

The Dynamics of Climate and the Macroeconomy

A Workshop

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**AC Hotel by Marriott
Washington DC Capitol
Hill Navy Yard**
867 New Jersey Ave SE,
Washington, DC 20003

Purpose

The first day of the workshop will compare perspectives on nonlinear, cascading and compounding risk to inform how climate science and macroeconomics may collectively better understand climate risk. It will focus on how the different disciplines assess and model cascading and compounding impacts. In a collaborative spirit the aim will be to establish what the community can learn from each other's approaches to studying cascading risk, and to start a workshop dialogue on what research gaps need to be filled. The second day of the workshop will explore examples and lessons learned from past nonlinear, cascading and compounding risk. The workshop will culminate in interactive breakouts to identify needs and priorities from the lens of developing a research agenda to advance research on systemic risk assessment.

WEDNESDAY, NOVEMBER 1, 2023 | 10:00 AM–4:30 PM | BLUE GRANITE ROOM

9:00–10:00 **Coffee and Light Breakfast Available**

10:00–10:30 **Opening Remarks**
Opening remarks from co-chairs

10:30–12:00 **Session 1: Nonlinear, Cascading, and Compounding Risks in the Climate**
~15 min overview keynote followed by a series of ~5-min flash talks and a panel discussion
This panel will first consider the characteristics of weather/climate changes and variability, including temporal and spatial manifestations. We will then hear from experts who are translating climate risks into impacts, adaptation, and vulnerability of coupled human-natural systems.

Moderators: *Tim Lenton* (workshop co-chair) and **Brad Colman** (workshop planning committee)

Overview: **David Armstrong McKay**, Research Impact Fellow, University of Exeter & Global Systems Institute

Panelists:

- **Matt Huber**, Professor, Department of Earth, Atmospheric, and Planetary Sciences, Purdue University
- **Kris Ebi**, Professor in the Center for Health and the Global Environment, University of Washington
- **Elisabeth Gilmore**, Associate Professor in Environmental Engineering, Carleton University
- **Mikhail Chester**, Professor, School of Sustainable Engineering and the Built Environment, Arizona State University

12:00–1:00 **LUNCH**

1:00–2:30 **Session 2: Nonlinear, Cascading, and Compounding Risks in the Economy**

~15 min overview keynote followed by a series of ~5-min flash talks and a panel discussion

The second session will delve deeper into the propagation mechanisms of systemic risk across sectors, regions, and time. This panel will open with experts who consider micro-behavioral responses to risks cascading through the economy followed by macroeconomists who think about risks cascading through the macroeconomy and how climate might factor into risk cascades. The panel will bridge the micro and macro levels and attempt to find linkages between the two.

Moderators: **Wendy Edelberg** (Roundtable co-chair and workshop planning committee) and **Lori Hunter** (workshop planning committee)

Overview: **Karen Fisher-Vanden**, Distinguished Professor of Environmental and Resource Economics and Public Policy, Pennsylvania State University

Panelists:

- **Catherine Hausman**, Associate Professor of Public Policy, University of Michigan
- **Etienne Espagne**, Senior Climate Economist, World Bank
- **Stephie Fried**, Senior Economist, Federal Reserve Bank of San Francisco
- **Yongyang Cai**, Professor, Department of Agricultural, Environmental, and Developmental Economics, The Ohio State University
- **Matthew Kahn**, Provost Professor of Economics, University of Southern California

2:30–3:00 **BREAK**

3:00–4:00 **Interactive Breakouts: Capacity Building and Collaboration**

Self-selected breakout groups have a 1-hour discussion to articulate their approach to research and challenges that arise related to their group's topic to build capacity for collaboration.

Moderators: **Sanya Carley** (University of Pennsylvania), **Tim Garrett** (University of Utah), **Sarah Kapnick** (National Oceanic and Atmospheric Administration), **Jeremy Martinich** (Environmental Protection Agency), **Yongyang Cai** (Ohio State University), **Frances Moore** (University of California, Davis), **James Neumann** (Industrial Economics), **Peter Wilcoxon** (Syracuse University)

4:00–4:30 **Report Back**

Rapporteurs will have ~3 minutes to summarize key takeaways from their breakout discussion.

END OF DAY 1

THURSDAY, NOVEMBER 2, 2023 | 10:15 AM–4:15 PM | BLUE GRANITE ROOM

9:00–10:15 **Coffee and Light Breakfast Available**

10:15–10:30 **Opening Remarks + Recap Day 1**

Co-Chairs convene meeting

10:30–12:00 **Session 3: Past and Contemporary Lessons in Macroeconomic Shocks and Risks**

~10-min presentations + ~40 min Q&A

The third session will probe the sources of nonlinear, cascading, and compounding macroeconomic risk through a series of recent historical examples. The aim will be to draw out specific lessons about the nature and mechanisms of macroeconomic risk that are potentially relevant to climate-related risk (interpreted as both physical and transition risks).

Moderators: *Sathya Gopalakrishnan* (workshop planning committee)

Panelists:

- **Markus Brunnermeier**, Edwards S. Sanford Professor in Economics, Princeton University
- **Laurence Ball**, Professor of Economics, John Hopkins University
- **Vellore Arthi**, Assistant Professor in Economics, University of California, Irvine
- **Joseph Tainter**, Professor, Environment & Society, Utah State University

12:00–1:15 **LUNCH**

1:15–4:00 **Session 4: A Path Forward**

This fourth session will consider how to advance research on systemic risk assessment related to climate and macroeconomic dynamics. It will start with a panel offering different sectoral and institutional perspectives on this challenge—both academic and practical perspectives—before workshop participants identify priorities for a research agenda in structured breakouts.

Moderators: *Eric Kemp-Benedict* (workshop co-chair) and *Paulina Jaramillo* (workshop planning committee)

1:15–2:00 **Perspectives on Future Directions**

Speakers:

- **Ruth Richardson**, Executive Director, Accelerator for Systemic Risk Assessment
- **Katharine Mach**, Professor at the Rosenstiel School of Marine, Atmospheric, & Earth Science, University of Miami
- **Esteban Rossi-Hansberg**, Glen A. Lloyd Distinguished Service Professor, Kenneth C. Griffin Department of Economics, University of Chicago
- **Brian O'Neill**, Earth Scientist and Laboratory Fellow, Pacific Northwest National Laboratory
- **Tony Smith**, Professor of Economics Chair, Yale University

2:00–2:10 **Instructions for Breakouts**

2:10–3:30 **World Café Breakouts: Research Agenda Development**

Four 20-minute rounds. Workshop participants will rotate through each of the themed groups. At the beginning of each round, the moderator will summarize the previous discussion so each round builds on the previous ones.

Moderators: *Tim Garrett* (University of Utah), **Robert Kopp** (Rutgers University), **Adele Morris** (Federal Reserve Board), **Brian O'Neill** (Pacific Northwest National Laboratory), **Jeremy Martinich** (Environmental Protection Agency), **Kyle Meng** (Council of Economic Advisers), **James Neumann** (Industrial Economics), **Jisung Park** (University of Pennsylvania)

3:30–3:45

BREAK

Virtual and in-person rapporteurs debrief to identify key takeaways for their breakout topic.

3:40–4:10

Report Back + Discussion

One rapporteur from each topic will have ~5 minutes to summarize the key takeaways from the in-person and virtual breakout discussions.

4:10–4:15

Wrap Up

MEETING ADJOURNS