



# SRA 2022

**Global Risks @ the Tipping Point**  
Risk Analysis & Policy Driving Systemic Change

**December 4-8 • Tampa, Florida**



# Conference Program

2022 Annual Meeting





# Society For Risk Analysis Annual Meeting

## 2022 Conference Program

### Table of Contents

|                                     |       |
|-------------------------------------|-------|
| SRA Council.....                    | 2     |
| Award Winners.....                  | 2-3   |
| Committee Meetings and Events ..... | 4-5   |
| Workshops.....                      | 6-7   |
| Exhibitors .....                    | 8     |
| Keynote Sessions .....              | 9     |
| Schedule-at-a-Glance.....           | 10-15 |
| Scientific Technical Program .....  | 16-40 |
| Monday, December 5 .....            | 16-22 |
| Posters .....                       | 22-24 |
| Tuesday, December 6 .....           | 25-33 |
| Wednesday, December 7.....          | 34-40 |
| Author Index .....                  | 41-42 |

### SRA Worldwide Headquarters

950 Herndon Parkway, Suite 450  
Herndon, VA USA 20170  
+1.703.790.1745; FAX: 703.790.2672  
[www.SRA.org](http://www.SRA.org), [SRA@BurkInc.com](mailto:SRA@BurkInc.com)

### 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

### Councilors

Sandra Alday  
Weihsueh Chiu  
Peg Coleman  
James Hammitt  
Roshanak Nateghi  
Nick Pidgeon  
Louie Rivers  
Amina Wilkins  
Marja Ylonen

### 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 Boudier  
Jeff Keisler  
Seda Kundak  
Adam Rose  
Donald Schaffner  
Jun Zhuang

## 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

Perna 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



---

# Committee Meetings and Events

## 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)*

# Workshops

Sunday, December 4

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.

# Exhibitors

## Ramboll

4245 North Fairfax Drive, Suite 700  
Arlington, VA 22203  
617-946-6100  
www.ramboll.com

Ramboll is a global architecture, engineering and consultancy company, employing more than 16,000 experts. Our globally recognized Environment & Health practice has earned a reputation for technical and scientific excellence and innovation. We are trusted by clients to manage their most challenging environmental, health and social issues.

**Silver Sponsor**

## Springer Nature

1 New York Plaza, Suite 4600  
New York, NY 10004  
800-777-4643  
www.springer.com

Springer is a leading global scientific, technical and medical portfolio, providing researchers in academia, scientific institutions and corporate R&D departments with quality content through innovative information, products and services.

## 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.

### Exhibition

Grand Ballroom Salon E-J (2nd Floor)

Monday, 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

**SILVER**





# 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.

### Monderator

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.

### Monderator

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.

### Monderator

Jonathan B. Wiener

### Panel

Elissa Philip Gentry, Jonathan H. Adler

| <b>7:00 AM-8:00 AM</b> <b>New Member, Student/Young Professional Breakfast</b> , <i>Terrace Room (1st Floor)</i>                 |   |  |   |   |
|--|---|--|---|---|
| <b>8:30 AM-10:00 AM</b> <b>Keynote Session</b> – Systemic Risks in a Global Context, <i>Grand Ballroom Salon E-J (2nd Floor)</i> |   |  |   |   |
| <b>10:00 AM-10:30 AM</b> <b>Coffee Break</b>   |   |  |   |   |
| Grand Ballroom Salon A (2nd Floor)   |   | Grand Ballroom Salon B (2nd Floor)                         | Grand Ballroom Salon C (2nd Floor)  | Grand Ballroom Salon D (2nd Floor)                      |
| 10:30 AM – 12:00 PM  | M2-A: Symposium: Closing Risk Perception Gaps: Insights from Cross-National Perspective   | M2-B: Infrastructure Risk, Resilience, and Natural Hazards | M2-C: Symposium: Advances in Disaster Research for Infrastructure, Capabilities, and Objectives | M2-D : Poster Platform: COVID-19                        |
| 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.<br>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)<br>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           |
| <b>3:00 PM-3:30 AM</b> <b>Coffee Break</b>   |   |  |   |   |
| 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 |
| <b>6:00 PM-8:00 PM</b> <b>Poster Reception</b> , <i>Grand Ballroom Salon E-J (2nd Floor)</i>                                     |   |  |   |   |

**7:00 AM-8:00 AM**      **New Member, Student/Young Professional Breakfast**, *Terrace Room (1st Floor)*

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

**10:00 AM-10:30 AM**      **Coffee Break**

|                     | Meeting Room 8<br>(3rd Floor)   | Meeting Room 9<br>(3rd Floor)                     | Meeting Room 10<br>(3rd Floor)   | Meeting Room 11<br>(3rd Floor)   |
|---------------------|---|---|--|--|
| 10:30 AM – 12:00 PM | M2-E: Symposium: Managing Risk from Megafires   | M2-F: Symposium: Managing Risk from Megafires     | M2-G: Considering Solar Geoengineering to Address Climate Change: Risk Tradeoffs, International Governance, and Comparisons with Other Emerging Technologies | M2-H: Risk Science: How Can We Make it a Broadly Recognized Science with Strong Societal Impact through Educational Programs |
| 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.<br>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)<br>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-E: Wildfire Risk Analysis  | M3-F: Cybersecurity, Digital Environment & Web3.0 | M3-G: The Social Cost of Carbon on Trial: What Comes Next?   | M3-H: Evaluating Cumulative Risk from Mixed Stressor Exposures   |
| 3:00 PM-3:30 AM     | <b>Coffee Break</b>   |   |  |  |
| 3:30 PM – 5:00 PM   | M4-E: Public Responses to Climate Change Risks  | M4-F: Cybersecurity                               | M4-G: Salmonella, Pork, and the Critical Role of Analysis and Data to Inform Decision-Making and Metrics Development   | M4-H: Symposium: Benzene Contamination in Consumer Products: Exposures and Implications for Human Health and The Environment |

**6:00 PM-8:00 PM**      **Poster Reception**, *Grand Ballroom Salon E-J (2nd Floor)*

|   | Grand Ballroom Salon A (2nd Floor)  | Grand Ballroom Salon B (2nd Floor)  | Grand Ballroom Salon C (2nd Floor)  | Grand Ballroom Salon D (2nd Floor)  |
|---|---|---|---|---|
| 8:30 AM-10:30 AM  | T1-A: Towards Enhancing Power Grid Resilience under Climate Change and Extreme Weather Events           | T1-B: Risk of the Year  | T1-C: Symposium: Management of Security and Safety Risks: A Cost and Benefits Perspective | T1-D: How Low Can You Go? Examining the Basis, Reliability, and Interpretation of Continuous Dose-Response Projected to Low Exposures for Noncancer Endpoints |
| <b>10:00 AM-10:30 AM Coffee Break</b>   |   |   |   |   |
| 10:30 AM – 12:00 PM   | T2-A: Adaptation Planning of Engineered Systems for Climate Change                                      | T2-B: COVID-19 Vaccine Information and Decision-Making for At-Risk and Equity-Deserving Populations                 | T2-C: SRA/MORS Collaboration in U.S. National Security Risk Analysis Challenges           | T2-D: Communicating Disease Risk  |
| <b>12:00 PM – 1:30 PM Keynote Session – Linkages Across Cumulative Risk, Environmental Justice and Climate Change, Grand Ballroom Salon E-J (2nd Floor)</b> |   |   |   |   |
| 1:30 PM-3:00 PM   | T3-A: Symposium: Sustainability, Resilience, Engineering, and Environmental Justice                     | T3-B: Symposium: Resilience of Energy Systems   | T3-C: Roundtable: The Future of Risk Research for Homeland Security                       | T3-D: Risk Perception & Information Processing  |
| <b>3:00 PM-3:30 AM Coffee Break</b>   |   |   |   |   |
| 3:30 PM-5:00 PM   | T4-A: Roundtable: Incorporating Risk Equity into the Distribution of New Federal Infrastructure Funding | T4-B: Symposium: Enhanced Geothermal Energy: New Research Findings and Implications for Renewable Energy Acceptance | T4-C: Symposium: Risk Informed Decision and Benefit Analysis in Cybersecurity             | T4-D: Risk and Human Factors Impacting Assessment   |
| <b>6:00 PM-8:00 PM Specialty Group Mixers, see page 5</b>   |   |   |   |   |

|   | Meeting Room 8<br>(3rd Floor)   | Meeting Room 9<br>(3rd Floor)   | Meeting Room 10<br>(3rd Floor)   | Meeting Room 11<br>(3rd Floor)   | Meeting Room 5<br>(2nd Floor)   |
|---|---|---|--|--|---|
| 8:30 AM-10:30 AM  | T1-E: Another Natural Hazards Session   | T1-F: Supply Chain & Cyber Risks  | T1-G: Evaluating Risks of Novel Food and Agriculture Technologies through Interdisciplinary Approaches | T1-H: Risk Analysis of Emerging Advanced Materials and Technologies  | T1-I: SRA's Risk Analysis Quality Test: 3 Surprise Spinoff Insights and How to Apply Them   |
| <b>10:00 AM-10:30 AM Coffee Break</b>   |   |   |  |  |   |
| 10:30 AM – 12:00 PM   | T2-E: Roundtable: Role of Occupational Exposure Assessments Under Amended TSCA Risk Evaluations | T2-F: Symposium: Resilient Supply Chains: Methodology and Applications in California and Florida Transportation Systems | T2-G: Roundtable: Cultured Meat and Alternative Protein Safety: Key Questions and Perspectives         | T2-H: Symposium: New Approaches to Measure Perceptions and Decision-Making Regarding Risks and Rechnologies: A Methodological Exchange | T2-I: Roundtable: Risk Analysis Quality Test (RAQT) Applications to Microbial Risk Analysis |
| <b>12:00 PM – 1:30 PM Keynote Session – Linkages Across Cumulative Risk, Environmental Justice and Climate Change, Grand Ballroom Salon E-J (2nd Floor)</b> |   |   |  |  |   |
| 1:30 PM-3:00 PM   | T3-E: Risk Perception & Information Processing  | T3-F: Symposium: Current Supply-Chain Risks and Impacts   | T3-G: Foodborne Illness & Microbial Risk Modeling  | T3-H: Wastewater and Water Quality   | T3-I: Lightning Session: Risk Communication/Perception                                      |
| <b>3:00 PM-3:30 AM Coffee Break</b>   |   |   |  |  |   |
| 3:30 PM-5:00 PM   | T4-E: Climate Change Adaptation and Resilience  | T4-F: Roundtable: In Memory of Dr. Sharon Dunwoody - Research Based on the RISP Model                                   | T4-G: Innovative Approaches in Food Safety Risk Management   | T4-H: Symposium: Risk Analysis for Arctic Systems  | T4-I: Lightning Session: Emerging Topics in Risk, Engineering, and Public Policy            |
| <b>6:00 PM-7:30 PM Specialty Group Mixers, see page 5</b>   |   |   |  |  |   |



| Grand Ballroom Salon A (2nd Floor)  |   | Grand Ballroom Salon B (2nd Floor)  |  | Grand Ballroom Salon C (2nd Floor)  |  | Grand Ballroom Salon D (2nd Floor)               |  |
|---|---|---|--|---|--|--|--|
| 8:30 AM-10:30 AM  | W1-A: Public Engagement: COVID and other Air Contaminants   | W1-B: US Risk Policy: Climate, Covid and Other Risks  |  | W1-C: Roundtable: ESG Tipping Point and Transforming Risk Decision Making |  | W1-D: Life Expectancies and Valuing Health Risks |  |
| <b>10:00 AM-10:30 AM Coffee Break</b>   |   |   |  |   |  |  |  |
| 10:30 AM – 12:00 PM   | W2-A: Risk Tradeoffs in Policy and Technology   | W2-B: Roundtable: Why We Need an SRA Chapter for the MENA Region                              |  | W2-C: Decision-making for Climate Change Adaptation                       |  | W2-D: Chemicals and Human Health Risks           |  |
| <b>12:00 PM – 1:30 PM Keynote Session – Risk Regulation and the Law: Implications of Recent SCOTUS Rulings and Luncheon, Grand Ballroom Salon E-J (2nd Floor)</b> |   |   |  |   |  |  |  |
| 1:30 PM-3:00 PM   | W3-A: Roundtable: Major Questions at the Supreme Court: Implications for Risk Analysis  | W3-B: Applied Risk Analysis & Management  |  | W3-C: Critical Infrastructure Risk and Resilience                         |  | W3-D: Artificial Intelligence                    |  |
| <b>3:00 PM-3:30 AM Coffee Break</b>   |   |   |  |   |  |  |  |
| 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? | W4-B: Roundtable: Risk Science Perspectives on Information, Misinformation and Disinformation |  | W4-C: Natural Hazards and Infrastructure                                  |  |  |  |

|   | Meeting Room 8<br>(3rd Floor)  | Meeting Room 9<br>(3rd Floor)                                     | Meeting Room 10<br>(3rd Floor)  |
|---|--|---|---|
| 8:30 AM-10:30 AM  | W1-E: Roundtable: Public Health Risk Modelling & Communication in the time of COVID-19: What went right and what went wrong?                 | W1-F: Plastics, Synthetic Biology, Polymers, and Combustion       | W1-G: Symposium: The Role of Risk Assessment and Benefit-Cost Analysis of Food Traceability   |
| <b>10:00 AM-10:30 AM Coffee Break</b>   |  |   |   |
| 10:30 AM – 12:00 PM   | W2-E: Roundtable: Convergence and Collaboration: A Conversation on the Role of Risk Communication in Transdisciplinary Research and Practice | W2-F: Submarines, Satellites, Pipelines and Risks of Big Projects | W2-G: Symposium: Food Safety Risks, Disease Burden, and Technological and Behavioral Solutions  |
| <b>12:00 PM – 1:30 PM Keynote Session – Risk Regulation and the Law: Implications of Recent SCOTUS Rulings and Luncheon, Grand Ballroom Salon E-J (2nd Floor)</b> |  |   |   |
| 1:30 PM-3:00 PM   | W3-E: Risk Governance and Community Resilience   | W3-F: Microbes, The Environment, and Engineered Systems           | W3-G: Symposium: Food Safety Risk Communication ñ Introducing The APEC Food Safety Risk Communication Framework and Associated Guidelines |
| <b>3:00 PM-3:30 AM Coffee Break</b>   |  |   |   |
| 3:30 PM-5:00 PM   | W4-E: Informing Exposure: PFAS and other Chemicals   | W4-F: Symposium: Emerging Risks and Consumer Products             |   |

# Monday

## Technical Program

| 10:30 AM – 12:00 PM   | 10:30 AM – 12:00 PM  | 10:30 AM – 12:10 PM  | 10:30 AM – 12:00 PM  |
|---|--|--|--|
| <b>M2-A: Symposium: Closing Risk Perception Gaps: Insights from Cross-National Perspective</b><br><i>Grand Ballroom Salon A (2nd Floor)</i><br><i>Chair: Catherine Wong</i> | <b>M2-B: Infrastructure Risk, Resilience, and Natural Hazards</b><br><i>Grand Ballroom Salon B (2nd Floor)</i><br><i>Chair: TBD</i>  | <b>M2-C: Symposium: Advances in Disaster Research for Infrastructure, Capabilities, and Objectives</b><br><i>Grand Ballroom Salon C (2nd Floor)</i><br><i>Chair: Cameron MacKenzie</i>                                     | <b>M2-D: Poster Platform: COVID-19</b><br><i>Grand Ballroom Salon D (2nd Floor)</i><br><i>Chair: MargUt Kuttschreuter</i>  |
| <b>10:30 am</b> <b>M2-A.1</b><br>Public perceptions of nuclear energy in relation to climate change in China<br><i>Catherine Wong</i><br><i>University of Amsterdam</i>     | <b>10:30 am</b> <b>M2-B.1</b><br>Surprise is inevitable: How do we train and prepare to make our critical infrastructure more resilient?<br><i>David Alderson</i><br><i>Naval Postgraduate School</i>                | <b>10:30 am</b> <b>M2-C.1</b><br>A Bayesian approach to reconstructing interdependent infrastructure networks<br><i>Hiba Baroud</i><br><i>Vanderbilt University</i>  | <b>10:30 am</b> <b>M2-D.1</b><br>Examining predictors of COVID-19 vaccine hesitancy to promote vaccination<br><i>Nagwan Zahry</i><br><i>The University of Tennessee-Chattanooga</i>  |
| <b>10:50 am</b> <b>M2-A.2</b><br>Do They See the Same Risks? Gaps between Engineers and the Ethics Community on AI Ethics<br><i>Cornelius Kalenzi</i><br><i>KAIST</i>       | <b>10:50 am</b> <b>M2-B.2</b><br>Assessing Exposure of Healthcare Facilities and Emergency Management Critical Infrastructure to Flooding Across Canada<br><i>Liton Chakraborty</i><br><i>University of Waterloo</i> | <b>10:50 am</b> <b>M2-C.2</b><br>Assessing interdependency among capabilities for emergency preparedness<br><i>Matthew Gabriel</i><br><i>Iowa State University</i>   | <b>10:35 am</b> <b>M2-D.2</b><br>A retrospective assessment of COVID-19 model performance in the US<br><i>Kyle Colonna</i><br><i>Harvard University</i>  |
| <b>11:10 am</b> <b>M2-A.3</b><br>Social Perception of Systemic Risk<br><i>Pia-Johanna Schweizer</i><br><i>Institute for Advanced Sustainability Studies</i>                 | <b>11:10 am</b> <b>M2-B.3</b><br>Evaluating the Risk and Complexity of Pluvial Flood Damage in the U.S.<br><i>Gina Tonn</i><br><i>Verdantas</i>  | <b>11:10 am</b> <b>M2-C.3</b><br>Assessing Goals and Objectives for Emergency Preparedness<br><i>Curtis Peters</i><br><i>Iowa State University</i>   | <b>10:40 am</b> <b>M2-D.3</b><br>Public discussion of secondary risks related to covid-19 vaccines: what can we learn from the pause of J&J vaccine?<br><i>Yeqing Kong</i><br><i>University of North Carolina Wilmington</i> |
| <b>11:30 am</b> <b>M2-A.4</b><br>A Conceptual Framework and Research Agenda for Risk Perception Gaps<br><i>Leonard Lee</i><br><i>National University of Singapore</i>       | <b>11:30 am</b> <b>M2-B.4</b><br>Cell phone data for quantifying disaster recovery<br><i>Tessa Swanson</i><br><i>University of Michigan</i>  | <b>11:30 am</b> <b>M2-C.4</b><br>Retrieving and disseminating information about disasters through natural language processing tools<br><i>Parastoo Akbari</i><br><i>Iowa State University</i>                              | <b>10:45 am</b> <b>M2-D.4</b><br>Predicting vaccination intentions for COVID-19, HPV, and monkeypox<br><i>Haoran Chu</i><br><i>University of Florida</i>   |
|   |  | <b>11:50 am</b> <b>M2-C.5</b><br>Towards advancing disaster preparedness: a data-driven spatiotemporal analysis to forecast mobility patterns at critical facilities<br><i>Zhiyuan Wei</i><br><i>University at Buffalo</i> |  |

# Monday

## Technical Program

| 10:30 AM – 12:00 PM  |               | 10:30 AM – 12:00 PM  |               | 10:30 AM – 12:10 PM   |               | 10:30 AM – 12:00 PM   |  |
|--|---------------|--|---------------|---|---------------|---|--|
| <b>M2-E: Symposium: Managing Risk from Megafires</b><br><i>Meeting Room 8 (3rd Floor)</i><br><i>Chair: Alison Cullen</i>                             |               | <b>M2-F: Symposium: Resilience in Cyber-Energy Systems</b><br><i>Meeting Room 9 (3rd Floor)</i><br><i>Chair: Igor Linkov</i>   |               | <b>M2-G: Considering Solar Geoengineering to Address Climate Change: Risk Tradeoffs, International Governance, and Comparisons with Other Emerging Technologies</b><br><i>Meeting Room 10 (3rd Floor)</i><br><i>Chair: Tyler Felgenhauer</i>                            |               | <b>M2-H: Roundtable: Risk Science: How Can We Make it a Broadly Recognized Science with Strong Societal Impact through Educational Programs</b><br><i>Meeting Room 11 (3rd Floor)</i><br><i>Chair: Seth Guikema</i>   |  |
| <b>10:30 am</b><br><b>International cooperation for managing wildfire risk</b><br><i>Sunniva Bloem</i><br><i>University of Washington</i>            | <b>M2-E.1</b> | <b>10:30 am</b><br><b>Edge Computing and Resilience</b><br><i>Fiondella</i><br><i>ERDC</i>   | <b>M2-F.1</b> | <b>10:30 am</b><br><b>Solar radiation modification: A risk-risk analysis</b><br><i>Jonathan Wiener</i><br><i>Duke University</i>  | <b>M2-G.1</b> | <p>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.</p> <p>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.</p> <p>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.</p> <p><b>Panelists</b></p> <ul style="list-style-type: none"> <li>• Ragnar Lofstedt</li> <li>• Terje Aven</li> <li>• Tom Logan</li> </ul> |  |
| <b>10:50 am</b><br><b>Risk Management Through Megafire Response</b><br><i>Alison Cullen</i><br><i>University of Washington</i>                       | <b>M2-E.2</b> | <b>10:50 am</b><br><b>Simulation of infrastructure resilience at military installations using Framework Integrating the Complexity of Uncertain Systems (FICUS)</b><br><i>Luke Hogewood</i><br><i>US Army Engineer Research and Development Center</i> | <b>M2-F.2</b> | <b>10:50 am</b><br><b>Does solar geoengineering crowd-out mitigation? Lessons from recent experiments</b><br><i>Todd Cherry</i><br><i>University of Wyoming</i>   | <b>M2-G.2</b> |   |  |
| <b>11:10 am</b><br><b>Fire Weather Forecasting in the Pacific Northwest</b><br><i>Reed Humphrey</i><br><i>University of Washington</i>               | <b>M2-E.3</b> | <b>11:10 am</b><br><b>Developing Reference Building Types for Risk Management in Non-Traditional Building Types</b><br><i>Andrew Jin</i><br><i>University of Southern California</i>   | <b>M2-F.3</b> | <b>11:10 am</b><br><b>Bi-directional learning for risk governance of solar geoengineering and gene drives: A comparison of technological and governance features across two emerging technologies</b><br><i>Khara Grieger</i><br><i>North Carolina State University</i> | <b>M2-G.3</b> |   |  |
| <b>11:30 am</b><br><b>Optimizing and Managing Prescribed Fire Usage in Mitigating Wildfires</b><br><i>Jun Zhuang</i><br><i>University at Buffalo</i> | <b>M2-E.4</b> | <b>11:30 am</b><br><b>Edge Computing Platform for Resilient Installations</b><br><i>Karen Fleckner</i><br><i>Artesion Inc</i>  | <b>M2-F.4</b> | <b>11:30 am</b><br><b>The effect of exclusivity and inclusivity on the international response to potentially harmful unilateral action: An application to solar geoengineering</b><br><i>Mark Borsuk</i><br><i>Duke University</i>                                      | <b>M2-G.4</b> |   |  |
|  |               |  |               | <b>11:50 am</b><br><b>Prevent, then manage: Governing the free driver incentive for solar geoengineering deployment</b><br><i>Tyler Felgenhauer</i><br><i>Duke University</i>   | <b>M2-G.5</b> |   |  |

| 1:30 PM – 3:00 PM  | 1:30 PM – 3:00 PM  | 1:30 PM – 3:00 PM   | 1:30 PM – 3:00 PM   |
|--|--|---|---|
| <b>M3-A: Resilience Against Emerging and Extreme Threats</b><br><i>Grand Ballroom Salon A (2nd Floor)</i><br><i>Chair: Aleksandar JOVANOVIĆ</i>  | <b>M3-B: Misinformation &amp; the Politicization of Risk</b><br><i>Grand Ballroom Salon B (2nd Floor)</i><br><i>Chair: Laura Rickard</i>   | <b>M3-C: Global Systemic Risks and Polycrises in the Anthropocene</b><br><i>Grand Ballroom Salon C (2nd Floor)</i><br><i>Chair: Pia-Johanna Schweizer</i>   | <b>M3-D: Poster Platform: Information Processing</b><br><i>Grand Ballroom Salon D (2nd Floor)</i><br><i>Chair: Xinxia Dong</i>  |
| <b>1:30 pm</b> <b>M3-A.1</b><br>New insurance solutions for enhancing disaster resilience against climate change related and natural extreme threats (XTs)<br><i>Aleksandar Jovanovic</i><br><i>Steinbeis EU-VRI</i> | <b>1:30 pm</b> <b>M3-B.1</b><br>Inoculation against fake news on COVID-19 vaccines: A replication study in Singapore<br><i>Catherine Wong</i><br><i>University of Amsterdam</i>  | <p>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.</p> <p>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.</p> | <b>1:30 pm</b> <b>M3-D.1</b><br>More insufficient or more capable? Predicting risk information seeking and processing related to PFAS contamination<br><i>Xinxia Dong</i><br><i>University at Buffalo</i>   |
| <b>1:50 pm</b> <b>M3-A.2</b><br>Interdependencies in energy systems<br><i>Giovanni Sansavini</i><br><i>ETH Zurich</i>  | <b>1:50 pm</b> <b>M3-B.2</b><br>Examining the effects of communicator bias on sharing intention in aggressive misinformation and correction about climate change<br><i>Shupe Yuan</i><br><i>Northern Illinois University</i> |   | <b>1:40 pm</b> <b>M3-D.3</b><br>Operationalizing the heuristic-systematic model in communication studies: a narrative review<br><i>Yidi Wang</i><br><i>University of Georgia</i>  |
| <b>2:10 pm</b> <b>M3-A.3</b><br>Systemic risks as possible extreme threats: health care<br><i>Peter Klimek</i><br><i>Medical University Vienna, Austria</i>  | <b>2:10 pm</b> <b>M3-B.3</b><br>Understanding support for aquaculture policy: The role of information exposure, information seeking, and source credibility<br><i>Laura Rickard</i><br><i>University of Maine</i>            |   | <b>1:55 pm</b> <b>M3-D.4</b><br>An assessment of expert risk perceptions of motor insurance fraud in Nigeria<br><i>Olatokunbo Shoyemi</i><br><i>University of Southampton</i>   |
| <b>2:30 pm</b> <b>M3-A.4</b><br>Dynamic and self-generated model of interdependencies in complex system: critical infrastructures and supply chains<br><i>Marjan Jelic</i><br><i>Steinbeis EU-VRI</i>                | <b>2:30 pm</b> <b>M3-B.4</b><br>Pathways underlying the COVID-19 vaccine political divide: A health behavior theory perspective<br><i>Christopher Clarke</i><br><i>George Mason University</i>                               |   | <b>2:00 pm</b> <b>M3-D.5</b><br>Eye-tracking Laypersons During a Nevus Identification Task: ABCDE Yields Increased Sensitivity but Reduced Visual Processing Efficiency<br><i>Kevin John</i><br><i>Brigham Young University</i>                         |
|  |  | <b>Panelists</b> <ul style="list-style-type: none"> <li>• Thomas Homer-Dixon</li> <li>• Mariko Nishizawa</li> <li>• Ortwin Renn</li> <li>• Johan Rockström</li> <li>• Catherine Wong</li> </ul>   | <b>2:05 pm</b> <b>M3-D.6</b><br>Actively open-minded thinking and liberal political orientation predict enhanced immunity to pandemic fake news stories: a signal detection approach<br><i>Richard John</i><br><i>University of Southern California</i> |
|  |  |   | <b>2:10 pm</b> <b>M3-D.7</b><br>Understanding motivation and risk perception of cryptoassets users<br><i>Thierry Warin</i><br><i>HEC Montréal</i>   |



| 1:30 PM – 3:00 PM   | 1:30 PM – 3:00 PM   | 1:30 PM – 3:00 PM  | 1:30 PM – 3:00 PM   |
|---|---|--|---|
| <b>M3-E: Wildfire Risk Analysis</b><br><i>Meeting Room 8 (3rd Floor)</i><br><i>Chair: Alison Cullen</i>   | <b>M3-F: Cybersecurity, Digital Environment &amp; Web3.0</b><br><i>Meeting Room 9 (3rd Floor)</i><br><i>Chair: Samuel Denard</i>  | <b>M3-G: The Social Cost of Carbon on Trial: What Comes Next?</b><br><i>Meeting Room 10 (3rd Floor)</i><br><i>Chair: Jonathan Wiener</i>   | <b>M3-H: Evaluating Cumulative Risk from Mixed Stressor Exposures</b><br><i>Meeting Room 11 (3rd Floor)</i><br><i>Chair: Frank Hearl</i>  |
| <b>1:30 pm</b> <b>M3-E.1</b><br>Risk-informed emergency management for wildfires: the Wildfire Safe Egress (WISE) model and platform<br><i>Ali Mosleh</i><br><i>University of California Los Angeles</i>  | <b>1:30 pm</b> <b>M3-F.1</b><br>Cybersecurity Risk Assessment of Networked Medical Devices<br><i>Maureen Van Devender</i><br><i>University of South Alabama</i>   | The Social Cost of Carbon (SCC) remains a central tool in agency toolbelts for accounting for the expected impacts of climate change within regulatory cost-benefit analyses. In February of this year, in <i>Louisiana v. Biden</i> , 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. | <b>1:30 pm</b> <b>M3-H.1</b><br>Applying cumulative risk assessment for mixed chemicals in the work environment<br><i>Alan Rossner</i><br><i>Clarkson University</i>                      |
| <b>1:50 pm</b> <b>M3-E.2</b><br>Systemic risks to wildfire response capacity in the US<br><i>Matthew Thompson</i><br><i>USDA Forest Service</i>   | <b>1:50 pm</b> <b>M3-F.2</b><br>RAQT results representation<br><i>Samuel Denard</i><br><i>Empirical Products</i>  |  | <b>1:50 pm</b> <b>M3-H.2</b><br>Risk, Stress, and Health<br><i>Mary O'Reilly</i><br><i>University at Albany School of Public Health and Workplace Health Without Borders-US (WHWB-US)</i> |
| <b>2:10 pm</b> <b>M3-E.3</b><br>Designing a Resilient Power Grid System through Optimal Public Safety Power Shutoffs and Microgrid Formation under Wildfire Scenarios<br><i>Sayanti Mukherjee</i><br><i>University At Buffalo, The State University Of New York</i> | <b>2:10 pm</b> <b>M3-F.3</b><br>Autonomous Driving Systems in Mobility as a Service: Operational Safety<br><i>Marilia Ramos</i><br><i>University of California Los Angeles</i>                                    |  | <b>2:10 pm</b> <b>M3-H.3</b><br>Mixed stressors and workplace mental health: Challenges and opportunities for risk assessment<br><i>Tom Cunningham</i><br><i>CDC/NIOSH</i>                |
| <b>2:30 pm</b> <b>M3-E.4</b><br>Growing Convergence Research: co-producing climate projection information for managing risk from simultaneous wildfires<br><i>Alison Cullen</i><br><i>University of Washington</i>  | <b>2:30 pm</b> <b>M3-F.4</b><br>Evaluating systematic deviations in behavioral measures of risk-taking depending on the structure of the task<br><i>Kevin Kapadia</i><br><i>University of Southern California</i> |  | <b>2:30 pm</b> <b>M3-H.4</b><br>Advanced analytics for evaluating cumulative risk<br><i>Margaret MacDonell</i><br><i>Argonne National Laboratory</i>                                      |
|   |   |  |   |
|   |   | <b>Panelists</b> <ul style="list-style-type: none"> <li>• Arden Rowell</li> <li>• Jonathan Wiener</li> <li>• Melissa Luttrell</li> <li>• Robin Cantor</li> <li>• James K. Hammitt</li> </ul>   |   |

| 3:30 PM – 5:10 PM  | 3:30 PM – 5:10 PM  | 3:30 PM – 5:10 PM   | 3:30 PM – 5:00 PM   |
|--|--|---|---|
| <b>M4-A: Risk Assessment at Scale for Critical Infrastructure</b><br><i>Grand Ballroom Salon A (2nd Floor)</i><br><i>Chair: Jason Reinhardt</i>  | <b>M4-B: Natural Hazards</b><br><i>Grand Ballroom Salon B (2nd Floor)</i><br><i>Chair: Sergio García Mejía</i>   | <b>M4-C: Risks from Extreme Storm Events</b><br><i>Grand Ballroom Salon C (2nd Floor)</i><br><i>Chair: Tom Logan</i>  | <b>M4-D: Poster Platform: Advanced Topics in Risk Analysis</b><br><i>Grand Ballroom Salon D (2nd Floor)</i><br><i>Chair: Jun Zhuang</i>   |
| <b>3:30 pm</b><br><b>Risk Assessment at Scale for Critical Infrastructure ñ NRMCC Vision</b><br><i>Merideth Secor</i><br><i>Cybersecurity and Infrastructure Security Agency</i>   | <b>3:30 pm</b><br><b>A culture of fire: identifying community risk perceptions surrounding prescribed burning in the Flint Hills, Kansas</b><br><i>Zoey Rosen</i><br><i>Colorado State University</i>                        | <b>3:30 pm</b><br><b>Comparing the Performance of Alternative Power Arrays During Extreme Weather Events</b><br><i>Yicheng Wang</i><br><i>Rensselaer Polytechnic Institute</i>                                    | <b>3:30 pm</b><br><b>A Game-theoretic Framework for Multi-target, Multi-layer Defense against Strategic Attackers</b><br><i>Ian Unson</i><br><i>University at Buffalo</i>   |
| <b>3:50 pm</b><br><b>Generation and Application of NCF Data Network Layers for Risk Analysis via Functional Decomposition</b><br><i>Laura Weinstock</i><br><i>Sandia National Laboratories</i>                                       | <b>3:50 pm</b><br><b>Risk communication about wildfire smoke exposure in the U.S.</b><br><i>Andrew Fox</i><br><i>University of Oklahoma</i>  | <b>3:50 pm</b><br><b>S158 in S157 - Isolation: Revising the estimated risk of sea-level rise</b><br><i>Tom Logan</i><br><i>University of Canterbury</i>   | <b>3:35 pm</b><br><b>Confidence In = Confidence Out</b><br><i>Alexander Wimbush</i><br><i>University of Liverpool</i>   |
| <b>4:10 pm</b><br><b>From Functions to Assets: developing a generalized risk assessment methodology for application with the National Critical Functions</b><br><i>Chel Samuels</i><br><i>Lawrence Livermore National Laboratory</i> | <b>4:10 pm</b><br><b>Scaling-up local adaptation: Results from an initial survey of local practitioners managing climate risks in the U.S. Gulf Coast, 2020-2022</b><br><i>Natalie Herbert</i><br><i>Stanford University</i> | <b>4:10 pm</b><br><b>Cross-sectoral and multiscale exposure assessment of California airports to future coastal flooding to advance climate adaptation policy</b><br><i>Sarah Lindbergh</i><br><i>UC Berkeley</i> | <b>3:50 pm</b><br><b>Risk Screening of Phosphorus (P) Capturing Materials for Eutrophication Control: Environmental Impacts and Sustainable Management</b><br><i>Mumtahina Riza</i><br><i>North Carolina State University</i>       |
| <b>4:30 pm</b><br><b>Application of a functional dependency modeling framework within the Risk Architecture</b><br><i>Rob Edsall</i><br><i>Idaho National Laboratory</i>   | <b>4:30 pm</b><br><b>Emergency Communication Strategies During “Back to Back” Tropical Cyclones Eta and Iota</b><br><i>Sergio García Mejía</i><br><i>University of Maryland</i>  | <b>4:30 pm</b><br><b>Direct policy search for a risk-based levee design framework</b><br><i>Jingya Wang</i><br><i>Purdue University</i>   | <b>3:55 pm</b><br><b>Water quality and exposure to enteric pathogens, inorganic chemicals, &amp; health outcomes in central Appalachia</b><br><i>Md Rasheduzzaman</i><br><i>Virginia Polytechnic Institute and State University</i> |
| <b>4:50 pm</b><br><b>A Network-of-Networks Framework for Analyzing Functions-Based Critical Infrastructure Risk and Resilience</b><br><i>Samrat Chatterjee</i><br><i>Pacific Northwest National Laboratory</i>                       | <b>4:50 pm</b><br><b>Social and Economic Disparity in Isolation Risk due to Sea Level Rise in the United States</b><br><i>Kelsea Best</i><br><i>University of Maryland</i>   | <b>4:50 pm</b><br><b>Agent-based modeling of resident flood-hazard relocation decisions with buyouts or relocation subsidies</b><br><i>Vicki Bier</i><br><i>University of Wisconsin-Madison</i>                   | <b>4:00 pm</b><br><b>Forecast value for risk averse decision-makers</b><br><i>Luca Anna Palasti</i><br><i>University of Colorado Boulder</i>  |
|  |  |   | <b>4:05 pm</b><br><b>Mapping sense of place for storm surge: map features and sense of place in storm surge risk perceptions and protective actions</b><br><i>Hugh Walpole</i><br><i>National Center for Atmospheric Research</i>   |
|  |  |   | <b>4:10 am</b><br><b>Downstream impacts of oral poliovirus vaccination: a quantitative microbial risk assessment</b><br><i>Madeline Lewis</i><br><i>Ohio State University College of Public Health</i>                              |

| 3:30 PM – 5:10 PM  | 3:30 PM – 5:10 PM  | 3:30 PM – 5:00 PM  | 3:30 PM – 5:00 PM  |
|--|--|--|--|
| <p><b>M4-E: Public Responses to Climate Change Risks</b><br/> <i>Meeting Room 8 (3rd Floor)</i><br/> <i>Chair: Dana Garfin</i></p>   | <p><b>M4-F: Cybersecurity</b><br/> <i>Meeting Room 9 (3rd Floor)</i><br/> <i>Chair: Maksim Kitsak</i></p>  | <p><b>M4-G: Salmonella, Pork, and the Critical Role of Analysis and Data to Inform Decision-Making and Metrics Development</b><br/> <i>Meeting Room 10 (3rd Floor)</i><br/> <i>Chair: Janell Kause</i></p>   | <p><b>M4-H: Symposium: Benzene Contamination in Consumer Products: Exposures and Implications for Human Health and The Environment</b><br/> <i>Meeting Room 11 (3rd Floor)</i><br/> <i>Chair: Debra Kaden</i></p>  |
| <p><b>3:30 pm</b> <b>M4-E.1</b><br/> Carbon Dependency, Social Capital, Political Orientation, and American Public Response to Climate Change<br/> <i>Feng Hao</i><br/> <i>University of South Florida</i></p>                                     | <p><b>3:30 pm</b> <b>M4-F.1</b><br/> Limitations of the Risk Matrix: Improving Risk Models for Cybersecurity of Mission-Critical Defense Systems<br/> <i>Elijah Evans</i><br/> <i>DESE Research Inc.</i></p> | <p><b>3:30 pm</b> <b>M4-G.1</b><br/> 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<br/> <i>Neal Golden</i><br/> <i>USDA/FSIS</i></p>                       | <p><b>3:30 pm</b> <b>M4-H.1</b><br/> Detection of benzene in consumer products<br/> <i>David Light</i><br/> <i>Valisure</i></p>  |
| <p><b>3:50 pm</b> <b>M4-E.2</b><br/> The impact of extreme precipitation events and their variability on climate change beliefs<br/> <i>Mikhaila Calice</i><br/> <i>University of Wisconsin-Madison</i></p>  | <p><b>3:50 pm</b> <b>M4-F.2</b><br/> Warnings and management of cyber threats by a hybrid AI system (robot and human operator)<br/> <i>Elisabeth Pate-Cornell</i><br/> <i>Stanford</i></p>                   | <p><b>3:50 pm</b> <b>M4-G.2</b><br/> 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<br/> <i>Eric Ebel</i><br/> <i>USDA/FSIS</i></p> | <p><b>3:50 pm</b> <b>M4-H.2</b><br/> Benzene Contamination in Consumer Products: Understanding the Regulatory Landscape<br/> <i>Nancy Beck</i><br/> <i>Hunton Andrews Kurth</i></p>                                |
| <p><b>4:10 pm</b> <b>M4-E.3</b><br/> Increased polarization in public view on climate change after exposure to natural hazards<br/> <i>Haoran Chu</i><br/> <i>University of Florida</i></p>  | <p><b>4:10 pm</b> <b>M4-F.3</b><br/> Finding communication paths in incomplete networks: implications for cybersecurity<br/> <i>Maksim Kitsak</i><br/> <i>Delft University of Technology</i></p>             | <p><b>4:10 pm</b> <b>M4-G.3</b><br/> Science in Action: From risk assessment to policy--the new Salmonella performance standards for raw pork products<br/> <i>Neal Golden</i><br/> <i>USDA/FSIS</i></p>   | <p><b>4:10 pm</b> <b>M4-H.3</b><br/> Environmental Impact of Currently Marketed Sunscreens and Potential Human Impacts of Changes in Sunscreen Usage<br/> <i>Charles Menzie</i><br/> <i>Exponent</i></p>           |
| <p><b>4:30 pm</b> <b>M4-E.4</b><br/> Concerned, but am I engaged? Identifying predictors of climate action among Americans who perceive climate change to be a high risk<br/> <i>Yema Conteh</i><br/> <i>University of Southern California</i></p> | <p><b>4:30 pm</b> <b>M4-F.4</b><br/> Resilience of multi-scale rail networks against compound floods and opportunistic failures<br/> <i>Jack Watson</i><br/> <i>Northeastern University</i></p>              | <p><b>4:30 pm</b> <b>M4-G.4</b><br/> The Margins Matter: A case study in how we can use non-inferiority tests to assess the risk of Salmonella in pork<br/> <i>Eric Ebel</i><br/> <i>USDA/FSIS</i></p>   | <p><b>4:30 pm</b> <b>M4-H.4</b><br/> Understanding exposures and the potential for health effects from benzene contamination in consumer products<br/> <i>Robinan Gentry</i><br/> <i>Ramboll US Consulting</i></p> |
| <p><b>4:50 pm</b> <b>M4-E.5</b><br/> Negative hazard experiences, climate anxiety, PTSD, and pro-environmental action and attitudes<br/> <i>Dana Garfin</i><br/> <i>University of California, Los Angeles</i></p>                                  | <p><b>4:50 pm</b> <b>M4-F.5</b><br/> A signal detection framework for threat perception and self defense<br/> <i>Richard John</i><br/> <i>University of Southern California</i></p>                          |  |  |

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***Nagwan Zahry  
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***Joeun 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***Yongjin Lee  
Yonsei University*

PS.20

**Defining Resilience: Lessons from the risk and safety sciences***Tom Logan  
University of Canterbury*

PS.21

**Probabilistic 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: Poster Session

Grand Ballroom Salon E-J (2nd Floor)

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-Yang 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

Shraddha 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.56

Predictors of Performance in Separating Valid Explanations from Conspiracy Theories

*Alyssa Delarosa*

*University of Southern California*

PS.57

Investigating the influence of preprints in COVID-19 news coverage on vaccine booster intentions

*Rebekah Wicke*

*University of Georgia*

PS.58

Development of a combined facility radiological safety and security model for risk assessment

*Jason Harris*

*Purdue University*

PS.59

Optimization of Infrastructure Placement using a Novel Disease Burden Reduction Model

*Theresa Lopez*

*Tetra Tech*

PS.60

Conundrum of the PFOA Human Half-life: An International Collaboration

*Michael Dourson*

*TERA*

PS.61

Intelligent Retreat: Guiding relocation of residential communities given multiple planning objectives

*Sam Archie*

*University of Canterbury*

PS.62

Stakeholder engagement for phosphorus sustainability: opportunities, challenges, and new directions

*Ashton Merck*

*NC State University*

PS.63

The COVID-19 outbreak impact on the mental health of short-term migrants in central Florida college towns

*Amer Abukhalaf*

*University of Florida*

PS.64

A comparative analysis of mental health risks due to covid 19 pandemic in africa

*Emma Anyika*

*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*

| 8:30 AM – 10:00 AM  | 8:30 AM – 10:00 AM  | 8:30 AM – 10:10 AM   | 8:30 AM – 10:00 AM   |
|---|---|--|--|
| <b>T1-A: Towards Enhancing Power Grid Resilience under Climate Change and Extreme Weather Events</b><br><i>Grand Ballroom Salon A (2nd Floor)</i><br><i>Chair: Sayanti Mukherjee</i>                    | <b>T1-B: Risk of the Year</b><br><i>Grand Ballroom Salon B (2nd Floor)</i><br><i>Chair: TBD</i> | <b>T1-C: Symposium: Management of Security and Safety Risks: A Cost and Benefits Perspective</b><br><i>Grand Ballroom Salon C (2nd Floor)</i><br><i>Chair: Unal Tatar</i>                                | <b>T1-D: How Low Can You Go? Examining the Basis, Reliability, and Interpretation of Continuous Dose-Response Projected to Low Exposures for Noncancer Endpoints</b><br><i>Grand Ballroom Salon D (2nd Floor)</i><br><i>Chair: Lorenz Rhomberg</i> |
| <b>8:30 am</b> <b>T1-A.1</b><br>Hurricane resilience of power systems: Effects of socioeconomic status and sociodemographic factors<br><i>Abdollah Shafieezadeh</i><br><i>The Ohio State University</i> |   | <b>8:30 am</b> <b>T1-C.1</b><br>Uncertainty Analysis of Business Interruption Losses in the Philippines Due to the COVID-19 Pandemic<br><i>Joost Santos</i><br><i>George Washington University</i>       | <b>8:30 am</b> <b>T1-D.1</b><br>Limits to meaningful projection of noncancer risk levels to lower doses<br><i>Lorenz Rhomberg</i><br><i>Gradient</i>   |
| <b>8:50 am</b> <b>T1-A.2</b><br>Power outage risk under uncertain climate change<br><i>Negin Alemazkoor</i><br><i>University of Virginia</i>  |   | <b>8:50 am</b> <b>T1-C.2</b><br>Visible Deterrence: A Novel Experiment of Adversary Dissuasion in Transportation Security<br><i>Brandon Behlendorf</i><br><i>University at Albany</i>                    | <b>8:50 am</b> <b>T1-D.2</b><br>Lessons from Beyond Science and Decisions Workshops Regarding Noncancer Risk<br><i>Michael Dourson</i><br><i>TERA</i>  |
| <b>9:10 am</b> <b>T1-A.3</b><br>Engineering resilience in the critical energy infrastructure<br><i>Giovanni Sansavini</i><br><i>ETH Zurich</i>  |   | <b>9:10 am</b> <b>T1-C.3</b><br>Wastewater-based Epidemiology: an Emerging Tool for Public Health Surveillance and Early Warning for Disease Outbreaks<br><i>Sheree Pagsuyoin</i><br><i>UMass Lowell</i> | <b>9:10 am</b> <b>T1-D.3</b><br>Wrestling with Uncertainty in the Low-Dose Region for Non-Cancer Risk Assessment<br><i>Greg Paoli</i><br><i>Risk Sciences International</i>  |
|   |   | <b>9:30 am</b> <b>T1-C.4</b><br>Robustness of Flood Protection Project Evaluation to Alternative Benefit Metrics<br><i>David Johnson</i><br><i>Purdue University</i>                                     | <b>9:30 am</b> <b>T1-D.4</b><br>Discussion - Risk-Specific Doses for Noncancer Toxicity<br><i>Julie Goodman</i><br><i>Gradient</i>   |
|   |   | <b>9:50 am</b> <b>T1-C.5</b><br>Synergies and Incompatibilities between AI and Fundamental Risk Principles in Disaster Risk Management<br><i>Unal Tatar</i><br><i>University at Albany</i>               |  |

| 8:30 AM – 10:10 AM  | 8:30 AM – 10:00 AM   | 8:30 AM – 10:00 AM   | 8:30 AM – 10:00 AM  |
|---|--|--|---|
| <b>T1-E: Another Natural Hazards Session</b><br><i>Meeting Room 8 (3rd Floor)</i><br><i>Chair: Thi Mui Nguyen</i>   | <b>T1-F: Supply Chain &amp; Cyber Risks</b><br><i>Meeting Room 9 (3rd Floor)</i><br><i>Chair: Adam Rose</i>  | <b>T1-G: Evaluating Risks of Novel Food and Agriculture Technologies through Interdisciplinary Approaches</b><br><i>Meeting Room 10 (3rd Floor)</i><br><i>Chair: Khara Grieger</i>   | <b>T1-H: Risk Analysis of Emerging Advanced Materials and Technologies</b><br><i>Meeting Room 11 (3rd Floor)</i><br><i>Chair: James Ede</i>   |
| <b>8:30 am</b> <span style="float: right;"><b>T1-E.1</b></span><br>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<br><i>Pascal Haegeli</i><br><i>Simon Fraser University</i>                                  | <b>8:30 am</b> <span style="float: right;"><b>T1-F.1</b></span><br>Credit Rating Processes Applied to Critical Infrastructure Cyber Risk Assessment<br><i>Kevin Griffith</i><br><i>Sandia National Labs</i>          | <b>8:30 am</b> <span style="float: right;"><b>T1-G.1</b></span><br>Key parameters to consider in environmental risk assessment of genetically engineered and gene edited agrifoods<br><i>Willy Wei</i><br><i>North Carolina State University</i> | <b>8:30 am</b> <span style="float: right;"><b>T1-H.1</b></span><br>Health and Safety Assessment and Risk Communication ñ The Challenge of Additive Manufacturing/3D Printing<br><i>Trey Thomas</i><br><i>CPSC</i>   |
| <b>8:50 am</b> <span style="float: right;"><b>T1-E.2</b></span><br>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.<br><i>Rosemary Langford</i><br><i>Simon Fraser University Avalanche Research Program</i> | <b>8:50 am</b> <span style="float: right;"><b>T1-F.2</b></span><br>Business process mapping for risk identification in semiconductor manufacturing<br><i>Zachary Collier</i><br><i>Radford University</i>            | <b>8:50 am</b> <span style="float: right;"><b>T1-G.2</b></span><br>Evaluating Risks, Benefits, and Societal Implications of Novel Agrifood Technologies<br><i>Nick Loschin</i><br><i>North Carolina State University</i>                         | <b>8:50 am</b> <span style="float: right;"><b>T1-H.2</b></span><br>Safer by Design Toolbox for the Risk Assessment of Next Generation Cellulose Nanomaterials<br><i>Brian Zhang</i><br><i>Vireo Advisors</i>  |
| <b>9:10 am</b> <span style="float: right;"><b>T1-E.3</b></span><br>Impact of Chemical Release Accidents on Rivers Caused by a Major Earthquake and Evaluation of Countermeasure Options<br><i>Lisa Ito</i><br><i>Osaka University</i>   | <b>9:10 am</b> <span style="float: right;"><b>T1-F.3</b></span><br>Cyber risk of shipbuilding supply network: data science + risk analytics approach<br><i>Ahmed M. Abdelmagid</i><br><i>Old Dominion University</i> | <b>9:10 am</b> <span style="float: right;"><b>T1-G.3</b></span><br>Fostering Responsible Innovation of Nano-Agrifoods through Interdisciplinary Perspectives and Insights<br><i>Khara Grieger</i><br><i>North Carolina State University</i>      | <b>9:10 am</b> <span style="float: right;"><b>T1-H.3</b></span><br>Life-cycle Risk Assessment of Consumer Applications of Graphene: Outcomes, Data Gaps and Priorities<br><i>James Ede</i><br><i>Vireo Advisors</i>   |
| <b>9:30 am</b> <span style="float: right;"><b>T1-E.4</b></span><br>Extreme weather drivers during power outages in the United States<br><i>Nicole Jackson</i><br><i>Sandia National Laboratories</i>  |  | <b>9:30 am</b> <span style="float: right;"><b>T1-G.4</b></span><br>Exploring the role of regulation to ensure animal welfare of gene edited animals<br><i>Ilaria Cimadori</i><br><i>Yale University</i>  | <b>9:30 am</b> <span style="float: right;"><b>T1-H.4</b></span><br>Risk Screening of Phosphorus Capturing Materials for Eutrophication Control: Environmental Impacts and Sustainable Management<br><i>Mumtahina Riza</i><br><i>North Carolina State University</i> |
| <b>9:50 am</b> <span style="float: right;"><b>T1-E.5</b></span><br>drought perception and adaption in Vietnam<br><i>Thi Mui Nguyen</i><br><i>Victoria University of Wellington</i>  |  |  |   |

8:30 AM – 10:00 AM

**T1-I: SRA's Risk Analysis Quality Test: 3 Surprise Spinoff Insights and How to Apply Them**

*Meeting Room 5 (2nd Floor)*

*Chair: John Lathrop*

The Applied Risk Management SG developed the SRA Risk Analysis Quality Test ([sra.org/resources/risk-analysis-quality-test/](http://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 76 questions that apply most importantly, and that are important but may not be often considered – we will present and seek feedback-new-ideas; 3) Many risk analysts work within a limited scope role in risk analysis as defined by SRA to include risk identification, characterization, assessment, communication, management, etc. – and so we will pose the question: How can SRA practitioners use the RAQT to improve the overall quality of a full-scope risk management process despite having authority over just a limited part of the process? In short, while we built the RAQT as a test of risk analysis quality, we find that it is a lot more than that: it 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

10:30 AM – 12:10 PM

**T2-A: Adaptation Planning of Engineered Systems for Climate Change**

*Grand Ballroom Salon A (2nd Floor)*

*Chair: Tom Logan*

**10:30 am T2-A.1**  
**Cascading risks through interdependent infrastructure-social systems**

*Tom Logan  
University of Canterbury*

**10:50 am T2-A.2**  
**Estimating the impact of sustainability requirements during federally-funded post-disaster reconstruction**

*Linda Waters  
University of Maryland*

**11:10 am T2-A.3**  
**Adaptation planning for non-housing infrastructure in rural, coastal regions vulnerable to sea-level rise**

*Allison Reilly  
University of Maryland*

**11:30 am T2-A.4**  
**Challenges in planning for climate change in the electric sector**

*Andrea Staid  
EPRI*

**11:50 am T2-A.5**  
**Regional responses to sea-level rise adaptation in the San Francisco Bay Area**

*Michelle Hummel  
University of Texas at Arlington*

10:30 AM – 12:10 PM

**T2-B: COVID-19 Vaccine Information and Decision-Making for At-Risk and Equity-Deserving Populations**

*Grand Ballroom Salon B (2nd Floor)*

*Chair: Cindy Jardine*

**10:30 am T2-B.1**  
**The impact on trust when vaccine access changes: Examining a tale of two pandemics on Red River Métis vaccine decisions**

*S. Michelle Driedger  
University of Manitoba*

**10:50 am T2-B.2**  
**“They're trying to bribe you and taking away your freedoms”: COVID-19 vaccine hesitancy in communities with traditionally low vaccination rates**

*Gabriela Capurro  
University of Manitoba*

**11:10 am T2-B.3**  
**COVID-19 vaccine attitudes and healthcare interactions among temporary foreign agricultural workers in British Columbia**

*Marinel Kniseley  
University of the Fraser Valley*

**11:30 am T2-B.4**  
**“I'm scared - what if more side effects come out?”: Pediatric COVID-19 vaccination decisions of South Asian parents**

*Cindy Jardine  
University of the Fraser Valley*

**11:50 am T2-B.5**  
**COVID-19 vaccine experiences of people with disabilities (PWD) in Manitoba, Canada**

*Jen Sebring  
University of Manitoba*

10:30 AM – 12:00 PM

**T2-C: SRA/MORS Collaboration in U.S. National Security Risk Analysis Challenges**

*Grand Ballroom Salon C (2nd Floor)*

*Chair: Barry Ezell*

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 panel 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   | 10:30 AM – 12:00 PM   | 10:30 AM – 12:00 PM  | 10:30 AM – 12:00 PM  |
|---|---|--|--|
| <p><b>T2-D: Communicating Disease Risk</b><br/> <i>Grand Ballroom Salon D (2nd Floor)</i><br/> <i>Chair: Frederic Boudier</i></p> <p><b>10:30 am</b> <b>T2-D.1</b><br/> <b>Effects of communicating lifetime risks and screening rates of colorectal cancer and breast cancer</b><br/> <i>Jiawei Liu</i><br/> <i>Cornell University</i></p> <p><b>10:50 am</b> <b>T2-D.2</b><br/> <b>Prevalence and content of messages in the public communication environment about alcohol use as a modifiable risk factor</b><br/> <i>Andy King</i><br/> <i>University of Utah</i></p> <p><b>11:10 am</b> <b>T2-D.3</b><br/> <b>Communicating uncertainty about cancer: a systematic review</b><br/> <i>Andy King</i><br/> <i>University of Utah</i></p> <p><b>11:30 am</b> <b>T2-D.4</b><br/> <b>Fighting the Covid19 pandemic with enhanced risk communication (PAN -FIGHT): learning from comparative research</b><br/> <i>Frederic Boudier</i><br/> <i>University of Stavanger</i></p> <p><b>11:50 am</b> <b>T2-D.5</b><br/> <b>Characterizing risk in relation to COVID-19: a review of current practices with suggestions for improvement</b><br/> <i>Ingrid Glette-Iversen</i><br/> <i>University of Stavanger</i></p> | <p><b>T2-E: Roundtable: Role of Occupational Exposure Assessments Under Amended TSCA Risk Evaluations</b><br/> <i>Meeting Room 8 (3rd Floor)</i><br/> <i>Chair: Neeraja Erraguntla</i></p> <p>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.</p> <p><b>Panelists</b></p> <ul style="list-style-type: none"> <li>• Silvia Maberti</li> <li>• Elke Jensen</li> <li>• Andrew Maier</li> <li>• Majd El-Zoobi</li> <li>• Christine Whittaker</li> </ul> | <p><b>T2-F: Symposium: Resilient Supply Chains: Methodology and Applications in California and Florida Transportation Systems</b><br/> <i>Meeting Room 9 (3rd Floor)</i><br/> <i>Chair: Kelsey Stoddard</i></p> <p><b>10:30 am</b> <b>T2-F.1</b><br/> <b>Resilience and Efficiency in Transpiration Supply Chains</b><br/> <i>Walter Hannah, Igor Linkov, Kelsey Stoddard</i><br/> <i>California Transportation Commission, US Army Corps of Engineers - ERDC</i></p> <p><b>10:50 am</b> <b>T2-F.2</b><br/> <b>Resilience in Florida Transportation Systems</b><br/> <i>Allison Yeh, Randy Deshazo</i><br/> <i>Tampa Bay Regional Planning Council</i></p> <p><b>11:10 am</b> <b>T2-F.3</b><br/> <b>Increasing Supply Chain Resilience Through Transportation Policy and Investment Optimization Tools in California</b><br/> <i>Kelsey Stoddard</i><br/> <i>US Army Corps of Engineers - ERDC</i></p> <p><b>11:30 am</b> <b>T2-F.4</b><br/> <b>Economic Analysis Framework for Freight Transportation Based on Florida Statewide Multi-Modal Freight Model</b><br/> <i>Zhong-Ren Peng</i><br/> <i>University of Florida</i></p> | <p><b>T2-G: Roundtable: Cultured Meat and Alternative Protein Safety: Key Questions and Perspectives</b><br/> <i>Meeting Room 10 (3rd Floor)</i><br/> <i>Chair: Jo Anne Shatkin</i></p> <p>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 in 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.</p> <p>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.</p> <p><b>Panelists</b></p> <ul style="list-style-type: none"> <li>• Kimberly Ong,</li> <li>• Richard Canady</li> <li>• William Hallman</li> </ul> |



| 10:30 AM – 12:10 PM   | 10:30 AM – 12:00 PM  | 1:30 PM – 3:00 PM   | 1:30 PM – 3:10 PM  |
|---|--|---|--|
| <p><b>T2-H: Symposium: New Approaches to Measure Perceptions and Decision-Making Regarding Risks and Rechnologies: A Methodological Exchange</b><br/> <b>Meeting Room 11 (3rd Floor)</b><br/> <i>Chair: Angela Bearth</i></p>     | <p><b>T2-I: Roundtable: Risk Analysis Quality Test (RAQT) Applications to Microbial Risk Analysis</b><br/> <b>Meeting Room 5 (2nd Floor)</b><br/> <i>Chairs: Margaret Coleman, John Lathop, Robert Waller</i></p>  | <p><b>T3-A: Symposium: Sustainability, Resilience, Engineering, and Environmental Justice</b><br/> <b>Grand Ballroom Salon A (2nd Floor)</b><br/> <i>Chair: Benjamin Rachunok</i></p>   | <p><b>T3-B: Symposium: Resilience of Energy Systems</b><br/> <b>Grand Ballroom Salon B (2nd Floor)</b><br/> <i>Chair: Hiba Baroud</i></p>  |
| <p><b>10:30 am</b> <b>T2-H.1</b><br/> Please imagine the following situationÖ - Using scenarios and vignettes to investigate risk perception and technology acceptance<br/> <i>Angela Bearth</i><br/> <i>ETH Zurich</i></p>       | <p>The Applied Risk Management Specialty Group (ARMSG) 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. The 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. One or more experts, who did not develop the RAQT, conducted beta tests of the RAQT with the two historic government microbial risk assessments listed below that include a common food commodity: raw milk. A diverse expert panel of risk assessors and the SRA audience will engage in dialogue about the outputs of the beta testing using the RAQT to stimulate deliberations about analysis quality and improve microbial risk assessment processes, integrating 21st century risk science. The roundtable deliberations will be moderated by ARMSG members who led development of the RAQT.</p> | <p><b>1:30 pm</b> <b>T3-A.1</b><br/> An enhanced approach to climate risk assessments in urban environments: evaluating indirect risk and identifying co-benefits for better adaptation and long-term planning<br/> <i>Mitchell Anderson</i><br/> <i>University of Canterbury</i></p> | <p><b>1:30 pm</b> <b>T3-B.1</b><br/> Access, Equity, and Community Resilience<br/> <i>Seth Guikema</i><br/> <i>University of Michigan</i></p>  |
| <p><b>10:50 am</b> <b>T2-H.2</b><br/> How methods may have an unwanted impact on research questions<br/> <i>Michael Siegrist</i><br/> <i>ETH Zurich</i></p>   |  | <p><b>1:50 pm</b> <b>T3-A.2</b><br/> Exploring the disproportionate impact of rising temperatures on US household air conditioning demand<br/> <i>Renee Obringer</i><br/> <i>Penn State University</i></p>  | <p><b>1:50 pm</b> <b>T3-B.2</b><br/> Using indicators of socio-economic vulnerability to predict spatial variations in resilience to power outages resulting from extreme weather events<br/> <i>Paul Johnson</i><br/> <i>Vanderbilt University</i></p>  |
| <p><b>11:10 am</b> <b>T2-H.3</b><br/> Drawing Different Conclusions from the Same Evidence: Belief in Hydroxychloroquine During the COVID-19 Pandemic<br/> <i>Caitlin Drummond Otten</i><br/> <i>Arizona State University</i></p> |  | <p><b>2:10 pm</b> <b>T3-A.3</b><br/> Drought impacts on equitable water affordability<br/> <i>Benjamin Rachunok</i><br/> <i>Stanford University</i></p>   | <p><b>2:10 pm</b> <b>T3-B.3</b><br/> Risks of Reductionism: Comparing Climate and Equity Methodologies for Interdisciplinary Energy Justice Research<br/> <i>Mariah Caballero</i><br/> <i>Vanderbilt University</i></p>  |
| <p><b>11:30 am</b> <b>T2-H.4</b><br/> Risk perceptions, critical thinking, and acceptance of genome editing in the United States and Switzerland<br/> <i>Alex Segrè Cohen</i><br/> <i>University of Oregon</i></p>                |  | <p><b>2:30 pm</b> <b>T3-A.4</b><br/> Integrating social vulnerability into rehabilitation decisions for deteriorating transportation structures<br/> <i>Jessica Boakye</i><br/> <i>University of Massachusetts Amherst</i></p>  | <p><b>2:30 pm</b> <b>T3-B.4</b><br/> A Hierarchical Data Driven Optimization Framework to Enhance Power Grid Infrastructure Resilience Under Compound Effects of Climate Change and Extreme Weather Events<br/> <i>Sayanti Mukherjee</i><br/> <i>University At Buffalo, The State University of New York</i></p> |
| <p><b>11:50 am</b> <b>T2-H.5</b><br/> Measuring community acceptance and the perceived risk of clean energy technologies<br/> <i>Douglas Bessette</i><br/> <i>Michigan State University</i></p>                                   |  | <p><b>Panelists</b><br/> <ul style="list-style-type: none"> <li>• Margaret Coleman</li> <li>• Tom Ross</li> <li>• Richard Williams</li> </ul> </p>  | <p><b>2:50 pm</b> <b>T3-B.5</b><br/> Extreme weather drivers during power outages in the United States<br/> <i>Nicole Jackson</i><br/> <i>Sandia National Laboratories</i></p>   |

| 1:30 PM – 3:00 PM  | 1:30 PM – 3:00 PM   | 1:30 PM – 3:10 PM  | 1:30 PM – 3:00 PM   |
|--|---|--|---|
| <b>T3-C: Roundtable: The Future of Risk Research for Homeland Security</b><br><i>Grand Ballroom Salon C (2nd Floor)</i><br><i>Chair: Gary Ackerman</i>   | <b>T3-D: Risk Perception &amp; Information Processing</b><br><i>Grand Ballroom Salon D (2nd Floor)</i><br><i>Chair: Gabrielle Wong-Parodi</i>   | <b>T3-E: Risk Perception &amp; Information Processing</b><br><i>Meeting Room 8 (3rd Floor)</i><br><i>Chair: Christopher Cummings</i>   | <b>T3-F: Symposium: Current Supply-Chain Risks and Impacts</b><br><i>Meeting Room 9 (3rd Floor)</i><br><i>Chair: Adam Rose</i>  |
| <p>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. Not only will the roundtable provide SRA members with guidance that emerged on the most necessary and policy-relevant application of the risk sciences for DHS, but it will present an opportunity to continue the conversation by bringing in the wider risk community.</p> <p><b>Panelists</b></p> <ul style="list-style-type: none"> <li>Jonathan Welburn, Ross Snare, Ryan Riccucci, Rae Zimmerman, Richard John, Jun Zhuang, Kenneth Crowther, Jacqueline Meszaros</li> </ul> | <p><b>1:30 pm T3-D.1</b><br/> <b>“Smells fishy”: Exploring sense of place salience in community acceptance of closed net-pen aquaculture in Frenchman Bay, Maine</b><br/> <i>Gabriella Gurney</i><br/> <i>University of Maine</i></p> <p><b>1:50 pm T3-D.2</b><br/> <b>Compensatory Use of Reusable Shopping Bags</b><br/> <i>Perna Shah</i><br/> <i>SUNY-Buffalo</i></p> <p><b>2:10 pm T3-D.3</b><br/> <b>Social Endorsement, Credibility, and Support for the Regulation of Research on Enhanced Geothermal Systems</b><br/> <i>Sara Yeo</i><br/> <i>University of Utah</i></p> <p><b>2:30 pm T3-D.4</b><br/> <b>How risk perceptions form and sustain adaptation to climate change</b><br/> <i>Gabrielle Wong-Parodi</i><br/> <i>Stanford University</i></p> | <p><b>1:30 pm T3-E.1</b><br/> <b>Socio-metabolic risk and tipping points on islands</b><br/> <i>Pia-Johanna Schweizer</i><br/> <i>Institute for Advanced Sustainability Studies</i></p> <p><b>1:50 pm T3-E.2</b><br/> <b>Understanding neighborhood-level socioeconomic disparities in access to essential services during a disaster using dynamic mobility networks</b><br/> <i>Zhiyuan Wei</i><br/> <i>University at Buffalo</i></p> <p><b>2:10 pm T3-E.3</b><br/> <b>Operationalizing equitable pandemic response</b><br/> <i>Emily Wells</i><br/> <i>Carnegie Mellon University</i></p> <p><b>2:30 pm T3-E.4</b><br/> <b>Stakeholder perceptions of CDR in the Global South</b><br/> <i>Elspeth Spence</i><br/> <i>Cardiff University</i></p> <p><b>2:50 pm T3-E.5</b><br/> <b>Labor violation trends in H-2A nonimmigrant agricultural workers: Improving inspection strategies for detecting labor violations</b><br/> <i>Arezoo Jafari</i><br/> <i>Northeastern University</i></p> | <p><b>1:30 pm T3-F.1</b><br/> <b>Supply-Chain Resilience: Methodology and Applications</b><br/> <i>Igor Linkov</i><br/> <i>Engineer Research and Development Center, U.S. Army Corps of Engineers</i></p> <p><b>1:50 pm T3-F.2</b><br/> <b>Understanding U.S. Imports of Medical Devices</b><br/> <i>Aliya Sassi</i><br/> <i>US Food and Drug Administration</i></p> <p><b>2:10 pm T3-F.3</b><br/> <b>Supply-Chain Impacts of the War in the Ukraine on World Regions</b><br/> <i>Adam Rose</i><br/> <i>University of Southern California</i></p> |

| 1:30 PM – 3:00 PM   |  | 1:30 PM – 3:00 PM  |  | 1:30 PM – 3:00 PM   |  |
|---|--|--|--|---|--|
| <b>T3-G: Foodborne Illness &amp; Microbial Risk Modeling</b><br><b>Meeting Room 10 (3rd Floor)</b><br><i>Chair: Ashwani Tiwari</i>  |  | <b>T3-H: Wastewater and Water Quality</b><br><b>Meeting Room 11 (3rd Floor)</b><br><i>Chair: Ryan Julien</i>   |  | <b>T3-I: Lightning Session: Risk Communication/Perception</b><br><b>Meeting Room 5 (2nd Floor)</b><br><i>Chair: Amanda Boyd</i>   |  |
| <b>1:30 pm</b><br><b>T3-G.1</b><br>Collaboration and stakeholder involvement in the risk analysis process to reduce Salmonella illnesses from poultry consumption<br><i>Janell Kause</i><br><i>Food Safety and Inspection Service</i> |  | <b>1:30 pm</b><br><b>T3-H.1</b><br>Current practices and knowledge gaps in managing building water quality: application of a literature-engaged Delphi approach<br><i>Md Rasheduzzaman</i><br><i>Virginia Polytechnic Institute and State University</i> |  | <b>1:30 pm</b><br><b>T3-I.1</b><br>Understanding the potential effects of health and non-health beliefs on outcomes in individuals with type 2 diabetes<br><i>Carolyn Lo</i><br><i>National University of Singapore</i> | <b>1:50 pm</b><br><b>T3-I.5</b><br>Dimensions of risk perception: A multi-risk multi-target perspective<br><i>Leonard Lee</i><br><i>National University of Singapore</i>                   |
| <b>1:50 pm</b><br><b>T3-G.2</b><br>Risk Assessment Models to support Salmonella and Campylobacter Performance Standards in Poultry in Canada.<br><i>Ashwani Tiwari</i><br><i>Canadian Food Inspection Agency</i>                      |  | <b>1:50 pm</b><br><b>T3-H.2</b><br>Interpreting wastewater-based epidemiology results at the building and community levels for SARS-CoV-2<br><i>Jade Mitchell</i><br><i>Michigan State University</i>  |  | <b>1:35 pm</b><br><b>T3-I.2</b><br>Sustaining Change Under Risk: Promoting Intrinsic Motivation for Environmental Behavior Change Programs<br><i>Naseem Dillman-Hasso</i><br><i>The Ohio State University</i>           | <b>2:00 pm</b><br><b>T3-I.6</b><br>Enforcing social norms during the pandemic: analysis of descriptive nature and antecedents<br><i>Hwanseok Song</i><br><i>Purdue University</i>          |
| <b>2:10 pm</b><br><b>T3-G.3</b><br>A Quantitative Microbiological Risk Assessment for cryptosporidiosis among NJ Dairy Cattle Farmers<br><i>Alexis Mraz</i><br><i>The College of New Jersey</i>                                       |  | <b>2:10 pm</b><br><b>T3-H.3</b><br>DisTorting Science? Regulations or Torts, which is more appropriate for managing chemical risk?<br><i>Richard Williams</i><br><i>RichardAWilliams.com</i>   |  | <b>1:40 pm</b><br><b>T3-I.3</b><br>A new way to configure severity and susceptibility perception to predict risk behaviors and attitudes<br><i>Haoran Chu</i><br><i>University of Florida</i>                           | <b>2:05 pm</b><br><b>T3-I.7</b><br>Risk Communication and Public Response to Potential Radiation Emergencies<br><i>Andrew Fox</i><br><i>University of Oklahoma</i>                         |
| <b>2:30 pm</b><br><b>T3-G.4</b><br>The Economic Burden of Foodborne Illnesses in the United States: A Systematic Literature Review<br><i>Joseph Njau</i><br><i>Food and Drug Administration</i>                                       |  |  |  | <b>1:45 pm</b><br><b>T3-I.4</b><br>Measuring climate change efficacy perceptions: a scale validation study<br><i>Soobin Choi</i><br><i>University of Michigan</i>   | <b>2:10 pm</b><br><b>T3-I.8</b><br>Risk Communication among Inuit women in Nunavik about mercury, country foods, and pregnancy<br><i>Amanda Boyd</i><br><i>Washington State University</i> |

3:30 PM – 5:00 PM

**T4-A: Roundtable: Incorporating Risk Equity into the Distribution of New Federal Infrastructure Funding**

*Grand Ballroom Salon A (2nd Floor)*

*Chair: Jacqueline MacDonald Gibson*

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. Invitees 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.

3:30 PM – 5:00 PM

**T4-B: Symposium: Enhanced Geothermal Energy: New Research Findings and Implications for Renewable Energy Acceptance**

*Grand Ballroom Salon B (2nd Floor)*

*Chair: Catherine Lambert*

**3:30 pm**

**T4-B.1**

**Context-based communication strategies for renewable transitions: a case study of deep geothermal energy**

*Catherine Lambert*

*Cornell University*

**3:50 pm**

**T4-B.2**

**Repurposing “Dirty” Technologies for “Clean” Energy Development: The Case of Enhanced Geothermal Systems**

*Katherine McComas*

*Cornell University*

**4:10 pm**

**T4-B.3**

**How do beliefs about the underground and tampering with nature influence perceptions of Enhanced Geothermal Systems (EGS) in Switzerland and the United States?**

*Julia Cousse*

*University of Geneva*

**4:30 pm**

**T4-B.4**

**EGS perceptions in Utah [placeholder]**

*Sara Yeo*

*University of Utah*

3:30 PM – 5:00 PM

**T4-C: Symposium: Risk Informed Decision and Benefit Analysis in Cybersecurity**

*Grand Ballroom Salon C (2nd Floor)*

*Chair: Omer Keskin*

**3:30 pm**

**T4-C.1**

**Productive supply chain cybersecurity risk management decisions for industrial automation and control devices in critical infrastructure**

*Kenneth Crowther*

*Xylem*

**3:50 pm**

**T4-C.2**

**Reinforcement Learning for Autonomous Cyber Defense Optimization**

*Samrat Chatterjee*

*Pacific Northwest National Laboratory*

**4:10 pm**

**T4-C.3**

**Cyber risk of shipbuilding supply network: data science + risk analytics approach**

*Ahmed M. Abdelmagid*

*Old Dominion University*

**4:30 pm**

**T4-C.4**

**Cybersecurity breach and disclosure**

*Jonathan Welburn*

*RAND Corporation*

3:30 PM – 5:10 PM

**T4-D: Risk and Human Factors Impacting Assessment**

*Grand Ballroom Salon D (2nd Floor)*

*Chair: Igor Linkov*

**3:30 pm**

**T4-D.1**

**Resilient International Teams: Diversity and Inclusiveness**

*Gregory Kiker*

*University of Florida*

**3:50 pm**

**T4-D.2**

**The Role of Human Factors in Security Risk Analysis: An Experimental Plan**

*Katja Tuma*

*Vrije Universiteit Amsterdam*

**4:10 pm**

**T4-D.3**

**The influence of risk awareness and government trust on risk perception and preparedness for natural hazards**

*Pamela Cisternas*

*Research Center for Integrated Disaster Risk Management (CIGIDEN)*

**4:30 pm**

**T4-D.4**

**Can everything be explained by decision bias? An organizational perspective on decision processes to improve disaster risk reduction**

*Myriam Merad*

*Paris Dauphine University - PSL*

**4:50 pm**

**T4-D.5**

**Social sensing and human in the loop profiling during pandemics: a preliminary application during the COVID-19 pandemic**

*Rui Gaspar*

*Catholic University of Portugal*

| 3:30 PM – 5:00 PM   | 3:30 PM – 5:00 PM   | 3:30 PM – 5:00 PM  | 3:30 PM – 5:10 PM  | 3:30 PM – 5:00 PM  |
|---|---|--|--|--|
| <b>T4-E: Climate Change Adaptation and Resilience</b><br><i>Meeting Room 8 (3rd Floor)</i><br><i>Chair: Gabrielle Wong-Parodi</i>   | <b>T4-F: Roundtable: In Memory of Dr. Sharon Dunwoody – Research Based on the RISP Model</b><br><i>Meeting Room 9 (3rd Floor)</i><br><i>Chair: Janet Yang</i> | <b>T4-G: Innovative Approaches in Food Safety Risk Management</b><br><i>Meeting Room 10 (3rd Floor)</i><br><i>Chair: Yuhuan Chen</i>   | <b>T4-H: Symposium: Risk Analysis for Arctic Systems</b><br><i>Meeting Room 11 (3rd Floor)</i><br><i>Chair: Hiba Baroud</i>                                      | <b>T4-I: Lightning Session: Emerging Topics in Risk, Engineering, and Public Policy</b><br><i>Meeting Room 5 (2nd Floor)</i><br><i>Chair: Adam Zwickle</i>   |
| <b>3:50 pm T4-E.1</b><br>Beyond Motivation: Towards a model of Protective Action Theory (PAT)<br><i>Gavin Brown</i><br><i>Dublin City University</i>  | <b>3:30 pm T4-F.1</b><br>In memory of Dr. Sharon Dunwoody - research based on the RISP Model<br><i>Janet Yang</i><br><i>University at Buffalo</i>             | <b>3:30 pm T4-G.1</b><br>FDA's Risk-Ranking Model for Food Tracing (RRM-FT) to Inform the Development of Traceability Regulations<br><i>Yuhuan Chen</i><br><i>FDA Center for Food Safety and Applied Nutrition</i>   | <b>3:30 pm T4-H.1</b><br>A Bayesian Network Approach for Predicting Future Risk in Arctic Maritime Transit<br><i>Wenjie Li</i><br><i>George Mason University</i> | <b>3:30 pm T4-I.1</b><br>Probabilistic characterization of mortality attributable to chronic exposure to ambient PM2.5: an expert elicitation focusing on risks in Kuwait and other understudied locations<br><i>Kyle Colonna</i><br><i>Harvard University</i> |
| <b>4:10 pm T4-E.2</b><br>How subjective attributions form and sustain adaptation to climate change<br><i>Gabrielle Wong-Parodi</i><br><i>Stanford University</i>  | <b>3:30 pm T4-F.2</b><br>Reflections on the planned risk information seeking model<br><i>Lee Kahlor</i><br><i>UT-Austin</i>                                   | <b>3:50 pm T4-G.2</b><br>A multi-criteria approach for evaluating food safety and environmental impacts: Case study of a large dairy farm<br><i>Rodney Feliciano</i><br><i>Secalim, INRAE, Oniris</i>  | <b>3:50 pm T4-H.2</b><br>Machine learning models to predict the Arctic maritime incident types<br><i>Rajesh Kandel</i><br><i>Vanderbilt University</i>           | <b>3:40 pm T4-I.2</b><br>Risk assessment and management at universities and colleges. Experiences from Norway.<br><i>Marie Røyksund</i><br><i>University of Stavanger</i>  |
| <b>4:30 pm T4-E.3</b><br>Towards an observatory to monitor resilience to floods in Tahiti<br><i>Bastien Bourlier</i><br><i>University of French Polynesia</i>   | <b>3:30 pm T4-F.3</b><br>Empirical review for the risk information seeking and processing model<br><i>Robert Griffin</i><br><i>Marquette University</i>       | <b>4:10 pm T4-G.3</b><br>A Confidential Data Sharing Platform for Food Safety Risk Management - Overview and Initial Results<br><i>De Ann Davis</i><br><i>Western Growers</i>  | <b>4:10 pm T4-H.3</b><br>Corridor Trace Analysis for Arctic Routes and Logistics Systems<br><i>Rebecca Rebar</i><br><i>University of Virginia</i>                | <b>3:45 pm T4-I.3</b><br>Drawing blanks and winning: Quantifying Bostrom's urn model of existential risk<br><i>John-Oliver Engler</i><br><i>University of Vechta</i>   |
| <b>4:50 pm T4-E.4</b><br>A serious game as part of an observatory for climate risk resilience strategies: application in French Polynesia<br><i>Charlotte Heinzle</i><br><i>University Paris Saclay, UVSQ - CEARC</i> | <b>3:30 pm T4-F.4</b><br>For my own sake: The role of personal relevance in information seeking<br><i>Zhuling Liu</i><br><i>Shanghai Jiao Tong University</i> | <b>4:30 pm T4-G.4</b><br>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<br><i>Zhoumeng Lin</i><br><i>University of Florida</i> | <b>4:30 pm T4-H.4</b><br>Arctic Infrastructure and Resilience<br><i>Benjamin Trump</i><br><i>US Army Corps of Engineers</i>                                      | <b>3:50 pm T4-I.4</b><br>Machine Learning Assisted Frameworks to Forecast Truck Travel Time Reliability and Evaluate Risk of Disruption of Logistics<br><i>Negin Moghadasi</i><br><i>University of Virginia</i>  |
|   |   |  | <b>4:50 pm T4-H.5</b><br>Machine learning models to predict the Arctic maritime incident types<br><i>Rajesh Kandel</i><br><i>Vanderbilt University</i>           | <b>3:55 pm T4-I.5</b><br>Encouraging local collaborative governance in response to decreasing groundwater availability<br><i>Adam Zwickle</i><br><i>Michigan State University</i>  |

| 8:30 AM – 10:10 AM   |               | 8:30 AM – 10:10 AM   |               | 8:30 AM – 10:00 AM   |  | 8:30 AM – 10:00 AM  |               |
|--|---------------|--|---------------|--|--|---|---------------|
| <b>W1-A: Public Engagement: COVID and other Air Contaminants</b><br><i>Grand Ballroom Salon A (2nd Floor)</i><br><i>Chair: Wandí Bruine de Bruin</i>   |               | <b>W1-B: US Risk Policy: Climate, Covid and Other Risks</b><br><i>Grand Ballroom Salon B (2nd Floor)</i><br><i>Chair: Lisa Robinson</i>  |               | <b>W1-C: Roundtable: ESG Tipping Point and Transforming Risk Decision Making</b><br><i>Grand Ballroom Salon C (2nd Floor)</i><br><i>Chair: Charles Redinger</i>  |  | <b>W1-D: Life Expectancies and Valuing Health Risks</b><br><i>Grand Ballroom Salon D (2nd Floor)</i><br><i>Chair: Roger McClellan</i>   |               |
| <b>8:30 am</b><br>Improving graphs for climate change communications: Insights from interviews with international policy makers and practitioners<br><i>Wandí Bruine de Bruin</i><br><i>University of Southern California</i>                            | <b>W1-A.1</b> | <b>8:30 am</b><br>The Benefits and Costs of U.S. Employer COVID-19 Vaccine Mandates<br><i>Lisa Robinson</i><br><i>Harvard University</i>   | <b>W1-B.1</b> | 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.   |  | <b>8:30 am</b><br>Monetary values of increasing life expectancy: sensitivity to shifts of the survival curve<br><i>James Hammitt</i><br><i>Harvard University</i>                                 | <b>W1-D.1</b> |
| <b>8:50 am</b><br>Effects of social trust and confidence on cooperation during a pandemic: examining the moderating role of COVID-19 knowledge<br><i>Prince Adu Gyamfi</i><br><i>Purdue University</i>   | <b>W1-A.2</b> | <b>8:50 am</b><br>Fatal Flaws in the U.S. Defense Department's Climate Risk Analysis and Military Service-based Implementation<br><i>Richard Belzer</i><br><i>Good Intentions Paving Co.</i>     | <b>W1-B.2</b> | 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. |  | <b>8:50 am</b><br>Health Risks of Emissions of Internal Combustion Engines: "A Success Story Joining Science, Technological Developments and Policy"<br><i>Roger McClellan</i><br><i>Self</i>     | <b>W1-D.2</b> |
| <b>9:10 am</b><br>How COVID-19 impacts academic scientists' public engagement participation<br><i>Mikhaila Calice</i><br><i>University of Wisconsin-Madison</i>  | <b>W1-A.3</b> | <b>9:10 am</b><br>Modeling the equitable deployment of solar+storage-powered community resilience hubs across California<br><i>Patrick Murphy</i><br><i>PSE Healthy Energy</i>                   | <b>W1-B.3</b> | 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).  |  | <b>9:10 am</b><br>Industrial air pollutant emissions and mortality from Alzheimer's disease in Canada<br><i>Sabit Cakmak</i><br><i>Health Canada</i>  | <b>W1-D.3</b> |
| <b>9:30 am</b><br>Communication, emotion, and reason: Testing the impact of uncertainty communication on emotions and public participation in decision-making related to nuclear decommissioning<br><i>Ferdiana Hoti</i><br><i>University of Antwerp</i> | <b>W1-A.4</b> | <b>9:30 am</b><br>Security and safety risk concepts reconsidered ñ Case of Customs and Border Management<br><i>Marja Ylonen</i><br><i>University of Stavanger</i>                                | <b>W1-B.4</b> | 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.  |  | <b>9:30 am</b><br>Risk Forecasting of Carbon Dioxide Emissions from Power Plants in Kuwait using US EPA, IPCC, and Machine Learning Methods<br><i>Sharaf AlKheder</i><br><i>Kuwait University</i> | <b>W1-D.4</b> |
|  |               | <b>9:50 am</b><br>Organizational Absorptive Capacity and Resilience Under Compound Threats: Learning from Federal Agency Perspectives<br><i>Emily Wells</i><br><i>Carnegie Mellon University</i> | <b>W1-B.5</b> | <b>Panelists</b> <ul style="list-style-type: none"> <li>• Frank Hearl</li> <li>• Mary O'Reilly</li> <li>• Cristina McLaughlin</li> <li>• Alan Rossner</li> </ul>   |  |   |               |



| 8:30 AM – 10:00 AM  | 8:30 AM – 10:00 AM   | 8:30 AM – 10:10 AM   | 10:30 AM – 12:10 PM  |
|---|--|--|--|
| <p><b>W1-E: Roundtable: Public Health Risk Modelling &amp; Communication in the time of COVID-19: What went right and what went wrong?</b><br/> <i>Meeting Room 8 (3rd Floor)</i><br/> <i>Chair: Ainsley Otten</i></p> <p>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.</p> <p><b>Panelists</b></p> <ul style="list-style-type: none"> <li>• Mark Weir</li> <li>• Jade Mitchell</li> <li>• Haoran Chu</li> <li>• Dominic Balog-Way</li> </ul> | <p><b>W1-F: Plastics, Synthetic Biology, Polymers, and Combustion</b><br/> <i>Meeting Room 9 (3rd Floor)</i><br/> <i>Chair: Margaret MacDonell</i></p> <p><b>8:30 am W1-F.1</b><br/> <b>Predicting properties that influence end-of-life environmental fate to inform the design of novel polymers</b><br/> <i>Kevin Hickey</i><br/> <i>Argonne National Laboratory</i></p> <p><b>8:50 am W1-F.2</b><br/> <b>Regulatory frameworks for synthetic biology in mining industry: a comparative study</b><br/> <i>Artem Anyshchenko</i><br/> <i>The University of Queensland</i></p> <p><b>9:10 am W1-F.3</b><br/> <b>Microplastics, Summary of Human Health and Ecological Effects and Risk Assessment Approach</b><br/> <i>Jenny Phillips</i><br/> <i>TRC</i></p> <p><b>9:30 am W1-F.4</b><br/> <b>Priority safety questions for cultured meat: the perspectives from producers and regulators</b><br/> <i>Kora Kukk</i><br/> <i>Vireo Advisors LLC</i></p> | <p><b>W1-G: Symposium: The Role of Risk Assessment and Benefit-Cost Analysis of Food Traceability</b><br/> <i>Meeting Room 10 (3rd Floor)</i><br/> <i>Chair: Cristina McLaughlin</i></p> <p><b>8:30 am W1-G.1</b><br/> <b>FDA's Risk-Ranking Model for Food Tracing (RRM-FT) to Inform the Development of Traceability Regulations.</b><br/> <i>Yuhuan Chen</i><br/> <i>FDA Center for Food Safety and Applied Nutrition</i></p> <p><b>8:50 am W1-G.2</b><br/> <b>Estimating Public Health Benefits from Food Traceability</b><br/> <i>Aliya Sassi</i><br/> <i>US Food and Drug Administration</i></p> <p><b>9:10 am W1-G.3</b><br/> <b>Use of Expert Elicitation to Address Data Gaps in Benefit-Cost Analysis</b><br/> <i>Aylin Sertkaya</i><br/> <i>Eastern Research Group, Inc.</i></p> <p><b>9:30 am W1-G.4</b><br/> <b>Estimating Food Traceability Costs</b><br/> <i>Michael Black</i><br/> <i>US Food &amp; Drug Administration</i></p> <p><b>9:50 am W1-G.5</b><br/> <b>Benefits from Avoiding Overly Broad Recalls of Certain Foods Following FDA Issued Public Health Advisories</b><br/> <i>Cristina McLaughlin</i><br/> <i>Food &amp; Drug Administration</i></p> | <p><b>W2-A: Risk Tradeoffs in Policy and Technology</b><br/> <i>Grand Ballroom Salon A (2nd Floor)</i><br/> <i>Chair: Gianluca Pescaroli</i></p> <p><b>10:30 am W2-A.1</b><br/> <b>Technology deployment and information disclosure in the face of a strategic threat</b><br/> <i>Kyle Hunt</i><br/> <i>University at Buffalo</i></p> <p><b>10:50 am W2-A.2</b><br/> <b>Core principles for assessing the “goodness” of policies on risk</b><br/> <i>Scarlett Tannous</i><br/> <i>Paris Dauphine University - PSL</i></p> <p><b>11:10 am W2-A.3</b><br/> <b>Identifying common points of failures in society for preparing to cascading crises</b><br/> <i>Gianluca Pescaroli</i><br/> <i>University College London</i></p> <p><b>11:30 am W2-A.4</b><br/> <b>An integrated marine mammal risk assessment and monitoring system for the Canadian Armed Forces</b><br/> <i>Andrew Day</i><br/> <i>Defence Research and Development Canada</i></p> <p><b>11:50 am W2-A.5</b><br/> <b>Social-Ecological RAS Site Suitability: Exploring the social, ecological, and spatial dimensions of recirculating aquaculture system development in Maine, United States</b><br/> <i>Nathan Smith</i><br/> <i>University of Maine</i></p> |

10:30 AM – 12:00 PM

**W2-B: Roundtable: Why We Need an SRA Chapter for the MENA Region**

*Grand Ballroom Salon B (2nd Floor)*

*Chair: Jacqueline MacDonald Gibson*

Risk analysis is needed for effective governance, equitable outcomes and institution-building in the Middle East and North Africa (MENA) region. Current global challenges are accelerating the need for collaboration on crucial issues such as food supply, energy and security. Risk governance, institution-building and justice have special resonance both conceptually and practically: in the post “Arab-spring” environment improving risk governance has been particularly important. Institution-building and risk governance is also needed to better address the risks and benefits of technological options, for instance in the energy sector (from oil to solar) or to address public health challenges and emergencies (e.g. COVID-19, antimicrobial resistance, injuries and heat-related illness, ambient air quality, incl. sand/dust storms). The goal of the roundtable is to continue an deepen the exchange that was started in 2021 as explore the issues that will be discussed at the next SRA World Congress Marrakech 2024. This session will be a milestone for building new MENA chapter.

**Panelists**

- Frederic Bouder
- Nouh El Harmouzi
- Ahmed El Awady
- JensThomsen
- Amal Mubarak Madhi

10:30 AM – 12:10 PM

**W2-C: Decision-making for Climate Change Adaptation**

*Grand Ballroom Salon C (2nd Floor)*

*Chair: Mitchell Anderson*

**10:30 am W2-C.1**  
**The role of past experience and concern about the future in adaptation decisions**

*Robyn Wilson  
The Ohio State University*

**10:50 am W2-C.2**  
**Place detachment, psychological distress, and climate migration**

*Nina Berlin Rubin  
Stanford University*

**11:10 am W2-C.3**  
**Household flood adaptation dynamics and the intention - behavior gap**

*Brayton Noll  
TU Delft*

**11:30 am W2-C.4**  
**Assessing risk management policy's equity implications based on FEMA disaster aid in the gulf of mexico region**

*Scott Kalafatis  
Chatham University*

**11:50 am W2-C.5**  
**Equitable and effective decision-making: utilising risk curves to identify social disparities and support adaptive decisions (S57)**

*Mitchell Anderson  
University of Canterbury*

10:30 AM – 12:10 PM

**W2-D: Chemicals and Human Health Risks**

*Grand Ballroom Salon D (2nd Floor)*

*Chair: Margaret McArdle*

**10:30 am W2-D.1**  
**Recommended Oral Reference Values for Risk Assessment of Copper**

*Margaret McArdle  
Exponent*

**10:50 am W2-D.2**  
**Cadmium physiologically based pharmacokinetic (PBPK) models for forward and reverse dosimetry: Review, evaluation, and adaptation to the U.S. population**

*Jane Van Doren  
FDA Center for Food Safety and Applied Nutrition*

**11:10 am W2-D.3**  
**Bayesian benchmark dose modeling methods for epidemiological dose-response assessment using cohort studies**

*Francesco De Pretis  
University of Modena and Reggio Emilia*

**11:30 am W2-D.4**  
**Children's risk to lead exposure does not diminish as they age: implication for routine child blood lead testing**

*Michelle Del Rio  
Indiana University-Bloomington*

**11:50 am W2-D.5**  
**Ethylene Oxide, What Health Effects? What Should You Know?**

*Jenny Phillips  
TRC*

10:30 AM – 12:00 PM

**W2-E: Roundtable: Convergence and Collaboration: A Conversation on the Role of Risk Communication in Transdisciplinary Research and Practice**

*Meeting Room 8 (3rd Floor)*

*Chair: Laura Rickard*

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   | 10:30 AM – 12:10 PM  | 1:30 PM – 3:00 PM   | 1:30 PM – 3:00 PM  |
|---|--|---|--|
| <p><b>W2-F: Submarines, Satellites, Pipelines and Risks of Big Projects</b><br/> <i>Meeting Room 9 (3rd Floor)</i><br/> <i>Chair: Scott Ferson</i></p> <p><b>10:30 am</b> <b>W2-F.1</b><br/> A demonstrative case study on using the SRA Risk Analysis Quality Test in mega construction project management<br/> <i>John Lathrop</i><br/> <i>Decision Strategies, LLC</i></p> <p><b>10:50 am</b> <b>W2-F.2</b><br/> False confidence: when satellites go bump in the sky<br/> <i>Scott Ferson</i><br/> <i>University of Liverpool</i></p> <p><b>11:10 am</b> <b>W2-F.3</b><br/> Characterizing climate risk in the mortgage and securitization markets<br/> <i>Janet Li</i><br/> <i>HUD</i></p> | <p><b>W2-G: Symposium: Food Safety Risks, Disease Burden, and Technological and Behavioral Solutions</b><br/> <i>Meeting Room 10 (3rd Floor)</i><br/> <i>Chair: Felicia Wu</i></p> <p><b>10:30 am</b> <b>W2-G.1</b><br/> A Tale of Two Aflatoxins: Cancer Risk in Maize and Peanuts vs. in Milk and Dairy<br/> <i>Felicia Wu</i><br/> <i>Michigan State University</i></p> <p><b>10:50 am</b> <b>W2-G.2</b><br/> Effect of Foodborne Illness Related Outbreaks and Recalls on Consumption of Low-Moisture Foods<br/> <i>Scharff Robert</i><br/> <i>Ohio State University</i></p> <p><b>11:10 am</b> <b>W2-G.3</b><br/> “Do Not Eat Raw Dough” – A Case Study of Communicating Food Safety Risk with Consumers<br/> <i>Han Chen</i><br/> <i>Purdue University</i></p> <p><b>11:30 am</b> <b>W2-G.4</b><br/> Foodborne Illness Outbreaks in Flour and Flour-Based Food Products from Microbial Pathogens in the US and Their Economic Burden from 2001-2021<br/> <i>Rubait Rahman</i><br/> <i>Michigan State University</i></p> <p><b>11:50 am</b> <b>W2-G.5</b><br/> A review of outbreaks associated with consumption of milk and cheese products in the United States, 2000–2020<br/> <i>Patricia Hsu</i><br/> <i>Michigan State University</i></p> | <p><b>W3-A: Roundtable: Major Questions at the Supreme Court: Implications for Risk Analysis</b><br/> <i>Grand Ballroom Salon A (2nd Floor)</i><br/> <i>Chair: Jonathan Wiener</i></p> <p>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.</p> <p><b>Panelists</b></p> <ul style="list-style-type: none"> <li>• Jonathan Adler</li> <li>• Elissa Gentry</li> <li>• Gary Marchant</li> <li>• Jonathan Nash</li> <li>• Jonathan Wiener</li> </ul> | <p><b>W3-B: Applied Risk Analysis &amp; Management</b><br/> <i>Grand Ballroom Salon B (2nd Floor)</i><br/> <i>Chair: Yin Huang</i></p> <p><b>1:30 pm</b> <b>W3-B.1</b><br/> Linking risk analysis with risk management: The cases for control or influence<br/> <i>Robert Waller</i><br/> <i>Protect Heritage Corp.</i></p> <p><b>1:50 pm</b> <b>W3-B.2</b><br/> Developing Web Applications for Expedited Risk Assessment for Transfusion-Transmitted Diseases<br/> <i>Yin Huang</i><br/> <i>US FDA</i></p> <p><b>2:10 pm</b> <b>W3-B.3</b><br/> The challenges of evaluating cumulative impact from projects located near environmental justice areas<br/> <i>Sonja Sax</i><br/> <i>Epsilon Associates</i></p> <p><b>2:30 pm</b> <b>W3-B.4</b><br/> Prediction markets for critical infrastructure risk assessment<br/> <i>Benjamin Bonin</i><br/> <i>Sandia National Laboratories</i></p> |

| 1:30 PM – 3:00 PM  | 1:30 PM – 3:00 PM  | 1:30 PM – 3:00 PM  | 1:30 PM – 3:00 PM   |
|--|--|--|---|
| <b>W3-C: Critical Infrastructure Risk and Resilience</b><br><i>Grand Ballroom Salon C (2nd Floor)</i><br><i>Chair: Damien Serre</i>  | <b>W3-D: Artificial Intelligence</b><br><i>Grand Ballroom Salon D (2nd Floor)</i><br><i>Chair: Seth Guikema</i>  | <b>W3-E: Risk Governance and Community Resilience</b><br><i>Meeting Room 8 (3rd Floor)</i><br><i>Chair: Yue Ge</i>   | <b>W3-F: Microbes, The Environment, and Engineered Systems</b><br><i>Meeting Room 9 (3rd Floor)</i><br><i>Chair: Vincent Chigor</i>   |
| <b>1:30 pm</b><br><b>W3-C.1</b><br>Assessing the Vulnerability of Mobile Broadband Infrastructure to Climate Hazards using Crowdsourced Open Data<br><i>Edward Oughton</i><br><i>George Mason University</i> | <b>1:30 pm</b><br><b>W3-D.1</b><br>How the narrative of risks regarding the use of AI is communicated at the European level<br><i>Anca Rusu</i><br><i>Dauphine University</i>  | <b>1:30 pm</b><br><b>W3-E.1</b><br>Integrating Stakeholders into Risk Mitigation Decisions for Infrastructure Resilience in the Context of Natural Hazard Disruptions<br><i>Rae Zimmerman</i><br><i>New York University</i>                                | <b>1:30 pm</b><br><b>W3-F.1</b><br>The effects on antimicrobial resistance of species-specific antimicrobial sales verses total antimicrobial sales<br><i>Andrew Estrin</i><br><i>Food and Drug Administration</i>  |
| <b>1:50 pm</b><br><b>W3-C.2</b><br>Critical Infrastructure Network (CIN) resilience: 20 years of research for what?<br><i>Damien Serre</i><br><i>Avignon Université</i>                                      | <b>1:50 pm</b><br><b>W3-D.2</b><br>(Re)Conceptualizing the trustworthiness of AI as perceptual and context-dependent<br><i>Christopher Wirz</i><br><i>National Center for Atmospheric Research</i>   | <b>1:50 pm</b><br><b>W3-E.2</b><br>An Interdisciplinary and Community-Engaged Approach to Community Resilience Research<br><i>Yue Ge</i><br><i>University of Central Florida</i>   | <b>1:50 pm</b><br><b>W3-F.2</b><br>Considering Pathogen Persistence within Surface Water Risk Assessments<br><i>Kara Dean</i><br><i>Michigan State University</i>   |
| <b>2:10 pm</b><br><b>W3-C.3</b><br>Integrating climate and cyber stressors for assessment of critical infrastructure vulnerabilities<br><i>Diane Henshel</i><br><i>Indiana University</i>                    | <b>2:10 pm</b><br><b>W3-D.3</b><br>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<br><i>Emily Walpole</i><br><i>National Institute of Standards and Technology</i> | <b>2:10 pm</b><br><b>W3-E.4</b><br>Risk governance approach to examine perceived risks, benefits, and mitigation measures in Australian clinical genomics<br><i>Yuwan Malakar</i><br><i>Commonwealth Scientific &amp; Industrial Research Organisation</i> | <b>2:10 pm</b><br><b>W3-F.3</b><br>Detection and quantitative microbial risk assessment of pathogenic <i>Vibrio cholerae</i> in an urban stream used for drinking, domestic, recreational and fresh produce irrigation<br><i>Vincent Chigor</i><br><i>University of Nigeria</i> |
|  |  |  | <b>2:30 pm</b><br><b>W3-F.4</b><br>A Generalizable Model for Pathogen Persistence in Surface Waters<br><i>Kara Dean</i><br><i>Michigan State University</i>   |

| 1:30 PM – 3:00 PM  | 3:30 PM – 5:00 PM  | 3:30 PM – 5:00 PM  | 3:30 PM – 5:10 PM   |
|--|--|--|---|
| <p><b>W3-G: Symposium: Food Safety Risk Communication ñ Introducing The APEC Food Safety Risk Communication Framework and Associated Guidelines</b><br/> <i>Meeting Room 10 (3rd Floor)</i><br/> <i>Chair: William Hallman</i></p> | <p><b>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?</b><br/> <i>Grand Ballroom Salon A (2nd Floor)</i><br/> <i>Chair: Anca Rusu</i></p>  | <p><b>W4-B: Roundtable: Risk Science Perspectives on Information, Misinformation and Disinformation</b><br/> <i>Grand Ballroom Salon B (2nd Floor)</i><br/> <i>Chair: Seth Guikema</i></p>   | <p><b>W4-C: Natural Hazards and Infrastructure</b><br/> <i>Grand Ballroom Salon C (2nd Floor)</i><br/> <i>Chair: Youngjun Choe</i></p>  |
| <p><b>1:30 pm</b><br/> <b>Moderator</b><br/> <i>Clare Narrod</i><br/> <i>Universit of Maryland</i></p>   | <p><b>W3-G.1</b><br/> 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.</p>  | <p>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?</p> | <p><b>3:30 pm</b><br/> <b>W4-C.1</b><br/> Water outage predictions for natural hazards using synthetic water distribution systems.<br/> <i>Zaira Pagan Cajigas</i><br/> <i>University of Michigan</i></p>                             |
| <p><b>1:50 pm</b><br/> <b>Introducing the APEC Food Safety Risk Communication Framework and Associated Guidelines</b><br/> <i>Clare Narrod</i><br/> <i>Universit of Maryland</i></p>   | <p><b>W3-G.2</b><br/> 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).</p> | <p><b>Panelists</b></p> <ul style="list-style-type: none"> <li>• Pia-Johanna Schweizer</li> <li>• José Manuel Palma-Oliveira</li> <li>• Myriam Merad</li> <li>• Benjamin Trump</li> <li>• Jonas Krieger</li> </ul>   | <p><b>3:50 pm</b><br/> <b>W4-C.2</b><br/> Analyzing disaster preparedness and mitigation strategies using synthetic water distribution system models<br/> <i>Rosalia Otaduy-Ramirez</i><br/> <i>University of Michigan</i></p>        |
| <p><b>2:10 pm</b><br/> <b>Reaching Vulnerable Populations and Getting Them to Take Action</b><br/> <i>William Hallman</i><br/> <i>Rutgers University</i></p>   | <p><b>W3-G.3</b></p>   | <p><b>Panelists</b></p> <ul style="list-style-type: none"> <li>• Dominic Balog-Way</li> <li>• Terje Aven</li> <li>• Katherine McComas</li> </ul>   | <p><b>4:10 pm</b><br/> <b>W4-C.3</b><br/> A method for identifying locations and times of hurricane evacuations from mobile phone location data<br/> <i>Valerie Washington</i><br/> <i>University of Michigan</i></p>                 |
| <p><b>2:30 pm</b><br/> <b>Using Social Media Engagement for Food Safety Risk Communication</b><br/> <i>Amy Philpott</i><br/> <i>Watson Green LLC, Consultant</i></p>   | <p><b>W3-G.4</b></p>   |  | <p><b>4:30 pm</b><br/> <b>W4-C.4</b><br/> Estimating disaster recovery times of interdependent infrastructure systems<br/> <i>Youngjun Choe</i><br/> <i>University of Washington</i></p>  |
|  |  |  | <p><b>4:50 pm</b><br/> <b>W4-C.5</b><br/> Studying the Effect of Built Environment on Traffic Accidents Risk with Random Parameter and Generalized Ordered Logit Models<br/> <i>Sharaf AlKheder</i><br/> <i>Kuwait University</i></p> |

3:30 PM – 5:00 PM

**W4-E: Informing Exposure:  
PFAS and other Chemicals**

*Meeting Room 8 (3rd Floor)*

*Chair: Lynne Haber*

**3:30 pm**  
Guidance document for use of human  
biomonitoring data for exposure assessment

*Lynne Haber  
University of Cincinnati*

**3:50 pm**  
Visualizing trends and customizing analyses of  
NIOSH Pocket Guide data

*Christine Whittaker  
NIOSH*

**4:10 pm**  
Machine-learned Bayesian networks for  
assessing risks of exposure to short-chain PFAS  
in groundwater

*Runwei Li  
Indiana University, Bloomington*

**W4-E.1**

**W4-E.2**

**W4-E.4**

3:30 PM – 5:00 PM

**W4-F: Symposium: Emerging Risks  
and Consumer Products**

*Meeting Room 9 (3rd Floor)*

*Chair: Christopher Cummings*

**3:30 pm**  
Emerging governance issues for biotechnology  
enabled food and agriculture products

*Emily Wells  
Carnegie Mellon University*

**3:50 pm**  
Biotechnology innovation and emerging ethical,  
legal, social, and environmental Implications  
(ELSEI)

*Benjamin Trump  
USACE*

**4:10 pm**  
Consumer Product Risk Screening Tool

*Amy Rosenstein  
USACE*

**4:30 pm**  
Collaborative Approaches for Addressing  
Potential Health Risk from Emerging Chemicals  
and Consumer Products

*Trey Thomas  
CPSC*

**W4-F.1**

**W4-F.2**

**W4-F.3**

**W4-F.4**



## A

Abdelmagid, Ahmed M.....26, 32  
 Abukhalaf, Amer.....22, 24  
 Akbari, Parastoo.....16  
 Alderson, David.....16  
 Alemazkoor, Negin.....25  
 AlKheder, Sharaf.....34, 39  
 Anderson, Chastain.....24  
 Anderson, Mitchell.....22, 29, 36  
 Anyika, Emma.....24  
 Anyshchenko, Artem.....35  
 Aoyagi, Midori.....22  
 Archie, Sam.....24  
 Awunga Nyi, Nzefeh Brenda.....23

## B

Baroud, Hiba.....16  
 Bearth, Angela.....29  
 Beck, Nancy.....21  
 Behlendorf, Brandon.....25  
 Belzer, Richard.....34  
 Bessette, Douglas.....29  
 Best, Kelsea.....20  
 Bier, Vicki.....20  
 Black, Michael.....35  
 Bloem, Sunniva.....17  
 Boakye, Jessica.....29  
 Bonin, Benjamin.....37  
 Borsuk, Mark.....17  
 Boudier, Frederic.....28  
 Bourlier, Bastien.....33  
 Boyd, Amanda.....31  
 Brown, Gavin.....33  
 Bruine de Bruin, Wandi.....34  
 Byrd, Katie.....23

## C

Caballero, Mariah.....29  
 Cajigas, Zaira Pagan.....39  
 Cakmak, Sabit.....34  
 Calice, Mikhaila.....21, 34  
 Capurro, Gabriela.....27  
 Chakraborty, Liton.....16  
 Chao, Pei-Chen.....22  
 Chatterjee, Samrat.....20, 32

Chen, Han.....37  
 Chen, Yingying.....23  
 Chen, Yuhuan.....33, 35  
 Cherry, Todd.....17  
 Chigor, Vincent.....38  
 Choe, Youngjun.....39  
 Choi, Soobin.....31  
 Chong, Kuan In.....23  
 Chopyk, Jessica.....23  
 Chou, Lien-Yao.....22  
 Chu, Haoran.....16, 21, 31  
 Chu, Hung-Yang.....23  
 Cimadori, Ilaria.....26  
 Cisternas, Pamela.....32  
 Clarke, Christopher.....18  
 Cohen, Alex Segrè.....29  
 Collier, Zachary.....26  
 Colonna, Kyle.....16, 33  
 Conteh, Yema.....21  
 Cousse, Julia.....32  
 Critto, Andrea.....22  
 Crowther, Kenneth.....32  
 Cullen, Alison.....17, 19  
 Cunningham, Tom.....19

## D

Davis, De Ann.....33  
 Day, Andrew.....35  
 Dean, Kara.....38  
 Delarosa, Alyssa.....24  
 Del Rio, Michelle.....36  
 de Marcellis-Warin, Nathalie.....23  
 Denard, Samuel.....19  
 De Pretis, Francesco.....36  
 Deshazo, Randy.....28  
 Dillman-Hasso, Naseem.....31  
 Di Tizio, Giorgio.....24  
 Dong, Xinxia.....18  
 Dourson, Michael.....24, 25  
 Driedger, S. Michelle.....27  
 Drummond Otten, Caitlin.....29  
 Duckett, Sarah.....23

## E

Ebel, Eric.....21  
 Ede, James.....26

Edsall, Rob.....20  
 Engler, John-Oliver.....33  
 Estrin, Andrew.....38  
 Evans, Elijah.....21

## F

Felgenhauer, Tyler.....17  
 Feliciano, Rodney.....33  
 Feng, Shuyi.....22  
 Ferson, Scott.....37  
 Fiondella.....17  
 Fleckner, Karen.....17  
 Fortunato, Louise.....23  
 Fox, Andrew.....20, 31

## G

Gabriel, Matthew.....16  
 Garfin, Dana.....21  
 Gaspar, Rui.....32  
 Gentry, Robinan.....21  
 Ge, Yue.....38  
 Glette-Iversen, Ingrid.....28  
 Golden, Neal.....21  
 Gomez, Carly.....23  
 Goodman, Julie.....25  
 Gray, Nicholas.....22  
 Greene, Christopher.....23  
 Gregori, Dario.....23  
 Grieger, Khara.....17, 26  
 Griffin, Robert.....33  
 Griffith, Kevin.....26  
 Grundy, Jean.....24  
 Guikema, Seth.....29  
 Gurney, Gabriella.....30  
 Gyamfi, Prince Adu.....34

## H

Haber, Lynne.....40  
 Haegeli, Pascal.....26  
 Hallman, William.....39  
 Hammitt, James.....34  
 Hannah, Walter.....28  
 Hao, Feng.....21  
 Haraguchi, Masahiko.....24

Harris, Jason.....24  
 Heinzlef, Charlotte.....33  
 Henshel, Diane.....38  
 Herbert, Natalie.....20  
 Hickey, Kevin.....35  
 Hogewood, Luke.....17  
 Holton, Michael.....24  
 Hoti, Ferdiana.....34  
 Hsu, Patricia.....37  
 Huang, Yin.....37  
 Hummel, Michelle.....27  
 Humphrey, Reed.....17  
 Hunt, Kyle.....35

## I

Ito, Lisa.....26

## J

Jackson, Nicole.....26, 29  
 Jafari, Arezoo.....30  
 Jardine, Cindy.....27  
 Jelic, Marjan.....18  
 Jew, Katrina.....23  
 Jin, Andrew.....17  
 John, Kevin.....18  
 John, Richard.....18, 21  
 Johnson, David.....25  
 Johnson, DeAndre.....23  
 Johnson, Paul.....29  
 Jovanovic, Aleksandar.....18

## K

Kahlor, Lee.....33  
 Kalafatis, Scott.....36  
 Kalenzi, Cornelius.....16  
 Kandel, Rajesh.....33  
 Kapadia, Kevin.....19  
 Karanth, Shraddha.....23  
 Kashuba, Roxolana.....22  
 Kause, Janell.....31  
 Kawakami, Minori.....24  
 Ke, Min Hsiu.....23  
 Kiker, Gregory.....32  
 Kim, Joeun.....22

## L

Lambert, Catherine.....32  
 Langford, Rosemary.....26  
 Lathrop, John.....37  
 Lee, Leonard.....16, 31  
 Lee, Yongjin.....22  
 Leong, Alisius.....22  
 Leung, Timothy.....23  
 Lewis, Madeline.....20, 23  
 Light, David.....21  
 Li, Janet.....37  
 Lindbergh, Sarah.....20  
 Linkov, Igor.....28, 30  
 Lin, Zhoumeng.....33  
 Li, Runwei.....40  
 Liu, Jiawei.....28  
 Liu, Sixiao.....22  
 Liu, Zhuling.....33  
 Li, Wenjie.....33  
 Lo, Carolyn.....31  
 Logan, Tom.....20, 22, 27  
 Lopez, Theresa.....24  
 Loschin, Nick.....26

## M

MacDonell, Margaret.....19  
 Malakar, Yuwan.....38  
 McArdle, Margaret.....36  
 McClellan, Roger.....34  
 McComas, Katherine.....32  
 McDuffie, Joshua.....24  
 McLaughlin, Cristina.....35  
 Mejia, Sergio Garcia.....20  
 Menzie, Charles.....21  
 Merad, Myriam.....32  
 Merck, Ashton.....24  
 Metcalf, Cherie.....22  
 Mitchell, Jade.....31  
 Moghadasi, Negin.....33

Moriguchi, Nobuto..... 23  
 Mosleh, Ali..... 19  
 Motoyoshi, Tadahiro..... 22  
 Mraz, Alexis ..... 24, 31  
 Mukherjee, Sayanti ..... 19, 29  
 Murphy, Patrick ..... 34

## N

Narrood, Clare..... 39  
 Nguyen, Thi Mui..... 26  
 Niemeier, Richard..... 22  
 Niroula, Varsha..... 23  
 Njau, Joseph..... 31  
 Nogaki, Shota ..... 23  
 Noll, Brayton ..... 36

## O

Obringer, Renee..... 29  
 Ohkubo, Chiyoji ..... 22  
 O'Reilly, Mary ..... 19  
 Otaduy-Ramirez, Rosalia ..... 39  
 Oughton, Edward..... 38  
 Owade, Joshua..... 24

## P

Pagsuyoin, Sheree..... 25  
 Palasti, Luca Anna ..... 20  
 Paoli, Greg..... 25  
 Pate-Cornell, Elisabeth ..... 21  
 Peng, Rui ..... 24  
 Peng, Zhong-Ren..... 28  
 Pescaroli, Gianluca ..... 35  
 Peters, Curtis..... 16  
 Phillips, Jenny ..... 35, 36  
 Philpott, Amy ..... 39

## R

Rachunok, Benjamin ..... 29  
 Rahman, Rubait..... 37  
 Ramos, Marilia..... 19  
 Rao, Aishwarya..... 22  
 Rasheduzzaman, Md..... 20, 31

Rebar, Rebecca..... 33  
 Reilly, Allison ..... 27  
 Rhomberg, Lorenz ..... 25  
 Rickard, Laura..... 18  
 Riza, Mumtahina..... 20, 26  
 Robert, Scharff ..... 37  
 Robinson, Lisa..... 34  
 Rose, Adam ..... 30  
 Rosenstein, Amy ..... 40  
 Rosen, Zoey..... 20  
 Rossner, Alan ..... 19  
 Røysund, Marie..... 33  
 Rubin, Nina Berlin ..... 36  
 Rusu, Anca..... 38

## S

Samuels, Chel..... 20  
 Sansavini, Giovanni ..... 18, 25  
 Santos, Joost..... 25  
 Sassi, Aliya ..... 30, 35  
 Sax, Sonja ..... 37  
 Schweizer, Pia-Johanna..... 16, 30  
 Sebring, Jen ..... 27  
 Secor, Merideth..... 20  
 Serre, Damien..... 38  
 Sertkaya, Aylin..... 35  
 Shafieezadeh, Abdollah ..... 25  
 Shah, Prerna ..... 30  
 Shoyemi, Olatokunbo..... 18  
 Siegrist, Michael..... 29  
 Smith, Nathan ..... 35  
 Song, Hwanseok..... 31  
 Song, Yoojin ..... 22  
 Spence, Elspeth ..... 30  
 Staid, Andrea..... 27  
 Stoddard, Kelsey ..... 28  
 Stump, Tyler..... 23  
 Swanson, Tessa ..... 16

## T

Tannous, Scarlett..... 35  
 Tatar, Unal..... 25  
 Thomas, Treye..... 26, 40  
 Thompson, Matthew ..... 19  
 Tiwari, Ashwani..... 31  
 Todorov, Todor ..... 22

Tonn, Gina ..... 16  
 Tran, Christopher..... 23  
 Trump, Benjamin ..... 33, 40  
 Tuma, Katja ..... 32

## U

Unson, Ian ..... 20

## V

Van Devender, Maureen ..... 19  
 Van Doren, Jane..... 36  
 Vega, Alexis ..... 22

## W

Waller, Robert ..... 37  
 Walpole, Emily..... 38  
 Walpole, Hugh..... 20  
 Wang, Jingya..... 20  
 Wang, Yicheng..... 20  
 Wang, Yidi ..... 18  
 Warin, Thierry ..... 18  
 Washington, Reese ..... 23  
 Washington, Valerie..... 39  
 Waters, Linda ..... 27  
 Watson, Jack..... 21  
 Weinstock, Laura ..... 20  
 Wei, Willy ..... 26  
 Wei, Zhiyuan ..... 16, 30  
 Welburn, Jonathan ..... 32  
 Wells, Emily ..... 30, 34, 40  
 Whittaker, Christine..... 40  
 Wicke, Rebekah..... 24  
 Wiener, Jonathan..... 17  
 Wilkins, Amina..... 24  
 Williams, Richard..... 31  
 Wilson, Robyn..... 36  
 Wimbush, Alexander ..... 20  
 Wirz, Christopher ..... 38  
 Wong, Catherine..... 16, 18  
 Wong, Jody Chin Sing..... 22  
 Wong-Parodi, Gabrielle ..... 30, 33  
 Wongsuriyanan, Chayanee ..... 24  
 Wu, Felicia..... 37

## X

Xu, Kaiqi..... 22

## Y

Yang, Janet ..... 33  
 Yeh, Allison..... 28  
 Yeo, Sara..... 30, 32  
 Ylonen, Marja ..... 34  
 Yuan, Shupeil ..... 18

## Z

Zahry, Nagwan..... 16, 22  
 Zhang, Brian ..... 26  
 Zhuang, Jun..... 17  
 Zimmerman, Rae ..... 38  
 Zwickle, Adam..... 33