

*The National Academies of*  
**SCIENCES • ENGINEERING • MEDICINE**

*Division of Behavioral and Social Sciences and Education  
Board on Environmental Change and Society*

**Methods for Characterizing Risk in Climate Change Assessments:  
A Workshop for the U.S. Global Change Research Program**

The National Academy of Sciences Building - Room 120  
2101 Constitution Avenue, NW  
Washington, DC 20418  
March 23-24, 2016

**Purpose of this meeting:** The U.S. Global Change Research Program (USGCRP), in response to its legislative mandate, conducts periodic National Climate Assessments to inform the nation about observed changes in climate, the current status of the climate, and anticipated trends for the future. The Program has conducted three such assessments and intends to develop a sustained assessment process. This workshop is designed to address a key issue for NCAs: providing information about climate-related hazards, risks, and opportunities in formats that are understandable, credible, and useful to decision makers in their efforts to reduce greenhouse gas emissions and to reduce vulnerability and increase resilience to climate change in the regions or sectors for which they are responsible.

**AGENDA**

**March 23**

**8:30 am**

Welcome, introductions, workshop background and objectives

*Richard Moss, Chair, Board on Environmental Change and Society*

*Joseph Arvai, University of Michigan, Workshop Planning Committee Chair*

**8:40 am**

**The objectives for, and desired impact of the workshop**

*John P. Holdren, White House Office of Science and Technology Policy*

*Thomas Karl, USGCRP*

**9:10 am**

**Panel on issues, methods and approaches for characterizing and communicating risk in climate change assessments** (see [background paper](#))

Introductory Remarks: *Joseph Arvai, University of Michigan, Workshop Planning Committee Chair*

**9:15 am**

1. Risk: Consequences to consider in climate change assessments

*Alice Hill, National Security Council*

**9:45 am**

2. Risk: Likelihoods of significant consequences

*Ben Sanderson, National Center for Atmospheric Research* [[Presentation](#)]

**10:15 am** Break

**10:30 am** 3. Risk: Treatment of uncertainty in climate change assessments

*Robert Kopp, Rutgers University* [[Presentation](#)]

**11:00 am** 4. Framing climate change risks to enhance effective communication

*Robyn Wilson, The Ohio State University* [[Presentation](#)]

**11:30 am** 5. Characterizing risk-based trade-offs to support climate change decisions

*Robin Gregory, University of British Columbia* [[Presentation](#)]

**12:00 pm** 6. A framework for climate change decision-making under uncertainty

*Inês Azevedo, Carnegie Mellon University* [[Presentation](#)]

**12:30 pm** Lunch

**1:30 pm** **Case-focused panels: Methods and Approaches for Risk-Based Assessment and Communication**

Each panel will consider, in the context of one of the chapters in the NCA, how the chapter could be written to take into account the risk issues and methods raised in the earlier discussion. Speakers will be asked to address issues of characterizing risks (consequences, likelihoods, and uncertainties), process issues in making risk information useful for decisions, and informing tradeoffs among risks to be reduced. Moderators will help guide the discussion and offer summative comments.

**Panel 1: Climate Change and the U.S. Southwest**  
[NCA3 Chapter 20 - Southwest](#)

*Moderator: Kristie Ebi, University of Washington*

*Gregg Garfin, University of Arizona* [[Presentation](#)]

*Bradley Udall, Colorado State University*

*Jonathan Overpeck, University of Arizona*

**3:00 pm** Break

- 3:15 pm**      **Panel 2: Impacts of Climate Change on Coastal Regions**  
[NCA3 Chapter 25 - Coasts](#)
- Moderator: Claudia Tebaldi, National Center for Atmospheric Research*
- Robin Gregory, University of British Columbia*  
*Susanne Moser, Independent Consultant* [\[Presentation\]](#)  
*Margaret Davidson, National Oceanic and Atmospheric Administration*
- 4:45 pm**      Concluding comments by moderators
- 5:00 pm**      Adjourn
- March 24**
- 8:30 am**      **Welcome, Recap of Day 1, and Plan for Day 2**
- Joseph Arvai, University of Michigan, Workshop Planning Committee Chair*
- 8:45 am**      **Panel 3: Energy-Land-Water Interactions**  
[NCA3 Chapter 10 - Energy, Water, and Land](#)
- Moderator: Robyn Wilson, The Ohio State University*
- Peter Gleick, Pacific Institute*  
*Paul Fleming, Seattle Public Utilities*  
*Joseph Arvai, University of Michigan, Workshop Planning Committee Chair*
- 10:15 am**      Break
- 10:30 am**      **An EPA Approach to Assessment: “Climate Change in the United States”**
- Moderator: Chris Weaver, U.S. Environmental Protection Agency*
- Jeremy Martinich, U.S. Environmental Protection Agency* [\[Presentation\]](#)
- 10:45 am**      **General Discussion: Key Risk-Related Topics for the National Climate Assessments**
- Moderator: Richard Moss, Joint Global Change Research Institute* [\[Presentation\]](#)
- Key Topics:**
1. Best Practices for Characterizing Risks
  2. Best Processes for Conveying Risk Information
  3. Approaches to Comparing Risk Information Across Sectors or Regions
  4. Research Needs and Additional Issues to be Considered in National Assessments
- 12:15 pm**      Lunch

**1:00 pm**      **Closing Panel: *One Small Step* Takeaways for NCA4 and *One Giant Leap* Takeaways for NCA5+**

*Moderator: Joseph Arvai, University of Michigan, Workshop Planning Committee Chair*

1. Comments from organizing committee members: *Baruch Fischhoff, Carnegie Mellon University* [[Presentation](#)]; *Chris Weaver, U.S. Environmental Protection Agency* [[Presentation](#)]
2. Comments from users of the NCA: *Paul Fleming, Seattle Public Utilities*; *Margaret Davidson, National Oceanic and Atmospheric Administration (by phone)*
3. Comments from the USGCRP perspective: *Michael Kuperberg, USGCRP*
4. General Discussion

**2:30 pm**      Adjourn