilience at military installations using Framework Integrating the Complexity of Uncertain Systems (FICUS)
Luke Hogewood
US Army Engineer Research and Development Center

11:10 am
Developing Reference Building Types for Risk Management in Non-Traditional Building Types
Andrew Jin
University of Southern California

11:30 am
Edge Computing Platform for Resilient Installations
Karen Fleckner
Artesion Inc

10:30 AM – 12:10 PM

M2-G: Considering Solar Geoengineering to Address Climate Change: Risk Tradeoffs, International Governance, and Comparisons with Other Emerging Technologies
Meeting Room 10 (3rd Floor)
Chair: Tyler Felgenhauer

10:30 am
Solar radiation modification: A risk-risk analysis
Jonathan Wiener
Duke University

10:50 am
Does solar geoengineering crowd-out mitigation? Lessons from recent experiments
Todd Cherry
University of Wyoming

11:10 am
Bi-directional learning for risk governance of solar geoengineering and gene drives: A comparison of technological and governance features across two emerging technologies
Khara Grieger
North Carolina State University

11:30 am
The effect of exclusivity and inclusivity on the international response to potentially harmful unilateral action: An application to solar geoengineering
Mark Borsuk
Duke University

11:50 am
Prevent, then manage: Governing the free driver incentive for solar geoengineering deployment
Tyler Felgenhauer
Duke University

10:30 AM – 12:00 PM

M2-H: Roundtable: Risk Science: How Can We Make it a Broadly Recognized Science with Strong Societal Impact through Educational Programs
Meeting Room 11 (3rd Floor)
Chair: Seth Guikema

The SRA vision is to be “the world’s leading authority on risk science and its applications.” This vision acknowledges that risk science exists as a distinct science and it is important to provide authority in relation to this science. The SRA strategic plan, which supports the vision, highlights the need for enhancing risk science and the profession. These high-level goals can be interpreted as a recognition of the importance of strengthening risk science.

The scope of risk science covers concepts, principles, approaches, methods, and models for understanding, assessing, characterizing, communicating, and managing risk. As a field and discipline, risk analysis includes all relevant study programs, researchers, journals, scientific conferences, societies, and so on.

Study programs and their curriculum play an important role in shaping and developing both risk science and its practitioners. SRA and other risk organizations can provide essential support for such initiatives, by providing essential documents and guidance on risk science, covering for example key subjects of risk science, fundamental principles, and suggestions for educational material.

Panelists
- Ragnar Lofstedt
- Terje Aven
- Tom Logan
1:30 PM – 3:00 PM  
M3-A: Resilience Against Emerging and Extreme Threats  
*Grand Ballroom Salon A (2nd Floor)*  
Chair: Aleksandar Jovanovic  
Steinbeis EU-VRi

1:30 pm  
**M3-A.1**  
New insurance solutions for enhancing disaster resilience against climate change related and natural extreme threats (XTs)  
Aleksandar Jovanovic  
Steinbeis EU-VRi

1:50 pm  
**M3-A.2**  
Interdependencies in energy systems  
Giovanni Sansavini  
ETH Zurich

2:10 pm  
**M3-A.3**  
Systemic risks as possible extreme threats: health care  
Peter Klimek  
Medical University Vienna, Austria

2:30 pm  
**M3-A.4**  
Dynamic and self-generated model of interdependencies in complex system: critical infrastructures and supply chains  
Marjan Jelic  
Steinbeis EU-VRi

1:30 PM – 3:00 PM  
M3-B: Misinformation & the Politicization of Risk  
*Grand Ballroom Salon B (2nd Floor)*  
Chair: Laura Rickard

1:30 pm  
**M3-B.1**  
Inoculation against fake news on COVID-19 vaccines: A replication study in Singapore  
Catherine Wong  
University of Amsterdam

1:50 pm  
**M3-B.2**  
Examining the effects of communicator bias on sharing intention in aggressive misinformation and correction about climate change  
Shupei Yuan  
Northern Illinois University

2:10 pm  
**M3-B.3**  
Understanding support for aquaculture policy: The role of information exposure, information seeking, and source credibility  
Laura Rickard  
University of Maine

2:30 pm  
**M3-B.4**  
Pathways underlying the COVID-19 vaccine political divide: A health behavior theory perspective  
Christopher Clarke  
George Mason University

1:30 PM – 3:00 PM  
M3-C: Global Systemic Risks and Polycrises in the Anthropocene  
*Grand Ballroom Salon C (2nd Floor)*  
Chair: Pia-Johanna Schweizer

The critical challenge facing humanity is the increasingly urgent need to find and implement pathways to sustainable futures with equity and justice. While humans living in Earth’s environment on which survival of all forms of life depends have been subject to disasters and faced crises at global to local spatial scales and temporal scales from immediate to long-term threats to future generations, a new type of risks, called systemic risks, are now increasingly acute and potentially irreversible with disastrous consequences leading to simultaneous polycrises. They include, e.g., the COVID-19 pandemic, food security, shifting geopolitics and war, climate change impacts, transgression of planetary boundaries, and systemic inequity and injustice.

Polycrises arise from complex interconnections and multiple feedbacks in global systems; their frequency and severity appear to be rising because society is subject to a range of increasingly powerful stresses. These stresses appear to be emerging slowly, but evidence suggests they are approaching tipping points that could cause disasters and even widespread system breakdown. Also, physical and social stresses are causally interacting in ways that could multiply their overall impact on human well-being, producing global repercussions that sharply and irreversibly degrade humanity’s prospects. To date, political, economic, institutional, and policy responses have been radically insufficient to reduce this risk. Polycrises are a consequence of system interaction and mutual dependencies leading to multiple cascading effects and amplification cycles.

**Panelists**  
- Thomas Homer-Dixon  
- Mariko Nishizawa  
- Ortwin Renn  
- Johan Rockström  
- Catherine Wong

1:30 PM – 3:00 PM  
M3-D: Poster Platform: Information Processing  
*Grand Ballroom Salon D (2nd Floor)*  
Chair: Xinxia Dong

1:30 pm  
**M3-D.1**  
More insufficient or more capable? Predicting risk information seeking and processing related to PFAS contamination  
Xinxia Dong  
University at Buffalo

1:40 pm  
**M3-D.3**  
Operationalizing the heuristic-systematic model in communication studies: a narrative review  
Yidi Wang  
University of Georgia

1:55 pm  
**M3-D.4**  
An assessment of expert risk perceptions of motor insurance fraud in Nigeria  
Olatokunbo Shoyemi  
University of Southampton

2:00 pm  
**M3-D.5**  
Eye-tracking Laypersons During a Nevus Identification Task: ABCDE Yields Increased Sensitivity but Reduced Visual Processing Efficiency  
Kevin John  
Brigham Young University

2:05 pm  
**M3-D.6**  
Actively open-minded thinking and liberal political orientation predict enhanced immunity to pandemic fake news stories: a signal detection approach  
Richard John  
University of Southern California

2:10 pm  
**M3-D.7**  
Understanding motivation and risk perception of cryptoassets users  
Thierry Warin  
HEC Montréal
### Monday

#### 1:30 PM – 3:00 PM

**M3-E: Wildfire Risk Analysis**  
*Meeting Room 8 (3rd Floor)*  
Chair: Alison Cullen

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<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Speaker(s)</th>
<th>Affiliation</th>
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<tbody>
<tr>
<td>1:30 pm</td>
<td>M3-E.1</td>
<td>Risk-informed emergency management for wildfires: the Wildfire Safe Egress (WISE) model and platform</td>
<td>Ali Mosleh</td>
<td>University of California Los Angeles</td>
</tr>
<tr>
<td>1:50 pm</td>
<td>M3-E.2</td>
<td>Systemic risks to wildfire response capacity in the US</td>
<td>Matthew Thompson</td>
<td>USDA Forest Service</td>
</tr>
<tr>
<td>2:10 pm</td>
<td>M3-E.3</td>
<td>Designing a Resilient Power Grid System through Optimal Public Safety Power Shutoffs and Microgrid Formation under Wildfire Scenarios</td>
<td>Sayanti Mukherjee</td>
<td>University At Buffalo, The State University Of New York</td>
</tr>
<tr>
<td>2:30 pm</td>
<td>M3-E.4</td>
<td>Growing Convergence Research: co-producing climate projection information for managing risk from simultaneous wildfires</td>
<td>Alison Cullen</td>
<td>University of Washington</td>
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#### 1:30 PM – 3:00 PM

**M3-F: Cybersecurity, Digital Environment & Web3.0**  
*Meeting Room 9 (3rd Floor)*  
Chair: Samuel Denard

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<tr>
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<th>Affiliation</th>
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<tbody>
<tr>
<td>1:30 pm</td>
<td>M3-F.1</td>
<td>Cybersecurity Risk Assessment of Networked Medical Devices</td>
<td>Maureen Van Devender</td>
<td>University of South Alabama</td>
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<tr>
<td>1:50 pm</td>
<td>M3-F.2</td>
<td>RAQT results representation</td>
<td>Samuel Denard</td>
<td>Empirical Products</td>
</tr>
<tr>
<td>2:10 pm</td>
<td>M3-F.3</td>
<td>Autonomous Driving Systems in Mobility as a Service: Operational Safety</td>
<td>Marilia Ramos</td>
<td>University of California Los Angeles</td>
</tr>
<tr>
<td>2:30 pm</td>
<td>M3-F.4</td>
<td>Evaluating systematic deviations in behavioral measures of risk-taking depending on the structure of the task</td>
<td>Kevin Kapadia</td>
<td>University of Southern California</td>
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#### 1:30 PM – 3:00 PM

**M3-G: The Social Cost of Carbon on Trial: What Comes Next?**  
*Meeting Room 10 (3rd Floor)*  
Chair: Jonathan Wiener

The Social Cost of Carbon (SCC) remains a central tool in agency toolkits for accounting for the expected impacts of climate change within regulatory cost-benefit analyses. In February of this year, in *Louisiana v. Biden*, a district court issued a sweeping nationwide injunction on all federal use of the SCC, citing multiple concerns with the SCC itself and with its implementation within regulatory risk analyses. Although the injunction was subsequently stayed on standing and procedural grounds, it froze many ongoing rules in the meantime. In this roundtable, legal and policy experts discuss this history and consider the future of the SCC, including the vulnerability of the SCC to future challenges of this type, implications for agencies and private actors, and how risk analysts can prepare and respond to judicial review of technical valuations like the SCC.

**Panelists**
- Arden Rowell
- Jonathan Wiener
- Melissa Luttrell
- Robin Cantor
- James K. Hammitt

#### 1:30 PM – 3:00 PM

**M3-H: Evaluating Cumulative Risk from Mixed Stressor Exposures**  
*Meeting Room 11 (3rd Floor)*  
Chair: Frank Hearl

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<tbody>
<tr>
<td>1:30 pm</td>
<td>M3-H.1</td>
<td>Applying cumulative risk assessment for mixed chemicals in the work environment</td>
<td>Alan Rossner</td>
<td>Clarkson University</td>
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<tr>
<td>1:50 pm</td>
<td>M3-H.2</td>
<td>Risk, Stress, and Health</td>
<td>Mary O’Reilly</td>
<td>University at Albany School of Public Health and Workplace Health Without Borders-US (WHWB-US)</td>
</tr>
<tr>
<td>2:10 pm</td>
<td>M3-H.3</td>
<td>Mixed stressors and workplace mental health: Challenges and opportunities for risk assessment</td>
<td>Tom Cunningham</td>
<td>CDC/NIOSH</td>
</tr>
<tr>
<td>2:30 pm</td>
<td>M3-H.4</td>
<td>Advanced analytics for evaluating cumulative risk</td>
<td>Margaret MacDonell</td>
<td>Argonne National Laboratory</td>
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<td>3:30 PM – 5:10 PM</td>
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| **M4-A: Risk Assessment at Scale for Critical Infrastructure**  
*Grand Ballroom Salon A (2nd Floor)*  
*Chair: Jason Reinhardt* | **M4-B: Natural Hazards**  
*Grand Ballroom Salon B (2nd Floor)*  
*Chair: Sergio García Mejía* | **M4-C: Risks from Extreme Storm Events**  
*Grand Ballroom Salon C (2nd Floor)*  
*Chair: Tom Logan* | **M4-D: Poster Platform: Advanced Topics in Risk Analysis**  
*Grand Ballroom Salon D (2nd Floor)*  
*Chair: Jun Zhuang* |
| **3:30 pm**  
M4-A.1  
Risk Assessment at Scale for Critical Infrastructure  
*NRMC Vision*  
Merideth Secor  
Cybersecurity and Infrastructure Security Agency | **3:30 pm**  
M4-B.1  
A culture of fire: identifying community risk perceptions surrounding prescribed burning in the Flint Hills, Kansas  
Zoey Rosen  
Colorado State University | **3:30 pm**  
M4-C.1  
Comparing the Performance of Alternative Power Arrays During Extreme Weather Events  
Yicheng Wang  
Rensselaer Polytechnic Institute | **3:30 pm**  
M4-D.1  
A Game-theoretic Framework for Multi-target, Multi-layer Defense against Strategic Attackers  
Ian Unson  
University at Buffalo |
| **3:30 pm**  
M4-A.2  
Generation and Application of NCF Data Network Layers for Risk Analysis via Functional Decomposition  
Laura Weinstock  
Sandia National Laboratories | **3:30 pm**  
M4-B.2  
Risk communication about wildfire smoke exposure in the U.S.  
Andrew Fox  
University of Oklahoma | **3:30 pm**  
M4-C.2  
S158 in S157 - Isolation: Revising the estimated risk of sea-level rise  
Tom Logan  
University of Canterbury | **3:30 pm**  
M4-D.2  
Confidence In = Confidence Out  
Alexander Wimbush  
University of Liverpool |
| **3:50 pm**  
M4-A.3  
From Functions to Assets: developing a generalized risk assessment methodology for application with the National Critical Functions  
Chel Samuels  
Lawrence Livermore National Laboratory | **3:50 pm**  
M4-B.3  
Scaling-up local adaptation: Results from an initial survey of local practitioners managing climate risks in the U.S. Gulf Coast, 2020-2022  
Natalie Herbert  
Stanford University | **3:50 pm**  
M4-C.3  
Cross-sectoral and multiscalar exposure assessment of California airports to future coastal flooding to advance climate adaptation policy  
Sarah Lindbergh  
UC Berkeley | **3:50 pm**  
M4-D.3  
Risk Screening of Phosphorus (P) Capturing Materials for Eutrophication Control: Environmental Impacts and Sustainable Management  
Mumtahina Riza  
North Carolina State University |
| **4:10 pm**  
M4-A.4  
Application of a functional dependency modeling framework within the Risk Architecture  
Rob Edsall  
Idaho National Laboratory | **4:10 pm**  
M4-B.4  
Emergency Communication Strategies During “Back to Back” Tropical Cyclones Eta and Iota  
Sergio García Mejía  
University of Maryland | **4:10 pm**  
M4-C.4  
Direct policy search for a risk-based levee design framework  
Jingya Wang  
Purdue University | **3:55 pm**  
M4-D.4  
Water quality and exposure to enteric pathogens, inorganic chemicals, & health outcomes in central Appalachia  
Md Rusheduzzaman  
Virginia Polytechnic Institute and State University |
| **4:30 pm**  
M4-A.5  
A Network-of-Networks Framework for Analyzing Functions-Based Critical Infrastructure Risk and Resilience  
Samrat Chatterjee  
Pacific Northwest National Laboratory | **4:30 pm**  
M4-B.5  
Social and Economic Disparity in Isolation Risk due to Sea Level Rise in the United States  
Kelsea Best  
University of Maryland | **4:30 pm**  
M4-C.5  
Agent-based modeling of resident flood-hazard relocation decisions with buyouts or relocation subsidies  
Vicki Bier  
University of Wisconsin-Madison | **4:00 pm**  
M4-D.5  
Forecast value for risk averse decision-makers  
Luca Anna Palasti  
University of Colorado Boulder |
| **4:50 pm**  
M4-A.6  
A Network-of-Networks Framework for Analyzing Functions-Based Critical Infrastructure Risk and Resilience  
Samrat Chatterjee  
Pacific Northwest National Laboratory | **4:50 pm**  
M4-B.6  
Social and Economic Disparity in Isolation Risk due to Sea Level Rise in the United States  
Kelsea Best  
University of Maryland | **4:50 pm**  
M4-C.6  
Agent-based modeling of resident flood-hazard relocation decisions with buyouts or relocation subsidies  
Vicki Bier  
University of Wisconsin-Madison | **4:05 pm**  
M4-D.6  
Mapping sense of place for storm surge: map features and sense of place in storm surge risk perceptions and protective actions  
Hugh Walpole  
National Center for Atmospheric Research |
| **4:50 pm**  
M4-A.7  
A Network-of-Networks Framework for Analyzing Functions-Based Critical Infrastructure Risk and Resilience  
Samrat Chatterjee  
Pacific Northwest National Laboratory | **4:50 pm**  
M4-B.7  
Social and Economic Disparity in Isolation Risk due to Sea Level Rise in the United States  
Kelsea Best  
University of Maryland | **4:50 pm**  
M4-C.7  
Agent-based modeling of resident flood-hazard relocation decisions with buyouts or relocation subsidies  
Vicki Bier  
University of Wisconsin-Madison | **4:10 am**  
M4-D.7  
Downstream impacts of oral poliovirus vaccination: a quantitative microbial risk assessment  
Madeline Lewis  
Ohio State University College of Public Health |
### M4-E: Public Responses to Climate Change Risks
**Meeting Room 8 (3rd Floor)**
**Chair:** Dana Garfin

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Speaker</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:30 pm</td>
<td>M4-E.1</td>
<td>Carbon Dependency, Social Capital, Political Orientation, and American Public Response to Climate Change</td>
<td>Feng Hao</td>
<td>University of South Florida</td>
</tr>
<tr>
<td>3:50 pm</td>
<td>M4-E.2</td>
<td>The impact of extreme precipitation events and their variability on climate change beliefs</td>
<td>Mikhaila Calice</td>
<td>University of Wisconsin-Madison</td>
</tr>
<tr>
<td>4:10 pm</td>
<td>M4-E.3</td>
<td>Increased polarization in public view on climate change after exposure to natural hazards</td>
<td>Haoran Chu</td>
<td>University of Florida</td>
</tr>
<tr>
<td>4:30 pm</td>
<td>M4-E.4</td>
<td>Concerned, but am I engaged? Identifying predictors of climate action among Americans who perceive climate change to be a high risk</td>
<td>Yema Conteh</td>
<td>University of Southern California</td>
</tr>
<tr>
<td>4:50 pm</td>
<td>M4-E.5</td>
<td>Negative hazard experiences, climate anxiety, PTSD, and pro-environmental action and attitudes</td>
<td>Dana Garfin</td>
<td>University of California, Los Angeles</td>
</tr>
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</table>

### M4-F: Cybersecurity
**Meeting Room 9 (3rd Floor)**
**Chair:** Maksim Kitsak

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Speaker</th>
<th>Institution</th>
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<tbody>
<tr>
<td>3:50 pm</td>
<td>M4-F.2</td>
<td>Warnings and management of cyber threats by a hybrid AI system (robot and human operator)</td>
<td>Elisabeth Pote-Cornell</td>
<td>Stanford</td>
</tr>
<tr>
<td>4:10 pm</td>
<td>M4-F.3</td>
<td>Finding communication paths in incomplete networks: implications for cybersecurity</td>
<td>Maksim Kitsak</td>
<td>Delft University of Technology</td>
</tr>
<tr>
<td>4:30 pm</td>
<td>M4-F.4</td>
<td>Resilience of multi-scale rail networks against compound floods and opportunistic failures</td>
<td>Jack Watson</td>
<td>Northeastern University</td>
</tr>
<tr>
<td>4:50 pm</td>
<td>M4-F.5</td>
<td>A signal detection framework for threat perception and self defense</td>
<td>Richard John</td>
<td>University of Southern California</td>
</tr>
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</table>

### M4-G: Salmonella, Pork, and the Critical Role of Analysis and Data to Inform Decision-Making and Metrics Development
**Meeting Room 10 (3rd Floor)**
**Chair:** Janell Kause

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Speaker</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:30 pm</td>
<td>M4-G.1</td>
<td>Knowing where we started to understand where we want to go: Part 1—Utilizing Salmonella pork exploratory sampling data to set baselines for future evaluations</td>
<td>Neal Golden</td>
<td>USDA/FSIS</td>
</tr>
<tr>
<td>3:50 pm</td>
<td>M4-G.2</td>
<td>Knowing where we started to understand where we want to go: Part 2—Utilizing Salmonella pork exploratory sampling and questionnaire data to identify risk factors for future evaluation</td>
<td>Eric Ebel</td>
<td>USDA/FSIS</td>
</tr>
<tr>
<td>4:10 pm</td>
<td>M4-G.3</td>
<td>Science in Action: From risk assessment to policy—the new Salmonella performance standards for raw pork products</td>
<td>Neal Golden</td>
<td>USDA/FSIS</td>
</tr>
<tr>
<td>4:30 pm</td>
<td>M4-G.4</td>
<td>The Margins Matter: A case study in how we can use non-inferiority tests to assess the risk of Salmonella in pork</td>
<td>Eric Ebel</td>
<td>USDA/FSIS</td>
</tr>
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</table>

### M4-H: Symposium: Benzene Contamination in Consumer Products: Exposures and Implications for Human Health and The Environment
**Meeting Room 11 (3rd Floor)**
**Chair:** Debra Kaden

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<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Speaker</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:30 pm</td>
<td>M4-H.1</td>
<td>Detection of benzene in consumer products</td>
<td>David Light</td>
<td>Valisure</td>
</tr>
<tr>
<td>3:50 pm</td>
<td>M4-H.2</td>
<td>Benzene Contamination in Consumer Products: Understanding the Regulatory Landscape</td>
<td>Nancy Beck</td>
<td>Hunton Andrews Kurth</td>
</tr>
<tr>
<td>4:10 pm</td>
<td>M4-H.3</td>
<td>Environmental Impact of Currently Marketed Sunscreens and Potential Human Impacts of Changes in Sunscreen Usage</td>
<td>Charles Menzie</td>
<td>Exponent</td>
</tr>
<tr>
<td>4:30 pm</td>
<td>M4-H.4</td>
<td>Understanding exposures and the potential for health effects from benzene contamination in consumer products</td>
<td>Robinan Gentry</td>
<td>Ramboll US Consulting</td>
</tr>
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</table>
Monday

6:00 PM – 8:00 PM

PS: Poster Session

Grand Ballroom Salon E-J (2nd Floor)

PS.1
“Nothing will ever be the same”: Qualitative inquiries during COVID-19
Jody Chin Sing Wong
RAND Corporation

PS.2
Evaluating the built environment impact on intentions of hurricane preparedness in Florida
Amer Abukhalaf
University of Florida

PS.3
The COVID-19 outbreak impact on the mental health of short-term migrants in central Florida college towns
Amer Abukhalaf
University of Florida

PS.4
Optimizing peer communication to increase behavioral intention of receiving covid-19 vaccine
Nagwon Zahary
The University of Tennessee-Chattanooga

PS.5
Risk Perception and Scientific Understanding of Electromagnetic Fields of Pregnant Women in Japan
Chiyoji Ohkubo
Japan Electrical Safety & Environment Technology Laboratories

PS.6
Multi-risk climate scenarios across system receptors in the metropolitan city of Venice
Andrea Critto
University Ca’ Foscari of Venice

PS.7
Exploring the role of subjective norms on risk information sharing and seeking about lead ammunition
Alisius Leong
Cornell University

PS.8
Dissolution of inorganic lead (Pb) compounds in synthetic sweat to assess risk of dermal exposure
Richard Niemeier
CDC/NIOSH

PS.9
Newspapers coverage of the Fukushima thyroid survey
Midori Aoyagi
National Institute for Environmental Studies

PS.10
The contribution of body burden by food exposure using dioxin in blood concentrations and simulation models
Jeoung Kim
Institute for Environmental Research College of Medicine, Yonsei University

PS.11
Logistic Regression with Uncertain Risk Factors
Nicholas Gray
University of Liverpool

PS.12
Assessment of Escherichia coli O157:H7 contamination risk on leafy greens irrigated with non-traditional water sources
Aishwarya Rao
University of Maryland

PS.13
Communicating risk across the political divide
Cherie Metcalf
Queen’s University

PS.14
Building and maintaining coastal community resilience through blue carbon resources
Roxolana Kashuba
EPA

PS.15
Quantitative microbial risk assessment for Salmonella spp. in onions in the United States
Shuyi Feng
University of Maryland

PS.16
Dietary exposure assessment to ingredients and process-related contaminants/impurities in food
Todor Todorov
FDA

PS.17
Seismic risk perception and disaster preparedness behavior in Japan
Tadahiro Motoyoshi
Kansai University

PS.18
Real-time personal exposure to particulate matter: portable exposure & cardiovascular outcome monitoring system
Yoojin Song
Yonsei University

PS.19
Defining Resilience: Lessons from the risk and safety sciences
Tom Logan
University of Canterbury

PS.20
Probabilistic risk assessment on cadmium in animal feeds: a population physiologically-based pharmacokinetics approach
Lien-Yao Chou
National Taiwan University

PS.21
Benefit-risk assessment of health risk and disease burdens contributed by climate change via dietary exposures to aflatoxins
Pei-Chen Chao
National Taiwan University

PS.22
Risk analysis in a sustainable new space product-service system: the application of functional resonance analysis method and Monte Carlo simulation
Kaiqi Xu
University of Southampton

PS.23
Visual depictions of behavioral norms and uncertainty: A Message Experiment Comparing Icon Arrays and Bar Charts
Alexis Vega
University of Utah

PS.24
Effects of Airborne Exposure and Airway Inflammation on Individual Exposure Evaluation of Elementary School Students in Seoul - Centered on exhaled nitrogen oxide
Yoojin Song
Yonsei University

PS.25
Improving disaster and community resilience: the underestimated role of the built environment on the community
Mitchell Anderson
University of Canterbury

PS.26
Learning from at-risk peers: Integrating narrative persuasion to communicate e-cigarette use
Sixiao Liu
University of Pennsylvania

PS.27
Probabilistic risk assessment on cadmium in animal feeds: a population physiologically-based pharmacokinetics approach
Lien-Yao Chou
National Taiwan University
PS.29
The ecological risk associated with illegal mining in Cameroon
Nzefeh Brenda Awunga Nyi
University of Buea, Faculty of Health Sciences, Department of Biomedical Sciences, Cameroon

PS.30
The Economic Impact Of Heat-Not-Burn-Tobacco Products On Health Care Burden Of Lung Cancer In EU: A Simulation Study
Dario Gregori
University of Padova

PS.31
Impact for smokers on risk of lung cancer by switching to Heat-Not_Burn-Tobacco (HNBT) products on the long run: a simulation study based on dose-response modeling
Dario Gregori
University of Padova

PS.32
Impurities in Cosmetics: EU vs US
Louise Fortunato
Ramboll UK Limited

PS.33
Exposure Effects of Drugs of Abuse on aquatic microbial communities
Varsha Niroula
University of Massachusetts Lowell

PS.34
Where's the risk? Exploring the place of risk education in secondary schools in England
Sarah Duckett
King's College London

PS.35
Trade-off assessment between low-carbon and increasing of blade waste disposal under wind power scenario
Shota Nogaki
Osaka University

PS.36
A comparative evaluation of cadmium maximum residue limits in food for Taiwan and the European Union: a probabilistic aggregate risk assessment approach
Min Hsiu Ke
National Taiwan University

PS.37
A systematic method to evaluate the current maximum residue levels of a hazard in foods: dioxins as an example
Hung-Yong Chu
National Taiwan University

PS.39
A Comparative Evaluation of the Maximum Residue Limits of Lead in Foods of Taiwan and the European Union: A Probabilistic Aggregate Risk Assessment Approach
Kuan In Chong
National Taiwan University

PS.40
Risk-based screening levels for benzene in skin care products
Jessica Chopyk
CTEH

PS.41
California-specific screening levels for recreational water activities following crude oil spills.
Katrina Jew
CTEH

PS.42
Classification of Salmonella enterica serovar Typhimurium isolates based on stress response signatures using machine learning and transcriptomics data
Shradha Karanth
University of Maryland, College Park

PS.43
In search of a data-driven decision process for Relative Source Contribution factors when deriving drinking water guidelines
Christopher Greene
Minnesota Department of Health

PS.44
Individual differences in compliance to pandemic mandates and voluntary avoidance behavior
Katie Byrd
University of Southern California

PS.45
How can US regulators protect consumers from ingesting lead-contaminated game meat?
Christopher Tran
Cornell University

PS.46
A Decision Model for Food Safety Diets in Cancer Patients who Consume Fresh Produce
Carly Gomez
Michigan State University

PS.47
Evaluating Impacts to the U.S. Department of Defense Mission from Chemical Regulation of Phosphoric Acid, Triphenyl Ester (TPP) and Tris(2-chloroethyl) Phosphate (TCEP)
Reese Washington
Noblis

PS.48
Considerations for computational model development and use to estimate infectious disease risks in healthcare contexts
Madeline Lewis
Ohio State University College of Public Health

PS.49
Quantitative Microbial Risk Assessment of Listeria monocytogenes in Michigan Apple Storage Practices
Tyler Stump
Michigan State University

PS.50
Risk and cost-benefit analysis of chemical release accident triggered by landslides
Nobuto Moriguchi
Osaka University

PS.52
Systems Models to Identify Risk for Enterprises
DeAndre Johnson
University of Virginia

PS.53
Risk assessment: effect of lead in private well water on educational outcomes
Timothy Leung
Indiana University

PS.54
Can we have your attention to climate change? Examining the joint effects between events and aggressive communication from networked gatekeepers on Twitter
Yingying Chen
University of South Carolina

PS.55
Risk perception as a factor of social acceptability: case study of willingness to share health data and openness to artificial intelligence in healthcare
Nathalie de Marcellis-Warin
Polytechnique Montreal & CIRANO
PS.63 Predictors of Performance in Separating Valid Explanations from Conspiracy Theories
Alyssa Delarosa
University of Southern California

PS.64 A comparative analysis of mental health risks due to covid 19 pandemic in africa
Emma Anyiko
The Co-operative University of Kenya

PS.65 Responding to public crises: how does culture affect public service motivation? – the mediating effect of crisis leadership from Chinese bureaucrats during COVID-19
Rui Peng
Tsinghua University/Harvard University

PS.66 Subsistence Seafood and Aquatic Biota Consumption Rate Systematic Review & Project Status
Amina Wilkins
USEPA

PS.67 Why are you not updating? the risk of software updates against advanced persistent threats
Giorgio Di Tizio
University of Trento

PS.68 A Case Study of Disaster Risk Analysis in Schools for the Blind in Thailand
Chayanee Wongsuriyanan
Kansai University

PS.69 Evaluation of fate of Escherichia coli O157:H7 in the different physiological states in postharvest leafy greens to understand and predict risks for transported products
Joshua Owade
Michigan State University

PS.70 Psychological Characteristics, Social Norms, and Behavioral Nudges of COVID-19 Vaccine Hesitancy and Vaccination Behavior: A Cross-Sectional Survey Among Older and Young Adults in China
Rui Peng
Tsinghua University/Harvard University

PS.71 Meta-analysis of water quality parameters and their influence on Legionella growth and persistence in biofilms
Alexis Mraz
The College of New Jersey

PS.72 Methods to Evaluate Exposure to Personal Care Products
Michael Holton
Ramboll

PS.73 Evaluation of organic chemicals subject to the PRTR from the perspective of the potential of long-range transport using grasshopper effect as an indicator
Minori Kawakami
Osaka University

PS.74 In silico Hazard Assessment of Flavor Chemicals Associated with Oral Nicotine Products
Chastain Anderson
Altria Client Services

PS.75 Trends of new flame retardant, PFAS, and plasticizer notifications in Canada
Jean Grundy
Health Canada

PS.76 Measuring older adults’ cognitive biases regarding adaptive behaviors to prevent heat-related illnesses.
Masahiko Haraguchi
Harvard University

PS.77 Risk Education for All: Methods & Applications for Developing a Risk Literate Society
Joshua McDuffie
Vanderbilt University
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<tr>
<td>8:30 AM</td>
<td>T1-A: Towards Enhancing Power Grid Resilience under Climate Change and Extreme Weather Events</td>
<td>Grand Ballroom Salon A (2nd Floor)</td>
<td>Sayanti Mukherjee</td>
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<tr>
<td>8:30 AM</td>
<td>T1-B: Risk of the Year</td>
<td>Grand Ballroom Salon B (2nd Floor)</td>
<td>TBD</td>
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<tr>
<td>8:30 AM</td>
<td>T1-C: Symposium: Management of Security and Safety Risks: A Cost and Benefits Perspective</td>
<td>Grand Ballroom Salon C (2nd Floor)</td>
<td>Unal Tatar</td>
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<tr>
<td>8:30 AM</td>
<td>T1-D: How Low Can You Go? Examining the Basis, Reliability, and Interpretation of Continuous Dose-Response Projected to Low Exposures for Noncancer Endpoints</td>
<td>Grand Ballroom Salon D (2nd Floor)</td>
<td>Lorenz Rhomberg</td>
<td></td>
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<tr>
<td>8:30 AM – 10:00 AM</td>
<td>T1-A.1</td>
<td>Hurricane resilience of power systems: Effects of socioeconomic status and sociodemographic factors</td>
<td>Abdollah Shafieezadeh</td>
<td>The Ohio State University</td>
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<tr>
<td>8:30 am</td>
<td>T1-A.2</td>
<td>Power outage risk under uncertain climate change</td>
<td>Negin Alemazkoor</td>
<td>University of Virginia</td>
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<td>8:30 am</td>
<td>T1-A.3</td>
<td>Engineering resilience in the critical energy infrastructure</td>
<td>Giovanni Sansavini</td>
<td>ETH Zurich</td>
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<tr>
<td>8:30 am</td>
<td>T1-C.1</td>
<td>Uncertainty Analysis of Business Interruption Losses in the Philippines Due to the COVID-19 Pandemic</td>
<td>Joost Santos</td>
<td>George Washington University</td>
</tr>
<tr>
<td>8:30 am</td>
<td>T1-C.2</td>
<td>Visible Deterrence: A Novel Experiment of Adversary Dissuasion in Transportation Security</td>
<td>Brandon Behlendorf</td>
<td>University at Albany</td>
</tr>
<tr>
<td>8:30 am</td>
<td>T1-C.3</td>
<td>Wastewater-based Epidemiology: an Emerging Tool for Public Health Surveillance and Early Warning for Disease Outbreaks</td>
<td>Sheree Pagsuyoin</td>
<td>UMass Lowell</td>
</tr>
<tr>
<td>8:30 am</td>
<td>T1-C.4</td>
<td>Robustness of Flood Protection Project Evaluation to Alternative Benefit Metrics</td>
<td>David Johnson</td>
<td>Purdue University</td>
</tr>
<tr>
<td>8:30 am</td>
<td>T1-C.5</td>
<td>Synergies and Incompatibilities between AI and Fundamental Risk Principles in Disaster Risk Management</td>
<td>Unal Tatar</td>
<td>University at Albany</td>
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<tr>
<td>8:30 am</td>
<td>T1-D.1</td>
<td>Limits to meaningful projection of noncancer risk levels to lower doses</td>
<td>Lorenz Rhomberg</td>
<td>Gradient</td>
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<tr>
<td>8:30 am</td>
<td>T1-D.2</td>
<td>Lessons from Beyond Science and Decisions Workshops Regarding Noncancer Risk</td>
<td>Michael Dourson</td>
<td>TERA</td>
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<tr>
<td>8:30 am</td>
<td>T1-D.3</td>
<td>Wrestling with Uncertainty in the Low-Dose Region for Non-Cancer Risk Assessment</td>
<td>Greg Paoli</td>
<td>Risk Sciences International</td>
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<tr>
<td>8:30 am</td>
<td>T1-D.4</td>
<td>Discussion - Risk-Specific Doses for Noncancer Toxicity</td>
<td>Julie Goodman</td>
<td>Gradient</td>
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</table>
| **Tuesday**  | **8:30 AM – 10:10 AM**           | **T1-E: Another Natural Hazards Session** | Thi Mui Nguyen | 8:30 am **T1-E.1** Equipping the avalanche safety community with better insight for developing and evaluating risk communication products: Developing a dedicated research panel and identifying meaningful user profiles  
Pascal Haegeli  
Simon Fraser University  
8:50 am **T1-E.2** How do winter backcountry recreationists make avalanche risk management decisions in the field? Identifying and characterizing in-field decision-making practices to inform improved risk communications.  
Rosemary Langford  
Simon Fraser University Avalanche Research Program  
9:10 am **T1-E.3** Impact of Chemical Release Accidents on Rivers Caused by a Major Earthquake and Evaluation of Countermeasure Options  
Lisa Ito  
Osaka University  
9:30 am **T1-E.4** Extreme weather drivers during power outages in the United States  
Nicole Jackson  
Sandia National Laboratories  
9:50 am **T1-E.5** drought perception and adaptation in Vietnam  
Thi Mui Nguyen  
Victoria University of Wellington |
| **8:30 AM – 10:00 AM** | **T1-F: Supply Chain & Cyber Risks** | **Meeting Room 9 (3rd Floor)** | Adam Rose | 8:30 am **T1-F.1** Credit Rating Processes Applied to Critical Infrastructure Cyber Risk Assessment  
Kevin Griffith  
Sandia National Labs  
8:50 am **T1-F.2** Business process mapping for risk identification in semiconductor manufacturing  
Zachary Collier  
Radford University  
9:10 am **T1-F.3** Cyber risk of shipbuilding supply network: data science + risk analytics approach  
Ahmed M. Abdelmagid  
Old Dominion University |
| **8:30 AM – 10:00 AM** | **T1-G: Evaluating Risks of Novel Food and Agriculture Technologies through Interdisciplinary Approaches** | **Meeting Room 10 (3rd Floor)** | Khara Grieger | 8:30 am **T1-G.1** Health and Safety Assessment and Risk Communication ñ The Challenge of Additive Manufacturing/3D Printing  
Treye Thomas  
CPSC  
8:50 am **T1-G.2** Evaluating Risks, Benefits, and Societal Implications of Novel Agrifood Technologies  
Nick Loschin  
North Carolina State University  
9:10 am **T1-G.3** Fostering Responsible Innovation of Nano-Agrifoods through Interdisciplinary Perspectives and Insights  
Khara Grieger  
North Carolina State University  
9:30 am **T1-G.4** Exploring the role of regulation to ensure animal welfare of gene edited animals  
Ilaria Cimadori  
Yale University |
| **8:30 AM – 10:00 AM** | **T1-H: Risk Analysis of Emerging Advanced Materials and Technologies** | **Meeting Room 11 (3rd Floor)** | James Ede | 8:30 am **T1-H.1** Health and Safety Assessment and Risk Communication ñ The Challenge of Additive Manufacturing/3D Printing  
Treye Thomas  
CPSC  
8:50 am **T1-H.2** Safer by Design Toolbox for the Risk Assessment of Next Generation Cellulose Nanomaterials  
Brian Zhang  
Vireo Advisors  
9:10 am **T1-H.3** Life-cycle Risk Assessment of Consumer Applications of Graphene: Outcomes, Data Gaps and Priorities  
James Ede  
Vireo Advisors  
9:30 am **T1-H.4** Risk Screening of Phosphorus Capturing Materials for Eutrophication Control: Environmental Impacts and Sustainable Management  
Mumtahina Riza  
North Carolina State University |
The Applied Risk Management SG developed the SRA Risk Analysis Quality Test (sra.org/resources/risk-analysis-quality-test/) to: 1) test any risk analysis, past or planned, for its risk analysis quality; 2) characterize risk analysis quality; 3) promote risk analysis quality; and 4) promote a culture of risk analysis quality. As we developed the RAQT and sought applications for it, we discovered three spinoff insights: 1) The RAQT provides a taxonomy and ontology of risk analysis quality – we will present and seek feedback-new-ideas; 2) Testing the RAQT against different specialty areas, as defined by SRA Specialty Groups, we find that different SGs have different subsets of the RAQT; and 3) The RAQT is a basis for understanding what comprises risk analysis quality; how that risk analysis quality varies among areas of specialization, and the relationships between individual and small-team risk analysts and overall risk analysis quality. There is more: Our panelists have been actively researching related topics, and will have recently-developed insights to present and discuss in December. One example: The role of a “risk analysis” in its larger political and/or institutional frame may prevent it from being an actual risk analysis. That effect may be either inadvertent or purposeful. The roundtable will be run as a workshop, asking the panelists and the audience to contribute ideas in each of the three areas listed, and on each of the additional issues the panelists raise.

Panelists
• Terje Aven, Emma Soane, Charles Redinger, Richard Belzer

The current U.S. National Security Strategic Interim Guidance describes numerous national security challenges of potentially global significance. In addition to the emergence of militarily near-peer authoritarian adversaries such as China, Russia and regional troublemakers like Iran and North Korea which seek to undermine democracies around the world, America and its allies face additional challenges that include recovery from the pandemic, national and global economic downturns, internal polarization and racial justice questions, terrorism, a deepening climate emergency, cybersecurity and perceived increases in the frequency of natural disasters.

A consequence of today’s complex and interconnected geopolitical environment is the need to make national security decisions in the face of broad uncertainties that can result in unintended outcomes with uneven undesirable national and international ramifications. This reality dictates a need for robust analytical and risk modeling, assessment, management, and communication approaches that are viable and implementable within and across borders.

A significant distinguishing feature of this roundtable is that it will be comprised of expert participants from both the Society of Risk Analysis (SRA) and the Military Operations Research Society (MORS). The motivation for, and objective of, this unique roundtable composition is to identify ways of combining the highly regarded and complementary experiences, skills and expertise of SRA risk science subject matter experts and the defense and national security analytical and domain expertise and experience of MORS operations research subject matter experts. Doing so is predicted to result in more holistic and impactful analyses of the national security challenges facing our countries and the development of more effective and actionable alternative risk management approaches for our national defense and security decision makers.

Panelists
• Kenneth Crowther, Cameron MacKenzie, Barry Ezell, Arch Turner
10:30 AM – 12:10 PM
T2-D: Communicating Disease Risk
Grand Ballroom Salon D (2nd Floor)
Chair: Frederic Bouder

10:30 am T2-D.1
Effects of communicating lifetime risks and screening rates of colorectal cancer and breast cancer
Jiawei Liu
Cornell University

10:50 am T2-D.2
Prevalence and content of messages in the public communication environment about alcohol use as a modifiable risk factor
Andy King
University of Utah

11:10 am T2-D.3
Communicating uncertainty about cancer: a systematic review
Andy King
University of Utah

11:30 am T2-D.4
Fighting the Covid19 pandemic with enhanced risk communication (PAN-FIGHT): learning from comparative research
Frederic Bouder
University of Stavanger

11:50 am T2-D.5
Characterizing risk in relation to COVID-19: a review of current practices with suggestions for improvement
Ingrid Glette-Iversen
University of Stavanger

Occupational exposure assessment remains a high impact element of TSCA chemical risk evaluations. This proposal follows up on the 2022 Society of Toxicology (SOT) symposium to describe developments of how the activities around occupational exposure assessment have progressed under amended TSCA. Under the current implementation framework both EPA and OSHA standards may apply in the workplace. This informational session will discuss the progress made in assessing and managing exposures and risk in occupational settings under amended TSCA. This informational session will present an overview of continuing opportunities and challenges in harmonizing TSCA risk evaluations and occupational exposure assessments. Additionally, this session will highlight best practices to gather, aggregate, analyze, and communicate occupational exposure data. Other available resources including tools for exposure assessment and educational webinars to provide information, encourage knowledge sharing, and streamline communication amongst various stakeholders will also be presented.

Panelists
- Silvia Maberti
- Elke Jensen
- Andrew Maier
- Majd El-Zoobi
- Christine Whittaker

10:30 AM – 12:00 PM
T2-E: Roundtable: Role of Occupational Exposure Assessments Under Amended TSCA Risk Evaluations
Meeting Room 8 (3rd Floor)
Chair: Neeraja Erraguntla

10:30 am T2-E.1
Occupational exposure assessment remains a high impact element of TSCA chemical risk evaluations. This proposal follows up on the 2022 Society of Toxicology (SOT) symposium to describe developments of how the activities around occupational exposure assessment have progressed under amended TSCA. Under the current implementation framework both EPA and OSHA standards may apply in the workplace. This informational session will discuss the progress made in assessing and managing exposures and risk in occupational settings under amended TSCA. This informational session will present an overview of continuing opportunities and challenges in harmonizing TSCA risk evaluations and occupational exposure assessments. Additionally, this session will highlight best practices to gather, aggregate, analyze, and communicate occupational exposure data. Other available resources including tools for exposure assessment and educational webinars to provide information, encourage knowledge sharing, and streamline communication amongst various stakeholders will also be presented.

Panelists
- Kimberly Ong
- Richard Canady
- William Hallman

Tuesday

10:30 AM – 12:00 PM
T2-F: Symposium: Resilient Supply Chains: Methodology and Applications in California and Florida Transportation Systems
Meeting Room 9 (3rd Floor)
Chair: Kelsey Stoddard

10:30 am T2-F.1
Resilience and Efficiency in Transpiration Supply Chains
Walter Hannah, Igor Linkov, Kelsey Stoddard
California Transportation Commission, US Army Corps of Engineers - ERDC

10:50 am T2-F.2
Resilience in Florida Transportation Systems
Allison Yeh, Randy Deshazo
Tampa Bay Regional Planning Council

11:10 am T2-F.3
Increasing Supply Chain Resilience Through Transportation Policy and Investment Optimization Tools in California
Kelsey Stoddard
US Army Corps of Engineers - ERDC

11:30 am T2-F.4
Economic Analysis Framework for Freight Transportation Based on Florida Statewide Multi-Modal Freight Model
Zhong-Ren Peng
University of Florida

There is a significant number of organizations developing alternative sources of protein to meet the growing need for safe, available and more ethical food sources. Products such as human breast milk proteins for infant formula, cultured meat and seafood, insect protein and a diversity of plant-based proteins are in development and in cases entering the market. This roundtable aims to highlight important issues for safety demonstration to improve the regulatory and commercial acceptance of these emerging food types and highlight key information needs. Presenters will offer perspectives on important issues for risk analysis for alternative proteins, with a focus on cultured meat and seafood products.

Vireo has been working with New Harvest and NeutralScience to convene key stakeholders in cellular agriculture to identify research priorities for advancing safety demonstration on the novel aspects of these and related alternative proteins. William Hallman has been conducting studies of consumer perception of these emerging technologies. Panelists will discuss perspectives from a diversity of views including consumer, international, industrial and governmental perspectives, followed by a discussion on key safety questions.

Panelists
- Kimberly Ong
- Richard Canady
- William Hallman

10:30 AM – 12:00 PM
T2-G: Roundtable: Cultured Meat and Alternative Protein Safety: Key Questions and Perspectives
Meeting Room 10 (3rd Floor)
Chair: Jo Anne Shatkin

There is a significant number of organizations developing alternative sources of protein to meet the growing need for safe, available and more ethical food sources. Products such as human breast milk proteins for infant formula, cultured meat and seafood, insect protein and a diversity of plant-based proteins are in development and in cases entering the market. This roundtable aims to highlight important issues for safety demonstration to improve the regulatory and commercial acceptance of these emerging food types and highlight key information needs. Presenters will offer perspectives on important issues for risk analysis for alternative proteins, with a focus on cultured meat and seafood products.

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Panelists
- Kimberly Ong
- Richard Canady
- William Hallman
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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Meeting Room 11 (3rd Floor)  
Chair: Angela Bearth |
| 10:30 am     | T2-H.1  | Please imagine the following situation - Using scenarios and vignettes to investigate risk perception and technology acceptance  
Angela Bearth  
ETH Zurich |
| 10:50 am     | T2-H.2  | How methods may have an unwanted impact on research questions  
Michael Siegrist  
ETH Zurich |
| 11:10 am     | T2-H.3  | Drawing Different Conclusions from the Same Evidence: Belief in Hydroxychloroquine During the COVID-19 Pandemic  
Caitlin Drummond Otten  
Arizona State University |
| 11:30 am     | T2-H.4  | Risk perceptions, critical thinking, and acceptance of genome editing in the United States and Switzerland  
Alex Segre Cohen  
University of Oregon |
| 11:50 am     | T2-H.5  | Measuring community acceptance and the perceived risk of clean energy technologies  
Douglas Bessette  
Michigan State University |
| 10:30 AM – 12:00 PM | T2-I    | Roundtable: Risk Analysis Quality Test (RAQT) Applications to Microbial Risk Analysis  
Meeting Room 5 (2nd Floor)  
Chairs: Margaret Coleman, John Lathrop, Robert Waller |
| 1:30 PM – 3:00 PM | T3-A    | Symposium: Sustainability, Resilience, Engineering, and Environmental Justice  
Grand Ballroom Salon A (2nd Floor)  
Chair: Benjamin Rachunok |
| 1:30 pm      | T3-A.1  | An enhanced approach to climate risk assessments in urban environments: evaluating indirect risk and identifying co-benefits for better adaptation and long-term planning  
Mitchell Anderson  
University of Canterbury |
| 1:50 pm      | T3-A.2  | Exploring the disproportionate impact of rising temperatures on US household air conditioning demand  
Renee Obringer  
Penn State University |
| 2:10 pm      | T3-A.3  | Drought impacts on equitable water affordability  
Benjamin Rachunok  
Stanford University |
| 2:30 pm      | T3-A.4  | Integrating social vulnerability into rehabilitation decisions for deteriorating transportation structures  
Jessica Bookey  
University of Massachusetts Amherst |
| 1:30 PM – 3:10 PM | T3-B    | Symposium: Resilience of Energy Systems  
Grand Ballroom Salon B (2nd Floor)  
Chair: Hiba Baroud |
| 1:30 pm      | T3-B.1  | Access, Equity, and Community Resilience  
Seth Guikema  
University of Michigan |
| 1:50 pm      | T3-B.2  | Using indicators of socio-economic vulnerability to predict spatial variations in resilience to power outages resulting from extreme weather events  
Paul Johnson  
Vanderbilt University |
| 2:10 pm      | T3-B.3  | Risks of Reductionism: Comparing Climate and Equity Methodologies for Interdisciplinary Energy Justice Research  
Mariah Caballero  
Vanderbilt University |
| 2:30 pm      | T3-B.4  | A Hierarchical Data Driven Optimization Framework to Enhance Power Grid Infrastructure Resilience Under Compound Effects of Climate Change and Extreme Weather Events  
Sayanti Mukherjee  
University At Buffalo, The State University of New York |
| 2:50 pm      | T3-B.5  | Extreme weather drivers during power outages in the United States  
Nicole Jackson  
Sandia National Laboratories |
### T3-C: Roundtable: The Future of Risk Research for Homeland Security
**Grand Ballroom Salon C (2nd Floor)**
**Chair: Gary Ackerman**

On May 16-17, 2022, the Center for Accelerating Operational Efficiency (CAOE), a Department of Homeland Security (DHS) Center of Excellence, convened an interdisciplinary workshop in Washington, DC. Consisting of roughly equal numbers of non-government risk researchers and government risk practitioners, the aim of the workshop was to jointly explore a path forward for the next five years with respect to innovative academic and policy research in the risk sciences to support the Homeland Security Enterprise. The workshop was attended by many high-profile researchers and government officials who work on security-related risk issues and explored four domains of risk through a series of working groups: 1) Risk Identification and Characterization (esp. regarding emerging risks); 2) Risk Assessment and Analysis; 3) Risk Management and Governance; 4) Risk Perception and Risk Communication. The working groups identified risk science needs in homeland security across each of these domains, prioritized those needs, and translated those needs into research questions and approaches that could be addressed by the risk community. The proposed roundtable will report on the findings of the workshop and extend the discussions that took place there. It will do so by assembling a panel of the workshop participants to convey their impressions about the future of risk research for homeland security, as well as engage the wider risk community by expanding the discussion and involving SRA audience members in thinking about how to proceed along several research paths.

**Panelists**
- Jonathan Welburn, Ross Snare, Ryan Riccucci, Rae Zimmerman, Richard John, Jun Zhuang, Kenneth Crowther, Jacqueline Meszaros

### T3-D: Risk Perception & Information Processing
**Grand Ballroom Salon D (2nd Floor)**
**Chair: Gabrielle Wong-Parodi**

1:30 pm  
"Smells fishy": Exploring sense of place salience in community acceptance of closed net-pen aquaculture in Frenchman Bay, Maine  
Gabriella Gurney  
University of Maine

1:50 pm  
Compensatory Use of Reusable Shopping Bags  
Prerna Shah  
SUNY-Buffalo

2:10 pm  
Social Endorsement, Credibility, and Support for the Regulation of Research on Enhanced Geothermal Systems  
Sara Yeo  
University of Utah

2:30 pm  
How risk perceptions form and sustain adaptation to climate change  
Gabrielle Wong-Parodi  
Stanford University

### T3-E: Risk Perception & Information Processing
**Meeting Room 8 (3rd Floor)**
**Chair: Christopher Cummings**

1:30 pm  
Socio-metabolic risk and tipping points on islands  
Pia-Johanna Schweizer  
Institute for Advanced Sustainability Studies

1:50 pm  
Understanding neighborhood-level socioeconomic disparities in access to essential services during a disaster using dynamic mobility networks  
Zhiyuan Wei  
University at Buffalo

2:10 pm  
Operationalizing equitable pandemic response  
Emily Wells  
Carnegie Mellon University

2:30 pm  
Stakeholder perceptions of CDR in the Global South  
Elspeth Spence  
Cardiff University

2:50 pm  
Labor violation trends in H-2A nonimmigrant agricultural workers: Improving inspection strategies for detecting labor violations  
Arezoo Jafari  
Northeastern University

### T3-F: Symposium: Current Supply-Chain Risks and Impacts
**Meeting Room 9 (3rd Floor)**
**Chair: Adam Rose**

1:30 pm  
Supply-Chain Resilience: Methodology and Applications  
Igor Linkov  
Engineer Research and Development Center, U.S. Army Corps of Engineers

1:50 pm  
Understanding U.S. Imports of Medical Devices  
Aliya Sassi  
US Food and Drug Administration

2:10 pm  
Supply-Chain Impacts of the War in the Ukraine on World Regions  
Adam Rose  
University of Southern California
# Conference Program

## Tuesday

### 1:30 PM – 3:00 PM

#### T3-G: Foodborne Illness & Microbial Risk Modeling

**Meeting Room 10 (3rd Floor)**

*Chair: Ashwani Tiwari*

1:30 pm  
**T3-G.1**

Collaboration and stakeholder involvement in the risk analysis process to reduce Salmonella illnesses from poultry consumption  
Janell Kause  
Food Safety and Inspection Service

1:50 pm  
**T3-G.2**

Risk Assessment Models to support Salmonella and Campylobacter Performance Standards in Poultry in Canada.  
Ashwani Tiwari  
Canadian Food Inspection Agency

2:10 pm  
**T3-G.3**

A Quantitative Microbiological Risk Assessment for cryptosporidiosis among NJ Dairy Cattle Farmers  
Alexis Mraz  
The College of New Jersey

2:30 pm  
**T3-G.4**

The Economic Burden of Foodborne Illnesses in the United States: A Systematic Literature Review  
Joseph Njau  
Food and Drug Administration

### 1:30 PM – 3:00 PM

#### T3-H: Wastewater and Water Quality

**Meeting Room 11 (3rd Floor)**

*Chair: Ryan Julien*

1:30 pm  
**T3-H.1**

Current practices and knowledge gaps in managing building water quality: application of a literature-engaged Delphi approach  
Md Rasheduzzaman  
Virginia Polytechnic Institute and State University

1:50 pm  
**T3-H.2**

Interpreting wastewater-based epidemiology results at the building and community levels for SARS-CoV-2  
Jade Mitchell  
Michigan State University

2:10 pm  
**T3-H.3**

DisTorting Science? Regulations or Torts, which is more appropriate for managing chemical risk?  
Richard Williams  
RichardAWilliams.com

### 1:30 PM – 3:00 PM

#### T3-I: Lightning Session: Risk Communication/Perception

**Meeting Room 5 (2nd Floor)**

*Chair: Amanda Boyd*

1:30 pm  
**T3-I.1**

Understanding the potential effects of health and non-health beliefs on outcomes in individuals with type 2 diabetes  
Carolyn Lo  
National University of Singapore

1:35 pm  
**T3-I.2**

Sustaining Change Under Risk: Promoting Intrinsic Motivation for Environmental Behavior Change Programs  
Naseem Dillman-Hasso  
The Ohio State University

1:40 pm  
**T3-I.3**

A new way to configure severity and susceptibility perception to predict risk behaviors and attitudes  
Haoran Chu  
University of Florida

1:45 pm  
**T3-I.4**

Measuring climate change efficacy perceptions: a scale validation study  
Soobin Choi  
University of Michigan

1:50 pm  
**T3-I.5**

Dimensions of risk perception: A multi-risk multi-target perspective  
Leonard Lee  
National University of Singapore

2:00 pm  
**T3-I.6**

Enforcing social norms during the pandemic: analysis of descriptive nature and antecedents  
Hwanseok Song  
Purdue University

2:05 pm  
**T3-I.7**

Risk Communication and Public Response to Potential Radiation Emergencies  
Andrew Fox  
University of Oklahoma

2:10 pm  
**T3-I.8**

Risk Communication among Inuit women in Nunavik about mercury, country foods, and pregnancy  
Amanda Boyd  
Washington State University
The Bipartisan Infrastructure Law, enacted by the U.S. Congress in November 2021, allocated more than $30 billion in new funding for U.S. drinking water infrastructure—the largest such investment in history. It mandates that 49% of funds go to disadvantaged communities as grants and forgivable loans. However, the legislation does not define “disadvantaged communities.” Instead, it tasks states with doing so, with oversight from the U.S. Environmental Protection Agency (EPA). As a result, states are re-conceptualizing their processes for allocating infrastructure funds, which typically are based on point systems that may not give sufficient weight to equity. This roundtable discussion will bring together decisionmakers who are actively working to implement these new legislative requirements. Roundtable speakers will give brief lightning talks on how their organizations plan to define the term “disadvantaged community” and how they will incorporate this definition into their infrastructure funding decisions. Then, roundtable participants will engage the audience in a moderated discussion of how concepts and frameworks for considering equity in risk analysis could inform these ongoing policy decisions. The roundtable is being organized by the SRA’s Justice, Equity and Risk Specialty Group.Speakers will be invited if the proposed roundtable is selected for the SRA Annual Meeting. Invites will include Jonathan Nelson, Senior Advisor, Office of Water, EPA; Brad Baird, Deputy Administrator for Infrastructure for the City of Tampa Utilities Department; Michael Lynch, Division of Water Resource Management, Florida Department of Environmental Protection; Shadi Eskaf, Director, Division of Water Infrastructure, North Carolina Department of Environmental Quality; Jeff Hughes, Utilities Commissioner for North Carolina; and Sarah Hudson, Director of Water Resources and Infrastructure Planning Program, Indiana Finance Authority.
**Tuesday**

**3:30 PM – 5:00 PM**

**T4-E: Climate Change Adaptation and Resilience**
*Meeting Room 8 (3rd Floor)*
Chair: Gabrielle Wong-Parodi

- **3:30 pm** T4-E.1 Beyond Motivation: Towards a model of Protective Action Theory (PAT)
  Gavin Brown
  Dublin City University

- **3:50 pm** T4-E.2 How subjective attributions form and sustain adaptation to climate change
  Gabrielle Wong-Parodi
  Stanford University

- **4:10 pm** T4-E.3 Towards an observatory to monitor resilience to floods in Tahiti
  Bastien Bourlier
  University of French Polynesia

- **4:50 pm** T4-E.4 A serious game as part of an observatory for climate risk resilience strategies: application in French Polynesia
  Charlotte Heinzlef
  University Paris Saclay, UVSQ - CEARC

**3:30 PM – 5:00 PM**

**T4-F: Roundtable: In Memory of Dr. Sharon Dunwoody – Research Based on the RISP Model**
*Meeting Room 9 (3rd Floor)*
Chair: Janet Yang

- **3:30 pm** T4-F.1 In memory of Dr. Sharon Dunwoody - research based on the RISP Model
  Janet Yang
  University at Buffalo

- **3:50 pm** T4-F.2 Reflections on the planned risk information seeking model
  Lee Kahlor
  UT-Austin

- **4:10 pm** T4-F.3 Empirical review for the risk information seeking and processing model
  Robert Griffin
  Marquette University

- **4:30 pm** T4-F.4 For my own sake: The role of personal relevance in information seeking
  Zhuling Liu
  Shanghai Jiao Tong University

**3:30 PM – 5:00 PM**

**T4-G: Innovative Approaches in Food Safety Risk Management**
*Meeting Room 10 (3rd Floor)*
Chair: Yuhuan Chen

- **3:30 pm** T4-G.1 FDA's Risk-Ranking Model for Food Tracing (RRM-FT) to Inform the Development of Traceability Regulations
  Yuhuan Chen
  FDA Center for Food Safety and Applied Nutrition

- **3:50 pm** T4-G.2 A multi-criteria approach for evaluating food safety and environmental impacts: Case study of a large dairy farm
  Rodney Feliciano
  Secalim, INRAE, Oniris

- **4:10 pm** T4-G.3 A Confidential Data Sharing Platform for Food Safety Risk Management - Overview and Initial Results
  De Ann Davis
  Western Growers

- **4:30 pm** T4-G.4 An interactive generic physiologically based pharmacokinetic modeling platform to predict meat and milk residues and withdrawal intervals for perfluorooctanoic acid, perfluorooctane sulfonate and perfluorohexane sulfonate in beef and dairy cattle
  Zhoumeng Lin
  University of Florida

**3:30 PM – 5:00 PM**

**T4-H: Symposium: Risk Analysis for Arctic Systems**
*Meeting Room 11 (3rd Floor)*
Chair: Hiba Baroud

- **3:30 pm** T4-H.1 A Bayesian Network Approach for Predicting Future Risk in Arctic Maritime Transit
  Wenjie Li
  George Mason University

- **3:50 pm** T4-H.2 Machine learning models to predict the Arctic maritime incident types
  Rajesh Kandel
  Vanderbilt University

- **4:10 pm** T4-H.3 Corridor Trace Analysis for Arctic Routes and Logistics Systems
  Rebecca Rebar
  University of Virginia

- **4:30 pm** T4-H.4 Arctic Infrastructure and Resilience
  Benjamin Trump
  US Army Corps of Engineers

- **4:50 pm** T4-H.5 Machine learning models to predict the Arctic maritime incident types
  Rajesh Kandel
  Vanderbilt University

**3:30 PM – 5:00 PM**

**T4-I: Lightning Session: Emerging Topics in Risk, Engineering, and Public Policy**
*Meeting Room 5 (2nd Floor)*
Chair: Adam Zwickle

- **3:30 pm** T4-I.1 Probabilistic characterization of mortality attributable to chronic exposure to ambient PM2.5: an expert elicitation focusing on risks in Kuwait and other understudied locations
  Kyle Colonna
  Harvard University

- **3:40 pm** T4-I.2 Risk assessment and management at universities and colleges. Experiences from Norway.
  Marie Rayksund
  University of Stavanger

- **3:45 pm** T4-I.3 Drawing blanks and winning: Quantifying Bostrom's urn model of existential risk
  John-Oliver Engler
  University of Vechta

- **3:50 pm** T4-I.4 Machine Learning Assisted Frameworks to Forecast Truck Travel Time Reliability and Evaluate Risk of Disruption of Logistics
  Negin Moghadasi
  University of Virginia

- **3:55 pm** T4-I.5 Encouraging local collaborative governance in response to decreasing groundwater availability
  Adam Zwickle
  Michigan State University
### Wednesday

#### 8:30 AM – 10:10 AM

**W1-A: Public Engagement: COVID and other Air Contaminants**  
*Grand Ballroom Salon A (2nd Floor)*  
*Chair: Wandi Bruine de Bruin*

**8:30 am**  
**W1-A.1**  
*Improving graphs for climate change communications: Insights from interviews with international policy makers and practitioners*  
Wandi Bruine de Bruin  
University of Southern California

**8:50 am**  
**W1-A.2**  
*Effects of social trust and confidence on cooperation during a pandemic: examining the moderating role of COVID-19 knowledge*  
Prince Adu Gyamfi  
Purdue University

**9:10 am**  
**W1-A.3**  
*How COVID-19 impacts academic scientists’ public engagement participation*  
Mikhaila Calice  
University of Wisconsin-Madison

**9:30 am**  
**W1-A.4**  
*Communication, emotion, and reason: Testing the impact of uncertainty communication on emotions and public participation in decision-making related to nuclear decommissioning*  
Ferdiana Hoti  
University of Antwerp

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#### 8:30 AM – 10:10 AM

**W1-B: US Risk Policy: Climate, Covid and Other Risks**  
*Grand Ballroom Salon B (2nd Floor)*  
*Chair: Lisa Robinson*

**8:30 am**  
**W1-B.1**  
*The Benefits and Costs of U.S. Employer COVID-19 Vaccine Mandates*  
Lisa Robinson  
Harvard University

**8:50 am**  
**W1-B.2**  
*Fatal Flaws in the U.S. Defense Department’s Climate Risk Analysis and Military Service-based Implementation*  
Richard Belzer  
Good Intentions Paving Co.

**9:10 am**  
**W1-B.3**  
*Modeling the equitable deployment of solar+storage-powered community resilience hubs across California*  
Patrick Murphy  
PSE Healthy Energy

**9:30 am**  
**W1-B.4**  
*Security and safety risk concepts reconsidered in the Case of Customs and Border Management*  
Marja Ylonen  
University of Stavanger

**9:50 am**  
**W1-B.5**  
*Organizational Absorptive Capacity and Resilience Under Compound Threats: Learning from Federal Agency Perspectives*  
Emily Wells  
Carnegie Mellon University

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#### 8:30 AM – 10:00 AM

**W1-C: Roundtable: ESG Tipping Point and Transforming Risk Decision Making**  
*Grand Ballroom Salon C (2nd Floor)*  
*Chair: Charles Redinger*

**8:30 am**  
**W1-C.1**  
*Few topics are more visible in organizational life than ESG (environment, social, governance). ESG roots go back to the 1980s with a focus on reporting for financial and investor purposes. Over the past 10 or so years, there has been rapid acceleration beyond these roots.*  
The 2020 pandemic, along with a bundle of issues, including diversity, equity, and inclusion (DE&I), have increased attention on the “social” in ESG. Disclosure and reporting frameworks continue to evolve. Activities impacting this space include: an effort to develop a unified reporting framework by the recently formed International Sustainability Standards Board; U.S. Securities and Exchange Commission requirements to report on human capital issues; and, the development of capitals- and integrated-thinking in organizational decision making as seen in the Capitals Coalition and Value Reporting Foundation.

In these development, little attention is being given to framing ESG in terms of risk, whether to organizations, or people associated with them (e.g. workers, consumers, community members).

This roundtable provides an overview of the ESG space from both a traditional perspective, as well as aspects of how it is evolving post-2020. After this, attention shifts to risk decision making implications to the organization, workers, consumers, and communities. Topics discussed are: double materiality, risk transfer, value accounting, capitals thinking, integrated thinking, risk metrics, Total Worker Health, Culture of Health for Business, and application of SRA’s Risk Analysis Quality Test (RAQT) to ESG decision making.

**Panelists**  
- Frank Hearl  
- Mary O’Reilly  
- Cristina McLaughlin  
- Alan Rossner

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#### 8:30 AM – 10:00 AM

**W1-D: Life Expectancies and Valuing Health Risks**  
*Grand Ballroom Salon D (2nd Floor)*  
*Chair: Roger McClellan*

**8:30 am**  
**W1-D.1**  
*Monetary values of increasing life expectancy: sensitivity to shifts of the survival curve*  
James Hammitt  
Harvard University

**8:50 am**  
**W1-D.2**  
*Health Risks of Emissions of Internal Combustion Engines: “A Success Story Joining Science, Technological Developments and Policy*  
Roger McClellan  
Self

**9:10 am**  
**W1-D.3**  
*Industrial air pollutant emissions and mortality from Alzheimer’s disease in Canada*  
Sabit Cakmak  
Health Canada

**9:30 am**  
**W1-D.4**  
*Risk Forecasting of Carbon Dioxide Emissions from Power Plants in Kuwait using US EPA, IPCC, and Machine Learning Methods*  
Sharaf AlKheder  
Kuwait University
Almost three years into the SARS-CoV-2 pandemic we are still observing many different approaches by health authorities with respect to their use of and communication to the public of COVID-19 quantitative modelling. In this roundtable session, panelists will discuss successes and failures of public health risk modelling and communication regarding COVID-19 to date, in the context of case studies of various regions and as approaches evolved during the pandemic. Questions and comments from the audience are welcomed, as an engaging discussion which references many experiences is the goal of the session, to establish lessons learned from this unique perspective of SRA members and the panelists.

Panelists
- Mark Weir
- Jade Mitchell
- Haoran Chu
- Dominic Balog-Way

**Meeting Room 8 (3rd Floor)**
Chair: Ainsley Otten

- 8:30 am
  - Predicting properties that influence end-of-life environmental fate to inform the design of novel polymers
    - Kevin Hickey
    - Argonne National Laboratory

- 8:50 am
  - Regulatory frameworks for synthetic biology in mining industry: a comparative study
    - Artem Anyshchenko
    - The University of Queensland

- 9:10 am
  - Microplastics, Summary of Human Health and Ecological Effects and Risk Assessment Approach
    - Jenny Phillips
    - TRC

- 9:30 am
  - Priority safety questions for cultured meat: the perspectives from producers and regulators
    - Kora Kukk
    - Vireo Advisors LLC

### W1-F: Plastics, Synthetic Biology, Polymers, and Combustion
**Meeting Room 9 (3rd Floor)**
Chair: Margaret MacDonell

- 8:30 am
  - Predicting properties that influence end-of-life environmental fate to inform the design of novel polymers
    - Kevin Hickey
    - Argonne National Laboratory

- 8:50 am
  - Regulatory frameworks for synthetic biology in mining industry: a comparative study
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  - Priority safety questions for cultured meat: the perspectives from producers and regulators
    - Kora Kukk
    - Vireo Advisors LLC

### W1-G: Symposium: The Role of Risk Assessment and Benefit-Cost Analysis of Food Traceability
**Meeting Room 10 (3rd Floor)**
Chair: Cristina McLaughlin

- 8:30 am
  - FDA's Risk-Ranking Model for Food Tracing (RRM-FT) to Inform the Development of Traceability Regulations.
    - Yuhuan Chen
    - FDA Center for Food Safety and Applied Nutrition

- 8:50 am
  - Estimating Public Health Benefits from Food Traceability
    - Aiyia Sassi
    - US Food and Drug Administration

- 9:10 am
  - Use of Expert Elicitation to Address Data Gaps in Benefit-Cost Analysis
    - Aylin Sertkaya
    - Eastern Research Group, Inc.

- 9:30 am
  - Estimating Food Traceability Costs
    - Michael Black
    - US Food & Drug Administration

- 9:50 am
  - Benefits from Avoiding Overly Broad Recalls of Certain Foods Following FDA Issued Public Health Advisories
    - Cristina McLaughlin
    - Food & Drug Administration

### W2-A: Risk Tradeoffs in Policy and Technology
**Grand Ballroom Salon A (2nd Floor)**
Chair: Gianluca Pescaroli

- 10:30 am
  - Technology deployment and information disclosure in the face of a strategic threat
    - Kyle Hunt
    - University at Buffalo

- 10:50 am
  - Core principles for assessing the “goodness” of policies on risk
    - Scarlett Tannous
    - Paris Dauphine University - PSL

- 11:10 am
  - Identifying common points of failures in society for preparing to cascading crises
    - Gianluca Pescaroli
    - University College London

- 11:30 am
  - An integrated marine mammal risk assessment and monitoring system for the Canadian Armed Forces
    - Andrew Day
    - Defence Research and Development Canada

- 11:50 am
  - Social-Ecological RAS Site Suitability: Exploring the social, ecological, and spatial dimensions of recirculating aquaculture system development in Maine, United States
    - Nathan Smith
    - University of Maine
In 2016, the U.S. National Science Foundation (NSF) recognized “convergence research” as one of “10 Big Ideas for Future NSF Investments.” Traditionally trained to communicate within disciplinary “silos,” researchers who conduct convergence research to investigate compelling problems—such as addressing ocean acidification, managing a pandemic, or developing AI that is trustworthy—collaborate with colleagues and practitioners outside of their disciplinary homes to integrate and develop new ways of thinking. Such research is expected to be “driven by a specific and compelling problem” through “deep integration across disciplines.” How does risk communication research fit into such interdisciplinary (i.e., synthesizing two or more disciplines, often establishing new, integrated knowledge) and transdisciplinary (i.e., synthesizing two or more disciplines to transcend the individual disciplines, with researchers and stakeholders sharing roles and acquiring new skills) collaborations? How do (and should) contemporary risk communication scholars and practitioners navigate these complex projects and relationships? In this roundtable, five prominent risk communication experts will discuss their views.

Panelists
- Cindy Jardine
- Nick Pidgeon
- Cara Cuite
- Julie Demuth
- Pascal Haegeli
10:30 AM – 12:00 PM

W2-F: Submarines, Satellites, Pipelines and Risks of Big Projects
Meeting Room 9 (3rd Floor)
Chair: Scott Ferson

10:30 am W2-F.1
A demonstrative case study on using the SRA Risk Analysis Quality Test in mega construction project management
John Lathrop
Decision Strategies, LLC

10:50 am W2-F.2
False confidence: when satellites go bump in the sky
Scott Ferson
University of Liverpool

11:10 am W2-F.3
Characterizing climate risk in the mortgage and securitization markets
Janet Li
HUD

10:30 AM – 12:10 PM

W2-G: Symposium: Food Safety Risks, Disease Burden, and Technological and Behavioral Solutions
Meeting Room 10 (3rd Floor)
Chair: Felicia Wu

10:30 am W2-G.1
A Tale of Two Aflatoxins: Cancer Risk in Maize and Peanuts vs. in Milk and Dairy
Felicia Wu
Michigan State University

10:50 am W2-G.2
Effect of Foodborne Illness Related Outbreaks and Recalls on Consumption of Low-Moisture Foods
Scharff Robert
Ohio State University

11:10 am W2-G.3
“Do Not Eat Raw Dough” – A Case Study of Communicating Food Safety Risk with Consumers
Han Chen
Purdue University

11:30 am W2-G.4
Foodborne Illness Outbreaks in Flour and Flour-Based Food Products from Microbial Pathogens in the US and Their Economic Burden from 2001-2021
Rubait Rahman
Michigan State University

11:50 am W2-G.5
A review of outbreaks associated with consumption of milk and cheese products in the United States, 2000-2020
Patricia Hsu
Michigan State University

1:30 PM – 3:00 PM

W3-A: Roundtable: Major Questions at the Supreme Court: Implications for Risk Analysis
Grand Ballroom Salon A (2nd Floor)
Chair: Jonathan Wiener

The last year has seen a number of important – and often controversial – Supreme Court cases, including several where risk analysis has played a critical role. These cases include NFIB v. OSHA, where the Supreme Court struck down OSHA regulations regarding COVID vaccines, and West Virginia v. EPA, where the Supreme Court addressed the authority of EPA to regulate climate change. Are these cases signals of a changing relationship between courts and agency risk analyses? What implications does the reasoning of the Court, including its turn towards the “major questions” doctrine, have for the future of risk analysis? Legal and policy experts discuss and debate.

Panelists
• Jonathan Adler
• Elissa Gentry
• Gary Marchant
• Jonathan Nash
• Jonathan Wiener

1:30 PM – 3:00 PM

W3-B: Applied Risk Analysis & Management
Grand Ballroom Salon B (2nd Floor)
Chair: Yin Huang

1:30 pm W3-B.1
Linking risk analysis with risk management: The cases for control or influence
Robert Waller
Protect Heritage Corp.

1:50 pm W3-B.2
Developing Web Applications for Expedited Risk Assessment for Transfusion-Transmitted Diseases
Yin Huang
US FDA

2:10 pm W3-B.3
The challenges of evaluating cumulative impact from projects located near environmental justice areas
Sonja Sax
Epsilon Associates

2:30 pm W3-B.4
Prediction markets for critical infrastructure risk assessment
Benjamin Bonin
Sandia National Laboratories
1:30 PM – 3:00 PM

**W3-C: Critical Infrastructure Risk and Resilience**
*Grand Ballroom Salon C (2nd Floor)*
Chair: Damien Serre

1:30 pm
**W3-C.1**
Assessing the Vulnerability of Mobile Broadband Infrastructure to Climate Hazards using Crowdsourced Open Data
Edward Oughton
George Mason University

1:50 pm
**W3-C.2**
Critical Infrastructure Network (CIN) resilience: 20 years of research for what?
Damien Serre
Avignon Université

2:10 pm
**W3-C.3**
Integrating climate and cyber stressors for assessment of critical infrastructure vulnerabilities
Diane Henshel
Indiana University

1:30 PM – 3:00 PM

**W3-D: Artificial Intelligence**
*Grand Ballroom Salon D (2nd Floor)*
Chair: Seth Guikema

1:30 pm
**W3-D.1**
How the narrative of risks regarding the use of AI is communicated at the European level
Anca Rusu
Dauphine University

1:50 pm
**W3-D.2**
(Re)Conceptualizing the trustworthiness of AI as perceptual and context-dependent
Christopher Wirz
National Center for Atmospheric Research

2:10 pm
**W3-D.3**
Can natural language processing do it better? Results from interdisciplinary development of an automated coding tool for community resilience, climate adaptation, and sustainability planning documents
Emily Walpole
National Institute of Standards and Technology

1:30 PM – 3:00 PM

**W3-E: Risk Governance and Community Resilience**
*Meeting Room 8 (3rd Floor)*
Chair: Yue Ge

1:30 pm
**W3-E.1**
Integrating Stakeholders into Risk Mitigation Decisions for Infrastructure Resilience in the Context of Natural Hazard Disruptions
Rae Zimmerman
New York University

1:50 pm
**W3-E.2**
An Interdisciplinary and Community-Engaged Approach to Community Resilience Research
Yue Ge
University of Central Florida

2:10 pm
**W3-E.3**
Risk governance approach to examine perceived risks, benefits, and mitigation measures in Australian clinical genomics
Yuwan Malakar
Commonwealth Scientific & Industrial Research Organisation

1:30 PM – 3:00 PM

**W3-F: Microbes, The Environment, and Engineered Systems**
*Meeting Room 9 (3rd Floor)*
Chair: Vincent Chigor

1:30 pm
**W3-F.1**
The effects on antimicrobial resistance of species-specific antimicrobial sales verses total antimicrobial sales
Andrew Estrin
Food and Drug Administration

1:50 pm
**W3-F.2**
Considering Pathogen Persistence within Surface Water Risk Assessments
Kara Dean
Michigan State University

2:10 pm
**W3-F.3**
Detection and quantitative microbial risk assessment of pathogenic Vibrio cholerae in an urban stream used for drinking, domestic, recreational and fresh produce irrigation
Vincent Chigor
University of Nigeria

2:30 pm
**W3-F.4**
A Generalizable Model for Pathogen Persistence in Surface Waters
Kara Dean
Michigan State University
### Wednesday

#### 1:30 PM – 3:00 PM

**W3-G: Symposium: Food Safety Risk Communication & Introducing The APEC Food Safety Risk Communication Framework and Associated Guidelines**  
*Meeting Room 10 (3rd Floor)*  
Chair: William Hallman

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<th>Time</th>
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| 1:30 pm | **W3-G.1**  
Moderator  
Clare Narrod  
University of Maryland |
| 1:50 pm | **W3-G.2**  
Introducing the APEC Food Safety Risk Communication Framework and Associated Guidelines  
Clare Narrod  
University of Maryland |
| 2:10 pm | **W3-G.3**  
Reaching Vulnerable Populations and Getting Them To Take Action  
William Hallman  
Rutgers University |
| 2:30 pm | **W3-G.4**  
Using Social Media Engagement for Food Safety Risk Communication  
Amy Philpott  
Watson Green LLC, Consultant |

#### 3:30 PM – 5:00 PM

**W4-A: Roundtable: Is There Something Else the Governments Could do to Improve their Communication with the Civil Society when Communicating about an Emerging Technology?**  
*Grand Ballroom Salon A (2nd Floor)*  
Chair: Anca Rusu

As part of a research conducted to observe how various actors communicate about the use of AI, it has been observed that there is a gap between what is communicated and what is perceived by the civil society. We propose a roundtable to understand why this is happening and how this perspective could be changed.

We have previously analysed various AI strategies and scientific articles to see how governments and academia speak about the use of AI, focusing primarily on the communication of opportunities and risks. This research was complemented by a survey constructed to see how civil society perceived the use of AI and how various actors communicated. It has been observed that, in terms of content, what has been communicated by the governments (EC and national governments), got to the public (e.g., there is not a significant gap between the available information).

**Panelists**  
- Pia-Johanna Schweizer  
- José Manuel Palma-Oliveira  
- Myriam Merad  
- Benjamin Trump  
- Jonas Krieger

#### 3:30 PM – 5:00 PM

**W4-B: Roundtable: Risk Science Perspectives on Information, Misinformation and Disinformation**  
*Grand Ballroom Salon B (2nd Floor)*  
Chair: Seth Guikema

Misinformation and disinformation are major challenges for risk assessment, risk communication and risk handling. However, the terms misinformation and disinformation in relation to risk are not easily defined and interpreted. When it comes to risk, there is in many cases no reference for what is the truth – the risk magnitude needs to be evaluated on the basis of analysis and judgments. This panel will discuss this issue from two perspectives. First, how can we use a risk perspective to better understand and define misinformation and disinformation? What do these terms mean in relation to risk description and risk science? Second, how can we use risk science to confront and diffuse misinformation and disinformation in the context of conducting a risk analysis and choosing among risk management alternatives? What is the role of risk communication in this combating misinformation and disinformation, and how is this founded in the foundations of risk science?

**Panelists**  
- Dominic Balog-Way  
- Terje Aven  
- Katherine McComas

#### 3:30 PM – 5:10 PM

**W4-C: Natural Hazards and Infrastructure**  
*Grand Ballroom Salon C (2nd Floor)*  
Chair: Youngjun Choe

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| 3:30 pm | **W4-C.1**  
Water outage predictions for natural hazards using synthetic water distribution systems  
Zaira Pagan Cajigas  
University of Michigan |
| 3:50 pm | **W4-C.2**  
Analyzing disaster preparedness and mitigation strategies using synthetic water distribution system models  
Rosalia Otaduy-Ramirez  
University of Michigan |
| 4:10 pm | **W4-C.3**  
A method for identifying locations and times of hurricane evacuations from mobile phone location data  
Valerie Washington  
University of Michigan |
| 4:30 pm | **W4-C.4**  
Estimating disaster recovery times of interdependent infrastructure systems  
Youngjun Choe  
University of Washington |
| 4:50 pm | **W4-C.5**  
Studying the Effect of Built Environment on Traffic Accidents Risk with Random Parameter and Generalized Ordered Logit Models  
Sharaf AlKheder  
Kuwait University |
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<td>3:30 PM</td>
<td><strong>W4-E: Informing Exposure: PFAS and other Chemicals</strong></td>
<td><strong>Meeting Room 8 (3rd Floor)</strong></td>
<td>Chair: Lynne Haber</td>
<td></td>
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<tr>
<td>3:30 pm W4-E.1</td>
<td>Guidance document for use of human biomonitoring data for exposure assessment</td>
<td>Lynne Haber</td>
<td>University of Cincinnati</td>
<td></td>
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<tr>
<td>3:50 pm W4-E.2</td>
<td>Visualizing trends and customizing analyses of NIOSH Pocket Guide data</td>
<td>Christine Whittaker</td>
<td>NIOSH</td>
<td></td>
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<tr>
<td>4:10 pm W4-E.4</td>
<td>Machine-learned Bayesian networks for assessing risks of exposure to short-chain PFAS in groundwater</td>
<td>Runwei Li</td>
<td>Indiana University, Bloomington</td>
<td></td>
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<tr>
<td>3:30 PM</td>
<td><strong>W4-F: Symposium: Emerging Risks and Consumer Products</strong></td>
<td><strong>Meeting Room 9 (3rd Floor)</strong></td>
<td>Chair: Christopher Cummings</td>
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<td>3:30 pm W4-F.1</td>
<td>Emerging governance issues for biotechnology enabled food and agriculture products</td>
<td>Emily Wells</td>
<td>Carnegie Mellon University</td>
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<tr>
<td>3:50 pm W4-F.2</td>
<td>Biotechnology innovation and emerging ethical, legal, social, and environmental Implications (ELSEI)</td>
<td>Benjamin Trump</td>
<td>USACE</td>
<td></td>
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<tr>
<td>4:10 pm W4-F.3</td>
<td>Consumer Product Risk Screening Tool</td>
<td>Amy Rosenstein</td>
<td>USACE</td>
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<td>4:30 pm W4-F.4</td>
<td>Collaborative Approaches for Addressing Potential Health Risk from Emerging Chemicals and Consumer Products</td>
<td>Treye Thomas</td>
<td>CPSC</td>
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