

IPS 271-01
MW 10:30-12:20
Bldg 160 Rm. 321

Prof. Paul N. Edwards
Encina C-226
Office hrs: Thurs 12:30-3:30

Climate Change Controversies: Past, Present, Future

Course description

This graduate-level course provides a unique perspective on contemporary debates about climate change through a study of their long history. After some background about climate science and a look at how people thought about climate in the 18th, 19th, and early 20th centuries, we explore the co-evolution of climate science and climate politics from World War II to the present.

The approach is to examine a series of political issues and debates that established human effects on the global atmosphere as serious problems: weather modification in the 1950s and 1960s, *The Limits to Growth* and the supersonic transport in the 1970s, the ozone hole and nuclear winter in the 1980s. We then focus on how climate change rose to the top of the global political agenda in the 1990s and 2000s, and the politicized disinformation campaigns that emerged to delay policy action. In the final weeks of the course, we consider the 2015 Paris agreement on climate change, along with new policy issues likely to arise in the coming decades, including climate refugees, massive adaptation projects, and geo-engineering.

The principal assignment is a research paper or policy brief on a topic of your choosing.

Note: due to vagaries of Stanford's scheduling system, this course is scheduled for 110-minute sessions — but in practice we will rarely, if ever, go beyond 80-90 minutes. Feel free to schedule other activities at or after 12:00.

Assignments and grading

- Active participation in class discussions — 25% of grade
- Reading log — 25% of grade
- In-class presentation(s) — 10% of grade
- Final paper or project — 40% of grade

In addition, **an 85 percent attendance record** (14 out of 17 post-intro sessions) **is required to pass the course.**

Discussions and participation: details

This is a discussion seminar. Its success depends on the commitment, involvement, and timeliness of all participants. Therefore, I expect you to arrive in class on time and thoroughly prepared to participate actively in all discussions.

Cold calls: to encourage full involvement and preparation, I will “cold call” several students during each class. This means that I will ask you a direct question on the readings; I will expect answers that demonstrate your knowledge of the material. This practice is intended to help you prepare for class and to learn to think and talk “on your feet,” a crucial skill required by almost every profession.

I will grade you on both the regularity and the quality of your participation, including your responses to cold calls.

Weekly reading log: details

A reading/video log is due for each class session. These are graded, and they are a vital component of the course. I will post separate log forms for **each** class session on Canvas. Download the form corresponding to each session, fill it out, and post it to Canvas.

Class presentations: details

1-2 times during the term (depending on the number of students), you will kick off the class with a presentation on that session’s topic and materials.

- Read all the course materials for that session (including the recommended readings).
- Spend 2-3 hours conducting additional research, beginning with the recommended reading. Focus on original sources, i.e., documents and images from the period or episode we’re reading about.
- Meet with the other student(s) presenting in that session. Collectively prepare a **one-page** handout on your findings. This should include (a) the 3-4 most important points from the readings and (b) new points from your own research. The handout should be brief: the goal is to summarize compactly, not to fill the page.
- Presenters will *jointly* spend a *maximum* of 20 minutes expanding upon the main points in the readings and telling us what you learned in your research. **All presenters must participate in the presentation.** You can use the projector if you want, but it’s not required.

Final paper or policy brief: details

For your final project, choose a climate policy issue that interests you. This project has four stages:

- *Stage 1:* Decide on a topic. Find some sources and write a short prospectus (250-500 words). Meet with the instructor to discuss your plans. Due by January 31.
- *Stage 2:* Do more research and compose a full draft of your project (4500-6000 words). Due by March 5.
- *Stage 3:* Present your work to the class (10 minutes max) on March 12 or 14.

- *Stage 4*: Final draft, taking into account my comments and those of your classmates, due March 22.

Required books

- James R. Fleming, *Historical Perspectives on Climate Change* (New York: Oxford University Press, 1998)
- James R. Fleming, *Fixing the Sky: The Checkered History of Weather and Climate Control* (New York: Columbia University Press, 2010)
- Paul N. Edwards, *A Vast Machine: Computer Models, Climate Data, and the Politics of Global Warming* (MIT Press, 2010)
- Naomi Oreskes and Erik M. Conway, *Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues From Tobacco Smoke to Global Warming* (New York: Bloomsbury Press, 2010)

Course Schedule

Week 1. Introduction

January 8 — Introduction

January 10

Edwards, *A Vast Machine* (AVM), [Introduction](#) and [Chapter 1](#). You may also wish to visit the book's [website](#).

Week 2. Climate science and politics before the 20th century (I)

January 15 — no class (MLK Day)

January 17

Fleming, *Historical Perspectives on Climate Change*, Chapters 2 and 4
 Brückner, Eduard, "How constant is today's climate?", and Nico Stehr and Hans von Storch, "Eduard Brückner's Ideas: Relevant in His Time and Today." Both are [in this PDF](#).
 Edwards, AVM, chapters 2-3

Recommended: Fleming, *Historical Perspectives on Climate Change*, Introduction and Chapter 1

Week 3. Carbon dioxide and climate change

January 22

Mike Hulme, *Why We Disagree About Climate Change: Understanding Controversy, Inaction, and Opportunity* (Cambridge University Press, 2009), Chapters 1, 3-7, and 9 — the rest is optional.

Original readings (canceled, but of course you're welcome to read them!)

Fleming, *Historical Perspectives on Climate Change*, chapters 5-7, 9

Highly recommended:

Guy Stewart Callendar, "[The Artificial Production of Carbon Dioxide and Its Influence on Temperature](#)" (1938)

Roger Revelle and Hans Suess, "[Carbon Dioxide Exchange Between the Atmosphere and Ocean and the Question of an Increase of Atmospheric CO₂ during the Past Decades](#)" (1957)

January 24 – no class

Week 4. History of weather and climate modification

January 29

Fleming, *Fixing the Sky*, chapters 1 and 5 (Chapters 2-4 highly recommended!)
Edwards, AVM, Chapter 8

January 31

John von Neumann, "[Can We Survive Technology?](#)" (1955)
Fleming, *Fixing the Sky*, chapter 6
Edwards, AVM, chapter 10

Week 5. Climate change as a global issue

February 5

Edwards, AVM, chapter 13
Meadows et al., *The Limits to Growth: A Report for the Club of Rome's Project on the Predicament of Mankind* (Universe Books, 1972) — "[short version](#)" by Eduard Pestel
Vieille Blanchard, Élodie. "[Modelling the Future: An Overview of the 'Limits to Growth' Debate.](#)" *Centaurus* 52:2 (2010): 91–116
Vieille Blanchard, Élodie. "[The Origins of Integrated Models of Climate Change.](#)" *Atoms For Peace: an International Journal* 3:3 (2012): 238–55

Strongly recommended: Study of Man's Impact on Climate. *Inadvertent Climate Modification: Report of the Study of Man's Impact on Climate* (MIT Press, 1971) — Preface and Chapter 1

February 7

Edwards, AVM, Chapters 11 and 14
Oreskes and Conway, *Merchants of Doubt*, Introduction and Chapter 4

Highly recommended: Oreskes and Conway, Chapter 2

– Stage 1 of final project due; meet with instructor next week –

Week 6. Climate change disinformation campaigns

February 12

Oreskes and Conway, *Merchants of Doubt*, Chapter 6, Conclusion

February 14

Edwards, AVM, Chapter 15

Week 7. Climategate, organized denialism, and the future of public science

February 19 – no class (Presidents' Day)

February 21

Grundmann, Reiner, "[The legacy of Climategate: revitalizing or undermining climate science and policy?](#)"

Beck, Silke, "[Between Tribalism and Trust: The IPCC Under the Public Microscope](#)"

Oreskes and Conway, *Merchants of Doubt*, Epilogue

Week 8. The 2015 Paris accords: focus on China and India

February 26

"A Reader's Guide to the Paris Agreement," *The Atlantic*, 16 December 2015

UNFCCC "[big picture](#)" website. This is a substantial website with a lot of information, but it's not overwhelming. Please read the whole thing. NB, this site does not behave well in some browsers, e.g. Chrome on Mac. If this happens to you, try another browser.

For reference: UNFCCC, [full text of the Paris Agreement](#)

February 28 (most of these readings are very short)

"[What Is Equity in the Context of Climate Negotiations?](#)" World Resources Institute (2012)

"[Different Perspectives on Differentiated Responsibilities A State-of-the-Art Review of the Notion of Common but Differentiated Responsibilities in International Negotiations](#)," German Development Institute (pp. 1-16 only)

"[The Climate Change Battle in Paris](#)," Meenakshi Raman, Third World Network

"[China's Contribution to the Paris Climate Agreement](#)," Center for Climate and Energy Solutions, July 2015

[China's Nationally Determined Contribution to the Paris Agreement](#), 2016 (English translation begins partway through the document)

[India's Nationally Determined Contribution to the Paris Agreement](#), 2016

"[China Will Start the World's Largest Carbon Trading Market](#)," Scientific American, May 2016

"[Reluctant signatory India takes moral high-ground on Paris climate deal](#)," CNN, 2 June 2017.
Please watch the embedded videos as well as reading the text.

[“Only India can save the Paris climate agreement,”](#) Hindustan Times, 15 June 2017

Week 9. Adaptation, and geoengineering(?)

March 5

F. Gemenne, [“Climate-Induced Population Displacements in a 4 Degrees C+ World”](#)

F. Gemenne, [“Why the Numbers Don’t Add Up: A Review of Estimates and Predictions of People Displaced By Environmental Changes.”](#) *Global Environmental Change* 21 (2011): S41-S49.

UNFCCC, [“Adapting to a Changing Climate”](#) (video, 20 min)

Dessai, S., M. Hulme, R. Lempert, and R. Pielke Jr. [“Climate Prediction: A Limit to Adaptation.”](#) In *Adapting to Climate Change: Thresholds, Values, Governance*, edited by W. N. Adger, I. Lorenzoni, and K. L. O’Brien (Cambridge, UK: Cambridge University Press, 2009), 64-78.

March 7

Schipper, E.L.F. [“Conceptual History of Adaptation in the UNFCCC Process.”](#) *Review of European Community & International Environmental Law* 15, no. 1 (2006): 82-92.

Fleming, *Fixing the Sky*, Chapter 8

Week 10. Project presentations

March 12 — Project presentations (no reading)

March 14 — Project presentations and wrap-up (no reading)