Science in Environmental Policy

ENVST-UA 422
Prof. David Kanter
Spring 2020
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Course description

Science plays a fundamental role in environmental policy. It can put an issue on the political agenda, it often guides and underpins policy development, while also enabling us to monitor policy implementation. In short, science can provide a reason for humankind to act on environmental problems and help make sure that action is effective. Therefore, understanding how science translates into policy, and the role scientists play in doing so, is critical to understanding environmental governance. This course explores how the scientific process, as well as scientists themselves, influence environmental policy – from agenda setting, to legislation and implementation. In order to ground the discussion, the course will focus on specific issues including stratospheric ozone depletion, climate change, pesticides, acid rain and whaling. For each issue, we will examine:

- How the science evolved – from its beginnings to the present day
- How and why the issue entered the policy arena
- What role scientists played – both as individuals and in groups – and how their role evolved as the issue progressed
- The controversies that inevitably arise as the interests of scientists, policy-makers, and other stakeholders collide.

Outside speakers will be brought in to provide firsthand experience, and team assignments will allow students to better understand the dynamics and challenges of the science-policy relationship.

Grading Criteria

<table>
<thead>
<tr>
<th>Item</th>
<th>Percent of final grade</th>
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<tr>
<td>Assignments</td>
<td>40%</td>
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<tr>
<td>Participation</td>
<td>15%</td>
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<tr>
<td>Discussion postings</td>
<td>15%</td>
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<tr>
<td>Final paper</td>
<td>30%</td>
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Participation

Participation is an important component of the class and of your final grade (10%). Classes will be a mix of lecture and discussion. You will be expected to attend every
class, and if you need to miss class, or you fall ill, please let me know ASAP. Missing more than one class without permission will negatively impact your grade. “A lot” of absences (i.e. five or more recorded by me) will cut your participation grade by around half. “A couple” of absences (i.e. 2-3 recorded by me) will reduce it by about 10%. There will be an online discussion board where you will be expected to post two questions based on the reading once per week. This will help drive active class conversation, which in turn will help us better unpack the assumptions, arguments and implications of the topics we discuss.

**Assignments**

You will have five written assignments during the semester and a final paper (described in the week-by-week schedule below). Four of these assignments will be graded, and the fifth will be a short description of the topic and a preliminary bibliography for your final research paper, which I will comment on, but will not give a letter grade.

*Final paper* – The goal of this paper is for you to analyze how science and scientists have influenced policy on a particular environmental issue (3000-4000 words). The issue can be local, national or global. I want you to apply the skills and lessons you learn in class and from the assignments to chronicle how the science evolved, how it impacted different stages of the policy process, and the various roles that scientists played throughout. By following a particular issue from cradle-to-grave, this assignment will give you the opportunity to investigate many of the challenges of translating science into policy that we will cover in class.

*Due dates: Research topic and preliminary bibliography (Tuesday March 31); Final paper (Friday May 15)*

**Plagiarism and academic support**

Plagiarism results in failure in the class and referral to your academic dean. It includes: copying sentences or fragments from any source without quotes and references; not citing a source used in your papers; citing Internet information without proper citation; presenting someone else’s work as your own; or inadvertently copying verbatim from any source. More detail can be found at http://cas.nyu.edu/page/academicintegrity. NYU offers academic support and tutoring at the University Learning Center: www.nyu.edu/cas/ulc, (212) 998-8085.
Class schedule

**Introduction and overview** (Weeks 1-3)

- What is the scientific method and how does it compare to other forms of knowledge creation?
- How does science influence policy development and when?
- What choices do scientists face in how they interact with decision-makers?

Readings:

Thursday January 30th
Jamieson (1996); Ascher et al. (2010); Oreskes (2019)

Tuesday February 4th
Merton (1942) and two blog posts – one summarizing the Merton approach and the other summarizing counter-arguments to his approach

Thursday February 6th
Pielke (2007); Pool (1990); this New York Times piece on science under attack in the Trump administration

Tuesday February 11th
Keller et al. (2010); Sarewitz (2004); Oppenheimer et al. (2019 – Chapter 1)

**Assignment 1:** President Trump and his administration have been widely criticized for undermining the role of science and scientists in government decision-making. One of his administration’s most controversial moves has been to replace members of the EPA’s Scientific Advisory Board with people friendly to the administration’s policies rather than highly qualified experts. As one of the few remaining esteemed scientists on the Board, you have decided to write an open letter to President outlining why this move is dangerous and what you think the role of science and scientists in government decision-making should be. Make sure to cite at least two readings from the Introduction reading list. 1000 words.

*Assigned: Tuesday February 11
Due: Tuesday February 18*

**Stratospheric ozone depletion** (Week 3-5)

Thursday February 13th
Rowland & Molina (2000); Benedick (1998)

Tuesday February 18th
Albritton (1998); McBean (1998); Canan & Reichman (2002); Parson (2003)
Thursday February 20th
Kanter away – guest lecture

Tuesday February 25th
Guest lecture: A.R. Ravishankara (former Chair of the Scientific Assessment Panel to the Montreal Protocol)

**Acid Rain** (Week 5-6)

Thursday February 27th
Cowling (1982); this [Smithsonian](#) article; Oreskes & Conway (2010 – Acid Rain)

Tuesday March 3rd
Herrick & Jamieson (1995); Oppenheimer et al. (2019 – Chapter 2)

Thursday March 5th
Guest lecture: Dale Jamieson (NYU)

**Whaling** (Week 7)

Tuesday March 10th
Burnett (2012): Introduction & Conclusion chapters

Thursday March 12th
Andresen (1989); Aron et al. (2002); Clapham et al. (2003)

**Assignment 2:** Pick a major turning point in the acid rain, ozone or whale story and analyze the role that science and scientists played (or not) in determining the outcome. 1000 words.

*Assigned: Thursday March 12
Due: Monday March 23*

**Climate Change** (Week 8-11)

Tuesday March 24th

Thursday March 26th
Jamieson (2015 – p. 18-34); Keller (2010 – p. 60-84)

Tuesday March 31st

Thursday April 2nd
Schneider (2009); Brysse et al. (2013); Mooney (2017) – link [here](#).
Assignment 3: The American Petroleum Institute’s strategy to undermine the political salience of climate science was largely a success. The Intergovernmental Panel on Climate Change is preparing for its Sixth Assessment Report, to be released in 2021, and has finally decided to invest in a communications strategy of its own. The IPCC has hired you, a renowned communications consultant, to do so. The Chairman of the IPCC has asked for a 1000-word memo outlining the main components of your proposed strategy. Specifically, he wants to know how the IPCC should communicate the central messages of its next report to policymakers and respond to criticism from climate skeptics and others. He is particularly interested in your thoughts on how the IPCC should approach what Steve Schneider calls the “double ethical bind” of being effective versus being honest.

Assigned: Thursday April 2
Due: Tuesday April 14

Pesticides (Week 12-13)

Thursday April 16th
Carson (1962 – Chapters 1-3, 17); Smith (2001)

Tuesday April 21st
NPR (2015) link here; Eisenstein 2015; Suryanarayanan (2015); Fang (2020) link here

Thursday April 23rd
Templeton (2011) – Abstract, Chapter 1, p. 297-306 and p. 313-315

Assignment 4: Protests are erupting across the United States demanding nationwide action on bee colony collapse disorder. The Trump administration, wanting to deflect attention away from its efforts to undo other environmental laws, has decided to convene a group of stakeholders to discuss whether the U.S. should follow the E.U.’s lead and institute a complete ban on neonicotinoid use across all crops. In the room are: a coalition of independent scientists, an industry lobby group, an environmental NGO, and a farmer lobby group (representing farmers that both need pollinators, but also use neonicotinoids). You will each be assigned a role and tasked with writing a policy memo outlining your position before class. You will then have 15 minutes at the beginning of class to coordinate your position with your classmates who have the same role, and then defend it in an in-class negotiation. Issues that you should consider in your memo include
(but are not limited to): scientific uncertainty, political and economic feasibility, industrial and agricultural competitiveness, and environmental conservation. 1000 words.

Assigned: Tuesday April 21
Due: Tuesday April 28