
Boston University
Frederick S. Pardee School of Global Studies
Department of Earth and Environment

IR/GE 599

Science, Politics and Climate Change

Spring 2020

Wednesdays
2:30 – 5:15PM
EPC 201

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Room 405
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Office Hours
Tuesdays 1:30-3:30PM
Wednesdays 1:00-2:00PM
Other times by appointment

Introduction

This course focuses on the interplay between science, technology and policy-making from the perspective of science and technology studies (STS), which is an interdisciplinary field that examines the societal context in which science is conducted and the interplay between science and politics in identifying and addressing policy issues. Specifically, the course applies a STS perspective to climate change science and policy. It introduces students to STS and to central scientific and political debates that shape climate change policy. The goal is to understand the larger picture of intertwining relationships between scientific, technical and political systems that shape policy with a focus on climate change mitigation and adaptation.

The course, which is based on a combination of short lectures and extensive class discussion, begins with an introduction to STS and often very complex relationships between science, technology and policy-making. In parallel, the course explores the history of climate change science up to present days understanding of the climate system and climate change. Next, the course applies a multilevel governance perspective as it examines major climate change policy developments across global, regional, national and local levels. Finally, the course looks at the roles of different non-state actors and strategies for communicating climate change science and policy.

There are no formal prerequisites for this course, which is open to graduate students and qualified upper-level undergraduates.

Attendance & Assignments

Great importance will be placed on regular attendance (including arriving on time and not leaving early) and timely submission of assignments. There will be a penalty for irregular attendance and late submissions of assignments, although individual emergencies will be

accommodated as far as possible. In such cases, students should make every effort to talk with the instructor before the said class. The final grade for the class will be calculated as follows:

<input checked="" type="checkbox"/> • Class Participation	30 points
<input checked="" type="checkbox"/> • Critical Review of STS	40 points
<input checked="" type="checkbox"/> • Simulation Reflection	30 points
<input checked="" type="checkbox"/> • Op-Ed	30 points
<input checked="" type="checkbox"/> • Research Paper	70 points
TOTAL	200 points

CLASS PARTICIPATION (30 points)

Class meetings are largely designed to be a series of discussion meetings with full participation by all students. Active and productive student participation is a critical part of the class, and students should come well prepared to speak their mind and to be called upon to speak their mind!

CRITICAL REVIEW OF STS (40 points)

Students write a critical review of STS. The review should discuss the strength and weaknesses of STS analysis as a means for understanding scientific investigation and science and politics interplay in theory and practice. Instructions will be handed out during class #4 (February 12th). The critical review is due at the beginning of class #5 (February 19th).

SIMULATION REFLECTION (30 points)

Students write a simulation reflection in connection with the global climate change simulation that will take place during class #8 (March 18th). Instructions will be handed out during class #7 (March 15th). The simulation reflection is due at the beginning of class #9 (March 25th).

OP-ED (30 points)

Students write a climate change related op-ed aimed for a newspaper. It should address some aspect of the climate change issue and follow the general guidelines for an op-ed. Instructions will be handed out during class #12 (April 15th). Students should e-mail their op-ed in pdf-format to the instructor no later than Wednesday, April 22nd at 3pm (selin@bu.edu).

RESEARCH PAPER (70 points)

Students will write a research paper (8 pages for undergraduates and 10 pages for graduate students, single spaced) that is due by beginning of class #13 (April 29th). The research paper should analyze a particular aspect of climate change politics, policy-making or management. Additional information about the research paper will be given in class and each student is required to present a paper topic in class #9 (March 25th).

Academic Honesty

The *American College Dictionary* defines plagiarism as “Copying or imitating the language, ideas, or thoughts of another author and passing off the same as one’s original work.” Plagiarism is intellectual theft and violates the student honor code. Exact quotations must have quotation marks and the appropriate citation. Paraphrases, even if not exact quotes, must nonetheless have the appropriate citation. Submitting a paper written by someone else, whether ‘borrowed’ from a friend or purchased from a ‘service’, even if updated, constitutes plagiarism.

Using the Internet for research is encouraged, but plagiarizing resources is not allowed. Cheating of any sort, submitting the same work for more than one course, deliberately impeding the performance of others, and other forms of academic misconduct are serious offenses. As a general rule, if you have any doubts, give credit to the source; if you have any questions, talk to

the instructor. Refer to the Academic Conduct Code, which will be strictly enforced: <http://www.bu.edu/academics/policies/academic-conduct-code>.

Readings & Sources

There are three required books for the course, which are available for purchase at Boston University Bookstore and various web-based booksellers:

- **SERGIO SISMONDO.** 2010. *An Introduction to Science and Technology Studies*. Oxford: Blackwell Publishing. 2nd edition.
- **SPENCER R. WEART.** 2008. *The Discovery of Global Warming*. Cambridge: Harvard University Press. 2nd edition.
- **KERRY EMANUEL.** 2018. *What We Know About Climate Change; Updated Edition*. Cambridge: MIT Press.

The course uses Blackboard Learn and additional readings beyond the three books listed in the syllabus are posted on Blackboard Learn under Course Documents. To ensure meaningful class discussion, it is very important that students have read the assigned readings before each class and come prepared to discuss relevant topics!

Disability Services:

Students with documented disabilities, including learning disabilities, may be entitled to accommodations intended to ensure that they have integrated and equal access to the academic, social, cultural, and recreational programs the university offers. Accommodations may include, but are not limited to, additional time on tests, staggered homework assignments, note-taking assistance. If you believe you should receive accommodations, please contact the Office of Disability Services to discuss your situation. This office can give you a letter that you can share with instructors of your classes outlining the accommodations you should receive. The letter will not contain any information about the reason for the accommodations.

If you already have a letter of accommodation, you are encouraged to share it with your instructor as soon as possible.

Disability & Access Services
25 Buick Street, Suite 300
617-353-3658
access@bu.edu
<http://www.bu.edu/disability/>

Course Outline

Class #1

Course Introduction

- **SUMMARY PRESENTATION OF THE COURSE STRUCTURE AND CONTENT INCLUDING ALL ASSIGNMENTS.**

Introduction to Science and Technology Studies I

- **SERGIO SISMONDO.** 2010. *An Introduction to Science and Technology Studies.* Oxford: Blackwell Publishing. Chapters 1-3, p.p. 1-35.
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Class #2

Introduction to Science and Technology Studies II

- **SERGIO SISMONDO.** 2010. *An Introduction to Science and Technology Studies.* Oxford: Blackwell Publishing. Chapters 4-10, p.p. 36-119.

Discovering Climate Change I

- **SPENCER R. WEART.** 2008. *The Discovery of Global Warming.* Cambridge: Harvard University Press. Chapters 1-2, p.p. 1-37.
 - **LEILA MCNEILL.** 2016. "This Lady Scientist Defined the Greenhouse Effect But Didn't Get Credit, Because Sexism" Smithsonian.com, December 5th (Blackboard).
 - **SPENCER R. WEART:** <http://www.aip.org/history/climate/index.htm>
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Class #3

Introduction to Science and Technology Studies III

- **SERGIO SISMONDO.** 2010. *An Introduction to Science and Technology Studies.* Oxford: Blackwell Publishing. Chapters 11-14, p.p. 128-167.

Discovering Climate Change II

- **WILL STEFFEN, PAUL J. CRUTZEN AND JOHN R. MCNEILL.** 2007. "The Anthropocene: Are Humans Now Overwhelming the Great Forces of Nature?" *Ambio* 36(8): 614-621 (Blackboard).
 - **SPENCER R. WEART.** 2008. *The Discovery of Global Warming.* Cambridge: Harvard University Press. Chapters 3-5, p.p. 38-113.
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Class #4

Discovering Climate Change III

- **SPENCER R. WEART.** 2008. *The Discovery of Global Warming.* Cambridge: Harvard University Press. Chapters 6-9 and Reflections, p.p. 114-204.
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- **KERRY EMANUEL.** 2018. *What We Know About Climate Change, Updated Edition.* Cambridge: MIT Press.

Science and Policy Interactions

- **SERGIO SISMONDO.** 2010. *An Introduction to Science and Technology Studies.* Oxford: Blackwell Publishing. Chapters 15-17, p.p. 168-204.
- **SIMON SHAKLEY AND BRIAN WYNNE.** 1995. "Global Climate Change: The Mutual Construction of an Emergent Science-Policy Domain" *Science and Public Policy* 22(4): 218-230 (Blackboard).
- **GUNILLA ÖBERG, KEVIN ELLIOTT AND ANNEGAAIKE LEOPOLD.** 2019. "Science Is Political But Should Not Be Partisan" *Integrated Environmental Assessment and Management* 16(1): 6-7 (Blackboard).

Class #5

Climate Change and Human and National Security

- **JOSHUA BUSBY.** 2018. "Environmental Security" *The Oxford Handbook of International Security.* Oxford: Oxford University Press (Blackboard).
- **W. NEIL ADGER ET AL.** 2014. "Human Security" in *Climate Change 2014: Impacts, Adaptation and Vulnerability.* Intergovernmental Panel on Climate Change, p.p. 755-791.
- **UNITED STATES ARMY WAR COLLEGE.** 2019. *Implications of Climate Change for the U.S. Army.* Carlisle: Pennsylvania (Blackboard).

Class #6

Global Climate Change Science and Policy I

- **SHEILA JASANOFF.** 2001. "Image and Imagination: The Formation of Global Environmental Consciousness" in Clark A. Miller and Paul N. Edwards (Eds.) *Changing the Atmosphere: Expert Knowledge and Environmental Governance.* Cambridge: MIT Press (Blackboard).
- **HENRIK SELIN AND STACY D. VANDEVEER.** 2019. "Global Climate Change Governance: Where To Go After Paris?" in N. J. Vig and M. E. Kraft (eds.) *Environmental Policy: New Directions for the Twenty-First Century,* 10th edition. Washington DC: CQ Press, p.p. 322-346 (Blackboard).
- **THE 1992 UNFCCC TEXT** (Blackboard).
- **THE 1997 KYOTO PROTOCOL TEXT** (Blackboard).
- **THE 2009 COPENHAGEN ACCORD TEXT** (Blackboard).
- **UNFCCC:** <http://newsroom.unfccc.int>
- **INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE:** <http://www.ipcc.ch>

Class #7

Global Climate Change Science and Policy II

- **ROBERT FALKNER.** 2016. "The Paris Agreement and the New Logic of International Climate Politics" *International Affairs* 92(5): 1107-1125 (Blackboard).
- **CENTER FOR CLIMATE AND ENERGY SOLUTIONS.** 2019. *Outcomes of the U.N. Climate Change Conference in Madrid.* Arlington: Center for Climate and Energy Solutions (Blackboard).

- **JOANA SETZER AND REBECCA BYRNES.** 2019. *Global Trends in Climate Litigation: 2019 Snapshot*. London: Grantham Research Center on Climate Change and the Environment and Center for Climate Change Economics and Policy, LSE (Blackboard).
- **STEVEN BERNSTEIN AND MATTHEW HOFFMANN.** 2019. "Climate Politics, Metaphors and the Fractal Carbon Trap" *Nature Climate Change* 9: 919-925 (Blackboard).
- **UNEP.** 2019. *Emissions Gap Report 2019: Executive Summary*. Nairobi: UNEP (Blackboard).
- **G. P. PETERS ET AL.** 2020. "Carbon Dioxide Emissions Continue to Grow Amidst Slowly Emerging Climate Policies" *Nature Climate Change* 10: 3-6 (Blackboard).
- **THE 2015 PARIS AGREEMENT TEXT** (Blackboard).

Class #8

Global Climate Change Simulation

- GROUP BASED SIMULATION WHERE STUDENTS REPRESENTING BLOCS OF COUNTRIES SEEK TO REDUCE GHG EMISSIONS TOWARD GLOBAL POLICY GOALS.

Class #9

Circumpolar Climate Change Issues and Action

- **BRANDON LUEDTKE AND ADRIAN HOWKINS.** 2012. "Polarized Climates: The Distinctive Histories of Climate Change and Politics in the Arctic and Antarctica since the Beginning of the Cold War" *Wiley Interdisciplinary Reviews: Climate Change* 3(2): 145-159 (Blackboard).
- **JAMES D. FORD ET AL.** 2010. "Climate Change Policy Responses for Canada's Inuit Population: The Importance Of and Opportunities For Adaptation" *Global Environmental Change* 20(1): 177-191 (Blackboard).

Student Research Paper Discussion

- STUDENT ORAL PRESENTATIONS OF RESEARCH PAPER TOPICS AND SUBMISSIONS OF ONE PAGE PAPER OUTLINES.

Class #10

U.S. Climate Change Policy and Politics

- **HENRIK SELIN AND STACY D. VANDEVEER.** 2012. "U.S. Climate Change Politics: Federalism and Complexity" in Sheldon Kamieniecki and Michael E. Kraft (eds.) *Oxford Handbook on U.S. Environmental Politics*. Oxford: Oxford University Press, p.p. 164-183 (Blackboard).
- **BARRY G RABE.** 2016. "The Durability of Carbon Cap-and-Trade Policy" *Governance* 29(1): 103-119 (Blackboard).
- **DANIEL A. MAZMANIAN, JOHN L. JUREWITZ AND HAL T. NELSON.** 2019. "State Leadership in U.S. Climate Change and Energy Policy: The California Experience" *Journal of Environment & Development*, p.p. 1-24 (Blackboard).
- **RILEY E. DUNLAP, AARON M. MCCRIGHT AND JERROD H. YAROSH.** 2016. "The Political Divide on Climate Change: Partisan Polarization Widens in the U.S." *Environment* 58(5): 4-23 (Blackboard).

- **CENTER FOR CLIMATE AND ENERGY SOLUTIONS:** <http://www.c2es.org>
 - **REGIONAL GREENHOUSE GAS INITIATIVE:** <http://www.rggi.org>
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Class #11

Private Sector, Civil Society and Climate Change

- **CHARLES A. JONES AND DAVID L. LEVY.** 2009. "Business Strategies and Climate Change" in Henrik Selin and Stacy D. VanDeveer (Eds.) *Changing Climates in North American Politics: Institutions, Policymaking and Multilevel Governance*. Cambridge: MIT Press (Blackboard).
 - **CHRISTIAN DOWNIE.** 2017. "Fighting for King Coal's Crown: Business Actors in the US Coal and Utility Industries" *Global Environmental Politics* 17(1): 21-39 (Blackboard).
 - **MICHAEL SHELLENBERGER AND TED NORDHAUS.** 2004. *The Death of Environmentalism: Global Warming Politics in a Post-Environmental World* (Blackboard).
 - **ROBIN GLOBUS VELDMAN, ANDREW SZASZ AND RANDOLPH HALUZA-DELAY.** 2014. "Climate Change and Religion as Global Phenomena: Summing Up Directions for Further Research" in Robin Globus Veldman, Andrew Szasz and Randolph Haluza-DeLays. Eds. *How the World's Religions are Responding to Climate Change: Social Scientific Investigations*. New York: Routledge, p.p. 297-315 (Blackboard).
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Class #12

Communicating Climate Change Science and Policy

- **SUSANNE C. MOSER AND LISA DILLING.** 2011. "Communicating Climate Change: Closing the Science-Action Gap" in John S. Dryzek, Richard B. Norgaard and David Schlosberg (Eds.) *The Oxford Handbook of Climate Change and Society*. Oxford: Oxford University Press (Blackboard).
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Class #13

The Future of Climate Change Science and Policy

- CONCLUDING DISCUSSION BASED ON COURSE CONTENT AND FINDINGS FROM RESEARCH PAPERS.

Summary Outline of Class Schedule

Class #1	January 22	<ul style="list-style-type: none">• Course Introduction• Introduction to Science and Technology Studies I
Class #2	January 29	<ul style="list-style-type: none">• Introduction to Science and Technology Studies II• Discovering Climate Change I
Class #3	February 5	<ul style="list-style-type: none">• Introduction to Science and Technology Studies III• Discovering Climate Change II
Class #4	February 12	<ul style="list-style-type: none">• Discovering Climate Change III• Science and Policy Interactions
Class #5	February 19	<ul style="list-style-type: none">• Climate Change and Human and National Security
Class #6	February 26	<ul style="list-style-type: none">• Global Climate Change Science and Policy I
Class #7	March 4	<ul style="list-style-type: none">• Global Climate Change Science and Policy II
Class #8	March 18	<ul style="list-style-type: none">• Global Climate Change Simulation
Class #9	March 25	<ul style="list-style-type: none">• Circumpolar Climate Change Issues and Action• Student Research Paper Discussion
Class #10	April 1	<ul style="list-style-type: none">• U.S. Climate Change Policy and Politics
Class #11	April 8	<ul style="list-style-type: none">• Private Sector, Civil Society and Climate Change
Class #12	April 15	<ul style="list-style-type: none">• Communicating Climate Change Science and Policy
Class #13	April 29	<ul style="list-style-type: none">• The Future of Climate Change Science and Policy