

Science and Technology Policy – Spring 2011

LAIS 486 (CRN 10938) and LAIS 586 (CRN 11670)

Time/Place: Tues/Thurs, 2:00-3:15pm, Room: _____

Instructor: Jason Delborne (delborne@mines.edu)
407 Stratton Hall, 303-273-3753

Office Hours: Tuesdays 12:00-2:00, Thursdays 12:30-2:00, or by appointment

I. Course Description

This course introduces students to the policy environment that surrounds science and technology. We will attend to a number of key aspects of this dynamic interaction: how scientists participate in and influence the policymaking process; how scientific data and interpretations become points of leverage and contention during policy debates; how federal funding and regulatory decisions affect research trajectories; and how the governance of science and technology implicates a variety of social forces ranging from explicit government intervention, to corporate behavior, to university policies, to direct involvement by citizens. The course will include historical and contemporary case studies, and students will have the opportunity to conduct their own analyses of policy issues of interest to them.

II. Course Objectives

After completing this course, students should be able to:

1. Describe the scope of governmental actions—both regulatory and promotional—that affect scientific practice and technological development.
2. Articulate and compare various ways for scientists to participate in the policymaking process.
3. Discuss tensions and complementarities between democracy and science.
4. Analyze science and technology policies with sensitivity to the complexity of policymaking processes – demonstrating expertise in understanding a specific and current debate in science and technology policy.

III. Readings

Required Texts (CSM Bookstore)

- Pielke Jr., Roger. 2007. *The Honest Broker: Making Sense of Science in Policy and Politics*. Cambridge University Press. [“*Honest Broker*” in syllabus]
- Sarewitz, Daniel. 1996. *Frontiers of Illusion: Science, Technology and the Politics of Progress*. Temple University Press. [“*Frontiers*” in syllabus]

Blackboard

All other readings will be available electronically on Blackboard. See “Course Documents” and click on the “Readings” folder. Please note the “fair use” statement regarding copyright issues, posted along with the folder.

IV. Assignments and evaluation

Summary

	LAIS 486	LAIS 586
Class participation	200	100
Policy Analysis Project	575	575
- Topic proposal	25	25
- Annotated Bibliography	50	50
- Landscape paper	100	100
- Connections paper	100	100
- Policy presentation	150	150
- Policy brief	150	150
Office hour visit (with discussion of policy project)	25	25
Analytic Reading Memos (ARMs)	200 (8 ARMs)	200 (4 ARMs)
Class presentation/facilitation	NA	100
TOTAL	1000	1000

A = 1000-920, A- = 919-900, B+ = 899-880, B = 879-820, and so on (+/- for LAIS 586 only)

NOTE: While undergraduates and graduate students will complete similar assignments, graduate students will be held to higher standards for evaluation purposes.

Detailed description

1. **Class participation.** Show up prepared for class, engage in discussion, ask questions, dare to be wrong, listen to your peers, and share your ideas respectfully. The time each week in discussion represents the only meaningful difference between taking the course and simply using the syllabus as a private reading list. Preparation for class (reading, thinking, and writing) is essential to all participants' intellectual development, as well as to the experience of their classmates. While I acknowledge the great diversity in levels of comfort with speaking in front of a group, if you are not doing so at least once per class, you are not meeting my expectations. If you feel especially shy, I encourage you to prepare questions or comments in advance. You will not be punished or humiliated for being "wrong" or asking a "dumb question." At the same time, each of you should strive to make contributions that connect to course materials, demonstrate analysis or synthesis, or marshal specific evidence for an argument. I will evaluate your participation in two ways: 1) my subjective assessment of the quality of your participation over the whole semester (which includes regular attendance and arriving on time to class), and 2) a one page self-evaluation of your own participation (including a proposed score), submitted in hard copy on the last day of class.
2. **Policy Analysis Project.** This assignment is the core of this course, and I have designed the series of assignments to help you build toward a product worthy of presenting formally to your classmates and possibly sharing with wider audiences. You may work individually, but I encourage you to work with a partner. Please keep in mind that pairs of students will need to double each requirement (length, time, sources) and that you will be responsible for negotiating an equitable distribution of work – pairs of students will receive the same grade for each assignment done cooperatively.

- a. *Topic proposal* (2 pages): Propose a topic for your policy analysis project. Address the following: 1) why this topic interests you, 2) how your topic fits with course themes, 3) if necessary, how you plan to narrow your topic, 4) what you hope to learn, and 5) any questions or concerns you have.
 - b. *Annotated bibliography* (4 pages): Find at least 4 sources for your project and read them (if one is a book, skimming is fine). At least one source must be peer-reviewed and one must be from a major newspaper. For each source, list the full bibliographic reference, provide a short summary of the argument, and discuss how this source informs your project and/or provides evidence. Note: I expect that your final project will rely upon many more than 4 sources – this assignment is designed to create some early momentum for your research.
 - c. *Landscape paper* (4 pages + references): Describe the “landscape” of your project. What are the primary issues? Who are the stakeholders? What policy decisions have been made? What impacts are evident? What decisions present themselves in the near future (discuss at least one)? What area do you plan to address with your policy brief?
 - d. *Connections paper* (4 pages + references): How do the readings from the course inform your approach to your topic? What specific questions do they demand that you answer? How do they affect your analysis? How do they challenge the argument that you are building? Cite at least three readings from the syllabus.
 - e. *Policy presentation* (in-class, 15 minutes each). Present your classmates with the argument you intend to make in your policy brief. Drawing upon your two previous papers, orient your classmates to your topic, describe insights gained from at least two class readings, and argue for a specific policy action.
 - f. *Policy brief* (4 pages + references): Write a persuasive essay to a particular individual or entity with the power to enact a policy change that you wish to advocate. Be as specific as possible; acknowledge concerns, potential problems, and likely resistance; and cite evidence to support your argument.
3. **Office hour visit.** Come to my office hours at least once by the end of the fifth week of class. Bring any questions or concerns and come prepared to discuss your policy project.
 4. **Analytic Reading Memos.** Students will sign up for four (586) or eight (486) classes to complete analytic reading memos. In 1 page (486) or 2 pages (586), address the following with regard to the assigned readings: main argument, connection to previously assigned readings, evaluation of the author’s persuasiveness, and 3 questions that might be used in class discussion. This assignment must be completed the day before class by noon in order to assist the student presenter(s). Submit your ARMs on Blackboard as Word documents as part of discussion threads for each week.

5. **Class presentation/facilitation (Graduate students ONLY).** Each 586 student will take two turns (with a partner) in presenting the assigned readings to the class. Presenters should aim to emphasize new points/arguments, clarify connections to previous weeks' themes, and suggest ways that assigned readings are in conversation with one another. Initial presentations should be 15-20 minutes and may include visuals or other helpful materials. The second part of the assignment involves preparing a plan to initiate and facilitate class discussion. You might plan a small group exercise, prepare a list of discussion questions, initiate a role play, or consider other creative ideas. You will be responsible for 65 minutes of class time, leaving 10 minutes for group feedback on your effort and class logistics.
6. **Mid-term evaluation.** Just as I will evaluate student performance throughout the semester to encourage improvement and identify particular challenges, students will also have an opportunity to evaluate my performance, *before* the end of the semester (when changes can only make a difference to future classes). During Week 5, students will be asked to complete an anonymous mid-term course evaluation to tell me what aspects of course organization, teaching style, and discussion format have been the most helpful, and also to provide any constructive criticism. I will discuss the results of this evaluation in class.

V. Resources and rules

Format of assignments: All written assignments should be formatted with 1 inch margins, 12pt font, and double-spaced (undergraduate ARMs may be 1½ spaced). Citations for readings from the syllabus should simply indicate author, date, and page number if appropriate [e.g., (Collins 1995: 102)]. Citations for other readings should follow the same format within the text, and also appear in a reference section at the end of the paper. You must turn in all written assignments BOTH on Blackboard and in hard copy (at the beginning of class) unless otherwise specified.

Extensions for assignments require my permission no less than 48 hours *prior* to when the assignment is due (except in absolutely horrific circumstances). Under no circumstances will I accept assignments after the last day of class – any outstanding work will negatively affect the course grade or result in an “Incomplete.”

Disabilities: If you have a disability that could affect your participation and/or performance in this course, please contact me as soon as possible in order to discuss appropriate and helpful accommodations.

Writing Center: The Writing Center is a terrific resource for students at all stages in the writing process, and you are encouraged to use it regularly. You may call 303-273-3085 to make an appointment to meet with an advisor in the Writing Center, located in Stratton Hall 311. Check the website (<http://www.mines.edu/Academic/lais/wc/home.htm>) for hours and other details. You may also find information on the **Communications Center**, which could be particularly helpful in planning for your presentations.

Writer's Help (Bedford/St. Martin's online resource): I have arranged for all students in this class to have free access to "Writer's Help." Since this is a new tool for me as an instructor, we will experiment over the course of the semester with ways to benefit from this resource. Please create your account and do some exploring early in the semester.

1. Go to www.writershelp.com
2. Click **Enter your activation code**.
3. Enter your activation code exactly as it appears here: **49d-74u-7rtx2f88**. Also enter your name and e-mail address, which will serve as your *Writer's Help* username. You won't be able to change your e-mail address after you register, so pick one that will be valid for the duration of the course.
4. Create a password and password hint. The password must be at least 4 characters long and should be something memorable.
5. Enter your instructor's email address [delborne@mines.edu]. Doing this will ensure that you can see any e-book pages that your instructor has assigned, and that your exercise results report to your instructor's gradebook.
6. Click **NEXT** at the bottom of the screen, confirm your account information, and click **CREATE ACCOUNT** to complete the registration process.
7. If you have trouble registering, contact **Tech Support** at **800.936.6899** or techsupport@bfpwpub.com. Otherwise, return to www.writershelp.com to log in to Writer's Help.

Academic dishonesty will not be tolerated. If questions arise in your mind during the semester about plagiarism, appropriate citation of sources, or permitted collaboration on assignments, please initiate a discussion with me. If you find yourself contemplating an action that you would be embarrassed to disclose fully to the other students in the class or to me, I would advise you to consult with me before moving forward. Please keep in mind that instructors have a subscription to anti-plagiarism software which tracks all Mines student writing, inappropriate borrowing from internet sites, and papers-for-sale.

Plagiarism: CSM policy defines plagiarism as follows: "Copying or adopting the scientific, literary, musical, or artistic composition or work of another and producing or publishing it as one's own original composition or work. To be liable for 'plagiarism' it is not necessary to exactly duplicate another's work: it is sufficient if unfair use of such work is made by lifting of substantial portion thereof, but even an exact counterpart of another's work does not constitute 'plagiarism' if such counterpart was arrived at independently." The LAIS plagiarism policy requires that:

- a. For a first offense, the student will receive an F in the course, and the Vice President for Student Life and Dean of Students will be notified.
- b. For a second offense, the student will also receive an F in the course and further action, normally suspension from CSM, will be taken by the Vice President for Student Life and Dean of Students. The incident will also become a permanent part of the student's transcript.

VI. Course Schedule

Our semester runs from January 12 – May 5. Because this class takes advantage of a number of guest speakers who are difficult to confirm prior to the semester, we have to maintain some flexibility. The following schedule includes fixed dates and due dates, followed by a list of sequential classes that will combine with guest speakers (TBA) to “fill in the blanks.” Consult Blackboard for ongoing updates to our schedule.

Calendar

Jan 13	Introductions, orientation, review of syllabus
Jan 18	_____
Jan 20	_____
Jan 25	_____
Jan 27	<i>DUE: Topic proposal for policy project</i> Class time will be allocated to presentations (2-3 min) of topics by students
Feb 1	_____
Feb 3	_____
Feb 8	_____
Feb 10	<i>DUE: Annotated bibliography for policy project</i> <i>DUE: Office hour visit (including discussion of policy project)</i> Mid-course evaluations of instructor in class Topic/Reading: _____
Feb 15	_____
Feb 17	_____
Feb 22	_____
Feb 24	_____
Mar 1	_____
Mar 3	<i>DUE: Landscape paper for policy project</i> Class time will be allocated to presentations (2-3 min) of refined policy topics
Mar 8	_____

Mar 10	_____
Mar 15/17	No class – CSM Spring Break
Mar 22	Jennifer Kuzma, Hennebach Visiting Scholar (readings TBD)
Mar 24	<i>DUE: Connections paper for policy project</i> Jennifer Kuzma (readings TBD)
Mar 29	Guest speaker: Jen Schneider, LAIS Topic: Science Communication (readings TBD)
Mar 31	Guest speaker: Jen Schneider, LAIS Topic: Science Communication (readings TBD)
Apr 5, 7, 12, 14, 19, 21	<i>Student Policy Presentations (in class)</i>
Apr 26	_____
Apr 28	_____
May 3	_____
May 5	<i>DUE: Policy Brief & Self-evaluation of class participation.</i> Class wrap-up and discussion of policy projects.

Sequence of classes

These classes are numbered sequentially so that you can fill in the calendar (above) as the semester progresses. Of the 17 “blanks” in the calendar, I anticipate including 2-3 additional guest speakers.

1. How do we think about public policy?
 - Stone, Deborah. 2002. *Policy Paradox: The Art of Political Decision Making*. 3rd ed. W. W. Norton & Company. Chapters 1 (“The Market and the Polis”), 7 (“Numbers”), and Conclusion (“Political Reason”).
2. *Frontiers*, “The End of the Age of Physics” (1-15) & “The Myth of Infinite Benefit” (17-29)
3. *Frontiers*, “The Myth of Unfettered Research” (31-49) & “Myth of Accountability” (51-69)
4. *Frontiers*, “Myth of Authoritativeness” (71-96) and “Myth of the Endless Frontier” (97-115)
5. *Frontiers*, “Pas de Trois: Science, Technology, and the Marketplace” (117-40) & “Science as Surrogate for Social Action” (141-67)
6. *Frontiers*, “Toward a New Mythology” (169-95)

7. Federal funding of science

- De Figueiredo, John M. and Brian S. Silverman (2007) "How Does the Government (Want to) Fund Science," in *Science and the University*, P.E. Stephan and R.G. Ehrenberg (eds.): 36-51.
- Jackson, Brian A. (2006) "Federal R&D: Shaping the National Investment Portfolio," in *Shaping Science and Technology Policy*, pp. 33-54.
- Find a newspaper or magazine article or blog to read that addresses federal funding of science. Come to class prepared to summarize what you learned.

8. Federal R&D Budget – 2011

- AAAS Report XXXV: Research and Development FY 2011, Ch 1-4 (pp. 5-41)
- Continued discussions of articles/blogs brought in by students

9. *Honest Broker*, Ch 1-3 (1-38)

10. *Honest Broker*, Ch 4-6 (39-96)

11. *Honest Broker*, Ch 8, 9, Appendix (116-62)

12. Science and democracy

- Jasanoff, Sheila (2009) "The Essential Parallel between Science and Democracy," *Seed Magazine*, February 17, 2009.
- Brown, Mark B. 2006. "Survey Article: Citizen Panels and the Concept of Representation." *Journal of Political Philosophy* 14:203–225.

13. Citizen engagement with science

- Sclove, Richard E. 2000. "Town Meetings on Technology: Consensus Conferences as Democratic Participation," in *Science, Technology, and Democracy*, D.L. Kleinman (ed.): 33-48.
- Kleinman, Daniel Lee, Jason A. Delborne, and Ashley A. Anderson. 2009. Engaging Citizens: The High Cost of Citizen Participation in High Technology. *Public Understanding of Science OnlineFirst* (October 9). doi:[10.1177/0963662509347137](https://doi.org/10.1177/0963662509347137).

14. Presidential Science Advisors

- R. Pielke, Jr. and R. A. Klein, Eds. (2010) *Presidential Science Advisors: Perspectives and Reflections on Science, Policy and Politics*. Springer. Read Introduction, Chapters 1 & 11.

15. Science advice to the Congress

- R. Pielke, Jr. and R. A. Klein, Eds. (2010) *Presidential Science Advisors: Perspectives and Reflections on Science, Policy and Politics*. Springer. Read Part III Intro., Chapters 9 & 10.