



Conference Program

2023 Annual Meeting



Society For Risk Analysis Annual Meeting

2023 Conference Program • December 10-14

Table of Contents

SRA Council2

Award Winners3

Committee Meetings and Events4-5

Workshops6-9

Keynote Sessions 11

Exhibitors 12

Schedule-at-a-Glance 14-19

Scientific Technical Program 20-45

 Monday, December 11 20-30

 Posters 27-30

 Tuesday, December 12 31-37

 Wednesday, December 13 38-47

Westin Washington DC Floor Plans 48

Author Index 49-52

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Venue and Room Information

Westin Washington DC
(formerly the Renaissance DC)
999 Ninth Street NW
Washington, DC 20001

2023 Award Winners

Distinguished Achievement Award

Terje Aven

Outstanding Practitioner Award

Alliya Sassi

Chauncey Starr Award

Roshanak Nateghi
Zachary Collier

Distinguished Educator Award

Jun Zhuang

Richard J Burk Outstanding Service Award

Seth Guikema

Fellow

Robin Dillon-Merrill
Jack Fowle
Rui Gasper
Cindy Jardine
Richard John
Robin Keller
Stanley Levinson
Kara Morgan

2023 Specialty Group Winners

Advanced Materials and Technologies

Kora Kukkk

Applied Risk Management

Kairui Feng

Decision Analysis and Risk

Patrick Curran

Dose Response

En Yu Chen

Economics and Benefits Analysis

Brianna Bace

Engineering and Infrastructure

Zhiyuan Wei

Exposure Assessment

Po-Han Lin

Foundational Issues in Risk Analysis

Christopher Doehring

Justice, Equity and Risk

Fatima Umar

Microbial Risk Analysis

Kayla Shorter
Shuyi Feng
Syed Anjerul Islam

Occupational Health and Safety

Pei-Yi Chen

Resilience Analysis

Andrew Jin

Risk Policy and Law

Kasia Klasa

Security and Defense

Madison Smith

Student and International Travel Award Winners

Emma Anyika

Robert Baker

Logan Brunner

Katie Byrd

Chia Fen Chen

Stefano Chiaradonna

Vijay Chiluveru

Yu-Chan Chiu

Pamela Cisternas

Patrick Curran

Andrii Davydiuk

Francesco De Pretis

Christopher Doehring

Xinxia Dong

Michael Eber

Kairui Feng

Yihan Gao

Erica Goto

ChoongHee Han

Qian He

Ronnie E. Hill Jr.

Madison Horgan

Patricia Hsu

Wan-Ting Hsu

Maho Ishibashi

Elmo Juanara

Rajesh Kandel

Mahek Karamchandani

Maksim Kitsak

Seyram Pearl Kumah

Po-Han Lin

Megan Marcellin

Joshua McDuffie

Negin Moghadasi

Rachid Ouache

Zaira Pagan Cajigas

Chuanshen Qin

Rubait Rahman

Celine Robinson

Anca Rusu

Jose Scott

Perna Shah

Olga Shashkina

Behnam Tahmasbi

Zhiyuan Wei

Shuo Yao

Yun Zhou

Committee Meetings and Events

Sunday, December 10

12:00 PM – 5:00 PM

Council Meeting and Lunch
Meeting Room 8/9

3:30 PM – 4:30 PM

Area Editors Meeting
Hickory

5:00 PM – 6:00 PM

Editorial Board Meeting
Hickory

5:00 PM – 6:00 PM

Student & New Member
Orientation
Meeting Room 4

6:00 PM – 7:30 PM

Welcome Reception
Potomac Ballroom Salon I & II

Monday, December 11

7:00 AM – 8:00 AM

New Member, Student/Young
Professionals Breakfast
Red Bud

12:10 PM – 1:25 PM

Specialty Group Meetings
See page 5

3:30 PM – 5:00 PM

Meeting for people interested in
revising the Social Amplification of
Risk Framework
Meeting Room 6

5:00 PM – 6:00 PM

World Congress Meeting
Hickory

Tuesday, December 12

7:00 AM – 8:00 AM

Grad Student Breakfast
Hickory

8:00 AM – 10:00 AM

Regional Organization Meeting
Meeting Room 6

12:00 PM – 1:30 PM

Business Meeting and Awards
Lunch
Potomac Ballroom

6:00 PM – 9:00 PM

Council Meeting and Dinner
Red Bud

7:00 PM – 9:00 PM

Managing the Risks of AI in the Age
of Misinformation
*Off Site: National Press Club,
529 14th St NW, Washington DC*

Wednesday, December 13

7:30 AM – 8:30 AM

Specialty Group Chair Meeting
Meeting Room 6

12:00 PM – 1:30 PM

Plenary Keynote and Lunch
Potomac Ballroom

12:00 PM – 1:00 PM

SRA Endowment Meeting
Hickory

Speaker Ready Room Hours

Sycamore Room

Sunday, December 10	2:00 PM – 5:00 PM
Monday, December 11	7:00 AM – 5:00 PM
Tuesday, December 12	7:00 AM – 5:00 PM
Wednesday, December 13	7:00 AM – 12:00 PM

Registration Desk Hours

Potomac Ballroom Foyer

Sunday, December 10	4:30 PM – 6:00 PM
Monday, December 11	7:30 AM – 4:00 PM
Tuesday, December 12	8:00 AM – 3:00 PM
Wednesday, December 13	8:00 AM – 3:00 PM

Committee Meetings and Events

Specialty Group Meetings

Monday, December 11

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)
Rock Creek Ballroom
- Economics & Benefits Analysis (EBASG)
River Birch A
- Occupational Health & Safety (OHSSG)
River Birch B
- Risk, Policy & Law (RPLSG)
Meeting Room 2
- Security & Defense (SDSG)
Meeting Room 3
- Foundational Issues in Risk Analysis (FRASG)
Meeting Room 16
- Justice, Equity and Risk (JERSG)
Meeting Room 4

12:50 PM – 1:25 PM

- Exposure Assessment (EASG)
Rock Creek Ballroom
- Risk Communication (RCSG)
River Birch A
- Applied Risk Management (ARMSG)
River Birch B
- Decision Analysis and Risk (DARSG)
Meeting Room 2
- Advanced Materials and Technologies (AMTSG)
Meeting Room 3
- Engineering & Infrastructure (EISG)
Meeting Room 5
- Microbial Risk Analysis (MRASG)
Meeting Room 16
- Resilience Analysis (RASG)
Meeting Room 4

Specialty Group Mixers

Tuesday, December 12

6:00 PM – 7:30 PM

- Mixer 1: Dose Response, Exposure Assessment, Occupational Health and Safety, Advanced Materials & Technologies
Meeting Room 15
- Mixer 2: Ecological Risk Assessment, Resilience Analysis, Microbial Risk Analysis and Engineering and Infrastructure
Meeting Rooms 8/9
- Mixer 3: Decision Analysis and Risk, Foundational Issues in Risk Analysis, Advanced Risk Management, Risk Communication
Meeting Rooms 10/11
- Mixer 4: Economics and Benefits Analysis, Justice, Equity and Risk, Risk, Policy and Law, Security and Defense
Ren Club Lounge, 3rd Floor

Networking Lounge

Meeting Room 7

Childcare

Meeting Room 1

Monday, December 11 7:30 AM – 5:00 PM
 Tuesday, December 12 7:30 AM – 5:00 PM
 Wednesday, December 13 7:30 AM – 5:00 PM

Workshops

Sunday, December 10

8:00 AM – 12:00 PM

Workshop 4: Eliciting Judgments from Experts and Non-experts

Aylin Sertkaya, Frank Hearl, and Cristina McLaughlin

Meeting Room 6

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.

8:00 AM – 12:00 PM

Workshop 5: Introduction to Chemical Mixtures Risk Assessment

Linda Teuschler and Richard Hertzberg

Meeting Room 16

This problems-based, half-day, introductory workshop focuses on methods to assess health risks posed by exposures to chemical mixtures in the environment. The workshop will present key concepts and terminology used in chemical mixtures risk assessment. This workshop will discuss component methods that utilize assumptions of response addition and dose addition, including the following dose-additive methods: the hazard index, the interaction-based hazard index, relative potency factors, and toxicity equivalence factors. The integrated addition format (introductory lectures, methods tutorial with exercises, general discussion)?

Workshops

Sunday, December 10

8:30 AM – 5:30 PM

Workshop 1: Approaches to Assessing Environmental Justice: Perspectives from the Scientific, Regulatory and Regulated Communities

Uni Blake, Anna White, Valerie Washington, Amina Wilkins, Ann Verwiel, Kelsea Best, and Jacqueline Gibson

Meeting Room 3

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.

8:30 AM – 5:30 PM

Workshop 3: Bayesian benchmark dose (BMD) analysis for toxicological and epidemiological data using the BBMD Platform

Kan Shao

Meeting Room 5

This full-day workshop will begin with an introduction on the benchmark dose modeling in a Bayesian framework and then provide participants with hands-on experience of using the Bayesian Benchmark Dose modeling (BBMD) system to perform dose-response assessment using toxicological and epidemiological data. The workshop will cover a number of important topics in Bayesian BMD modeling, including using Markov Chain Monte Carlo (MCMC) algorithm to fit dose-response models, using appropriate statistics to evaluate goodness of fit, estimating the distributions of model parameters and quantities of interest (e.g., BMD), calculating model averaged BMD estimates to take model uncertainty into account, and employing the Monte Carlo simulation for probabilistic low-dose extrapolation, etc. More importantly, the workshop will extensively explore the major functionalities of the BBMD system for dose-response assessment through case studies: (1) for toxicological data, BMD analysis of single and multiple datasets for dichotomous, continuous, and categorical data will be discussed and practiced; (2) for epidemiological data, BMD modeling with quantification for exposure uncertainty will be explored. In short, the workshop will provide participants with both theoretical and practical skills of using the BBMD system for dose-response assessment.

Workshops

Sunday, December 10

1:00 PM – 5:00 PM

Workshop 7: Community Based Resilience Analysis Using the Resilient Node Cluster Analysis Tool (ReNCAT)

Amanda Wachtel and Olga Epshtein Hart

Meeting Room 16

Moving from the theoretical to the practical, workshop attendees will be trained on and use the ReNCAT software to develop a model of the community from the case study. They will run an optimization to understand potential locations for microgrids throughout the community that minimize both cost and the burden on residents to acquire critical services. The workshop will end with a deep dive into results from the model, what they mean, and how to talk through the tradeoffs of different resilient investment options with community stakeholders.

Thursday, December 14

8:00 AM – 12:00 PM

Workshop 10: Cybersecurity Vulnerabilities: The new standards from assessment to prediction

Fabio Massacci, Sasha Romanosky

Meeting Room 16

The world standard for the assessment of cybersecurity software vulnerabilities (CVSS – Common Vulnerabilities Scoring System) is a pillar for security risk assessment for both government and industry. A new version has been proposed this June after 10 years and we are moving forward from assessment to prediction with a recent follow-up (EPSS – Exploit Prediction Scoring System). This tutorial, from the people behind these works, describes to interested policy makers, managers, researchers and graduate students the high level concepts behind the design of assessment, scoring and prediction of cybersecurity vulnerabilities.

Workshops

Thursday, December 14

8:00 AM – 12:00 PM

Workshop 9: Responsible communication on Emerging Technologies: A Risk Governance Tool

Anca Georgiana Rusu

Meeting Room 5

The influence of technology utilization can be moderated through communication, which entails both the method (form) and the content (substance) of the conveyed message. In the context of technology usage, there's a direct correlation between communication and informed decision-making, as the distribution of information regarding the technology (both in form and substance) enables thorough decision-making.

Given that responsible communication serves as a tool for risk governance, this workshop aims to outline the processes and characteristics of such communication.

After a few introductory lectures where the communication regarding a few examples of emergign tehcnologies will be made, participants will be divided into stakeholder groups, and following this, common elements will be identified. These elements will subsequently be utilized by risk governance practitioners.

8:30 AM – 5:30 PM

Workshop 8: Dose-response modeling – benchmark dose modeling approaches using online and desktop versions of EPA's Benchmark Dose Software (BMDS) and NIEHS' ToxicR

J Allen Davis, Matthew Wheeler, Andy Shapiro, Todd Blessinger, and Jeff Gift

Meeting Room 4

In 2022, EPA released BMDS Online (bmdsonline.epa.gov), a browser-based version of BMDS to allow users to run BMDS on any computer with access to the internet. Recently, EPA has released BMDS Desktop (a Python-based graphic user interface) to replace the Excel-based BMDS 3.3. Additionally, NIEHS has further expanded dose-response capabilities through the release of the R-based ToxicR Bayesian modeling platform 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 demos and hands-on exercises) dose-response modeling of dichotomous, continuous, cancer, and developmental toxicity response data using BMDS Online and BMDS Desktop. 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.



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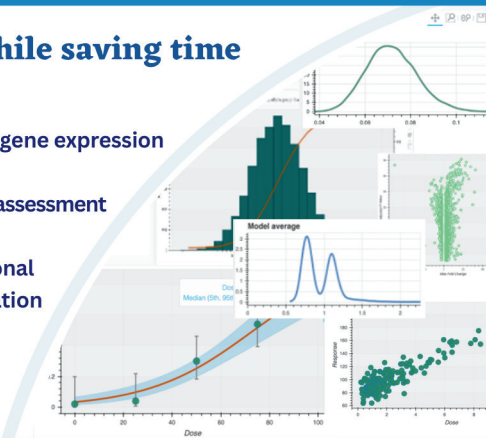
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Microbial Risk Analysis considers articles dealing with the study of risk analysis applied to microbial hazards.

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Donald Schaffner

Rutgers The State University of New Jersey, USA

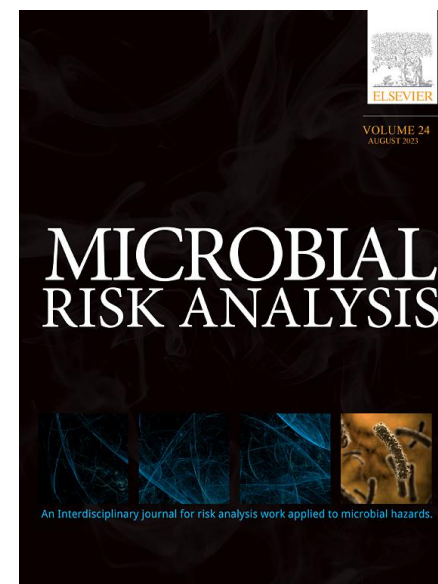
Co-Editor in Chief

Maarten Nauta

State Serum Institute, Denmark



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Keynote Sessions

Monday, December 11

8:30 AM – 10:00 AM

How Climate Change Will Affect the Safety and Security of our Food, and Unique Solutions

Rock Creek Ballroom

Maintaining a reliable and safe food supply globally is one of the major challenges associated with climate change, as identified in the most recent Assessment Report of the Intergovernmental Panel on Climate Change (IPCC). We will cover two distinct areas of challenges: (1) how climate change compromises food safety all over the world, and (2) how we can implement solutions using existing supply chains to improve distribution of food and other means to counteract climate change impacts on food security.

Speakers

Michael Ferrari, Climate Alpha
Felicia Wu, Michigan State University

Tuesday, December 12

8:30 AM – 10:00 AM

Risk Management of AI: How Should We Prepare?

Rock Creek Ballroom

Artificial intelligence (AI) is entering every sphere of life, from workplaces to homes to retail to online interactions. There are multiple risks involved with AI; yet at the same time, AI could help policymakers and researchers to manage risks. This plenary panel will focus on both these aspects of risk: the most crucial risks we should understand associated with the widespread use of AI, as well as how AI can be a tool for risk analysts, managers, and communicators in the future.

Speakers

Seth Guikema, University of Michigan
Ann Bostrom, University of Washington
Hayley Falk, University of Michigan
Tony Cox, Cox Associates

Wednesday, December 13

12:00 PM – 1:30 PM

Root Cause Analysis to Reduce and Communicate Risks: Lessons from an Astronaut and Engineer in Healthcare Management – Plenary Lunch

Potomac Ballroom

This plenary luncheon begins with a deep dive into lessons learned as a US astronaut in the 1970s. It then moves to root cause analysis applied to understanding risks in our current health care system, such as those associated with patient safety breaches – and how understanding root causes of surgical and other health care problems can help prevent their occurrence and improve health care across the lifespan.

Speaker

Jim Bagjan, University of Michigan

Exhibitors

Center for Truth in Science

300 S. Riverside Plaza, Suite 1625
Chicago, IL 60606
www.truthinscience.org
401-227-0586

The Center for Truth in Science works to promote an environment in which legal and regulatory decisions are made using the best available scientific evidence and methods to interpret and use that information responsibly. Our mission is to ensure science is honestly and objectively portrayed and utilized to make decisions.

DREAM Tech, LLC

642 N. Madison Street
Bloomington, IN 47404
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DREAM Tech, LLC is a technology-based scientific consulting company specialized in providing customized solutions to support quantitative chemical risk assessment. Our vision is to provide efficient and effective risk assessment services through advanced technology. Company's Bayesian benchmark dose (BBMD®) modeling system is the most comprehensive and scientifically rigorous dose-response modeling platform currently available.

Kennesaw State University

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Exhibition

Potomac Ballroom Foyer

Monday, December 1110:00 AM – 4:00 PM
Poster Session6:00 PM – 8:00 PM
Tuesday, December 129:30 AM – 4:00 PM
Wednesday, December 139:30 AM – 4:00 PM

Coffee Breaks

Potomac Ballroom Foyer

AM Coffee Breaks10:00 AM – 10:30 AM
PM Coffee Breaks3:00 PM – 3:30 PM

RAND Corporation

1776 Main Street
Santa Monica, CA 90401-3208
www.rand.org
310-393-0411

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US Environmental Protection Agency

1200 Pennsylvania Avenue NW
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www.epa.gov

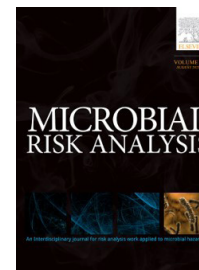
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7:00 AM-8:00 AM **New Member, Student/Young Professional Breakfast**, *Red Bud*

8:30 AM-10:00 AM **Keynote Session** – How Climate Change Will Affect the Safety and Security of our Food, and Unique Solutions, *Rock Creek Ballroom*

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

	Rock Creek Ballroom	River Birch A	River Birch B	Meeting Room 2
10:30 AM – 12:00 PM	M2-A: Environmental Justice and Marginalized Communities	M2-B: Poster Platform: Risk Perception & Communication	M2-C: Artificial Intelligence and Risk Analysis 1	M2-D: Symposium: Infrastructure Resilience at Local and Regional Scales

12:00 PM – 1:30 PM

Pick up your box lunch near the registration desk and attend the specialty group meeting(s) of your choice.

12:10 PM-12:45 PM - Dose Response (DRSG), Economics & Benefits Analysis (EBASG), Occupational Health & Safety (OHSSG), Risk, Policy & Law (RPLSG), Security & Defense (SDSG), Foundational Issues in Risk Analysis (FRASG), Justice, Equity and Risk (JERSG)

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), Engineering & Infrastructure (EISG), Microbial Risk Analysis (MRASG), Resilience Analysis (RASG)

1:30 PM-3:00 PM	M3-A: Roundtable: Risk Communication Inequalities and Inequities	M3-B: Poster Platform: Health Risks in Healthcare, Occupational, and Environmental Settings	M3-C: Artificial Intelligence and Risk Analysis 2	M3-D: Water, Infrastructure and Sea-Level Rise
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3:00 PM-3:30 AM **Coffee Break**, *Potomac Ballroom Foyer*

3:30 PM – 5:00 PM	M4-A: Roundtable: Federal Activities to Address Needs of Overburdened Communities	M4-B: Roundtable: New Frontiers in Risk Analysis at the Intersection of ESG, Capitals Assessment, Valuation, and Human Health	M4-C: Symposium: Sustainable Food Systems: Risks and Perceptions	M4-D: Infrastructure Resilience
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6:00 PM-8:00 PM **Poster Reception**, *Potomac Ballroom*

7:00 AM-8:00 AM **New Member, Student/Young Professional Breakfast**, *Red Bud*

8:30 AM-10:00 AM **Keynote Session** – How Climate Change Will Affect the Safety and Security of our Food, and Unique Solutions, *Rock Creek Ballroom*

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

	Meeting Room 3	Meeting Room 4	Meeting Room 5	Meeting Room 16
10:30 AM – 12:00 PM	M2-E: Roundtable: Risk science and politics: What is and should be the relationship?	M2-F: Symposium: How to build a microbial profile for a Salmonella quantitative microbial risk assessment; data analyses from the front lines	M2-G: Symposium: Applying the Quantitative Microbial Risk Assessment Framework Across Alternative Exposure Scenarios	M2-H: Roundtable: Communicating effectively about attenuated risks: Where are we now and where are we going?
12:00 PM – 1:30 PM	Pick up your box lunch near the registration desk and attend the specialty group meeting(s) of your choice. 12:10 PM-12:45 PM -Dose Response (DRSG), Economics & Benefits Analysis(EBASG), Occupational Health & Safety (OHSSG), Risk, Policy & Law (RPLSG), Security & Defense (SDSG), Foundational Issues in Risk Analysis (FRASG), Justice, Equity and Risk (JERSG) 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), Engineering & Infrastructure (EISG), Microbial Risk Analysis (MRASG), Resilience Analysis (RASG)			
1:30 PM-3:00 PM	M3-E: Foundations of Risk Analysis 1	M3-F: Roundtable: Interdisciplinary Perspectives on the U.S. Executive Order on Biotechnology	M3-G: Risk Resilience at the Community Level	M3-H: Symposium: Climate Change Countermeasures and Risk
3:00 PM-3:30 AM	Coffee Break , <i>Potomac Ballroom Foyer</i>			
3:30 PM – 5:00 PM	M4-E: Roundtable: Resilience at Country Scale: Case of Ukraine	M4-F: Risk Analysis in Agriculture	M4-G: Communicating Science	M4-H: Advancements in Modelling: Dose-Response and Exposure

6:00 PM-8:00 PM **Poster Reception**, *Potomac Ballroom*

8:30 AM-10:00 AM Keynote Session – Risk Management of AI: How Should We Prepare? *Rock Creek Ballroom*

	Rock Creek Ballroom	River Birch A	River Birch B	Meeting Room 2
10:30 AM – 12:00 PM	T2-A: Food Safety Policies: Update on Recent Risks and Regulations	T2-B: Symposium: Updating the Social Amplification of Risk Framework for Risk Science and Practice in the 21st century	T2-C: Foodborne Microbial Risks	T2-D: Advances in Natural Hazards Modeling

12:00 PM-1:30 PM SRA Business Meeting and Awards Lunch, *Potomac Ballroom*

1:30 PM-3:00 PM	T3-A: Roundtable: THE FUTURE OF The Democratic Process and the Clean Energy Transformation in a Post-Truth Society	T3-B: Roundtable: Improving Communication of Risk and Uncertainty Across Federal Agencies	T3-C: International Food Security Risks	T3-D: Risk impacts of tropical cyclones
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3:00 PM-3:30 AM Coffee Break, *Potomac Ballroom Foyer*

3:30 PM-5:00 PM	T4-A: Roundtable: Does risk analysis have a future? A transatlantic perspective	T4-B: Symposium: Watershed Resilience for Low-Capacity Communities	T4-C: Symposium: Food Safety and Security Measures	T4-D: Natural Hazards Infrastructure Resilience
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6:00 PM-7:30 PM Specialty Group Mixers, *see page 5*

8:30 AM-10:00 AM Keynote Session – Risk Management of AI: How Should We Prepare? *Rock Creek Ballroom*

	Meeting Room 3	Meeting Room 4	Meeting Room 5	Meeting Room 16
10:30 AM – 12:00 PM	T2-E: Roundtable: Hierarchy of Use: Risk Decision-making and Integrated Thinking	T2-F: Roundtable: Understanding the Potential of Wastewater-Based Epidemiology for Risk Management	T2-G: Security and Disaster Management	T2-H: Symposium: New Approaches to Measure Perceptions and Decision-Making Regarding Risks and Rechnologies: A Methodological Exchange
12:00 PM-1:30 PM SRA Business Meeting and Awards Lunch, <i>Potomac Ballroom</i>				
1:30 PM-3:00 PM	T3-E: The Economics of Risk: Theory and Global Applications	T3-F: Roundtable: The Test of Risk Analysis Practice: Quality, Fit for Purpose, or Both?	T3-G: Symposium: Integrated Disaster Risk Management: Joint Session with the International Society for Integrated Disaster Risk Management	T3-H: Lightning Talks: Risk Assessment Potpourri: microbial, dermal, epidemiologic, and metal modelling
3:00 PM-3:30 AM Coffee Break, <i>Potomac Ballroom Foyer</i>				
3:30 PM-5:00 PM	T4-E: Risk in Critical Industrial Sectors	T4-F: Roundtable: Integrated Engineering, Public Health, and Data Analytics: A Holistic Approach towards Crisis Mitigation, Response, and Recovery	T4-G: Risk Communication and Perception for Social Systems	T4-H: Symposium: Risk Communication in the Public Sector: Challenges and Successes in Applying Science Across Government
6:00 PM-7:30 PM Specialty Group Mixers, <i>see page 5</i>				

Wednesday

	Rock Creek Ballroom	River Birch A	River Birch B	Meeting Room 2	Meeting Room 3
8:30 AM-10:00 AM	W1-A: Symposium: Water Security and Systems Analysis for Infrastructure Development	W1-B: Symposium: Resilience in Transportation Systems	W1-C: Symposium: Innovative Approaches to the Risk Assessment and Risk Management of Emerging Substances	W1-D: Symposium: Computational applications in Sustainability, Resilience, Equity, & Engineering	W1-E: Statistical Models for Engineering and Infrastructure System
10:00 AM-10:30 AM Coffee Break, Potomac Ballroom Foyer					
10:30 AM – 12:00 PM	W2-A: Symposium: Cost-Benefit Analysis for Critical Infrastructure Cybersecurity	W2-B: Symposium: Exploring Multi-Faceted Impacts of Climate Change on Energy Infrastructure	W2-C: Renewable energy and climate change mitigation	W2-D: Natural Hazards Perception & Communication	W2-E: Foundations of Risk Analysis 2
12:00 PM – 1:30 PM Keynote Session – Root Cause Analysis to Reduce and Communicate Risks: Lessons from an Astronaut and Engineer in Healthcare Management , Potomac Ballroom					
1:30 PM-3:00 PM	W3-A: Roundtable: Space Risk: Planetary Protection against Contamination and Planetary Defense against Asteroids	W3-B: Climate Change and Public Health	W3-C: Adaptive Capacity and Preparedness	W3-D: Environmental Justice, Hazards, and the Built Environment	W3-E: Symposium: Exploring the Role of Psychological Factors in Shaping Judgments and Decisions on Societal Issues
3:00 PM-3:30 AM Coffee Break, Potomac Ballroom Foyer					
3:30 PM-5:00 PM	W4-A: Roundtable: Taking [some of] the Wicked out of the Cyber Problem	W4-B: Roundtable: Overview of Proposed SRA Bylaws Changes and Q&A	W4-C: Roundtable: New Developments in Economic Impact Assessments of Risk Reducing Policies	W4-D: Symposium: Wildland Fire – Managing Risk and Impacts	W4-E: Risk Visualization, Perception, and Communication

	Meeting Room 4	Meeting Room 5	Meeting Room 16	Potomac Ballroom Salon I	Potomac Ballroom Salon II	Potomac Ballroom Salon III
8:30 AM-10:00 AM	W1-F: Symposium: School Safety and Security: Models and Practices	W1-G: Symposium: Risk Management and Emerging Biotechnology	W1-H: PFAS and Plastics – Risk Communication and New Technologies	W1-J: Cyber- and Cryptocurrency Risks	W1-K: Lightning Session: Energy, Climate, Uncertainty, and Cyber	W1-L: Wildfire Risks
10:00 AM-10:30 AM Coffee Break, Potomac Ballroom Foyer						
10:30 AM – 12:00 PM	W2-F: Symposium: Disaster Risk Reduction and Short- and Long-term Outcomes	W2-G: Emerging Risks – Similarities Across Contexts	W2-H: Symposium: Interventional Probability of Causation with Potential Applications to Formaldehyde Leukemogenicity			
12:00 PM – 1:30 PM Keynote Session – Root Cause Analysis to Reduce and Communicate Risks: Lessons from an Astronaut and Engineer in Healthcare Management , Potomac Ballroom						
1:30 PM-3:00 PM	W3-F: Symposium: Bringing Sex Toys Out of the Dark – A Convergent Approach to Identifying and Mitigating Potential Health Risks	W3-G: Antecedents to Trust and Behavior	W3-H: Cyber: Indicators vs Regulators			
3:00 PM-3:30 AM Coffee Break, Potomac Ballroom Foyer						
3:30 PM-5:00 PM	W4-F: Symposium: Safety assessment of cultured meat and seafood products	W4-G: Hurricane Research – A Dynamic Risk Science	W4-H: Roundtable: DARPA Resilient Supply-and-Demand Networks Program	W4-J: Roundtable: Prospects from the MENA region, why we need an SRA Chapter & what it may bring	W4-K: Symposium: Methods for Evaluating the Efficacy of Risk Management Strategies in Incident Response and Disaster Mitigation Scenarios	W4-L: Risk, Governance, and Accidents

Monday

Technical Program

10:30 AM – 12:00 PM

M2-A: Environmental Justice and Marginalized Communities

*Rock Creek Ballroom
Chair: Andrew Hardwick*

10:30 am M2-A.1
Ghosts in the built microbiome: the negative influence of racism and sexism on accurate built microbiome engineering and policy making

*Andrew Hardwick, Joe Graves, Jennifer Kuzma, Christopher Cummings, Joe Brown
North Carolina State University, North Carolina Agricultural and Technical State University, USACE, The University of North Carolina at Chapel Hill*

10:50 am M2-A.2
Potential human health risks associated with the use of cosmetics and personal care products in minority populations.

*Abdel-Razak Kadry, Babasaheb Sonawane
Univeristy of Maryland, Georgetown University, TRACS, LLC*

11:10 am M2-A.3
Fact check your health: Improving health research literacy among females using a podcast-based intervention

*Katie Byrd, Sydney Miller
University of Southern California*

11:30 am M2-A.4
Housing affordability and disproportionate flood risk exposure of economically insecure residents in Canada

*Liton Chakraborty, Jason Thistlethwaite, Daniel Henstra
University of Waterloo*

10:30 AM – 12:00 PM

M2-B: Poster Platform: Risk Perception & Communication

*River Birch A
Chair: Amanda Boyd*

10:30 am M2-B.1
Trauma-informed risk communication and community engagement
*Amelia Hertzberg
ORISE EPA*

10:35 am M2-B.2
Social-psychological factors influencing risk perceptions of chronic wasting disease on social media
*Alisius Leong, Bruce Lauber, William Siemer, Jeremy Hurst, Richard Stedman, Krysten Schuler, Katherine McComas
Cornell University, New York State Department of Environmental Conservation*

10:40 am M2-B.3
Understanding and Tolerance in Communication about COVID-19 in Japan
*Maho Ishibashi, Naoya Sekiya
The University of Tokyo*

10:45 am M2-B.4
Numeracy and Stated Preference Valuation
*Michael Eber
Harvard University*

10:50 am M2-B.5
An analysis of public's risk perception toward the offshore release of ALPS treated water at TEPCO's Fukushima Daiichi Power Station and its causes
*Midori Aoyagi, Ikuma Ogura
National Institute for Environmental Studies, Ibaraki University*

10:55 am M2-B.6
Misinformation and Digital Health Literacy Among American Indian and Alaska Native People
*Amanda Boyd, YingChia Hsu, Erin Morgan, Magdalena Haakenstad, Juliana Garcia, Lucas Gillespie, Denise Dillard
Washington State University*

11:00 am M2-B.7
Self-affirmation as a tool to encourage recycle and reuse behaviors
*Perna Shah, Janet Yang
SUNY-Buffalo, University at Buffalo*

11:05 am M2-B.8
Behavior change preferences of Canadian hunters' based on perceived risk of tuberculosis and brucellosis from wood bison.
*David Hall, Kyle Plotsky
University of Calgary*

11:10 am M2-B.9
Enhancing FDA's communication on foodborne illness outbreaks and food recalls through consumer research: An overview of a research program
*Fanfan Wu, Amy Lando, Linda Verrill, Lindsay Walerstein
U.S. Food and Drug Administration (FDA)*

11:15 am M2-B.10
The Role of Political Identity Matching in Predicting Climate Change Attitudes and Risk Perceptions
*Raphaella Martins Velho, Janet Yang
University at Buffalo*

10:30 AM – 12:00 PM

M2-C: Artificial Intelligence and Risk Analysis 1

*River Birch B
Chair: Seth Guikema*

10:30 am M2-C.1
Perception and enjoyment of AI-generated narratives in the age of artificial intelligence
*Haoran Chu, Sixiao Liu
University of Florida, University of Pennsylvania*

10:50 am M2-C.2
Tracking risks of AI in healthcare applications: a multi-layer risk register approach
*Negin Moghaddasi, Rupa S. Valdez, Misagh Piran, Negar Moghaddasi, Thomas L. Polmateer, Davis Loose, James H. Lambert
University of Virginia, Western University of Health Sciences*

11:10 am M2-C.3
Machine learning to predict total and pathogenic *Vibrio parahaemolyticus* concentrations in seawater and oysters
*Shuyi Feng, Shraddha Karanth, Esam Almuhaideb, Salina Parveen, Abani Pradhan
University of Maryland College Park, University of Maryland Eastern Shore*

11:30 am M2-C.4
Forecaster perceptions of trustworthiness, explainability, and interpretability in the context of AI-derived guidance
*Mariana Cains, Christopher Wirz, Julie Demuth, Ann Bostrom
National Center for Atmospheric Research, NCAR, University of Washington*

Monday

Technical Program

10:30 AM – 12:00 PM	10:30 AM – 12:00 PM	10:30 AM – 12:00 PM	10:30 AM – 12:00 PM
M2-D: Symposium: Infrastructure Resilience at Local and Regional Scales <i>Meeting Room 2</i> <i>Chair: Andrew Pfluger</i>	M2-E: Roundtable: Risk science and politics: What is and should be the relationship? <i>Meeting Room 3</i> <i>Chair: Terje Aven</i>	M2-F: Symposium: How to build a microbial profile for a Salmonella quantitative microbial risk assessment; data analyses from the front lines <i>Meeting Room 4</i> <i>Chair: Joanna Zablotzky Kufel</i>	M2-G: Symposium: Applying the Quantitative Microbial Risk Assessment Framework Across Alternative Exposure Scenarios <i>Meeting Room 5</i> <i>Chair: Ainsley Otten</i>
10:30 am M2-D.1 Increasing Infrastructure Resilience through Optimization Scalability Heuristic <i>Kelsey Stoddard</i> <i>US Army Corps of Engineers – ERDC</i>	Risk science can be seen as the most updated and justified knowledge – in the form of concepts, principles, approaches, methods and models – for understanding, assessing, characterizing, communicating and handling risk, with applications. It is also about the practice that gives us this knowledge. It is commonly stated that it should be a goal for risk science to be politically neutral. This panel will discuss the meaning and appropriateness of this goal. In particular, the panel will debate the position of the Society for Risk Analysis (SRA) on this matter.	10:30 am M2-F.1 Overview of the Food Safety and Inspection Service’s Salmonella in Poultry Initiative and Risk Assessments. <i>Joanna Zablotzky Kufel</i> <i>USDA FSIS</i>	10:30 am M2-G.1 How DNA Extraction Techniques Affect QMRA Results in Occupational, Recreational, and Drinking Water Exposures of Cryptosporidium <i>Alexis Mraz, Kayla Shorter*</i> <i>The College of New Jersey</i>
10:50 am M2-D.2 Infrastructure Resilience to Mold for Military Installations <i>Margaret Kurth, Matthew Joyner</i> <i>USACE ERDC</i>	Recently, an SRA policy has been formulated on promoting risk science in decision-making (SRA 2022). The policy states that SRA’s charge is to promote the role of risk science in decision-making and be actively engaged in translating risk science to policy and other decision makers. It highlights that SRA should not make policy recommendations or recommend specific solutions to societal problems. It is, however, mentioned that, in rare cases, SRA may endorse a specific policy or solution. The cases are defined in the following way:	10:45 am M2-F.2 Deep dive on the data: Analysis of FSIS serotype data <i>Drew Posny</i> <i>United States Department of Agriculture, Food Safety and Inspection Service</i>	10:45 am M2-G.2 Applying QMRA to Inform Mpox Risk Management <i>Jade Mitchell</i> <i>Michigan State University</i>
11:10 am M2-D.3 Resilience of wastewater treatment facilities to individual and compound stressors <i>Andrew Pfluger</i> <i>USMA</i>	Such endorsement would be appropriate only when the complex participatory process of engaging the full range of experts, stakeholders, and citizens for consensus building has taken place and a specific solution is supported by analysis that is consistent with the best practices of risk analysis. In such cases, care should be taken to provide a platform for dialogue that incorporates a diverse range of views to minimize potential biases (SRA 2022)	11:00 am M2-F.3 Concentration and Prevalence: Duality or Tautology <i>Michael Williams, Iva Bilanovic*</i> <i>United States Department of Agriculture, Food Safety and Inspection Service</i>	11:00 am M2-G.3 Exposures to Legionella and Mycobacterium Avium Complex (MAC) from Indoor Water Uses <i>Ryan Julien</i> <i>Michigan State University</i>
11:30 am M2-D.4 A Geospatial MCDA Tool for Distributed Emergency Response Resources <i>Andrew Jin, Leonardo Bautista, Igor Linkov, Kelly Sanders</i> <i>University of Southern California, Engineer Research and Development Center, U.S. Army Corps of Engineers</i>	As all professional societies, SRA builds its existence and activities on certain values and policies. Historically, SRA has been clear on being politically neutral in the sense of not making policy recommendations or recommending specific solutions to societal problems. It can be discussed if the SRA (2022) statement is in line with this historical SRA perspective.	11:15 am M2-F.4 Beyond 100 Grams: What The NHANES Data Can Tell Us About Poultry Consumption <i>Davia LaBarre, Drew Posny*</i> <i>United States Department of Agriculture, Food Safety and Inspection Service</i>	11:15 am M2-G.4 Decision Support for Economic Valuation of Food Safety Risk Reduction <i>Carly Gomez</i> <i>Michigan State University</i>
	Panelists <ul style="list-style-type: none"> • Felicia Wu • Marja Ylönen • Seth Guikema • Robyn Wilson 	11:30 am M2-F.5 Why Metadata Matters: Lessons For Public-Private Data Partnerships <i>Iva Bilanovic</i> <i>United States Department of Agriculture, Food Safety and Inspection Service</i>	11:30 am M2-G.5 Case Study and Review of Risk Factors for Aerosol Exposure to Coccidioides Spp. <i>David Kahn</i> <i>Drexel University</i>

10:30 AM – 12:00 PM

M2-H: Roundtable: Communicating effectively about attenuated risks: Where are we now and where are we going?

Meeting Room 16

Chair: Dominic Balog-Way

This roundtable brings together a multidisciplinary panel of experts to discuss their latest thinking and research on so-called attenuated risk issues. In contrast with amplified risks, attenuated risks refer to those risks which experts judge to be serious, but receive disproportionately little concern, sociopolitical activity, and/or attention from society. While oft-cited examples include naturally occurring radon, automobile accidents, and tobacco smoking, panelists will discuss contemporary contexts relating to electronic cigarettes, lead ammunition poisoning, dioxin, alcohol use, opioids use pre-2010, and aquaculture facility siting. This will lay the foundations for a broader discussion addressing the current state and future directions of research and practice on attenuated risk issues. The central purpose of the roundtable is to stimulate a lively debate on a class of risk issues that are all too often overlooked. Along with opening-up the discussion to audience contributions, panelists will be asked to consider at least three key questions. What do we really mean when we classify something as an attenuated versus amplified risk issue? What are the mechanisms, processes, and effects of risk attenuation in the context of the social amplification of risk framework? To what extent and how should risk communicators vary their approaches when communicating about attenuated risk issues?

Panelists

- Katherine McComas
- Robin Cantor
- Laura Rickard
- Jeff Niederdeppe
- Adam Zwickle
- Nick Pidgeon

1:30 PM – 3:00 PM

M3-A: Roundtable: Risk Communication Inequalities and Inequities

Rock Creek Ballroom

Chair: Cindy Jardine

Risk communication inequalities (defined as the differences in how individuals or groups access, engage with, process and act upon risk information) are a major driver in promoting and/or perpetuating disparities and inequities in the assumed burden of health and environmental risks. Such inequalities particularly impact structurally-disadvantaged individuals and populations. Our 'traditional' risk communication theories and methods have focussed primarily on either individual-level approaches or generic population-level approaches, neither of which fully account for the cultural, political and social spaces in which risk communication inequalities may exist. Moreover, inadequate or inappropriate risk communication may create and/or perpetuate socially constructed harms and traumas, such as racism. At-risk and structurally-disadvantaged populations are often 'spoken to' rather than 'talked with', resulting in ineffective interactions, less empathy and acknowledgement of concerns, and ultimately worse outcomes.

Addressing risk communication inequalities and inequities requires broadening our scope and fundamental understanding of how communication at multiple levels contributes to or mitigates risk and health disparities. Participatory and/or partnership processes that involve specific communities or populations when developing strategic risk communication efforts have been promoted as an approach that improves the equity of communication interventions, research and policy. More recently, 'trauma-informed' or 'trauma-aware' risk communication approaches have been advocated as a means of specifically engaging in more equitable and effective communications with populations that have experienced traumas such as systemic racism, transgenerational harms and climate change. The key principles of a trauma-informed approach are: 1) safety; 2) trustworthiness and transparency; 3) peer support; 4) collaboration and mutuality; 5) empowerment, voice and choice; and 6) cultural, historical and gender issues (SAMSHA 2014)

Panelists

- S. Michelle Driedger
- Rui Gaspar
- Amelia Hertzberg
- Amanda Boyd
- Jeff Niederdeppe

1:30 PM – 3:00 PM

M3-B: Poster Platform: Health Risks in Healthcare, Occupational, and Environmental Settings

River Birch A

Chair: Patrick Gurian

1:30 pm

Health risk assessment of air pollution and alcohol consumption on the mortality of liver disease and cirrhosis

Chia Fen Chen, Wan-Ting Hsu, Szu Pei Chien, She Yu Chiu, Chi Chang Ho, Hwa Lung Yu, Wen-Chao Ho
China Medical University, National Health Research Institutes, National Taiwan university

1:35 pm

Health risk assessment of air pollution and diet on the mortality of vascular dementia

Wan-Ting Hsu, Chia Fen Chen, Szu Pei Chien, Hwa Lung Yu, Chi Chang Ho, She Yu Chiu, Wen-Chao Ho
China Medical University, National Taiwan university, National Health Research Institutes

1:40 pm

Catheter-associated urinary tract infections: a quantitative microbial risk assessment

Madeline Lewis, Mark Weir
Ohio State University

1:45 pm

Examining media framing of pesticide residue issues: implications for food safety and beyond

Yu-Chan Chiu
National Taiwan University

1:50 pm

Computational model development and evaluation of infectious disease risk estimates in healthcare contexts

Madeline Lewis, Mark Weir
Ohio State University

M3-B.1

1:55 pm

Making Sense of Indicator Bacteria: Health Risks of Recreational Contact with Water Bodies of Brazil's Guanabara Bay Basin

Rachel Sklar, Alexander Chabrelie, Renato Carreira, Patrick Gurian, Jade Mitchell*
UCSF, Michigan State University, Pontifical Catholic University of Rio de Janeiro, Drexel University

M3-B.2

2:00 pm

Human health risk of cohabitating with livestock

David Demaree, Tyler Stump, Hanna Brosky, Gouthami Rao, Aijia Zhou, Marc Verhougstraete, Joseph Eisenber
ORISE at US EPA, Michigan State University, QRMA VI, University of North Carolina, University of Illinois, University of Arizona, University of Michigan

M3-B.3

2:05 pm

An attempt to quantify effect on low-dose lead exposure in Japanese adults

Kyoko Ono
RISS, AIST

M3-B4

2:10 pm

Implementation of Risk Management and Brownfield Reuse on Abandoned Mining Sites with Soil Contamination

Hsin-Yu Chang, Jui-Hsiang Liu, Tzu-Hsin Wang, Bo-Wei Power Liang, Wen-Jie Chen, Yihsin Lai
Environmental Protection Administration Executive Yuan, R.O.C. (Taiwan), Sinotech Engineering Services, LTD

M3-B.5

M3-B.6

M3-B.7

M3-B.8

M3-B.9

1:30 PM – 3:00 PM

M3-C: Artificial Intelligence and Risk Analysis 2

*River Birch B
Chair: Christopher Wirz*

1:30 pm **M3-C.1**
The use of artificial intelligence in the instrumentalization of disaster classifiers
Samir Batista Fernandes, Marcelo Luciano Vieira, Rodrigo Werner da Silva, Wagner Dos Anjos Carvalho Instituto Científico e Tecnológico em Defesa Civil, Faculdade Presbiteriana Mackenzie Rio

1:45 pm **M3-C.2**
Quantum chemistry and machine learning to predict environmental fate of polymers
Kevin Hickey, Jeremy Feinstein, Cheng Wang, Margaret MacDonell Argonne National Laboratory

2:00 pm **M3-C.3**
A foggy forecast: Expert perceptions of new AI guidance for operational decision making
Christopher Wirz, Julie Demuth, Miranda White, Mariana Cains, Philippe Tissot, Jacob Radford, Hamid Kamangir, Evan Krell, Ann Bostrom, Scott King, John Williams National Center for Atmospheric Research, Texas A&M University, Cooperative Institute for Research in the Atmosphere, University of Washington, The Weather Company, National Weather Service

2:15 pm **M3-C.4**
Resilience Stress Testing Using a Digital Twin at Dallas Fort-Worth Airport (DFW)
Robert Horton, Gregory Kiker, Ben Trump, Evangelina Agapaki, Igor Linkov Dallas Fort Worth International Airport, University of Florida

2:30 pm **M3-C.5**
Open-source data pipeline for street-view images: a case study on community mobility during COVID-19 pandemic
Matthew Martell, Nick Terry, Ribhu Sengupta, Christopher Salazar, Nicole Errett, Scott Miles, Youngjun Choe, Joseph Wartman University of Washington*

1:30 PM – 3:00 PM

M3-D: Water, Infrastructure and Sea-Level Rise

*Meeting Room 2
Chair: Gina Tonn*

1:30 pm **M3-D.1**
Functional Isolation: The compounding burden amidst cascading infrastructure network failures and disrupted supply chains
Mitchell Anderson, Tom Logan, Logan Brunner University of Canterbury

1:50 pm **M3-D.2**
Engineering analysis for climate resilience of highway bridges
Gina Tonn Verdantas

2:10 pm **M3-D.3**
Analyzing the impact of sea level rise and increased flooding on coastal septic system failure
Emily Speierman, Allison Reilly University of Maryland, College Park

2:30 pm **M3-D.4**
How do Hurricanes and Federal Aid Affect Eviction Risk? Decade-long Evidence from the United States
Qian He, Kelsea Best, Allison Reilly, Deb Niemeier Rowan University, University of Maryland

1:30 PM – 3:00 PM

M3-E: Foundations of Risk Analysis 1

*Meeting Room 3
Chair: Maksim Kitsak*

1:30 pm **M3-E.1**
Strategic risk analysis
Elisabeth Pate-Cornell, Marc Eskew Stanford

1:50 pm **M3-E.2**
On the use of the term “real risk”
Roger Flage, Terje Aven, Ingrid Glette-Iversen University of Stavanger

2:10 pm **M3-E.3**
Uncertainty in relation to risk: How can the risk field and policymakers’ views be aligned?
Sanja Mrksic Kovacevic, Frederic Boudier University of Stavanger

2:30 pm **M3-E.4**
Are Civilizations Destined to Collapse? Lessons from the Mediterranean Bronze Age
Maksim Kitsak, Igor Linkov, Benjamin Trump, Elizaveta Pinigina, Stephanie Galaitsi, Krista Rand, Eric H. Cline Delft University of Technology, US Army Engineer Research and Development Center, US Army Corps of Engineers, Capitol Archaeological Institute, The George Washington University

1:30 PM – 3:00 PM

M3-F: Roundtable: Interdisciplinary Perspectives on the U.S. Executive Order on Biotechnology

*Meeting Room 4
Chair: Khara Grieger*

Innovative biotechnologies applied across sectors present enormous potential to help address societal goals and to design and achieve more sustainable and resilient societies. Biotechnology broadly refers to innovations in the life sciences, including application of genetic engineering and genome editing to insert or modify specific gene sequences in living organisms, and the use of biological systems to develop products. Recent innovations in genome editing show particular promise in improving food and nutrition security, enabling sustainable agricultural practices, and supporting resilient supply chains, among other benefits in the bioeconomy. Some benefits have already been proven in human health applications, including in the development of vaccines. To realize the potential of biotechnology safely and sustainably, processes are needed to identify and mitigate potential risks and unintended impacts.

The Biden Administration issued an Executive Order (EO) on “Advancing Biotechnology and Biomanufacturing Innovation for a Sustainable, Safe, and Secure American Bioeconomy” on September 12, 2022 that included sections on Biotechnology Regulation Clarity and Efficiency (Section 8) and Reducing Risk by Advancing Biosafety and Biosecurity (Section 9). Combined, these parts of the EO task the federal government with developing an enabling environment for innovation while ensuring appropriate risk mitigation throughout research, development, and commercialization. In addition, the EO requires development of strategies to grow the U.S. bioeconomy, including setting research priorities, data for the bioeconomy, workforce development, and international engagement, as well as actions to protect national security. The EO also opens a window for policy discussion between stakeholders and regulatory agencies regarding oversight of biotechnologies and resulting products.

Panelists

- Christopher Cummings
- Zachary Brown
- Nick Loschin
- Ilaria Cimadori

1:30 PM – 3:00 PM

M3-G: Risk Resilience at the Community Level

Meeting Room 5
Chair: Laura Rickard

1:30 pm **M3-G.1**
Using Twitter to evaluate wildfire smoke risk communications in Oregon and Washington

Catherine Slavik, Alex Segrè Cohen, Daniel Chapman, Nahla Bendefaa, Ellen Peters
University of Oregon

1:45 pm **M3-G.2**
Trust, sense of place, risk perception and their effects on cooperation with recirculating aquaculture system developments

Nathan Smith, Laura Rickard, Branden Johnson
University of Maine, Decision Research

2:00 pm **M3-G.3**
Government's Disaster Recovery Efforts and Disaster Reconstruction: Human-Centered Approach following 2015 Nepal Earthquake Recovery Process

Jungwon Yeo
University of Central Florida

2:15 pm **M3-G.4**
Prioritization of Hazard Mitigation Projects in the State of Illinois

Mia Renna
University of Maryland College Park

1:30 PM – 3:00 PM

M3-H: Symposium: Climate Change Countermeasures and Risk

Meeting Room 16
Chair: Yasunobu Maeda

1:30 pm **M3-H.1**
Climate change and plastic ban

Yasunobu Maeda, Pooja Pragati Suresh
Shizuoka University, Boeing Commercial Airplanes

1:45 pm **M3-H.2**
Challenges of groundwater management and its associated risks in Taiwan under climate change

Shih-Yao Lee, Tailin Huang, Hwa Lung Yu
National Taiwan University, National Cheng Kung University

2:00 pm **M3-H.3**
Risk and public perception of hydrogen utilization technology as a climate change countermeasure: a case study of hydrogen refueling stations in Japan

Kyoko Ono
RISS, AIST

2:15 pm **M3-H.4**
Consideration on land use optimization for coexistence of disaster prevention, climate change and biodiversity

Satoru Yusa, Yuichiro Usuda
National Research Institute for Earth Science and Disaster Resilience

2:30 pm **M3-H.5**
Exploring public risk perceptions of climate change and carbon dioxide removal in Malaysia

Elsbeth Spence, Nick Pidgeon, Melissa Payne, Emily Cox
Cardiff University, South East Asia Rainforest Research Partnership

3:30 PM – 5:00 PM

M4-A: Roundtable: Federal Activities to Address Needs of Overburdened Communities

Rock Creek Ballroom
Chair: Chris Frey

The U.S. Federal Government is engaged in a whole-of-government approach to address the needs of overburdened and underserved communities in response to Executive Orders 13985, 14008, 14091, and 14096. This roundtable will provide an overview of what several Federal agencies are doing to address the needs of over-burdened communities in a variety of decision contexts. These decision contexts include, but are not limited to, promoting community health, wellbeing, and quality of life, improving climate readiness and resilience to changing climate, identifying interventions related to aging infrastructure, and ensuring decision processes that promote participatory justice by supporting community-engaged activities. In addition to intramural and extramural research activities to expand and develop the science to inform decisions to improve outcomes for overburdened communities, Federal agencies are developing and implementing policies and programs to deliver resources and solutions to such communities.

Panelists

- Igor Linkov
- Gretchen Goldman

3:30 PM – 5:00 PM

M4-B: Roundtable: New Frontiers in Risk Analysis at the Intersection of ESG, Capitals Assessment, Valuation, and Human Health

River Birch A
Chair: Fred Boelter

This session explores the turbulent ESG, capitals, and valuation space in terms of risk analysis and risk management contexts, and how the perceptions, views, etc. of stakeholders come together in decision making in managing risk. The speakers bring occupational health and safety expertise in science, regulatory development, executive management, and consensus standards development to this inquiry; and, posit that there is an imperative to apply Risk Analysis: Fundamental Principles (SRA, 2018) to these topics.

An overview of ESG and capitals-thinking frameworks sets the stage for addressing how stakeholders and shareholders are navigating these spaces, how they are assessing risk, and how integrated decision-making is being done around business, operating decisions, and the ability to attract capital investment. Speakers will engage in discussions on ESG frameworks (e.g. GRI, SASB, ISSB), integrated capitals assessment (e.g. Capitals Coalition), conformity assessment (e.g. rating agencies and regulators), and valuation methods.

ESG's originating focus is fiduciary (e.g. finance, investment) and for many the hard currency is carbon. Many others view ESG as creating an opportunity to improve global and human health, including worker and environmental health.

Is it not a fallacy to be forced to choose between creating wealth and jobs or creating healthier workplaces and a healthier world? U.S. Senator from Illinois Paul Douglas (b.1892-d.1976) saw such fallacies as a false-choice and pressed for answers on how to obtain both. From this centering perspective, a premise put forth in this session is to follow the money while putting human health at the center of ESG-related analysis and decision-making.

Panelists

- Frank Hearl
- Chia-Chia Chang
- Silvia Maberti
- Paul Harper
- Fred Boelter

3:30 PM – 5:00 PM	3:30 PM – 5:00 PM	3:30 PM – 5:00 PM	3:30 PM – 5:00 PM
<p>M4-C: Symposium: Sustainable Food Systems: Risks and Perceptions <i>River Birch B</i> Chair: Adam Zwickle</p>	<p>M4-D: Infrastructure Resilience <i>Meeting Room 2</i> Chair: Logan Brunner</p>	<p>M4-E: Roundtable: Resilience at Country Scale: Case of Ukraine <i>Meeting Room 3</i> Chair: Igor Linkov</p>	<p>M4-F: Risk Analysis in Agriculture <i>Meeting Room 4</i> Chair: Gregory Kiker</p>
<p>3:30 pm M4-C.1 Leveraging a Systems Approach to Environmental Health <i>Adam Zwickle, Latifa Salangi, Rachel Szczytko, Joe Hamm</i> Michigan State University</p>	<p>3:30 pm M4-D.1 Sensitivity analysis on the vulnerability of interdependent infrastructure <i>Logan Brunner, Tom Logan</i> University of Canterbury</p>	<p>3:30 pm M4-E.1 Digital Transformation at the time of war <i>Yegor Dubinskiy</i> Ministry of Digital Transformation, Ukraine</p>	<p>3:30 pm M4-F.1 Exploring weather information seeking and processing among Illinois Farmers <i>Shupeiy Yuan</i> Northern Illinois University</p>
<p>3:50 pm M4-C.2 Incorporating Superorganisms in OneHealth Approaches <i>Margaret Coleman, D. Warner North</i> Coleman Scientific Consulting, Northworks</p>	<p>3:45 pm M4-D.2 Critical Interdependencies Assessment for Resilience of Facilities <i>Rachid Ouache, David Bristow</i> UVIC, University of Victoria</p>	<p>3:50 pm M4-E.2 USA/Ukraine Cybersecurity Collaboration <i>Brandon Wales</i> DHS/CISA</p>	<p>3:45 pm M4-F.2 The key factors for engaging small farmers in effective risk management <i>Xuanli Liu</i> Fort Valley State University</p>
<p>4:10 pm M4-C.3 Don't say "vegan" or "plant-based": Food without meat and dairy is more likely to be chosen when labeled as "healthy" and "sustainable" <i>Patrycja Sleboda, Wandi Bruine de Bruin, Tania Gutsche, Joe Árvai</i> University of Southern California</p>	<p>4:00 pm M4-D.3 Serious gaming for teaching complex human-technical systems experiencing shocks: An application to interdependent infrastructure recovery <i>Mohammad Reza Yazdi-Samadi, Allison Reilly, Matthew Gabb, Micheal Gerst, Melissa Kenney</i> University of Maryland, City of Edina's Sustainability Division, University of Minnesota</p>	<p>4:10 pm M4-E.3 Impact of Ukraine/Russia Conflict on Global Food Security <i>Olga Shashkina</i> Independent Consultant</p>	<p>4:00 pm M4-F.3 A data-driven approach to assess the impact of climate change on the agriculture sector in Jordan <i>Yingqiang Xu</i> Vanderbilt University</p>
<p>4:30 pm M4-C.4 Oilfield produced water for crop irrigation: Is it a sustainable and safe solution? <i>Jennifer Hoponick Redmon, Donna Womack, Ted Lillys, Avner Vengosh, AJ Kondash</i> RTI International, Duke University</p>	<p>4:15 pm M4-D.4 The resilience curve is a poor model of resilience <i>Daniel Eisenberg, Thomas Seager, David Alderson</i> Naval Postgraduate School, Arizona State University</p>	<p>4:30 pm M4-E.4 bridgeUkraine Initiative (www.bridgeUkraine.org) <i>Stergios-Aristoteles Mitoulis</i> University of Birmingham</p>	<p>4:15 pm M4-F.4 Assessing Climate Change Effects on Global Rangeland Dynamics and Livestock Productivity <i>Gregory Kiker, Savannah Morgan, Eric Pitts, Kate Vaiknoras, Jayson Beckman, Randall Boone, Ephraim Nkonya</i> University of Florida, United States Department of Agriculture Economic Research Service, Colorado State University</p>
	<p>4:30 pm M4-D.5 Prediction Markets for Critical Infrastructure Risk Assessment <i>Benjamin Bonin, Cyrus Bonyadi*, Nathan Clough, Elizabeth McCarthy, Megan Nyre-Yu, Nick Winstead</i> Sandia National Laboratories, Zeichner Risk Analytics</p>		<p>4:30 pm M4-F.5 Preventing Chagas disease through promoting hygienic processing of acai berries: A case study of a successful risk communication program for two communities in the Brazilian Amazon <i>Ben Rholdan Pereira, Bret Shaw, Dominique Brossard, Walter Lima Junior</i> Rutgers University, University of Wisconsin – Madison, Universidade Federal do Para</p>

3:30 PM – 5:00 PM

M4-G: Communicating Science

Meeting Room 5

Chair: John Besley

3:30 pm M4-G.1

Credible communications: scientific integrity, transparency and knowledge mobilization

Steven Gibb

IAFNS

3:50 pm M4-G.2

Environmental Scientists Have Limited Experience Receiving Communication Support

John Besley

Michigan State University

4:10 pm M4-G.3

Uncertainty and HIV-cure science: a message experiment

Sebastiaan Gorissen, Yi Liao, Jakob Jensen, Joshua Barbour, Kevin John, Dallin Adams, Chelsea Ratcliff*
Minot State University, University of Utah, University of Texas at Austin, Brigham Young University, The University of Georgia

4:30 pm M4-G.4

Communicating Emerging Energy Research to the Public: A Message Experiment Examining Uncertainty, Source, and Bandwagon Cues

Kevin John, Jakob Jensen, Yi Liao, Sebastiaan Gorissen, Camilla Owens, Dallin Adams, Manu Pokharel, Chelsea Ratcliff

Brigham Young University, University of Utah, Minot State University, Texas State University, The University of Georgia

3:30 PM – 5:00 PM

M4-H: Advancements in Modelling: Dose-Response and Exposure

Meeting Room 16

Chair: Tony Cox

3:30 pm M4-H.1

What is an exposure-response curve?

Tony Cox

Cox Associates

3:50 pm M4-H.2

Utilization of life expectancy losses as a risk assessment metric: the case of crystalline silica

Andrey Korchevskiy

Chemistry & Industrial Hygiene, Inc.

4:10 pm M4-H.3

Increasing scientific confidence in exposure models to accelerate the pace of their application for chemical assessments

Richard Becker, Elke Jensen, Paul Deleo, Rosemary Zaleski, Jon Arnot

American Chemistry Council, Dow, Lumina Consulting, L.L.C., ARC Arnot Research & Consulting

Poster Session
Potomac Ballroom

- P.1**
Nomophobia among university students in five Arab countries in the Middle East: prevalence and risk factors
Abdallah Naser, Hassan Alwafi, Mohamed Bahlol, Amer Abukhalaf, Sami Qadus
Isra University, Umm Al-Qura University, Egyptian Russian University, University of Florida
- P.2**
Global prevalence of monkeypox from May to July 2022
Abdallah Naser
Isra University
- P.3**
Gender difference of risk perception on environmental risk factors including electromagnetic fields (EMFs)
Chiyoji Ohkubo
Japan Electrical Safety & Environment Technology Laboratories
- P.4**
Tracking the Spread of Disinformation on Social Media Using Big Data Analytics
Nika Mahdavi, Eva Murdock, Puneet Agarwal, Ethan Eichten, Jack Reed, Vanessa Veto
Cal Poly San Luis Obispo, California Polytechnic State University
- P.5**
Efforts to Protect Outdoor Workers from Wildfire Smoke and the Potential Implications for Other Similar Occupational Exposures
Douglas Johns, Kathleen Navarro
CDC/NIOSH, Department of the Interior
- P.6**
Fair innings: an empirical test
James Hammitt
Harvard University
- P.7**
Measuring Resilience Across Multiple Dimensions: Strategies for Expert Elicitation
Victoria Kraemer, Casey Canfield
Missouri University of Science and Technology
- P.8**
Occupational health risk assessment for Indium phosphide and Indium compounds
Pei-Yi Chen, Kuen-Yuh Wu
National Taiwan University
- P.9**
Whose opinions should be heard? Comparison of newspaper coverage of children's health check-ups
Midori Aoyagi
National Institute for Environmental Studies
- P.10**
March 2023 Arkansas Tornadoes: social media use by public organizations
Rejina Manandhar
Arkansas Tech University
- P.11**
Linking risk and sustainability through rational decision-making
Sandra Seno Alday, Anca Hanea
The University of Sydney Business School, The University of Melbourne
- P.12**
Effects of social determinants of health on perception of environmental health risk
Rachel Szczytko, Adam Zwickle, Joe Hamm, Latifa Salangi
Michigan State University
- P.13**
How narrative and framing in risk communication change public risk responsive behavior: evidence from a survey experiment
Chuanshen Qin, Zhuling Liu
Shanghai Jiao Tong University
- P.14**
Work remotely or work from the office? Efficiency versus resilience in collaborating teams
Maksim Kitsak, Igor Linkov, Benjamin Trump
Delft University of Technology, US Army Engineer Research and Development Center, US Army Corps of Engineers
- P.15**
Examining psychological distance and construal level effects on people's disease barrier perception about online health consultation
Shuo Yao, Haoran Chu
University of Florida
- P.16**
Machine learning-based prediction of Salmonella genetic patterns associated with different stages of chicken production
Shraddha Karanth, Abani Pradhan
University of Maryland, College Park
- P.17**
Using bayesian statistical methods to interpret clinical trial data for gossypol dose-response assessments
EnYu Chen, Su-Yin Chiang, Kuen-Yuh Wu
National Taiwan University, China Medical University
- P.18**
Advancing health equity by addressing dioxin risks
Latifa Salangi, Adam Zwickle, Rachel Szczytko, Joe Hamm
Michigan State University
- P.19**
Application of quantitative microbial risk assessment to respiratory pathogens and implications for uptake in policy
Lizhan Tang, Timothy Julian, Kerry Hamilton
Swiss Federal Institute of Aquatic Science and Technology, Arizon State University
- P.20**
Impacts of Psychoactive Drugs on the Survival and Locomotion of *C. virginica* Oyster Larvae
Gustavo Salcedo, Sheree Pagsuyoin
University of Massachusetts, UMass Lowell
- P.21**
Public pathways to net zero: mapping the landscape of attitudes towards decarbonised heating technologies among the UK public
William Smith, Christina Demski, Nick Pidgeon
Cardiff University, University of Bath
- P.22**
Our Shot to Improve Vaccine Uptake: Evaluating Gain-Loss Framing in the Bivalent COVID-19 Vaccine Context
Kyle Chambers, Haoran Chu
University of Florida
- P.23**
Proposal to develop assessment framework for extractables and leachables in pharmaceuticals taking into account skin sensitization risk
Asako Fukushima, Tae Hayashi, Masahiro Takeyoshi, Akihiko Hirose
Chemicals Evaluation and Research Institute, Japan
- P.24**
Analysis of Factors Affecting Legal Immigration in the United States Using Data and Predictive Analytics
Mahek Karamchandani, Puneet Agarwal, Nika Mahdavi, Boaz Nakhimovsky, Katrina Apiado
Cal Poly San Luis Obispo, California Polytechnic State University
- P.25**
Optimizing resource allocation in multi-layered defense systems against probabilistic and strategic risks
Zhiyuan Wei, Jun Zhuang
University at Buffalo

Poster Session
Potomac Ballroom

- P.26**
Managing occupational health risks in an automated workplace design: a pilot study in artificial intelligence
Pei-Yi Chen, Shao-Zu Huang, Kuen-Yuh Wu
National Taiwan University
- P.27**
It's the intensity, not the average: The risk perception gap between scientists and the public on fine dust pollution
Ho Young Yoon
Ewha Womans University
- P.28**
Per- and polyfluoroalkyl Substances (PFAS) in community water systems in Minnesota
Christopher Greene, Jane de Lambert
Minnesota Department of Health
- P.29**
Prevalence of Escherichia coli O157:H7 and Salmonella serovars in microgreens grown from contaminated seeds
Aishwarya Rao, Abani Pradhan, Jitendra Patel
University of Maryland, USDA
- P.30**
Gauging misinformation about COVID-19: types, sources, and risks
Nagwan Zahry, Hong Qin, Azad Hossain
The University of Tennessee-Chattanooga
- P.31**
Estimating the contribution of private well water to PFAS exposure using a probabilistic modeling approach
Banks Grubbs, Jacqueline MacDonald Gibson
North Carolina State University
- P.32**
From bioreactors to hospitals: incorporating bench scale studies in mechanistic models to reduce legionellosis outbreaks in healthcare facilities
Kayla Shorter, Alexis Mraz, Nikhil Parab
The College of New Jersey
- P.33**
Understanding Food Insecurity in Los Angeles County During the COVID-19 Pandemic and its Aftermath: A Qualitative Interview Study
Jose Scott, Wandu Bruine de Bruin, Lila Rabinovich, Kayla de la Haye
University of Southern California
- P.34**
Distribution of stress response and virulence genes across salmonella enterica isolates from poultry processing
Edmund Benefo, Abani Pradhan
University of Maryland
- P.35**
Comparative Risk Assessments of Arsenic, Cadmium, Lead, and Mercury in Chinese Herbal Medicines Before and After the Promulgation of Limit Standards
Po-Han Lin, Yun-Yu Wu, Bao-Suei Chang, Kuen-Yuh Wu, Su-Yin Chiang
China Medical University, National Taiwan University
- P.36**
Evaluating Impacts to the U.S. Department of Defense (DoD) Mission from Changing Regulations and Toxicity Values for Vanadium and Cobalt
Kelsey Hendrixson, Emily Barrett
Noblis, Inc.
- P.37**
Projecting the viability of ecological based coastal defense in the US Atlantic coast
Henry Hausmann
University of Maryland College Park
- P.38**
Positioning risk in secondary education in England
Sarah Duckett
King's College London
- P.39**
Disaster risk literacy: an educational approach to building disaster resilient communities
Joshua McDuffie
Vanderbilt University
- P.40**
Toward a better understanding of the effects of communicating uncertainty: explicating the uncertainty information processing model
Chelsea Ratcliff, Rebekah Wicke, Helen Lillie, Jakob Jensen
The University of Georgia, Cornell University, University of Iowa, University of Utah
- P.41**
Climate Change Communication for Urban Residents in Southeast Michigan
Sandarwan Pradeep Kumara Subasinghe Mudiyansele
Wayne State University
- P.42**
Title: Exploring Pluralistic Ignorance in Republican Support for Climate Mitigation Policies
Graham Dixon, Christopher Clarke, P. Sol Hart, Jeffrey Jacquet, Darrick Evensen
Ohio State University, George Mason University, University of Michigan, University of Edinburgh
- P.43**
Air pollution and the risks to public health in the United Arab Emirates: A systematic literature review
Grace Kilroy, Samrin Ahmed Kusum, Jacqueline MacDonald Gibson
North Carolina State University
- P.44**
Dose-response assessment of dioxin-like mixtures via a Bayesian framework of mechanism-based data integration
Yun Zhou, Kan Shao
Indiana University Bloomington
- P.45**
A cost-benefit perspective for assessing alternative approaches to lead prevention among homes relying on private wells
Timothy Leung, Jacqueline MacDonald Gibson
North Carolina State University
- P.46**
Analyzing the redistribution of federal disaster aid through machine learning
Adriana Bryant, Allison Reilly, Deb Niemeier
University of Maryland
- P.47**
Organic vs nonorganic farming: food safety and risk assessment of glyphosate residues in chicken.
Aleem Waris, Maria Chiesa, Sylvia Costa, Rachel Dubbs
University of Maryland
- P.48**
Does transparency in fact-checking improve correction acceptance?
Jamie Gentry
University of Florida
- P.49**
Handling Risks of Catastrophic Cyber Attacks: A Red-Teaming Analysis from Insurance Perspective
Omer Keskin
University at Albany

Poster Session
Potomac Ballroom

- P.50**
Cumulative Impact Assessment: Science and Uncertainty
Uni Blake
ToxStrategies, Inc.
- P.51**
Implementing Environmental Justice in NAAQS: The Perspective of the Regulated community
Omobola A
American Petroleum Institute
- P.52**
Range of the Perfluorooctanoate (PFOA) Safe Dose for Human Health: An International Collaboration
Michael Dourson
TERA
- P.53**
Calibration and evaluation of PFAS toxicokinetics and implementation in a community-facing tool to estimate individual serum levels
Meghan Lynch, Weihsueh Chiu, Claire Lay, Rachel Rogers
Abt Associates, Texas A&M University, Centers for Disease Control and Prevention/Agency for Toxic Substances and Disease Registry
- P.54**
Risk and hazard assessment of occupational cancer among firefighters
Tee Guidotti
Occupational + Environmental Health & Medicine
- P.55**
Engaging Stakeholders and Researchers to Co-Create Sustainable Phosphorus Solutions
Corieander Griebel, Khara Grieger
North Carolina State University
- P.57**
Stakeholder Views and Needs for Decreasing Risk and Increasing Sustainability of Phosphorus Management
Khara Grieger, Ashton Merck, Corieander Griebel
North Carolina State University, NC State University
- P.58**
Estimating Public Health Risk of Infectious Disease Events: A Canadian Approach to Rapid Risk Assessment
Linda Vrbova, Sai Priya Anand, Clarence Tam, Sharon Calvin, Dima Ayache, Lisa Slywchuk, Rukshanda Ahmad, Eleni Galanis, Jan Trumble Waddell
Public Health Agency of Canada
- P.59**
A picture says thousands of words: unlock the dermal exposure information from pictures using a hybrid deep learning method to support product safety assessment (a proof of concept)
Hua Qian, Manisha Kotha, Tuan A Tran, Hassan Chughtai, Haining Zheng
ExxonMobil Biomedical Sciences, Inc., Exxon Mobil, ExxonMobil Technology and Engineering Company
- P.60**
Risk-benefit analysis for dioxin and its compounds
Yongjin Lee, Youngwook Lim, Kyungjun Jung
Yonsei University, Yonsei University, Yon
- P.61**
Individual exposure assessment of daily inhaled PM2.5 dose in micro-environments
Yongjin Lee, Min Ji Park, Dongjun Lee, Taeyeong Yu, Kyungjun Jeong
Yonsei University, Yonsei University, Institute of Environmental Research, Department of Preventive Medicine, Yonsei University
- P.62**
Quantitative microbial risk assessment of raw milk for multiple foodborne pathogens in raw milk in the US
Angelica Godinez Oviedo, Naim Montazeri, Minho Kim, Mohan Li, Gabriela K. Betancourt-Barszcz, Natasha Ng, Olufemi Olatoye, Alexis Mraz, Scott Meschke
UAQ, University of Florida, Illinois State University, University of Nebraska-Lincoln, Texas Tech University, Arizona State University, Morgan State University; University of Ibadan, The College of New Jersey, University of Washington
- P.63**
Methods used for rapid risk assessments of public health events: a scoping review
Dima Ayache, Linda Vrbova, Lisa Waddell, Sai Priya Anand, Melanie Cousins, Lisa Slywchuk, Katja Sling, Emilie Peron, Jan Trumble Waddell
Public Health Agency of Canada, World Health Organization, WHO
- P.64**
A refinement of a quantitative microbial risk assessment model for Salmonella enterica by the consumption of chicken in the central region of Mexico using whole genome sequencing
Angelica Godinez Oviedo, Adrián Gómez-Baltazar, Montserrat Hernández Iturriaga
UAQ, Universidad Autónoma de Querétaro
- P.65**
Comparative Semi-Quantitative Risk Assessment of Harmful and Potentially Harmful Constituents in Tobacco Products
Zhengxi Wei, Chastain Anderson, Timothy Langston, Wanyoike Kangethe, Donna Smith
Altria, Altria Client Services
- P.66**
Understanding School Shootings in the United States: Analyzing Patterns, Social Factors, and Preventive Measures for Safer Schools
Seyed Ahmad Torabzadeh, Jun Zhuang
University at Buffalo
- P.67**
Game Theory Analysis of US-Canada Collaboration in Mitigating Canada's Wildfires and Smoke Health Risks
Mina Samiei Nasab, Jun Zhuang
University at Buffalo
- P.69**
Human health risk assessment tools and risk assessments for abandoned mine lands (AML)
Natasha Ng
Arizona State University
- P.70**
NO₂ as a Surrogate for Gaseous Oxides of Nitrogen
Qingyu Meng, Adam Reff, Stephen McDow
USEPA
- P.71**
Health Risk Evaluation on Recycled Plastics in Circular Economy
Naoya Kojima, Tomoko Oguri, Naohide Shinohara, Isamu Ogura, Hideo Kajihara, Eriko Yamazaki, Keisuke Nakamura, Hanari Nobuyasu, Masashi Gamo
The National Institute of Advanced Industrial Science and Technology, The Advanced Industrial Science and Technology, National Institute of Advanced Industrial Science and Technology (AIST)

Poster Session
Potomac Ballroom

P.72

Investigating the tension between risk governance recommendations and technical uncertainty modelling in practice: a study of four mathematical models for offshore wind farms

*Solene Huynh
University of Strathclyde*

P.73

Estimating Interspecies Pharmacodynamic Data-Derived Extrapolation Factors for Organophosphate Pesticides

*Richard Reiss, Ann Jonyngas, Paul Whatling, Betsy Codrea, Christian Strupp
Exponent, AMVAC, FMC Corporation, Gowan Company*

P.74

Partisan winds: reframing new windfarm developments to overcome identity-protective cognition

*Aitor Marcos Diaz, Patrick Hartmann, Joe Árvai
University of Southern California, University of the Basque Country UPV/EHU*

P.75

Interactive map of risk indicators for critical infrastructure systems: a case study of Greater-Houston power infrastructure

*Ada Novak, Paul Johnson, Hiba Baroud
Vanderbilt University*

P.76

An Impact of System Down Risk Disclosure on Maintenance Service Personnel Effort and System Liability: An Experimental Economic Analysis with Student Subjects

*Ryoji Makino, Jun-Ichi Takanori, Takanori Kudo, Keiko Aoki, Kenju Akai
National Institute of Advanced Industrial Science and Technology, Setsunan University, Saitama University, Shimane University*

P.77

Assessment of antibiotic-resistant infection risks associated with reclaimed wastewater irrigation in intensive tomato cultivation

*Hunter Quon
University of California, Irvine*

P.78

Modeling interdependent transit network resilience under future flooding scenarios

*Jack Watson, Samrat Chatterjee, Auroop Ganguly
Northeastern University, Pacific Northwest National Laboratory, Northeastern University*

P.79

Quantitative microbial risk assessment of viral infection in exposed children at public parks fertilized with recycled urine

*Syed Anjerul Islam, Julia Harrison, Jade Mitchell, Kerry Hamilton
University of North Carolina at Chapel Hill, North Carolina State University, Michigan State University, Arizona State University*

P.80

Integrating pharmaceutical reduction strategies with wastewater-based epidemiology

*Julie Barnett, Scott Watkins, Megan Robertson, Ruth Barden, Barbara Kasprzyk-Hordern
University of Bath, University of the West of England, Wessex Water*

P.81

Estimating potential new U.S. blood donor deferrals with an individual HIV risk assessment for at-risk sexual behavior

*Yin Huang, Barbee Whitaker, Diane Gubernot, Anne Eder, Debby Herbenick, Tsung-chieh Fu, Richard Forshee, Steven Anderson
US FDA, Indiana University*

P.82

Mapping public safety power shutoffs: intersections of outage risk, community vulnerability, and energy resilience cost

*Bethany Kwoka, Patrick Murphy, Yunus Kinkhabwala, Yanelli Nunez, Elena Krieger
PSE Healthy Energy*

P.83

Dose-Response Analysis for SARS-CoV-2

*Shaista Shah
Student*

P.84

What is process risk?

*Samuel Denard
Empirical Products*

P.85

Assessing the impact of culvert failure from an equity lens.

*Joshua Govina
University Of Massachusetts, Amherst*

P.86

European blackouts: key lessons and insights from operational experience

*Andrej Stankovski, Blazhe Gjorgiev, Leon Locher, Giovanni Sansavini
ETH Zurich*

P.87

Decision-making and Risk-Mitigating Behaviors against Heat Stress among Secondary School Students

*Masahiko Haraguchi
Harvard University*

10:30 AM – 12:00 PM	10:30 AM – 12:00 PM	10:30 AM – 12:00 PM	10:30 AM – 12:00 PM
<p>T2-A: Food Safety Policies: Update on Recent Risks and Regulations <i>Rock Creek Ballroom</i> Chair: Sandra Hoffmann</p>	<p>T2-B: Symposium: Updating the Social Amplification of Risk Framework for Risk Science and Practice in the 21st century <i>River Birch A</i> Chair: Angela Bearth</p>	<p>T2-C: Foodborne Microbial Risks <i>River Birch B</i> Chair: Jade Mitchell</p>	<p>T2-D: Advances in Natural Hazards Modeling <i>Meeting Room 2</i> Chair: Pia-Johanna Schweizer</p>
<p>10:30 am T2-A.1 2022 Cost of Foodborne Illnesses in the U.S. <i>Sandra Hoffmann, Elaine Scallan Walter, Alice White, Robert B. McQueen, Jae-Wan Ahn</i> USDA Economic Research Service, Colorado School of Public Health</p>	<p>10:30 am T2-B.1 Social Amplification and Attenuation: The Role of Trust and Expectations <i>Angela Bearth, Seth Tuler</i> ETH Zurich, Worcester Polytechnic Institute (WPI)</p>	<p>10:30 am T2-C.1 Trends in Salmonella Infantis human illness incidence and chicken carcass prevalence in the USA; 1996-2019 <i>Mark Powell</i> USDA/OCE</p>	<p>10:30 am T2-D.1 Machine Learning Algorithm for Early Warning System for Tsunami Triggered by the Volcanic Activity: Case of Anak Krakatau Volcano Indonesia <i>Elmo Juanara, C.Y. Lam</i> Japan Advanced Institute of Science and Technology (JAIST)</p>
<p>10:45 am T2-A.2 Assessing the Association between Dietary Exposure to Lead, Arsenic, and Cadmium and Adverse Health Effects: A Comprehensive Evaluation Using Bradford Hill Criteria <i>Patricia Hsu, Felicia Wu</i> Michigan State University</p>	<p>10:45 am T2-B.2 SARF in the literature since 2003 <i>Thomas Webler</i> Social and Environmental Research Institute</p>	<p>10:45 am T2-C.2 Understanding the limit: a reverse quantitative microbial risk assessment to investigate low-level concentration of Listeria monocytogenes in apple packinghouses from epidemiological data <i>Tyler Stump, Kara Dean, Jade Mitchell*</i> Michigan State University</p>	<p>10:45 am T2-D.2 Criteria-based visualization design for hazard maps <i>Pia-Johanna Schweizer, Max Schneider, Fabrice Cotton</i> Research Institute for Sustainability – Helmholtz Centre Potsdam, U.S. Geological Survey, German Research Institute for Geoscience – Helmholtz Centre Potsdam</p>
<p>11:00 am T2-A.3 Cancer burden from dietary exposure to inorganic arsenic in the United States: Risk assessment and policy implications <i>Rubait Rahman, Felicia Wu</i> Michigan State University</p>	<p>11:00 am T2-B.3 Dispelling myths about the social amplification of risk I: amplified risks are real risks <i>Terje Aven, Rob Goble, Ortwin Renn</i> University of Stavanger, Clark University, Research Institute for Sustainability – Helmholtz Center Potsdam (RIFS)</p>	<p>11:00 am T2-C.3 A meta-analysis of conditions effecting decay and growth of Escherichia coli O157:H7 in leafy greens <i>Joshua Owade, Jade Mitchell, Teresa Bergholz</i> Michigan State University</p>	<p>11:00 am T2-D.3 Surrogate Models to Predict Flood Hazard under Evolving Coastal Conditions <i>David Johnson</i> Purdue University</p>
<p>11:15 am T2-A.4 A Solution for FDA's Human Foods Program <i>Richard Williams</i> RichardAWilliams.com</p>	<p>11:15 am T2-B.4 Dispelling myths about the social amplification of risk II: the public are not the only parties engaged in amplification. <i>Rob Goble, Lisbet Fjæran, Kenneth Pettersen</i> Clark University, University of Stavanger</p>	<p>11:15 am T2-C.4 Quantitative risk assessment-epidemic curve prediction model for leafy green outbreak investigation <i>Hao Pang</i> Food and Drug Administration</p>	<p>11:15 am T2-D.4 A framework for modelling the probability of flooding under levee breaching <i>Thomas Wallace, Tom Logan, Kaley Crawford-Flett, Matthew Wilson</i> University of Canterbury, University of Auckland</p>
<p>11:30 am T2-A.5 The science behind FSIS' proposal that Salmonella is an adulterant in not-ready-to-eat breaded stuffed chicken products <i>Janell Kause</i> Food Safety and Inspection Service</p>	<p>11:30 am T2-B.5 Visualising the interactive and dynamic nature of the social amplification and attenuation of risk <i>Lisbet Fjæran, Kenneth Pettersen</i> University of Stavanger</p>	<p>11:30 am T2-C.5 Implementation of gene editing into the food system: opportunities and barriers <i>Gulbanu Kaptan, Huw Jones, Edgar Meyer, Joshua Weller, Baruch Fischhoff</i> University of Leeds, Aberystwyth University, Carnegie Mellon University</p>	<p>11:30 am T2-D.5 Hybrid Decision Support by Combining Economic Assessment and Bayesian Networks for Multi Criteria Decision Analysis: A Case Study of Adaptation Measures for Hurricane Risk <i>Bona Ryan, David Bristow, Agil Darmawan*</i> University of Victoria, PT Perusahaan Listrik Negara Indonesia</p>

10:30 AM – 12:00 PM

T2-E: Roundtable: Hierarchy of Use: Risk Decision-making and Integrated Thinking

*Meeting Room 3
Chair: Mary O'Reilly*

Occupational and environmental risk is most often described as a combination of severity of the outcome and likelihood of its occurrence. For chemical exposures that typically means toxicity of the material and duration/frequency of exposure. Focusing primarily on these two parameters usually precludes evaluating why the chemical is used. For most chemicals, however, there is a hierarchy of use. For example, using PFAS in chip manufacturing may be assessed to be of higher priority than using PFAS on frying pans, skis and dental floss. Ethylene oxide is used primarily to sterilize medical plastic items. Many of those plastic items, however, could be made from glass that can be autoclaved. Other examples include asbestos, PCBs and bisphenol A.

A hierarchy of use would value a chemical based on its society-wide negative impacts as well as its society-wide benefits and could aid ESG reporting. Howard Glickman in "Buying Power" has documented American consumer activism that has certainly played a part in the removal of bisphenol A from some plastics, especially baby products, due to its ability to bind to estradiol receptors and mimic estrogen effects. Disposing of toxic but useful chemicals and their breakdown products results in harm to neighboring communities around the world. A hierarchy of use, in contrast to a ban, would provide a systematic way to limit the production and use of toxic chemicals and their effects on both workers and downstream communities.

Evaluating risk from a hierarchy of use perspective raises valuable questions. When are adverse effects first recognized? At what point do adverse effects outweigh beneficial use? Whose responsibility is it to clearly and transparently communicate risks associated with a useful product? And to whom? What is the role of regulators, investors in the ESG movement, educators, consumers and the general public? How should companies address these topics in ESG-related disclosures? Integrating a hierarchy of use into human health risk assessment would enable more judicious use of toxic chemicals by balancing society-wide harmful effects and society-wide benefits.

Panelists

- Fred Boelter
- Frank Hearl
- Regina Pana-Cryan
- Margaret MacDonell

10:30 AM – 12:00 PM

T2-F: Roundtable: Understanding the Potential of Wastewater-Based Epidemiology for Risk Management

*Meeting Room 4
Chair: Patrick Gurian*

Wastewater serves as a collective pool of biological and chemical markers shed by individuals in a community. By analyzing these markers, such as viral RNA, metabolites, and pharmaceuticals, researchers can estimate the overall health status of the population, an approach referred to as wastewater-based epidemiology (WBE). WBE provides a holistic perspective, capturing both symptomatic and asymptomatic cases, allowing for the identification of diseases that might otherwise go undetected. This insight aids in early intervention, targeted public health measures, and improved population health management.

One of the most significant advantages of WBE is its potential for early detection and monitoring of pandemics. By analyzing wastewater samples from specific locations, researchers can identify the presence of viral pathogens, such as SARS-CoV-2, even before clinical cases are reported. This timely information can help public health authorities take proactive measures to curb the spread of the disease, allocate resources, and implement targeted interventions to protect vulnerable populations.

WBE enables the evaluation of the effectiveness of various public health interventions and control measures. By monitoring wastewater samples before and after the implementation of interventions like vaccination campaigns or lockdown measures, researchers can assess their impact on disease prevalence and transmission. This data-driven approach provides valuable insights into the efficacy of public health strategies, facilitating evidence-based decision-making.

Wastewater surveillance also provides a unique opportunity to monitor drug consumption patterns and public health trends. By analyzing wastewater for the presence of drug metabolites, researchers can estimate drug use within a population, identify emerging drug trends, and evaluate the efficacy of substance abuse prevention programs. This information aids policymakers and public health agencies in designing targeted interventions to address drug-related challenges.

Panelists

- Charles Haas
- Mark Weir
- Raul Gonzalez
- Kyle Curtis

10:30 AM – 12:00 PM

T2-G: Security and Disaster Management

*Meeting Room 5
Chair: Ronnie E. Hill Jr.*

10:30 am T2-G.1
Cybersecurity Requirements for a connected world

*ChoongHee Han, Naresh Adhikari
Korea Power Exchange, Slippery Rock University*

10:50 am T2-G.2
Cyber Risk Loss Distribution of Drone Delivery Systems: A Study of Amazon Drone Deliveries in College Station, TX

*Petar Jevtic, Nicolas Lanchier, Stefano Chiaradonna
Arizona State University*

11:10 am T2-G.3
Pandemic and other Stressors Disrupt Investments for Disaster Mitigation

*Ronnie E. Hill Jr., Davis Loose, Barry Ezell, James H. Lambert, DeAndre Johnson
University of Virginia, Old Dominion University*

10:30 AM – 12:00 PM

T2-H: What's in the Air – Air Pollution

*Meeting Room 16
Chair: Sabine Lange*

10:30 am T2-H.1
Does ambient air pollution influence biochemical markers of liver injury? Findings of a cross-sectional population-based survey.

*Sabit Cakmak, Kimberly Mitchell, Anna Lukina, Jeffrey Brook, Subramanian Karthikeyan, Robert Dales
Health Canada, University of Toronto*

10:50 am T2-H2
Derivation and application of comparison values and action levels for use in mobile air monitoring

*Sabine Lange
Texas Commission on Environmental Quality*

11:10 am T2-H.3
Health and climate benefits of electric school bus adoption in the United States

*Ermani Choma
Harvard University*

1:30 PM – 3:00 PM

T3-A: Roundtable: The Future of the Democratic Process and the Clean Energy Transformation in a Post-Truth Society

Rock Creek Ballroom

Chairs: Bonnie Ram, Pia-Johanna Schweizer

The urgency of climate change and the threat of misinformation via social media require that we revisit the sufficiency of tools to engage publics and stakeholders in risk decision making. Climate change due to fossil fuel combustion is imposing significant and rapidly increasing costs on people and institutions worldwide. To mitigate these harms there is an urgent need to decarbonize energy systems, however a major impediment is public and stakeholder opposition. Opposition is met at national and subnational policymaking venues and in communities where renewable energy infrastructure is proposed. Opposition is fueled in a large part by misinformation campaigns that are growing more sophisticated and effective and threaten to balloon with the increased use of deep fakes and other techniques enabled by artificial intelligence. This roundtable reconsiders the need and direction for public and stakeholder participation in risk decision making by focusing on this question: Are the present mechanisms, strategies, and laws for public engagement sufficient to meet the challenge posed by misinformation/social media and the urgency of climate change? Discussion begins with this question and then transitions to consider policy interventions, new engagement strategies, and other actions that should be taken to address the shortcomings.

After the three 5-minute presentations, the panelists will engage the roundtable audience in exploring the challenges and questions introduced, particularly how to rapidly accelerate renewable energy deployments whilst taking the time to engage citizens and incorporate public values. The panelists hope that this discussion will create innovative approaches to public participation and capacity building to facilitate and accelerate the energy transition in advanced and emerging economies.

Panelists

- Thomas Weblar

1:30 PM – 3:00 PM

T3-B: Roundtable: Improving Communication of Risk and Uncertainty Across Federal Agencies

River Birch A

Chair: Paul Han

Federal agencies tasked with safeguarding the well-being of the US public face the common challenge of effectively communicating the risks of various hazards, as well as the nature and extent of scientific uncertainty about these risks. Effective communication of risk and uncertainty enables the public to understand the likelihood of important hazards, assess the strength of available risk information, and take appropriate action to mitigate and respond to these hazards. Yet effective communication of risk and uncertainty to the public raises key questions about what information to communicate, why, when, how, and to whom. Effective risk and uncertainty communication is also challenging due to human factors including limitations in literacy and numeracy, cognitive biases and heuristics (mental shortcuts), the spread of misinformation and disinformation, and limited access to information among different communities and stakeholders. To address these many challenges, a federal inter-agency workgroup (IWG) on Communicating Hazard Information and Other Types of Uncertainty was convened by the National Science and Technology Council (NSTC) Subcommittee on Social, Behavioral and Economic Sciences. This goal of this IWG is to improve the quality, consistency, timeliness, and appropriateness of efforts to communicate the risks and uncertainties of various hazards to the general public. Toward this end, the IWG is identifying key needs, available resources, and potential strategies to promote a more intentional and coordinated approach to communicating risk and uncertainty across federal agencies; increase translation of social and behavioral evidence on risk and uncertainty communication into best practices; and ensure meaningful engagement of community stakeholders in these efforts. In this Roundtable discussion, IWG members from different federal agencies (e.g., DHS, EPA, NIH, NPS, NOAA) will discuss the initiative and the key challenges it involves, and identify opportunities for moving this work forward.

Panelists

- Madeline Beal
- Tom Fish
- Rik Legault
- Hank Jenkins-Smith

1:30 PM – 3:00 PM

T3-C: International Food Security Risks

River Birch B

Chair: Wayne Landis

1:30 pm

FIRE: the Food Import Risk Explorer, a tool for the comparative risk assessment of imported foods in the Canadian food supply.

Ashwani Tiwari, Cory Lindgren, Christina Sparr, Justin Falardeau, Mohamed Afifi, Alia'a Ghiba, Catherine Semple, Emma Hartnett, Gregory Paoli
Canadian Food Inspection Agency, Risk Sciences International

1:50 pm

Do blood metals influence lipid profiles? Findings of a cross-sectional population-based survey

Sabit Cakmak
Health Canada

2:10 pm

Risk assessment of gene drive constructs as an approach for controlling populations of pests and disease bearing hosts.

Wayne Landis, Steven Eikenbary, Ethan Brown
Western Washington University, Integral Corporation, University of Notre Dame

T3-C.1

T3-C.2

T3-C.3

1:30 PM – 3:00 PM

T3-D: Risk impacts of tropical cyclones

Meeting Room 2

Chair: Zaira Pagan Cajigas

1:30 pm

Broadcast meteorologist and emergency manager interpretations of a redesigned hurricane threats and impacts visualization

Robert Prestley, Rebecca Morss, Kenneth Broad, Alberto Cairo, Scotney Evans, Sharanya Majumdar, Brian McNoldy, Barbara Millet
National Center for Atmospheric Research, University of Miami

1:50 pm

Estimating Tropical Cyclone induced Power Outages in Future Climate Scenarios' Impact on Socio-economically Vulnerable Populations and Racial Minorities

Zaira Pagan Cajigas, Seth Guikema, Charles Fant, Brent Boehlert
University of Michigan, Industrial Economic Inc.

2:10 pm

Adaptive strategies for flooding risk management under climate change: A reinforcement learning application for NYC

Kairui Feng, Ning Lin, Michael Oppenheimer
Princeton University

2:30 pm

The Use of Parametric Insurance via Blockchain to Improve Hurricane Event Outcomes

Steven Haynes
University of Texas at Dallas

T3-D.1

T3-D.2

T3-D.3

T3-D.4

1:30 PM – 3:00 PM

T3-E: The Economics of Risk: Theory and Global Applications

Meeting Room 3
Chair: Emma Hartnett

1:30 pm **T3-E.1**
The Effect on the Poor of Near-Zero Discount Rates

Richard Belzer
Good Intentions Paving Co.

1:50 pm **T3-E.2**
Preparing for High Impact, Low Frequency Events with RaCEr.

Emma Hartnett, Todd Ruthman, Paul Stanish, Hong Duan, Amy McNeely
Risk Sciences International, Transport Canada

2:10 pm **T3-E.3**
Assessing Inherent Risks in Taxation for Wealth Creation

Emma Anyika
The Co-operative University of Kenya

2:30 pm **T3-E.4**
An Empirical Illustration of Tri-Players Cyber Risk Model using Game Theory

Madhu Acharyya, John Houston*
GCU, University of Stirling

1:30 PM – 3:00 PM

T3-F: Roundtable: The Test of Risk Analysis Practice: Quality, Fit for Purpose, or Both?

Meeting Room 4
Chair: Robert Waller

The Applied Risk Management Specialty Group and the Risk Policy and Law Specialty Group are jointly seeking to enhance understanding between risk analysts and risk managers to the benefit of both and of society at large. Over the past five years the exploration of understandings, and misunderstandings, between analysts and decision makers has been structured through development and publication of the Risk Analysis Quality Test Release 1.0 (RAQT1.0). This was intended to be a first attempt at codifying expectations of quality in technical risk assessments done in the service of risk decision makers. It comprises 76 questions. As expected, there was not universal agreement that the RAQT1.0 captured all the important characteristics of what would consider ‘quality’ risk assessment in every field, discipline, and application. Of particular concern was a charge that a risk assessment could satisfy all questions in the RAQT1.0 but still not be “fit for purpose”.

Seeking to understand how the RAQT1.0 might include the fit for purpose concept has led to wanting to better understand whether “analysis quality” and “fit for purpose” are synonymous or, if not, how they differ. Can fitness for use be codified in any way that would be useful across a variety of disciplines and applications. This roundtable explores these questions as they apply in fields ranging from health risks to infrastructure risks. The addition of insights and perspectives from a diverse audience is sought.

Our objective is to understand how to enhance the mutual understandings between technical risk analysts and risk management decision makers about quality and suitability of risk assessments.

Panelists

- Zachary Collier
- Michael Dourson
- Samuel Denard
- Kara Morgan

1:30 PM – 3:00 PM

T3-G: Symposium: Integrated Disaster Risk Management: Joint Session with the International Society for Integrated Disaster Risk Management

Meeting Room 5
Chair: Adam Rose

1:30 pm **T3-G.1**
Behavioral, Environmental, Health and Other Systemic Trends Disrupting Priorities of First Responders

James H. Lambert
University of Virginia

1:50 pm **T3-G.2**
An entropy-centered approach to assessing resistance deterioration for time-based resilience

Bilal Ayyub, Lance Curtis*
University of Maryland

2:10 pm **T3-G.3**
Climate change and disaster risk: Current situation and public policy challenges

Myriam Merad
Paris Dauphine University – PSL

2:30 pm **T3-G.4**
The IDRim initiative to develop an implementation science

Rob Goble
Clark University

1:30 PM – 3:00 PM

T3-H: Lightning Talks: Risk Assessment Potpourri: microbial, dermal, epidemiologic, and metal modelling

Meeting Room 16
Chair: Mark Weir

1:30 pm
The Public Health Costs from Antimicrobial Resistance in Eight Common Pathogens

Katherine Toran, Andrew Estrin, Michael Lanthier
Food and Drug Administration

1:35 pm
Biofilm Ecology Modeling Method for Improved Quantitative Microbial Risk Assessment Modeling

Mark Weir, David Hibler
Ohio State University, Sustainability Institute

1:40 pm
Improving the integration of epidemiological data into human health risk assessment: what risk assessors told us they need

Sandrine Deglin, Igor Burstyn*, Carl Phillips, David Miller
Health and Environmental Sciences Institute, Drexel University, Epiphi Consulting, US Environmental Protection Agency

1:45 pm
Epidemiology: a field that is growing in importance and relevance to risk assessment

David Miller
US Environmental Protection Agency

1:50 pm
Benchmark dose modeling for epidemiological dose-response assessment using case-control studies

Francesco De Pretis, Kan Shao
University of Modena and Reggio Emilia, Indiana University

1:55 pm
A Bayesian Approach to Estimate Parameters for Children from a Pharmacokinetic Model for Methylmercury Exposure to Pregnant Women

Michael Dzierlenga, Yu-Sheng Lin, Leonid Kopylev, Deborah Segal
US EPA

T3-H.1 2:00 pm
Assessing environmental health risks in Meghalaya, India: evaluating spatial methodologies

Ann Elise Lewallen, Erica Goto
University of Victoria, University of Arizona

2:05 pm
Risk assessment of skin disease caused by differential selection and use of PCP in the showering environment

Yihan Gao, C.Y. LAM
Japan Advanced Institute of Science and Technology

2:10 pm
Streamlining dermal risk assessment through a risk decision framework.

Paul Deleo, Elke Jensen, Andrew Maier, Silvia Maberti, Lauren Gloekler, Heather Lynch
American Chemistry Council, Dow, Cardno ChemRisk, ExxonMobil Chemical Company, Stantec ChemRisk

2:15 pm
A handbook of occupational dermal exposure factors for streamlining dermal risk assessment

Paul Deleo, Elke Jensen*, Silvia Maberti, Andrew Maier, Heather Lynch, Claire Hamaji
American Chemistry Council, Dow, ExxonMobil Chemical Company, Cardno ChemRisk, Stantec ChemRisk

2:20 pm
Risk characterization of pediatric injuries from textual emergency department records using ChatGPT: new opportunities for epidemiological surveillance

Dario Gregori, Giulia Lorenzoni
University of Padova

3:30 PM – 5:00 PM

T4-A: Roundtable: Does risk analysis have a future? A transatlantic perspective

Rock Creek Ballroom
Chair: Frederic Boudier

T3-H.7 Risk Analysis is a relatively new discipline that developed very rapidly in the 1970s-2000s. Compared to twenty years ago, there seems to be less risk research being funded—a trend that is particularly true in Europe and may also partially apply to the US. A reason might be the lack of replacement of retired senior risk professors with new talents. As a result, universities that had been at the forefront of risk research have arguably changed their priorities. Another reason may also be the appeal of new concepts such as ‘precaution’ or ‘sustainability’ that lead to hazard-based rather than risk-based approaches. There is a concern that several new regulations – from the energy transition to chemical or food policy – are not sufficiently rooted in risk science. The European Green Deal is one such body of regulation that is very much based on hazard classifications and precautionary thinking. In the US the concept of Green chemistry may also raise similar concerns. We have also witnessed an increased focus on topics like cumulative risk that seem to be risk-based but rarely are. Is there a future for risk analysis? Do North America and Europe converge or do they diverge when it comes to the use of risk analysis? Is risk research actually in decline, or could it be that risk science is hidden in other types of research? In this round table, panellists will provide 5–10-minute interventions discussing their perspective on risk analysis in Europe and North America. They will cover a wide range of risks and disciplines.

Panelists

- Katherine McComas
- Rui Gaspar
- George Gray
- Robyn Wilson

3:30 PM – 5:00 PM

T4-B: Symposium: Watershed Resilience for Low-Capacity Communities

River Birch A
Chair: Frank Randon

3:30 pm
Watershed Resilience for Low-Capacity Communities

Igor Linkov
Engineer Research and Development Center, U.S. Army Corps of Engineers

3:50 pm
Resilience Developments at DHS

Frank Randon
DHS

4:10 pm
USACE Approach to Watershed Resilience

Michael Deegan
USACE

4:30 pm
Community engagement in watershed resilience: Anderson County in SC

David Vaughn
Clemson University

3:30 PM – 5:00 PM	3:30 PM – 5:00 PM	3:30 PM – 5:00 PM	3:30 PM – 5:00 PM
<p>T4-C: Symposium: Food Safety and Security Measures <i>River Birch B</i> Chair: Yuhuan Chen</p>	<p>T4-D: Natural Hazards Infrastructure Resilience <i>Meeting Room 2</i> Chair: Seth Guikema</p>	<p>T4-E: Risk in Critical Industrial Sectors <i>Meeting Room 3</i> Chair: Zachary Collier</p>	<p>T4-F: Roundtable: Integrated Engineering, Public Health, and Data Analytics: A Holistic Approach towards Crisis Mitigation, Response, and Recovery <i>Meeting Room 4</i> Chair: Benjamin Trump</p>
<p>3:30 pm T4-C.1 Subistence Fish and Seafood Consumption Systematic Review: Literature Evidence Map <i>Amina Wilkins</i> USEPA</p>	<p>3:30 pm T4-D.1 Cell phone data for determining the role of access to essential services in disaster recovery <i>Tessa Swanson, Seth Guikema*</i> University of Michigan</p>	<p>3:30 pm T4-E.1 Modeling manufacturing overproduction risks for outsourcing decisions using game theory <i>Zachary Collier</i> Radford University</p>	<p>In the face of ever-evolving global challenges, it is evident that an interdisciplinary approach, integrating engineering, public health, and data analytics, is indispensable in advancing both everyday life and crisis management, respectively. Traditional crisis response mechanisms have often leaned towards isolated, sector-specific responses. However, in today's complex, interconnected world, crises are no longer singular or static, making the efficacy of such approaches limited.</p>
<p>3:50 pm T4-C.2 Modeling within lot variability in pathogen contamination and the impact on predicted risk reduction from sampling ready-to-eat foods <i>Régis Pouillot, Yuhuan Chen, Jane Van Doren</i> Goldbelt, FDA Center for Food Safety and Applied Nutrition</p>	<p>3:45 pm T4-D.2 Assessing the effectiveness of multi-infrastructure disaster risk reduction options on metro-wide restoration timelines <i>David Bristow, Andrew Deelstra</i> University of Victoria</p>	<p>3:45 pm T4-E.2 Enterprise Risk Management for Electrification of Cold Regions Maritime Ports <i>Robert Baker, Megan C. Marcellin*, Dan Hendrickson, Thomas L. Polmateer, James H. Lambert</i> University of Virginia, Port of Virginia</p>	<p>Engineering, in its broadest sense, offers the necessary infrastructure and technology for swift crisis management. From emergency housing following natural disasters to rapid-response medical equipment in health emergencies, the role of engineering is critical. In our increasingly urbanized world, the importance of resilient infrastructure, both physical and digital, can't be overstated.</p>
<p>4:10 pm T4-C.3 Quantify risk reduction from sampling using L. monocytogenes in ready-to-eat foods survey data and OC curves <i>Yuhuan Chen, Régis Pouillot, V Jane Van Doren</i> FDA Center for Food Safety and Applied Nutrition, Goldbelt</p>	<p>4:00 pm T4-D.3 Intelligent Decision-Making in Electrical Infrastructure Management to Promote System Resilience <i>Madison Horgan</i> Arizona State University</p>	<p>4:00 pm T4-E.3 The Role of Knowledge and Trust in Developing Risk Perceptions of Autonomous Vehicles: A Moderated Mediation Model <i>Kathryn Robinson-Tay, Wei Peng</i> Washington State University</p>	<p>Public health, the second pillar of our proposed approach, provides a keen understanding of the societal and individual impacts of crises. This field can identify, quantify, and communicate health risks and facilitate health-promoting responses. Their integration with engineering solutions and data analytics can enable more holistic responses.</p>
<p>4:30 pm T4-C.4 Relative importance of preharvest, pre-rehang, and post-rehang interventions on Salmonella load in young chicken <i>Peter Evans, Amber Pasko, Courtney Amundsen, Scott Malcolm, Berhanu Tameru</i> USDA/FSIS</p>	<p>4:15 pm T4-D.4 Probabilistic seismic analysis of water supply interruptions in terms of societal impact <i>Rithika Dulam, Rachel Davidson, Nafiseh Solemani, Sina Naeimi</i> University of Delaware</p>	<p>4:15 pm T4-E.4 Geospatial cost-benefit assessment of telecommunication infrastructure protection strategies in conflict economies <i>Edward Oughton, Jevgenijs Steinbuks, Harris Selod</i> George Mason University, World Bank</p>	<p>Data analytics forms the final core element of this integrative approach. It empowers decision-makers to understand the breadth and depth of crises, predict their trajectories, and evaluate the effectiveness of interventions.</p>
	<p>4:30 pm T4-D.5 Risk Analysis for Coupled Power – Sewer Systems <i>Rosalia Otaduy-Ramirez</i> University of Michigan</p>	<p>4:30 pm T4-E.5 Analytical Review of Resilience of Ukraine's Critical Energy Infrastructure to Cyber Risks and Threats in Times of War <i>Andrii Davydiuk</i> CCDCOE</p>	<p>By integrating these three disciplines, we present a holistic, robust, and adaptable approach to crisis management. This convergence enables an in-depth understanding of crisis scenarios, improves the design and implementation of responsive infrastructures, and optimizes strategies based on real-time data.</p>
			<p>Panelists</p> <ul style="list-style-type: none"> • Christopher Cummings • Jeffrey Keisler • Thomas Janisko • Cody Thornton • Eric Powell

3:30 PM – 5:00 PM

T4-G: Risk Communication and Perception for Social Systems

*Meeting Room 5
Chair: Emma Soane*

3:30 pm T4-G.1

Updating the Nuclear Regulatory Commission waste incidental to reprocessing monitoring program with Be riskSMART

*Christianne Ridge, Cynthia Barr, Harry Felsher, Christopher McKenney, Stephen Koenick
US Nuclear Regulatory Commission*

3:50 pm T4-G.2

Collaboration, Digitization and Risks: How Digital Collaboration Influences Infrastructure Project Safety

*Emma Soane, Vikki Edmondson, Katherine Ziegelbauer
The London School of Economics and Political Science, Northumbria University*

4:10 pm T4-G.3

Americans' views of fusion energy: Implications for sustainable public support

Kuhika Gupta, Hank Jenkins-Smith, Joseph Ripberger, Carol Silva, Andrew Fox, Will Livingston
University of Oklahoma*

3:30 PM – 5:00 PM

T4-H: Symposium: Risk Communication in the Public Sector: Challenges and Successes in Applying Science Across Government

*Meeting Room 16
Chair: Madeline Beal*

3:30 pm T4-H.1

Misinformation, Disinformation, and Coordination in Risk Communication: Reflections from East Palestine OH

*Mike Nye
US Environmental Protection Agency*

3:45 pm T4-H.2

New Approaches to Risk Communication at NOAA

*Gina Eosco
NOAA*

4:00 pm T4-H.3

A Risk Communication Training Platform for the Public Sector, Built on Best Practices from the Fields of Risk Communication and Adult Learning

*Madeline Beal
US EPA*

4:15 pm T4-H.4

Using Data to Drive Risk Decision Making and Risk Communication at WMATA

*Nickea Bradley
The Washington Metropolitan Transit Authority*

4:30 pm T4-H.5

Development and Use of the Framework for Communicating Benefits, Risks and Uncertainties for Medical Products

*Paula Rausch
Food and Drug Administration*

8:30 AM – 10:00 AM	8:30 AM – 10:00 AM	8:30 AM – 10:00 AM	8:30 AM – 10:00 AM
<p>W1-A: Symposium: Water Security and Systems Analysis for Infrastructure Development Rock Creek Ballroom Chair: James H. Lambert</p>	<p>W1-B: Symposium: Resilience in Transportation Systems River Birch A Chair: David Johnson</p>	<p>W1-C: Symposium: Innovative Approaches to the Risk Assessment and Risk Management of Emerging Substances River Birch B Chair: James Ede</p>	<p>W1-D: Symposium: Computational applications in Sustainability, Resilience, Equity, & Engineering Meeting Room 2 Chair: Benjamin Rachunok</p>
<p>8:30 am W1-A.1 Stability and Resilience Through Water Security in Central Asia Benjamin Trump US Army Corps of Engineers</p>	<p>8:30 am W1-B.1 The impact of sea-level rise and roadway flooding on workforce accessibility for US coastal military installations Behnam Tahmasbi University of Maryland</p>	<p>8:30 am W1-C.1 Emerging Trends in Grouping Chemicals for Regulatory and Toxicological Purposes Kelsey Hendrixson Noblis</p>	<p>8:30 am W1-D.1 Vehicle electrification's impact on access to essential services during long-duration power outages Yamil Essus North Carolina State University</p>
<p>8:50 am W1-A.2 Risks of Water Scarcity and Climate in Asset Management for Energy Infrastructure Megan C. Marcellin University of Virginia</p>	<p>8:45 am W1-B.2 A Graph-based Data-driven Approach for Achieving Resilient Transit Systems: A Case Study of the Washington Metropolitan Area Transit Authority Celine Wehbe Vanderbilt University</p>	<p>8:50 am W1-C.2 Current Approaches to Grouping Nanomaterials for Regulatory and Toxicological Assessments James Ede Vireo Advisors</p>	<p>8:45 am W1-D.2 Quantifying Disaster Impacts with the American Housing Survey Benjamin Rachunok North Carolina State University</p>
<p>9:10 am W1-A.3 Risk of Disruption of Logistics Systems by Water Scarcity and Other Stressors DeAndre Johnson, James H. Lambert, Benjamin Trump, Thomas L. Polmateer, Igor Linkov, Venkataraman Lakshmi, Gigi Pavur University of Virginia, US Army Corps of Engineers, Engineer Research and Development Center</p>	<p>9:00 am W1-B.3 Climate Financing for Marine Transport: Analyzing the Impact of Climate Adaptation Investments in Inland Waterways Paul Johnson Vanderbilt University</p>	<p>9:10 am W1-C.3 Qualifying Novel Bio-based Materials for the Market: EHS, Sustainability and Beyond Jo Anne Shatkin Vireo Advisors</p>	<p>9:00 am W1-D.3 Indices for Measuring Disaster Social Capital Ignacio Sepulveda North Carolina State University</p>
<p>9:30 am W1-A.4 Water Security and Systems Analysis for Infrastructure Development Ronnie E. Hill Jr. University of Virginia</p>	<p>9:15 am W1-B.4 Using Travel-Time to Essential Services to Identify Vulnerable and Fragile Communities Utkuhan Genc Purdue University</p>	<p>9:30 am W1-C.4 Evaluating the Bioavailability of Novel Forms of Cellulose for Food Additive Applications Brian Zhang Vireo Advisors</p>	<p>9:15 am W1-D.4 Building a national risk and resilience planning dashboard Tom Logan University of Canterbury</p>
	<p>9:30 am W1-B.5 Path ranking approach to improve connectivity to essential service facilities and reduce inequities in accessibility Sabarethinam Kameshwar Louisiana State University</p>		<p>9:30 am W1-D.5 Placeholder Presentation Rabab Haider Massachusetts Institute of Technology</p>

8:30 AM – 10:00 AM	8:30 AM – 10:00 AM	8:30 AM – 10:00 AM	8:30 AM – 10:00 AM
W1-E: Statistical Models for Engineering and Infrastructure System <i>Meeting Room 3</i> <i>Chair: Rajesh Kandel</i>	W1-F: Symposium: School Safety and Security: Models and Practices <i>Meeting Room 4</i> <i>Chair: Jun Zhuang</i>	W1-G: Symposium: Risk Management and Emerging Biotechnology <i>Meeting Room 5</i> <i>Chair: Henry Willis</i>	W1-H: PFAS and Plastics – Risk Communication and New Technologies <i>Meeting Room 16</i> <i>Chair: Carrie Loomis</i>
8:30 am W1-E.1 A probabilistic method to assess the risk of contamination-induced insulator flashover <i>Gitanjali Bhattacharjee, Ezra Jampole, Abid Kemal Exponent, Inc.</i>	8:30 am W1-F.1 Protecting Soft Targets <i>Ian Unson, Jun Zhuang</i> <i>University at Buffalo</i>	8:30 am W1-G.1 Considering Risk and the Bioeconomy <i>Henry Willis</i> <i>The RAND Corporation</i>	8:30 am W1-H.1 Dreaded and unknown: online risk communication and polyfluoroalkyl substances (PFAS) <i>Carrie Loomis, Laura Rickard, Amelia Couture Bue, Janet Yang</i> <i>University of Maine, University at Buffalo</i>
8:50 am W1-E.2 Generalizable framework to mitigate above ground storage tank failure <i>Celine Robinson</i> <i>Duke University</i>	8:45 am W1-F.2 Reducing Risks Through Improved Crowd Modeling and Guidance in Emergency Situations: A Theoretical Approach <i>Milad Siami, Hamidreza Montazeri, Atefe Darabi</i> <i>Northeastern University</i>	8:50 am W1-G.2 Modelling the Value of Pandemic Characterization: Benefits and Risks <i>Kevin Esvelt</i> <i>Massachusetts Institute of Technology</i>	8:50 am W1-H.2 Uncertain and relevant? How conflicting message influences information processing about PFAS contamination <i>Xinxia Dong, Janet Yang</i> <i>University at Buffalo</i>
9:10 am W1-E.3 Machine learning methods to predict the occurrence of Arctic maritime incidents <i>Rajesh Kandel</i> <i>Vanderbilt University</i>	9:00 am W1-F.3 School Shootings: When will the craziness end <i>Jimmie Oxley</i> <i>University of Rhode Island</i>	9:10 am W1-G.3 Practical Perspectives on Risk Management Tradeoffs Addressing the Bioeconomy and Medical Product Supply Chains <i>Stuart Evenhaugen</i> <i>Department of Health and Human Services, Administration for Strategic Preparedness and Response</i>	9:10 am W1-H.3 The Integration of microplastics and nanoplastics into large scale multiple stressor ecological risk assessments using San Francisco Bay and the Delta Region as a case study. <i>Wayne Landis, Emma Sharpe, Cynthia Kuhn</i> <i>Western Washington University</i>
9:30 am W1-E.4 Quantum Fault Trees: Applications and Future Opportunities <i>Enrique Lopez Droguett, Gabriel San Martin</i> <i>University Of California Los Angeles</i>	9:15 am W1-F.4 Simulating and optimizing resource allocation for school safety <i>Yusuf Ihsan Tokel</i> <i>University at Buffalo</i>	9:30 am W1-G.4 Mitigating Emerging Technology Risks by Considering Ethical, Legal and Societal Issues (ELSI) <i>Daniel Gerstein</i> <i>RAND</i>	9:30 am W1-H.4 Applying new technology to inform new plastics <i>Margaret MacDonell, Cheng Wang, Kevin Hickey, Kurt Picel</i> <i>Argonne National Laboratory</i>
	9:30 am W1-F.5 School Safety and Security: Models and Practices <i>Kevin Kapadia, Richard John, Katie Byrd</i> <i>University of Southern California</i>		

8:30 AM – 10:00 AM

W1-J: Cyber- and Cryptocurrency Risks

Potomac Ballroom Salon I

Chair: Fabio Massacci

8:30 am **W1-J.1**
Decoding cryptocurrency adoption: Insights from Quebec's public sentiment and trust analysis

Nathalie de Marcellis-Warin, Thierry Warin*
Polytechnique Montreal & CIRANO, HEC Montréal

8:50 am **W1-J.2**
Cryptocurrency market risk analysis: evidence from FZL function

Seyram Pearl Kumah
Akenten Appiah-Menkah University of Skills Training and Entrepreneurial Development

9:10 am **W1-J.3**
Cyber Expert LLM Safety Assistant (CELSA): Increasing Cybersecurity Resilience Through the Development of a Large Language Model

Madison Smith, Igor Linkov, Benjamin Trump, Kelsey Stoddard, Andrew Strelzoff
US Army Corp of Engineers, Engineer Research and Development Center

9:30 am **W1-J.4**
Technical leverage: the cybersecurity risk indicator for the software supply chain

Fabio Massacci, Ranindya Paramitha
University of Trento, Vrije Universiteit Amsterdam

8:30 AM – 10:00 AM

W1-K: Lightning Session: Energy, Climate, Uncertainty, and Cyber

Potomac Ballroom Salon II

Chair: Nick Pidgeon

8:30 am **W1-K.1**
Tools for decision-making under deep uncertainty in community adaptation: which, when and how

Patrick Curran, Anita Wreford, Tom Logan
University of Canterbury, Lincoln University

8:35 am **W1-K.2**
Validating a measure of public preferences for information about uncertain science

Chelsea Ratcliff, Blue Harvill, Rebekah Wicke
The University of Georgia, The Ohio State University, Cornell University

8:40 am **W1-K.3**
Ensuring/insuring resilient energy system infrastructure

Katherine Lonergan, Salvatore Francesco Greco, Giovanni Sansavini
ETH Zurich

8:45 am **W1-K.4**
Improving the representation of cost of capital in energy system models

Katherine Lonergan, Florian Egli, Sebastian Osorio, Giovanni Sansavini, Michael Pahle, Tobias S. Schmidt, Bjarne Steffen
ETH Zurich, Potsdam Institute for Climate Impact Research (PIK)

8:50 am **W1-K.5**
Deliberating disruption: public perceptions of in home and network impacts from heat decarbonisation in the UK

Nick Pidgeon, Gareth Thomas, Karen Henwood, Fiona Shirani
Cardiff University

8:55 am **W1-K.6**
Framework for Cyber Risk Loss Distribution of Client-Server Networks: A Bond Percolation Model and Industry Specific Case Studies

Stefano Chiaradonna, Petar Jevtic, Nicolas Lanchier, Sasa Pesic
Arizona State University

9:00 am **W1-K.7**
Assessment of the poverty-line population vulnerable to climate-driven coastal flooding in Low and Middle Income Countries (LMICs)

Allison Thomey, Edward Oughton
George Mason University

9:05 am **W1-K.8**
Global public concerns about climate change and severe weather: Evidence from the World Risk Poll

Wandi Bruine de Bruin, Patrycja Sleboda, Tsegaye Ginbo Gatiso
University of Southern California, World Bank

9:10 am **W1-K.9**
From science to stakeholder-driven institutions: confronting underground infrastructure risks

Rae Zimmerman, Debra Laefer, Carlos Restrepo, Al Leidner, Wendy Dorf, Kim Hertz, Sai Charan Kukunoor, Peter Gmelch
New York University, GISMO

8:30 AM – 10:00 AM

W1-L: Wildfire Risks

Potomac Ballroom Salon III

Chair: Erin Budzyn

8:30 am **W1-L.1**
WiSE: Wildfire Safe Evacuation Planning and Management

Mohammad Pishahang, Enrique Lopez Droguett*, Marilia Ramos, Ali Mosleh
University of California, Los Angeles

8:50 am **W1-L.2**
Are southern California recreationists fire-tired? Exploring message fatigue and perceived risk levels of national forest visitors.

Erin Budzyn, Elizabeth Perry, Adam Zwickle, Jessica Miesel, José Sánchez, Alyssa Thomas, Brian Peterson
Michigan State University, USFS, Kansas State University

9:10 am **W1-L.3**
Data-Driven Analysis of Equity in Wildfire Resource Allocation

Fatima Umar, Sayanti Mukherjee
University at Buffalo, The State University Of New York

10:30 AM – 12:00 PM	10:30 AM – 12:00 PM	10:30 AM – 12:00 PM	10:30 AM – 12:00 PM
<p>W2-A: Symposium: Cost-Benefit Analysis for Critical Infrastructure Cybersecurity <i>Rock Creek Ballroom</i> Chair: Omer Keskin</p>	<p>W2-B: Symposium: Exploring Multi-Faceted Impacts of Climate Change on Energy Infrastructure <i>River Birch A</i> Chair: Renee Obringer</p>	<p>W2-C: Renewable energy and climate change mitigation <i>River Birch B</i> Chair: Elnaz Kabir</p>	<p>W2-D: Natural Hazards Perception & Communication <i>Meeting Room 2</i> Chair: Natalie Herbert</p>
<p>10:30 am W2-A.1 Cyber Risk in the US Space Sector: Exploring the Applicability of International Law to Cyber Attacks on Space Infrastructures <i>Brianna Bace</i> University at Albany</p>	<p>10:30 am W2-B.1 Predicting the Impact of Climate Change on Renewable Energy Generation in the USA <i>Joy Adul</i> Pennsylvania State University</p>	<p>10:30 am W2-C.1 Risks, benefits and opportunities for utility-scale renewable energy development. <i>Douglas Bessette, Jacob White*</i> Michigan State University</p>	<p>10:30 am W2-D.1 Risk communication strategies of EM organizations: implications from 2019 Arkansas River Floods <i>Rejina Manandhar, Ekong Peters, Bethany Swindell</i> Arkansas Tech University</p>
<p>10:50 am W2-A.2 A Graph Neural Network Approach for Analyzing Urban Rail Transit System Threat Deterrence <i>Samrat Chatterjee, Rishi Sahastrabudde, Auroop Ganguly</i> Pacific Northwest National Laboratory, Northeastern University</p>	<p>10:45 am W2-B.2 Understanding the influence of spatio-temporal climatological variations on the trends of renewable power <i>Vijay Bhaskar Chiluveru</i> Pennsylvania State University</p>	<p>10:50 am W2-C.2 Accelerating Energy Transition through Implementation of Integrated Risk Management in Renewable Projects: A Case Study of Asahan 3 (2 X 87MW) Hydropower Project <i>Bona Ryan, Agil Darmawan*</i> University of Victoria, PT Perusahaan Listrik Negara</p>	<p>10:50 am W2-D.2 Risk perception, trust and preparedness for earthquakes and tsunamis between inhabitants and tourists <i>Pamela Cisternas, Nicolás Bronfman, Luis Cifuentes, Paula Repetto, Javiera Castañeda</i> Research Center for Integrated Disaster Risk Management (CIGIDEN), Universidad Andres Bello, Pontificia Universidad Católica de Chile</p>
<p>11:10 am W2-A.3 Electronic Health Data Risk & Compliance <i>Benjamin Yankson</i> University at Albany</p>	<p>11:00 am W2-B.3 A Data-Driven Approach for Forecasting Hydropower Generation Under the Uncertainty of Water and Infrastructure Availability <i>Tharindu De Silva</i> Vanderbilt University</p>	<p>11:10 am W2-C.3 A Spatiotemporal Analysis of large-scale adoption of renewable energy sources <i>Elnaz Kabir</i> Texas A&M University</p>	<p>11:10 am W2-D.3 Improving recruiting for impactful RCTs: Outcomes from two studies in climate frontline communities <i>Natalie Herbert, Teal Harrison, Jenna Jorns, Maria Carmen Lemos, Gabrielle Wong-Parodi</i> Stanford University, Adaptation International, University of Michigan</p>
<p>11:30 am W2-A.4 Cybersecurity as Cost and Profit Centre: Critical Infrastructure Perspective <i>C. Ariel Pinto</i> University at Albany, State University of New York</p>	<p>11:15 am W2-B.4 Representing Climate Impacts in Power System Planning <i>Andrea Staid</i> EPRI</p>	<p>11:30 am W2-C.4 Energy Projects and Net Zero by 2050: Can we build enough fast enough? A Canadian perspective <i>Monica Gattinger, Michael Cleland, Rafael Armando*, Patricia Larkin</i> University of Ottawa</p>	<p>11:30 am W2-D.4 Combining behavioral data and computational modeling to assess societal implications of private adaptation to climate-induced hazards <i>Tatiana Filatova</i> Delft University of Technology</p>
<p>11:30 am W2-A.5 An integrated multipronged quantitative approach to enhance the electric grid resilience under compound climatic disasters <i>Sayanti Mukherjee</i> University at Buffalo, The State University Of New York</p>	<p>11:30 am W2-B.5 An integrated multipronged quantitative approach to enhance the electric grid resilience under compound climatic disasters <i>Sayanti Mukherjee</i> University at Buffalo, The State University Of New York</p>		

10:30 AM – 12:00 PM	10:30 AM – 12:00 PM	10:30 AM – 12:00 PM	10:30 AM – 12:00 PM
<p>W2-E: Foundations of Risk Analysis 2 <i>Meeting Room 3</i> <i>Chair: Mitch Small</i></p>	<p>W2-F: Symposium: Disaster Risk Reduction and Short- and Long-term Outcomes <i>Meeting Room 4</i> <i>Chair: Allison Reilly</i></p>	<p>W2-G: Emerging Risks – Similarities Across Contexts <i>Meeting Room 5</i> <i>Chair: Christopher Doehring</i></p>	<p>W2-H: Symposium: Interventional Probability of Causation with Potential Applications to Formaldehyde Leukemogenicity <i>Meeting Room 16</i> <i>Chair: Kenneth Mundt</i></p>
<p>10:30 am W2-E.1 Evidence-based risk assessment (EBRA) using ontology framework and Bayesian network model of causal relation of accidents: A case study of combustion devices <i>Xiaodong Feng, Kun Zhang, Yoshiki Mikami</i> <i>Nagaoka University of Technology, Kaishi Professional University</i></p>	<p>10:30 am W2-F.1 Evaluating a pre-disaster relocation subsidy plan in coastal Louisiana via high-resolution agent-based simulation <i>Fangyuan Li, Diako Abbasi</i> <i>Purdue University, University of Maryland, College Park</i></p>	<p>10:30 am W2-G.1 A framework for risk communication on emergign tehcnologies <i>Anca Rusu</i> <i>Dauphine University Paris</i></p>	<p>10:30 am W2-H.1 Causal Epidemiology: overview of current approaches <i>Anthony Russell</i> <i>Stantec</i></p>
<p>10:45 am W2-E.2 Mixture Models for the Cascade of Values, Beliefs, Preferences, and Behaviors <i>Mitch Small</i> <i>Carnegie Mellon</i></p>	<p>10:45 am W2-F.2 When federal disaster aid doesn't suffice: a multivariate analysis of aid-to-damage ratios after hurricanes <i>Linda Waters</i> <i>University of Maryland</i></p>	<p>10:45 am W2-G.2 How risk communication strategies shape public attitudes: the case of 5G infrastructure <i>Yunzhe Liu</i> <i>University of Michigan, Ann Arbor</i></p>	<p>10:45 am W2-H.2 The Importance of Evidence-Based Methods and Critical Appraisal of Systematic Biases in Evaluating Causation: Case Study on Formaldehyde and Lymphohematopoietic Cancers <i>Daniele Wikoff</i> <i>ToxStrategies</i></p>
<p>11:00 am W2-E.3 The application of the Cynefin framework in disaster risk management: predictive approaches for enhancing practices and adaptive approaches to address complexity and uncertainty. <i>Samir Batista Fernandes, Marcelo Luciano Vieira*, Rodrigo Werner da Silva</i> <i>Instituto Científico e Tecnológico em Defesa Civil</i></p>	<p>11:00 am W2-F.3 Assessing adaptive capacity to hurricane-related school closures in the US <i>Diako Abbasi</i> <i>University of Maryland, College Park</i></p>	<p>11:00 am W2-G.3 The uncanny underground: subsurface associations and their implications for perceptions of subterranean technologies <i>Catherine Lambert, Dominic Balog-Way, Katherine McComas, Julia Cousse, Evelina Trutneyte</i> <i>Cornell University, University of Geneva</i></p>	<p>11:00 am W2-H.3 Individual Probability of Causation <i>Tony Cox, George Maldonado</i> <i>Cox Associates, University of Minnesota School of Public Health</i></p>
<p>11:15 am W2-E.4 Gen Z: crisis, risk and hope <i>Gabriel Rubin</i> <i>Montclair State University</i></p>	<p>11:15 am W2-F.4 Rent Affordability after Hurricanes: Longitudinal Evidence from U.S. Coastal States <i>Kelsea Best</i> <i>University of Maryland</i></p>	<p>11:15 am W2-G.4 Workshopping trust and trustworthiness of AI from a risk communication perspective <i>Ann Bostrom, Julie Demuth, Christopher Wirz, Mariana Cains, Andrea Schumacher, Deiana Madlambayan, Jacob Radford</i> <i>University of Washington, National Center for Atmospheric Research, Cooperative Institute for Research in the Atmosphere (CIRA), Colorado State University (CSU)</i></p>	<p>11:15 am W2-H.4 Interventional Probabilities of Causation (IPoC) with epidemiological and partial mechanistic evidence: benzene vs. formaldehyde as chemical myeloid leukemogens <i>Kenneth Mundt, Tony Cox, William Thompson</i> <i>University of Massachusetts, Cox Associates</i></p>
<p>11:30 am W2-E.5 Agnostic risk management for High Impact Low probability Events <i>Gianluca Pescaroli</i> <i>University College London</i></p>	<p>11:30 am W2-F.5 Sensitivity Analysis of Voluntary Buyout and Relocation Policies via High-resolution Agent-based Modeling <i>Pragathi Jha</i> <i>Purdue University</i></p>	<p>11:30 am W2-G.5 Autonomous Vehicle (AV) Risk Perspectives <i>Christopher Doehring, Zaira Pagan Cajigas, Robert Bordley, James Bagian, Xunbi Ji, Minghao Shen, Gabor Orosz, Seth Guikema</i> <i>University of Michigan</i></p>	<p>11:30 am W2-H.5 Panel Discussion: Application of Advanced Causal Methods <i>Margaret Murray, Tony Cox, Ted Simon, William Thompson, Kenneth Mundt</i> <i>Center for Truth in Science, Cox Associates, Ted Simon LLC, University of Massachusetts</i></p>

1:30 PM – 3:00 PM

W3-A: Roundtable: Space Risk: Planetary Protection against Contamination and Planetary Defense against Asteroids

Rock Creek Ballroom

Chair: Jonathan Wiener

Today space exploration is being actively pursued by numerous governments, as well as by numerous private corporations. These actors are undertaking many missions for diverse purposes including scientific research, communications, commerce, mining, military forces, and planetary defense – not only in Earth orbit and on our Moon, but also on Mars, asteroids, and beyond. They confront an array of emerging space risks, including operational accidents, space debris, space weather, geopolitical conflict, human health in space, and more. This session will focus on two key challenges: (i) "Planetary Protection" to assess and reduce the health and ecological risks of microorganisms being transported from one planet to another, such as forward contamination from Earth to other planets, and backward contamination from Mars Sample Returns to Earth; and (ii) "Planetary Defense" to assess and prevent collisions by large asteroids and other Near-Earth Objects that could cause local disasters or a global mass extinction event. Biosafety protocols to prevent forward and backward contamination have been developed by COSPAR and national space agencies over several decades; today their application to the Mars Sample Returns (being collected on Mars now, and planned to return to Earth within a decade) remains under discussion, with uncertainties regarding questions such as: how to recognize and assess unfamiliar astrobiology; how and where to build adequate biosafety laboratory facilities to study the samples; how to make decisions about scientific advances with ultra-low-probability risks of planet-scale catastrophe; which current laws may apply or new laws may be needed (e.g. laws on environmental impact assessment, pandemic infectious disease, and invasive species); and how to enlist cooperation by other spacefaring nations. As to planetary defense, the project by NASA & partners to start deflecting asteroids (demonstrated by the pathbreaking DART mission in 2022) exhibits a confluence of expert risk analysis, astute aerospace engineering, and carefully cultivated political support for funding measures to prevent low-probability global catastrophic risk – and thus raises questions about how best to address other higher-risk asteroids, and how to apply these lessons to other extreme risks. Existing space law, such as the 1967 Outer Space Treaty, calls on governments to address some of these issues, but its coverage may have gaps, its standards may need updating for newly emerging risks, its translation into national government policies may be incomplete, and its ability to reach private actors may be in question. New or improved approaches by scientific and social communities, national governments, private corporations, and international regimes may be needed to address emerging space risks.

1:30 PM – 3:00 PM

W3-B: Climate Change and Public Health

River Birch A

Chair: Jacqueline MacDonald Gibson

1:30 pm W3-B.1
Quantifying the burden of disease attributable to ambient air pollution and climate change in the United Arab Emirates

Tongchuan Wei, Jacqueline MacDonald Gibson, Nick Kruskamp, Nathan Ellermeier*
North Carolina State University, RTI International

1:50 pm W3-B.2
Balancing Climate Resilience and Adaptation for Caribbean SIDS: Promoting Institutional Capacities

Stephanie Galaitsi, Benjamin Trump, Igor Linkov, Christopher Cummings
US Army Engineer Research and Development Center, US Army Corps of Engineers

2:10 pm W3-B.3
Climate change and the risk of cardiovascular diseases in high-income countries: A systematic literature review

Samrin Ahmed Kusum, Grace Kilroy, Jacqueline MacDonald Gibson
North Carolina State University

1:30 PM – 3:00 PM

W3-C: Adaptive Capacity and Preparedness

River Birch B

Chair: Cameron MacKenzie

1:30 pm W3-C.1
Practitioners' Perception of Self and Perception of Adaptive Capacity to Extreme Weather Events in the U.S. Gulf Coast Region

Erica Goto
University of Arizona

1:50 pm W3-C.2
Training for infrastructure surprise

Thomas Seager, David Alderson, Daniel Eisenberg, Emily Pesicka, Michelle Hancock
Arizona State University, Naval Postgraduate School

2:10 pm W3-C.3
Modeling and Assessing Capability-Based Planning for Emergency Preparedness

Cameron MacKenzie, Matthew Gabriel
Iowa State University

1:30 PM – 3:00 PM

W3-D: Environmental Justice, Hazards, and the Built Environment

Meeting Room 2

Chair: Patrick Murphy

1:30 pm W3-D.1
Examining disparities in access to critical facilities using fine-grained human mobility network

Zhiyuan Wei, Sayanti Mukherjee
University at Buffalo, The State University Of New York

1:50 pm W3-D.2
Mapping Proximity to Environmental Injustices and Risk Perception of Climate Change

*Alex Segrè Cohen, Catherine Slavik**
University of Oregon

2:10 pm W3-D.3
Identifying Vulnerable Regions by Measuring Accessibility to Critical Infrastructures Using Egonets

Sukhwan Chung
US Army Engineer Research and Development Center

2:30 pm W3-D.4
Resilience Hubs: Where will it be hardest to serve the most vulnerable?

Patrick Murphy
PSE Healthy Energy

1:30 PM – 3:00 PM	1:30 PM – 3:00 PM	1:30 PM – 3:00 PM	1:30 PM – 3:00 PM
<p>W3-E: Symposium: Exploring the Role of Psychological Factors in Shaping Judgments and Decisions on Societal Issues <i>Meeting Room 3</i> <i>Chair: Caitlin Drummond Otten</i></p>	<p>W3-F: Symposium: Bringing Sex Toys Out of the Dark – A Convergent Approach to Identifying and Mitigating Potential Health Risks <i>Meeting Room 4</i> <i>Chair: Joana Sipe</i></p>	<p>W3-G: Antecedents to Trust and Behavior <i>Meeting Room 5</i> <i>Chair: Richard John</i></p>	<p>W3-H: Cyber: Indicators vs Regulators <i>Meeting Room 16</i> <i>Chair: Ruby Booth</i></p>
<p>1:30 pm W3-E.1 Food disgust influences how people perceive risks associated with immigrants <i>Michael Siegrist</i> <i>ETH Zurich</i></p>	<p>1:30 pm W3-F.1 Problem introduction, observed data and policy gaps that instigated this work, and motivation for convergent approach. <i>Jaleesia Amos, Christine Ogilvie Hendren</i> <i>Duke University, Appalachian State University</i></p>	<p>1:30 pm W3-G.1 Associations of fear and anger with risk perceptions and preventive behaviors during the COVID-19 pandemic: May and December 2020 <i>Patrycja Sleboda, Wandí Bruine de Bruin, Joe Árvai, Caitlin Drummond Otten, Lauren Lutzke, Alex Cohen</i> <i>University of Southern California, Arizona State University, University of Oregon</i></p>	<p>1:30 pm W3-H.1 Shifting With the Adversary: Developing Indicators for A Changing Cyber Landscape <i>Ruby Booth</i> <i>Sandia National Laboratories</i></p>
<p>1:45 pm W3-E.2 Intuitive Toxicology: Beliefs about New Approach Methods for Chemical Risk Assessment Among Risk Assessors and the Public <i>Angela Bearth</i> <i>ETH Zurich</i></p>	<p>1:40 pm W3-F.2 Experimental data conducted by the co-author team to corroborate concerns about potential sex toy exposures and hazards. <i>Joana Sipe</i> <i>Duke University</i></p>	<p>1:45 pm W3-G.2 Validity of Behavioral Measures of Risk-Taking <i>Richard John, Kevin Kapadia, Coco Tang</i> <i>University of Southern California</i></p>	<p>1:50 pm W3-H.2 A Flexible and Scalable Risk Analysis Framework: From Methods to Application <i>Laura Weinstock</i> <i>Sandia National Laboratories</i></p>
<p>2:00 pm W3-E.3 Risk perception, science communication, and public understanding of battery usage and storage <i>Alex Segrè Cohen, Bunquin Jon Benedik</i> <i>University of Oregon</i></p>	<p>1:55 pm W3-F.3 Conceptual introduction of multi-perspective approach to risk management with a panel of diverse stakeholders <i>Zoe Ligon, Jaleesia Amos</i> <i>Duke University</i></p>	<p>2:00 pm W3-G.3 When does trust matter? Examining characteristics of behavior moderating effects of trust on compliance intentions <i>Hwanseok Song, Prudence Mbah</i> <i>Purdue University</i></p>	<p>2:10 pm W3-H.3 Analysis of a Federal Response to Catastrophic Cyber Risk from Cyber Insurance Perspective <i>Brianna Bace</i> <i>University at Albany</i></p>
<p>2:15 pm W3-E.4 Do individuals selectively engage their scientific reasoning abilities? <i>Caitlin Drummond Otten</i> <i>Arizona State University</i></p>	<p>2:10 pm W3-F.4 Moderated Panel with Government, Journalist, Retail, Legal Scholar, and Exposure Scholar Perspectives <i>Joana Sipe, Christine Ogilvie Hendren</i> <i>Duke University, Appalachian State University</i></p>	<p>2:15 pm W3-G.4 Public attitudes and perspectives on the tradeoffs associated with limiting nighttime lighting <i>Andrew Fox, Maggie Leon-Corwin, Hank Jenkins-Smith, Carol Silva, Cheyenne Black, Jeffrey Kelly, Kyle Horton, Carolyn Burt, Ali Khalighifar, Grace Trankina</i> <i>University of Oklahoma, Colorado State University</i></p>	<p>2:30 pm W3-H.4 Risk Formulation for NCFs: Lessons from Financial Risk Measurement and Continuity <i>Kevin Griffith</i> <i>Sandia National Labs</i></p>
<p>2:30 pm W3-E.5 That's Funny: The Role of Humor in Risk and Benefit Perceptions and Support for Geothermal Energy <i>Sara Yeo, Michael Cacciatore, Isabelle Freiling, Meaghan McKasy, Leona Y.F. Su, Sarah Rose Siskind, James Caven</i> <i>University of Utah, University of Georgia, Utah Valley University, University of Illinois at Urbana-Champaign, Hello SciCom</i></p>		<p>2:30 pm W3-G.5 Licensed to greenwash? Investigating corporations' approach to sustainability communication <i>Shupey Yuan, Haoran Chu</i> <i>Northern Illinois University, University of Florida</i></p>	

3:30 PM – 5:00 PM

W4-A: Roundtable: Taking [some of] the Wicked out of the Cyber Problem

*Rock Creek Ballroom
Chair: Debra Decker*

The concept of the “wicked problem” was introduced decades ago to characterize the complexity of applying science to policy, with different stakeholder valuations, complex causes, changing definitions of causation and success – to name a few issues.

Cybersecurity is indeed a wicked problem. It has been primarily viewed a problem that users of information and communications technology (ICT) have to manage through having stronger security and more resiliency to reduce consequences of inevitable incidents. Few have been dealing with the nature of insecurities inherent in cyberspace and the threat itself. Some insecure aspects of ICT appear to be changing as demands increase for ICT firms to provide “security by design” and to be accountable, to some extent, for their products/services' security. Thus, vulnerabilities are just starting to be better assessed/managed. However, less attention has been paid to the underlying issue of malicious actors and how to affect their capacity, capability and intent. This roundtable will consider how cybersecurity can become less of a wicked problem.

Other areas of international risk have been considered wicked problems but have been managed by the international community. The Stimson Center, a nonpartisan DC-based think tank working on international security issues, has undertaken a project to look at some other areas of international risk – from chlorofluorocarbons to dual-use materials – to consider lessons (including decision processes) that could be translated to better managing cyberspace, with a focus on accountability. One of the lessons emerging is the importance of detailed risk assessments with stakeholder input and valuations, something cyberspace has generally lacked.

Panelists

- Rosa Celorio
- Christopher Ford
- Fabio Massacci
- Unal Tatar

3:30 PM – 5:00 PM

W4-B: Roundtable: Overview of Proposed SRA Bylaws Changes and Q&A

*River Birch A
Chair: Robyn Wilson*

This is a placeholder for a session where we can provide an overview of the proposed bylaw changes and have time for feedback and discussion. Namely we will discuss the shift from an Executive Committee and Council to a Board and Advisory Council, the restructuring of committees, and other minor shifts in our governance structure. The theme, SG, and topic selections are not relevant – but perhaps this is about disaster preparedness, foundational issues in risk analysis and stakeholder engagement.

Panelists

- Seth Guikema
- Terje Aven
- Katherine McComas
- Henry Willis
- Jim Lambert

3:30 PM – 5:00 PM

W4-C: Roundtable: New Developments in Economic Impact Assessments of Risk Reducing Policies

*River Birch B
Chair: Elizabeth Quin*

Regulatory impact assessments of risk reducing regulations are required by several Executive Orders. These analyses include cost-benefit analysis and assessments of other impacts. Guidance and oversight are provided by the U.S. Office of Management and Budget (OMB), which is part of the Executive Office of the President. OMB's Circular A-4 provides guidelines to Federal agencies on the development of regulatory analysis and accounting statements. These requirements have been established over the last several decades. The current administration issued a new Executive Order 14094 “Modernizing Regulatory Review”, which reinforces the basic principles of previous executive orders and directs OMB to issue revisions to Circular A-4 by April 6, 2024. Earlier this year OMB published the much-anticipated proposed revisions to Circular A-4 and requested public comment. The proposed revisions raise several interesting benefit-cost analysis issues, including appropriate discount rates and distributional impacts of regulations.

This roundtable will bring together experts from academia and U.S. Federal agencies to discuss the proposed revisions and potential changes to current regulatory analysis practices. This group consists of established and well-respected professionals with a long history of conducting economic analyses of risk regulations, including contributors to development of HHS, EPA, DOT, and OMB guidelines for regulatory impact assessments.

Updating and finalizing Circular A-4 is one of the top priorities of the administration and may impact policies for years to come as well as the framework for conducting regulatory impact assessments of these policies. Discussions resulting from this roundtable will contribute to shaping practices related to economic analysis of regulations that reduce health, safety, and security risks.

Panelists

- Lisa Robinson
- Jonathan Wiener
- Deborah Aiken
- Chris Dockins
- Aaron Kearsley
- Linda Abbott

3:30 PM – 5:00 PM

W4-D: Symposium: Wildland Fire – Managing Risk and Impacts

*Meeting Room 2
Chair: Alison Cullen*

**3:30 pm W4-D.1
Case Studies and Validation of WISE Simulation Platform for Wildfire Evacuation Planning and Risk Management**

*Ali Mosleh
University of California, Los Angeles*

**3:45 pm W4-D.2
Assessing the Impact of Development in the Wildland-Urban Interface on Projected Wildfire Risk**

*Reed Humphrey, Lee Kessenich, Alison Cullen
University of Washington, National Center for Atmospheric Research*

**4:00 pm W4-D.3
Presentation Title: Science-Based Modification of the Atmospheric River Scale for Wildfire Impacted Regions**

*Emily Wells
US Army Corps of Engineers*

**4:15 pm W4-D.4
Quantifying the Impact of the Prescribed Burning on Mitigating Wildland Fire Risk**

*Jun Zhuang
University at Buffalo*

**4:30 pm W4-D.5
Characterizing Ignitions Which Evolve into Resource Intensive Wildfires in the Western US**

*Alison Cullen, Brian Goldgeier, Erin Belval
University of Washington, USDA Forest Service*

3:30 PM – 5:00 PM

W4-E: Risk Visualization, Perception, and Communication

Meeting Room 3
Chair: Fernando Ferrante

3:30 pm **W4-E.1**
The Dynamics of Fear: Exploring Logarithmic Changes in COVID-19 Risk Perception over Time in South Korea

Ji-Bum Chung, Min-Kyu Kim, BoEun Lee
Ulsan National Institute of Science and Technology

3:45 pm **W4-E.2**
Governance during Uncertainty: The role of governors and federalism in US disaster response during the COVID-19 pandemic

Kasia Klasa
University of Michigan

4:00 pm **W4-E.3**
Proposal for a Single Index (CIRIX) for Quantifying Resilience of Critical Infrastructures/Entities Against Extreme Threats

Aleksandar Jovanovic, Helene Schernberg
Steinbeis EU-VRI, ETHZ Risk Center

4:15 pm **W4-E.4**
Public transportation network vulnerability assessment considering both overall and equity aspects

Behnam Tahmasbi, Saeed Saleh Namadi, Asal Mehdi Tabrizi
University of Maryland

4:30 pm **W4-E.5**
Exploring Risk Visualization and Communication Tools for Nuclear Reactors

Fernando Ferrante, Mark Wishart, Andrew Miller
Electric Power Research Institute, Jensen Hughes

3:30 PM – 5:00 PM

W4-F: Symposium: Safety assessment of cultured meat and seafood products

Meeting Room 4
Chair: Kimberly Ong

3:30 pm **W4-F.1**
Safety assessment of cultured meat and seafood products: Insights from regulators, industry, and safety experts

Kimberly Ong
Vireo Advisors

3:50 pm **W4-F.2**
Microbial risks in cultured meat and seafood products

Wei Ng
Vireo Advisors

4:10 pm **W4-F.3**
Risk assessment of growth factors and culture media inputs

Kora Kukkk, Kimberly Ong, Jo Anne Shatkin
Vireo Advisors

4:30 pm **W4-F.4**
A simulated digestion model to evaluate the safety of bioactive molecules

Christie Sayes
Baylor University

3:30 PM – 5:00 PM

W4-G: Hurricane Research – A Dynamic Risk Science

Meeting Room 5
Chair: Gabrielle Wong-Parodi

3:30 pm **W4-G.1**
Social influence and protective action during rapidly intensifying tropical cyclones

Gabrielle Wong-Parodi, Natalie Herbert, Andrea Schumacher, Hugh Walpole, Rebecca Morss, Julie Demuth
Stanford University, Cooperative Institute for Research in the Atmosphere (CIRA) at Colorado State University (CSU), National Center for Atmospheric Research

3:45 pm **W4-G.2**
Changing risk perceptions as hurricanes approach landfall: longitudinal panel data for 3 hurricanes

Julie Demuth, Andrea Schumacher, Rebecca Morss, Gabrielle Wong-Parodi, Natalie Herbert, Hugh Walpole
National Center for Atmospheric Research, Cooperative Institute for Research in the Atmosphere (CIRA) at Colorado State University (CSU), Stanford University

4:00 pm **W4-G.3**
Subjective attribution, risk perceptions, and adaptation and environmental behaviors

Gabrielle Wong-Parodi, Dan Relihan, Dana Rose Garfin
Stanford University, University of California Irvine, UCLA

4:15 pm **W4-G.4**
“I don’t trust you so I am staying put:” media dependencies surrounding Hurricane Ian and their impact on risk perception, mitigation, evacuation, and trust of emergency responders.

Ken Lachlan, James DiCairano, Christine Gilbert, Patric Spence
University of Connecticut, SUNY- Stony Brook, University of Central Florida

4:30 pm **W4-G.5**
Efficacy and real-time behavior during hurricanes: Evidence from three case studies, 2020-2022

Natalie Herbert, Julie Demuth, Rebecca Morss, Andrea Schumacher, Hugh Walpole, Gabrielle Wong-Parodi
Stanford University, NCAR, Cooperative Institute for Research in the Atmosphere (CIRA) at Colorado State University (CSU), National Center for Atmospheric Research

3:30 PM – 5:00 PM

W4-H: Roundtable: DARPA Resilient Supply-and-Demand Networks Program

*Meeting Room 16
Chair: Mark Flood*

Military and Civilian infrastructure as well as manufacturing and trade have been adversely impacted disrupted by recent shocks and stresses associated with global change, conflicts and supply chain breakdowns. The Department of Defense (DoD) has a critical need to secure its sources of material against both intentional—including adversarial—and unintentional disruptions. DARPA has initiated Resilient Supply-and-Demand Networks (RSDN) program to address strategic challenges of supply chain networks. The program views SDNs as open, complex, evolving systems whose dynamics reflect the impact of both external factors (e.g., conflict, climate change) and internal behaviors (e.g., inventory management). These factors are often driven by the locally focused decisions of SDN participants themselves. SDN resilience is a characteristic of the SDN system as a whole. Resilience enhancements, therefore, require coordinated action among SDN participants, who may individually lack the incentive and discretion to undertake this complex process. This session will present the program and its progress to developing set of tools capable of assessing SDN risk and resilience and conducting stress testing to decide on implementing resilience-by-design and resilience-by-intervention in complex networks.

Panelists

- Igor Linkov
- Andres Gonzalez
- Adam Rose
- Kevin Kiernan
- Heather Pastolic

3:30 PM – 5:00 PM

W4-J: Roundtable: Prospects from the MENA region, why we need an SRA Chapter & what it may bring

*Potomac Ballroom Salon I
Chair: Frederic Boudier*

Lessons from selected cooperation projects with MENA countries
Ben Trump

Use of Risk Analysis to Inform Evidence-Based Environment and Health Policymaking in Abu Dhabi

*Jacqueline MacDonald Gibson
North Carolina State University*

The Main institutional risks threatening the MENA region

*Nouh El Harmouzi
Arab Center for Research*

Presentation title: Establishing a new chapter in the Mena region

*Frederic Boudier
University of Stavanger*

3:30 PM – 5:00 PM

W4-K: Symposium: Methods for Evaluating the Efficacy of Risk Management Strategies in Incident Response and Disaster Mitigation Scenarios

*Potomac Ballroom Salon II
Chair: Joost Santos*

3:30 pm W4-K.1
Drought Impact Mitigation and Policy Analysis

*Joost Santos
George Washington University*

3:50 pm W4-K.2
Enhanced Transportation Mobility using AI Technologies and Intelligent Transportation Systems

*Shital Thekdi
University of Richmond*

4:10 pm W4-K.3
DiSenDa: Disease Surveillance with Multi-Modal Sensor Network and Data Analytics

*Sheree Pagsuyoin
UMass Lowell*

4:30 pm W4-K.4
Locating Emergency Response Facilities in the Metrorail System: a Decision Support Tool

*Elizabeth Ottinger
George Washington University*

3:30 PM – 5:00 PM

W4-L: Risk, Governance, and Accidents

*Potomac Ballroom Salon III
Chair: Robin Dillon-Merrill*

3:30 pm W4-L.1

Existential risks: Climate change, artificial intelligence and the apocalypse

*David Berube
NCSU*

3:50 pm W4-L.2

Voluntary ESG disclosures: an evolving economic risk for greenwashing conduct

Neal Brody, Robin Cantor
Berkeley Research Group LLC*

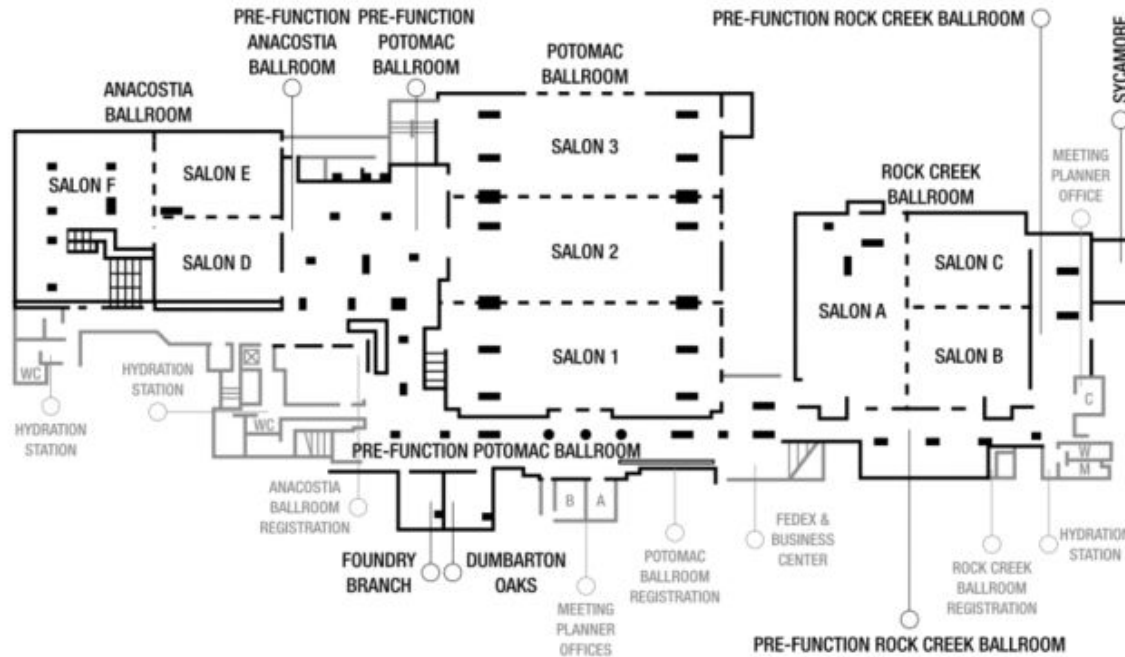
4:10 pm W4-L.3

The Relationship between Freight Train Length and the Risk of Derailment

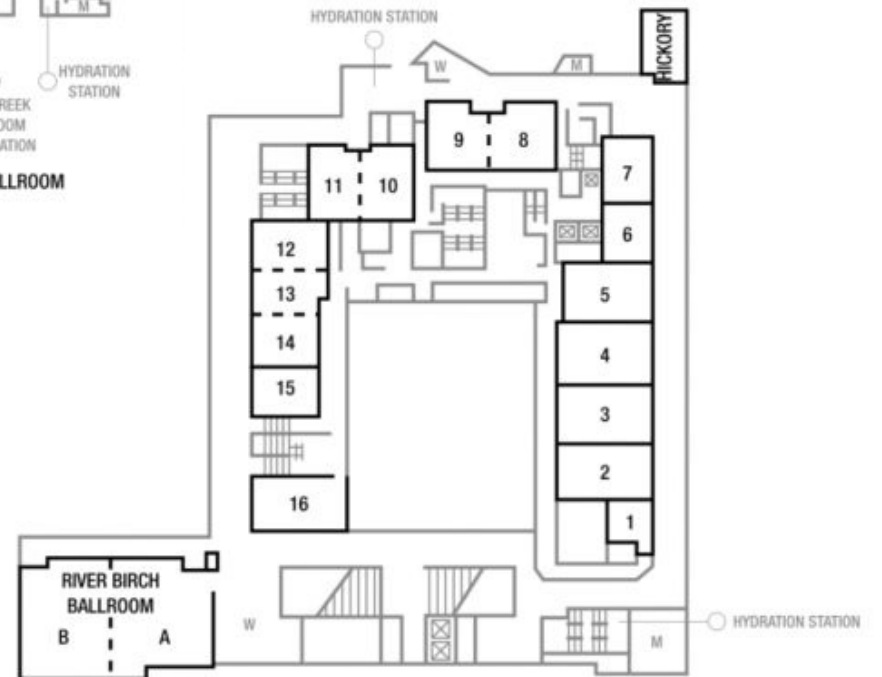
*Robin Dillon-Merrill, Peter Madsen, Kostas Triantis
Georgetown University, BYU, Virginia Tech*

Westin Washington DC Floor Plans

BALLROOM LEVEL



MEETING ROOM LEVEL



Author Index

S		Sipe, Joana.....44	Thekdi, Shital.....47	Wang, Tzu-Hsin.....22	Y	
Sahastrabuddhe, Rishi.....41	Siskind, Sarah Rose.....44	Thistlethwaite, Jason.....20	Warin, Thierry.....40	Waris, Aleem.....28	Yamazaki, Eriko.....29	
Salangi, Latifa.....25, 27	Sklar, Rachel.....22	Thomas, Alyssa.....40	Wartman, Joseph.....23	Waters, Linda.....42	Yang, Janet.....20, 39	
Salazar, Christopher.....23	Slavik, Catherine.....24, 43	Thomas, Gareth.....40	Watkins, Scott.....30	Watson, Jack.....30	Yankson, Benjamin.....41	
Salcedo, Gustavo.....27	Sleboda, Patrycja.....25, 40, 44	Thomey, Allison.....40	Wehbe, Celine.....38	Weinstock, Laura.....44	Yao, Shuo.....27	
Saleh Namadi, Saeed.....46	Sling, Katja.....29	Thompson, William.....42	Wei, Tongchuan.....43	Weller, Joshua.....31	Yazdi-Samadi, Mohammad Reza.....25	
Sánchez, José.....40	Slywchuk, Lisa.....29	Tissot, Philippe.....23	Wei, Zhengxi.....29	Wells, Emily.....45	Yeo, Jungwon.....24	
Sanders, Kelly.....21	Small, Mitch.....42	Tiwari, Ashwani.....33	Wei, Zhiyuan.....27, 43	Werner da Silva, Rodrigo.....23, 42	Yeo, Sara.....44	
San Martin, Gabriel.....39	Smith, Donna.....29	Tonn, Gina.....23	Wen, Mark.....22, 35	Whatling, Paul.....30	Yoon, Ho Young.....28	
Sansavini, Giovanni.....30, 40	Smith, Madison.....40	Torabzadeh, Seyed Ahmad.....29	Wei, Zhiyuan.....27, 43	Whitaker, Barbee.....30	Yuan, Shupeil.....25, 44	
Santos, Joost.....47	Smith, Nathan.....24	Toran, Katherine.....35	Wells, Emily.....45	White, Alice.....31	Yu, Hwa Lung.....22, 24	
Sayes, Christie.....46	Smith, William.....27	Trankina, Grace.....44	Werner da Silva, Rodrigo.....23, 42	White, Jacob.....41	Yusa, Satoru.....24	
Scallan Walter, Elaine.....31	Soane, Emma.....37	Tran, Tuan A.....29	Wells, Emily.....45	White, Miranda.....23	Yu, Taeyeong.....29	
Schernberg, Helene.....46	Solemani, Nafiseh.....36	Triantis, Kostas.....47	Werner da Silva, Rodrigo.....23, 42	White, Rebekah.....28, 40		
Schernberg, Helene.....46	Sonawane, Babasaheb.....20	Trump, Benjamin.....23, 27, 38, 40, 43, 47	Werner da Silva, Rodrigo.....23, 42	Wikoff, Daniele.....42		
Schmidt, Tobias S.....40	Song, Hwanseok.....44	Trutneyte, Evelina.....42	Werner da Silva, Rodrigo.....23, 42	Wilkins, Amina.....36		
Schneider, Max.....31	Sparr, Christina.....33	Tuler, Seth.....31	Werner da Silva, Rodrigo.....23, 42	Williams, John.....23		
Schuler, Krysten.....20	Speierman, Emily.....23	U		Williams, Michael.....21		
Schumacher, Andrea.....42, 46	Spence, Elspeth.....24	Umar, Fatima.....40	Umar, Fatima.....40	Williams, Richard.....31		
Schweizer, Pia-Johanna.....31	Spence, Patric.....46	Unson, Ian.....39	Unson, Ian.....39	Willis, Henry.....39		
Scott, Jose.....28	Staid, Andrea.....41	Usuda, Yuichiro.....24	Usuda, Yuichiro.....24	Wilson, Matthew.....31		
Seager, Thomas.....25, 43	Stanish, Paul.....34	V		Winstead, Nick.....25		
Segal, Deborah.....35	Stankovski, Andrej.....30	Vaiknoras, Kate.....25	Vaiknoras, Kate.....25	Wirz, Christopher.....20, 23, 42		
Segrè Cohen, Alex.....24, 43, 44	Stedman, Richard.....20	Valdez, Rupa S.....20	Valdez, Rupa S.....20	Wishart, Mark.....46		
Sekiya, Naoya.....20	Steffen, Bjarne.....40	Vaughn, David.....35	Vaughn, David.....35	Womack, Donna.....25		
Selod, Harris.....36	Steinbuks, Jevgenijs.....36	Velho, Raphaela Martins.....20	Velho, Raphaela Martins.....20	Wong-Parodi, Gabrielle.....41, 46		
Semple, Catherine.....33	Stoddard, Kelsey.....21, 40	Vengosh, Avner.....25	Vengosh, Avner.....25	Wreford, Anita.....40		
Sengupta, Ribhu.....23	Strelzoff, Andrew.....40	Verhougstraete, Marc.....22	Verhougstraete, Marc.....22	Wu, Fanfan.....20		
Seno Alday, Sandra.....27	Strupp, Christian.....30	Verrill, Linda.....20	Verrill, Linda.....20	Wu, Felicia.....31		
Sepulveda, Ignacio.....38	Stump, Tyler.....22, 31	Veto, Vanessa.....27	Veto, Vanessa.....27	Wu, Kuen-Yuh.....27, 28		
Shah, Prena.....20	Su, Leona Y.F.....44	Vrbova, Linda.....29	Vrbova, Linda.....29	Wu, Yun-Yu.....28		
Shah, Shaista.....30	Swanson, Tessa.....36	W				
Shao, Kan.....28, 35	Swindell, Bethany.....41	Waddell, Jan Trumble.....29	Waddell, Jan Trumble.....29			
Sharpe, Emma.....39	Szczytko, Rachel.....25, 27	Waddell, Lisa.....29	Waddell, Lisa.....29			
Shashkina, Olga.....25	T		Walerstein, Lindsay.....20			
Shatkin, Jo Anne.....38, 46	Tahmasbi, Behnam.....38, 46	Wales, Brandon.....25	Wales, Brandon.....25			
Shaw, Bret.....25	Takanori, Jun-Ichi.....30	Wallace, Thomas.....31	Wallace, Thomas.....31			
Shen, Minghao.....42	Takeyoshi, Masahiro.....27	Walpole, Hugh.....46	Walpole, Hugh.....46			
Shinohara, Naohide.....29	Tam, Clarence.....29	Wang, Cheng.....23, 39	Wang, Cheng.....23, 39			
Shirani, Fiona.....40	Tameru, Berhanu.....36	X				
Shorter, Kayla.....21, 28	Tang, Coco.....44	Xu, Yingqiang.....25	Xu, Yingqiang.....25			
Siami, Milad.....39	Tang, Lizhan.....27					
Siegrist, Michael.....44	Tang, Lizhan.....27					
Siemer, William.....20	Tatiana Filatova.....41					
Silva, Carol.....37, 44	Terry, Nick.....23					
Simon, Ted.....42						