

Climate Change and Society  
ESP 891/ SOC 950  
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### Course outline

3 September—Overview of the course, framing the problem

Readings:

+National Academies. 2008. *Understanding and Responding to Climate Change*.

<http://americasclimatechoices.org/>

10 September— The climate system

Readings:

+Intergovernmental Panel on Climate Change. Working Group I. 2007. *Climate Change 2007: The Physical Science Basis*. Summary for Policy Makers. <http://www.ipcc.ch/>

OR

Intergovernmental Panel on Climate Change. Working Group I. 2007. *Climate Change 2007: The Physical Science Basis*. Technical Summary

+Katherine Richardson et al. 2009. *Synthesis Report: Climate Change: Global Risks, Challenges and Decisions*. University of Copenhagen. <http://climatecongress.ku.dk/pdf/synthesisreport>

+Spencer R. Weart. 2008. *The Discovery of Global Warming*. Harvard University Press.

OR

“A Hyperlinked History of Climate Change Science” and as much else of Weart’s materials as you care to read.

17 September—Climate as a factor in human history

Readings:

+ Robert Costanza, Lisa Graumlich, Will Steffan, Carole Crumley, John Dearing, Kathy Hibbard, Rik Leemans, Charles Redman, and David Schimel. 2007. "Sustainability or Collapse: What Can We Learn from Integrating the History of Humans and the Rest of Nature?" *Ambio* 36:522-527.

+ Peter J Richerson, Robert Boyd, and Robert L Bettinger. 2001. "Was Agriculture Impossible During the Pleistocene But Mandatory During the Holocene? A Climate Change Hypothesis." *American Antiquity* 66:387-411.

+ Peter J Richerson and Robert Boyd. 2001. "Institutional Evolution in the Holocene: The Rise of Complex Societies." *Proceedings of the British Academy* 110:197-204.

+ David D Zhang, Peter Brecke, Harry F Lee, Yuan-Qing He, and Jane Zhang. 2007. "Global climate change, war, and population decline in recent human history." *Proceedings of the National Academy of Sciences* 104:19214-1921

## 24 September-- Vulnerabilities and resilience

### Readings:

- +Jeanne X Kasperson, Roger E Kasperson, and B.L. II Turner. In press. "Vulnerability of Coupled Human-Ecological Systems to Global Environmental Change." Pp. 231-294 in *Threats to Sustainability: Understanding Human Footprints on the Global Environment*, edited by E. Rosa, A. Diekmann, T. Dietz, and C. Jaeger. Cambridge, Massachusetts: The MIT Press.
  - +U.S. Global Change Research Program. 2009. Unified Synthesis Product. <http://www.globalchange.gov/>
  - +Intergovernmental Panel on Climate Change. Working Group II. 2007. *Climate Change 2007: Impacts, Adaptation and Vulnerability*. Summary for Policy Makers. <http://www.ipcc.ch/>
- OR

Intergovernmental Panel on Climate Change. Working Group II. 2007. *Climate Change 2007: Climate Change 2007: Impacts, Adaptation and Vulnerability*. Technical Summary

## 1 October--Anthropogenic drivers, mitigation and policy.

### Readings:

- +Thomas Dietz, Eugene A Rosa, and Richard York. In press. "Human Driving Forces of Global Change: Examining Current Theories." Pp. 83-132 in *Threats to Sustainability: Understanding Human Footprints on the Global Environment*, edited by E. A. Rosa, A. Diekmann, T. Dietz, and C. Jaeger. Cambridge, Massachusetts: MIT Press.
  - +Thomas K. Rudel. 2009. "How Do People Transform Landscapes? A Sociological Perspective on Suburban Sprawl and Tropical Deforestation." *American Journal of Sociology* 115:129-154.
  - +Intergovernmental Panel on Climate Change. Working Group III. 2007. *Climate Change 2007: Mitigation of Climate Change*. Summary for Policy Makers. <http://www.ipcc.ch/>
- OR

Intergovernmental Panel on Climate Change. Working Group III. 2007. *Climate Change 2007: Mitigation of Climate Change*. Technical Summary

## 8 October—Climate cognition

- +W. Kip Viscusi and Richard J. Zeckhauser. 2006. "The Perception and Valuation of the Risks of Climate Change: A Rational and Behavioral Blend" *Climatic Change* 77(1-2): 151-177.
- +Baruch Fischhoff. 2007. "Nonpersuasive Communication about Matters of Greatest Urgency: Climate Change." *Environmental Science and Technology* 41:7204-7208.
- +Dietz, Thomas, Paul C Stern, and Amy Dan. 2008. "How Deliberation Affects Stated Willingness to Pay for Mitigation of Carbon Dioxide Emissions: An Experiment" *Land Economics* 85:329-347.
- +Sternum, John D. 2008. "Risk Communication on Climate: Mental Models and Mass Balance." *Science* 322:532-533.
- +Sabine M Marx and Elke U Weber. 2010. "Decision Making Under Climate Uncertainty: The Power of Understanding Judgment and Decision Processes." In T. Dietz and D. Bidwell (eds.) *Climate Change in the Great Lakes Region: Decision Making Under Uncertainty*. East Lansing, Michigan: Michigan State University Press.

## 15 October—Public perception and opinion

- + Robert E O'Connor, Richard J. Bord, Brent Yarnal, and Nancy Wiefek. 2002. "Who Wants to Reduce Greenhouse Gas Emissions?" *Social Science Quarterly* 83(1):1-17.

- + Matthew C. Nisbet and Teresa Meyers. 2007. “The Polls—Trends: Twenty Years of Public Opinion about Global Warming.” *Public Opinion Quarterly* 71:444-470.
- + Leiserowitz, Anthony. 2008. “International Public Opinion, Perception, and Understanding of Global Climate Change.” Report for Yale Project on Climate Change. New Haven, CT: Yale University. [http://hdr.undp.org/en/reports/global/hdr2007-2008/papers/leiserowitz\\_anthony6.pdf](http://hdr.undp.org/en/reports/global/hdr2007-2008/papers/leiserowitz_anthony6.pdf)
- + Ariel Malka, Jon A. Krosnick, and Gary Langer. 2009. “The Association of Knowledge with Concern about Global Warming: Trusted Information Sources Shape Public Thinking.” *Risk Analysis* 29:633-647.
- + Aaron McCright and Riley Dunlap. 2009. “The politicization of climate change: political polarization in the American public’s views of global warming” Under review

Topics to be decided for the rest of the semester:

- 15 October
- 22 October
- 29 October
- 5 November—No class
- 12 November
- 19 November
- 26 November—Thanksgiving, no class
- 3 December—

Candidate topics include but are by no means limited to:

- Public opinion, climate skeptics and policy dynamics
- Abrupt climate change
- Environmentally significant consumption
- Decision making under uncertainty
- International treaties and other institutions
- Climate change in the Great Lakes region
- Climate change and international security
- Looking at an aspect of mitigation or adaptation in greater detail

### Class goals and process

Climate change is one of the most important challenges of the 21<sup>st</sup> century. This seminar comes at a time when key facts about climate change itself are on firm grounds. Warming is unequivocal. There is very high confidence (>90%) that the bulk (>90% of radiative forcing) of this warming is caused by human action. There is growing consensus that warming beyond 2°C temperature should be considered “dangerous” and that holding warming to 2°C requires stabilizing atmospheric concentrations of greenhouse gases at 450 ppm Ce. Unfortunately, it is also difficult to define a plausible pathway to move from where we are now (~380 ppm) to stabilization at 450 and even halting concentrations at 550 (3°C) will take a huge and immediate effort.

All of this means that we are entering a new era in our relationship with the climate of the planet. It also means we need a new kind of climate science, what might be termed a “science for responding.” A key feature of this new science is that the physical, biological and social sciences must be fully integrated.

The goal of the course is to both build a basic familiarity with the rapidly changing state of the science on climate change and society and to facilitate exploration in more detail of the topics of greatest interest to the participants. We will achieve the first goal by reading some of the key overview and integrative statements in the literature, especially during the first few weeks of the class. The second goal will be achieved by picking a handful of topics to explore in greater depth based on mutual interest. This goal will also be facilitated by the papers required of each participant. While the paper will be described in more detail in a subsequent document, it is intended to be a vehicle by which each class participant will produce, by the end of the semester, a paper dealing with an aspect of climate change and society that is of publishable quality (and length). Since writing a research paper is always an iterative process we will expect drafts of the papers well before the end of the semester.

Weekly tasks: Each week, required readings are indicated by a +. In some cases, the + indicates a choice of one of two readings. *One day before each class, please email to Maya Fischhoff your reflections on the readings for that week.* These should not be “reviews” in either the sense of a summary or in the sense of a rating. Rather, they should be summaries of the thinking the reading has produced, especially melding the insights gained from readings and thinking with your own background and research interests. These should be short, 250 words or much less—they might be a set of bullet points or questions reflecting your thinking. Maya will compile them and share them with us as a way to help shape our discussion.

Midstream we will also ask you to prepare a 1-2 pages summary of your current thinking to help crystallize and share it even as you are working on your paper.

If some of the topics we chose for later in the course reflect strong interests on the part of one or more individuals in the class, it will be appropriate for them to help select the readings for that week and to help lead the discussion.