

ESPM 256

Science, Technology and the Politics of Nature

Spring 2008

Wednesdays 2-5

XXXXXXXXXX Hall

3 Units

INSTRUCTOR

David Winickoff, Assistant Professor of Bioethics and Society

Office Hours: XXXXXXXXXXXX, or by appointment

115 Giannani Hall

winickoff@nature.berkeley.edu

643-0319

COURSE DESCRIPTION

This graduate seminar will introduce the methods and theories of Science and Technology Studies (STS) in order to explore the relationship of science, technology, law and politics in the domains of environment and health. The course will focus some attention on the tension between technocracy and democracy in science policy, and the role of biotechnology in reshaping the natural and political order. The course will equip graduate students in the social sciences, law, life sciences and public policy with theoretical and practical tools for analyzing complex problems at the science, technology and society interface.

REQUIRED BOOKS

Available at the Campus Bookstore and/or Ned's on Bancroft

- J.R. Kloppenburg, Jr. *First the Seed: The Political Economy of Plant Biotechnology*, 2nd Ed. (Madison, WI: University of Wisconsin Press, 2004)
- B. Latour, *We Have Never Been Modern* (Cambridge: Harvard University Press, 1991).
- J. Scott, *Seeing Like a State* (New Haven: Yale University Press, 1998).
- L. Winner, *The Whale and the Reactor*

The books have been placed on reserve and are located in GRDS in room 208 of Doe Library (Graduate Services).

REQUIRED COURSE READER:

Available at Ned's Bookstore on Bancroft or online at www.odinreaders.com

You are responsible for printing out and bringing to class all online materials

GRADING

Weekly Response Papers

20%

5-10 minute oral presentation of one week's reading	10%
Participation in class discussion and web site	10%
Written Paper(s) (2 8-10 page OR 1 20 page)	60%

The research paper for this course requires that graduate students pick a topic of their choosing related to the themes of the class. Students will use the readings from the class to develop theoretical, analytical, and/or empirical frameworks to interpret a problem or problems within their chosen topic. For instance, you might choose “the regulation of nanotechnology” and then use the materials in the course to explore practical or theoretical problems associated with the regulation of nanotechnology. The paper could also be the development of a research prospectus using the frameworks and materials discussed.

January 23	Introduction and Overview
-------------------	----------------------------------

Raymond Williams, selections from *Keywords*, 2nd ed., (NY: Oxford U.P., 1985 [1976])
 “Nature,” pp. 219-224, “Science,” pp. 276-80; “Technology,” pp. 315-16.

January 30	Science and Democracy
-------------------	------------------------------

- R. Macleod, "Science and Democracy: Historical Reflections on Present Discontents," *Minerva* 35 (1997), pp. 369-384.
- M. Polanyi, "The Republic of Science," *Minerva* 1 (1962), pp. 54-73.
- D.K. Price, *The Scientific Estate* (Cambridge, MA: Harvard University Press, 1965), Ch. 1 ("Escape to the Endless frontier"), pp. 1-20; Ch. 6 ("Constitutional Relativity"), pp. 163-207.
- R.K. Merton, "The Normative Structure of Science" [note different name in packet] ,in R.K. Merton, *The Sociology of Science: Theoretical and Empirical Investigations* (Chicago: University of Chicago Press, 1973), pp. 267-278.
- D.S. Greenberg, *Science, Money, and Politics: Political Triumph and Ethical Erosion* (Chicago: University of Chicago Press, 2001), Ch. 3 ("Vannevar Bush and the Myth of Creation"), pp. 41-58.
- D.H. Guston, *Between Politics and Science* (New York: Cambridge University Press, 2000), Ch. 2 ("Understanding the Social Contract for Science"), pp. 37-63.

February 6	STS Frameworks
-------------------	-----------------------

- D. Bloor, *Knowledge and Social Imagery* (Chicago: University of Chicago Press, 1991 [1976]), Ch. 1 ("The Strong Programme in the Sociology of Knowledge"), pp. 3-23.
- I. Hacking, *The Social Construction of What?* (Cambridge, MA: Harvard University Press, 1999), Ch. 2 ("Too Many Metaphors"), pp. 35-62.
- T.F. Gieryn, "The Boundaries of Science," in S. Jasanoff et al., eds., *Handbook of Science and Technology Studies* (Thousand Oaks, CA: Sage Publications, 1995),

pp. 393-443.

- D. Haraway, *Simians, Cyborgs and Women*, Ch. 9 ("Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective"), pp. 183-201.
- S. Visvanathan, *A Carnival for Science* Delhi: Oxford University Press, 1997), Ch. 2 ("On the Annals of the Laboratory State"), pp. 15-47.
- P. Kitcher, *Science, Truth, and Democracy* (Oxford: Oxford University Press, 2001), Ch. 4 ("The World as We Make It"), pp. 43-53.

February 13

Coproducing Nature, Knowledges and Social Order

- S. Shapin and S. Schaffer, *Leviathan and the Air-Pump* (Princeton: Princeton University Press, 1985), Ch. 8 ("The Polity of Science: Conclusions"), pp. 332-344.
- B. Latour, *We Have Never Been Modern* (Cambridge: Harvard University Press, 1993), Chs. 1-3, pp. 1-90.
- E.F. Keller, *Reflections on Gender in Science* (New Haven: Yale University Press, 1985), pp. 75-94.
- S. Jasanoff, ed., *States of Knowledge: The Co-Production of Science and Social Order* (London: Routledge, 2005), Ch. 2 ("Ordering Knowledge, Ordering Society"), pp. 13-45.
- H. Nowotny, P. Scott and M. Gibbons, *Re-Thinking Science: Knowledge and the Public in an Age of Uncertainty* (Cambridge: Polity, 2001), Ch. 3 ("The Co-Evolution of Society and Science"), pp. 30-49.

February 20

Networks and Power

- B. Latour, *We Have Never Been Modern*, pp. 91-145.
- M. Callon, "Some Elements of a Sociology of Translation: Domestication of the Scallops and the Fishermen of St. Brieuc Bay," in J. Law, ed., *Power, Action, and Belief: A New Sociology of Knowledge?* (London: Routledge and Kegan Paul, 1986), pp. 196-233.
- M. Strathern, "Cutting the Network," *Journal of the Royal Anthropological Institute* (N.S.) 2 (1996), pp. 517-535.
- M. Foucault, *Politics, Philosophy, Culture*, ed. L. Kritzman, excerpts on "Power," 58-61, 82-85, 100-109, 264-7
- S.L. Star, J.R. Griesemer, "Institutional ecology, 'translations' and boundary objects: Amateurs and professionals in Berkeley's Museum of Vertebrate Zoology, 1907- 39." *Social Studies of Science* (1989) 19: 387-420.
- P.M. Haas, "Do Regimes Matter? Epistemic Communities and Mediterranean Pollution Control," *International Organization* 43:377-403 (1989).

Suggested:

- B. Latour, *Reassembling the Social: An Introduction to Actor-Network Theory* (Oxford: Oxford U.P., 2005).
- J. Fujimura, "Crafting science: Standardized packages, boundary objects, and 'translation,'" In

Science as Practice and Culture, ed. Andrew Pickering: (Chicago: University of Chicago Press, 1992), pp. 170-209

February 27	Seeing and Representing
--------------------	--------------------------------

- M. Foucault, "Panopticism" from *Discipline and Punish*, reprinted and edited in Rabinow, ed., *Foucault Reader* (New York: Pantheon, 1984), pp. 206-213.
Shapin and Schaffer, *Leviathan*, Ch. 2 ("Seeing and Believing"), pp. 22-79.
M. Goldman, "The Birth of a Discipline: Producing Authoritative Green Knowledge, World Bank Style," 2(2) *Ethnography* 191 (2001).
J. Scott, *Seeing Like a State* (New Haven: Yale University Press, 1998), pp. 1-146.
M. Chapin, Z. Lamb, B. Threlkeld, "Mapping Indigenous Lands," *Annu. Rev. Anthropol.* (2005) 34:619-38.

Suggested:

- Y. Ezrahi, *Descent of Icarus*, Chs. 3, 4, pp. 67-127.
R. Friedland and R.R. Alford, "Bringing Society Back In: Symbols, Practices, and Institutional Contradictions," in W.W. Powell and P.J. DiMaggio, eds., *The New Institutionalism in Organizational Analysis* (Chicago: University of Chicago Press, 1991), pp. 232-263.

March 5	Classifying and Normalizing
----------------	------------------------------------

- M. Foucault, *Discipline and Punish*, Part III, Ch. 2 ("The means of correct training"), pp. 170-194.
M. Foucault, "Preface" in *The Order of Things: An Archaeology of the Human Sciences*, (New York, NY: Routledge, 2002) xv-xx.
J. Carson, "Army Alpha, Army Brass, and the Search for Army Intelligence." *Isis* 84 (1993), pp. 278-309.
I. Hacking, *Rewriting the Soul* (Princeton, NJ: Princeton University Press, 1995), Ch. 4 ("Child Abuse"), pp. 55-68.
G.C. Bowker and S.L. Star, *Sorting Things Out: Classification and Its Consequences* (Cambridge, MA: MIT Press, 2000), Ch. 6 ("The Case of Race Classification and Reclassification Under Apartheid"), pp. 195-225.
J. Kahn, "How a Drug Becomes 'Ethnic': Law, Commerce, and the Production of Racial Categories in Medicine," *Yale Journal of Health Policy, Law and Ethics*, 4:1 (2004): 1-46.

March 12	Discourses of Risk and Expertise
-----------------	---

- T. Porter, *Trust in Numbers* (Princeton, NJ: Princeton University Press, 1995), Ch. 7 ("U.S. Army Engineers and the Rise of Cost-Benefit Analysis"), pp. 148-189.
S. Jasanoff, "Acceptable Evidence in a Pluralistic Society," Ch. 2, in R. Hollander and D.

Mayo, eds., *Acceptable Evidence: Science and Values in Hazard Management* (New York: Oxford U.P., 1991), pp. 29-47.

S. Jasanoff, "Songlines of Risk," *Environmental Values* 8 (1999): 135-152.

M. Hajer, *The Politics of Environmental Discourse* (Oxford: Oxford University Press, 1995), Ch. 2 ("Discourse Analysis"), pp. 42-72.

A.M. Weinberg, "Science and Trans-Science," *Minerva* 10 (1972), pp. 209-222.

C. Sunstein, *Risk and Reason* (Cambridge: Cambridge U.P., 2002), Ch. 5 ("Reducing Risks Rationally") pp. 99-132, Ch. 8. ("Of Courts and Law: Cost-Benefit Default Principles") 191-228.

March 19	Ontologies of Nature
-----------------	-----------------------------

D. Takacs, *The Idea of Biodiversity: Philosophies of Paradise* (Baltimore: Johns Hopkins U.P., 1996), pp. 34-99.

S. Visvanathan, *A Carnival for Science*, Ch. 2 ("Footnotes to Vavilov: An Essay on Gene Diversity"), pp. 48-93.

D. Delaney, *Law and Nature*, Ch. 8 ("Law and Endangered Species"), pp. 192-212.

C. Thompson, "Co-producing CITES and the African Elephant," Ch. 4 in S. Jasanoff, ed., *States of Knowledge*, pp. 67-86.

S. Pinker, "Why Nature & Nurture Won't Go Away," *Daedalus* 133;44 (Fall 2004): 5-17.

R. Rorty, "Philosophy-envy," *Daedalus* 133;44 (Fall 2004): 18-24.

Suggested:

C. Merchant, *Death of Nature*

Collingwood, *The Idea of Nature*

W. Cronon, ed., *Uncommon Ground: Rethinking the Human Place in Nature*

March 26

**** **SPRING BREAK** ****

April 2	Technology and Power
----------------	-----------------------------

L. Winner, "Do Artifacts Have Politics," in *The Whale and the Reactor* (Chicago: University of Chicago Press, 1986), pp. 19-39.

B. Joerges, "Do Politics Have Artefacts," *Social Studies of Science* 29 (1999), pp. 411-431.

B. Bimber, "Three Faces of Technological Determinism," in M.R. Smith and L. Marx, eds., *Does Technology Drive History: The Dilemma of Technological Determinism* (Cambridge, MA: MIT Press, 1994), pp. 79-100.

D. MacKenzie, *Inventing Accuracy: A Historical Sociology of Nuclear Missile Guidance* (Cambridge, MA: MIT Press, 1990), Ch. 2 ("Inventing a Black Box"), pp. 27-49.

R. Sclove, *Democracy and Technology* (NY: Guilford Press, 1995), Chs. 2,3, pp. 10-57.

W.E. Bijker, *Of Bicycles, Bakelites, and Bulbs: Toward a Theory of Sociotechnical Change* (Cambridge, MA: MIT Press, 1997), Ch. 4, pp. 200-267.

Suggested:

- B. Latour, "Where Are the Missing Masses? The Sociology of a Few Mundane Artifacts," in W.E. Bijker and J. Law, eds., *Shaping Technology/Building Society* (Cambridge, MA: MIT Press, 1992), pp. 225-258.
- L. Winner, "Upon Opening the Black Box and Finding It Empty: Social Constructivism and the Philosophy of Technology," *Science, Technology, and Human Values* 18 (1993), pp. 362-378.
- E. Hayter, "Barbed wire fencing - a prairie invention: Its rise and influence in the western states," *Agricultural History* 13 (1939): 189-207.

April 9	Agricultures of Control
----------------	--------------------------------

- Kloppenburg, *First the Seed*
- J. Scott, *Seeing Like a State*, Ch.8 ("Taming Nature: An Agriculture of Legibility and Simplicity"), pp. 262-306.

April 16	Science and the University
-----------------	-----------------------------------

April 23	
-----------------	--

April 30	From Biopower to Citizenship
-----------------	-------------------------------------

- M. Foucault, "Biopower" from *History of Sexuality and Power/Knowledge*, excerpted in P. Rabinow, ed., *The Foucault Reader* (NY: Pantheon Books, 1984), pp. 258-289.
- S. Epstein, "The Construction of Lay Expertise: AIDS Activism and the Forging of Credibility in the Reform of Clinical Trials," 20:4 *Science, Technology, & Human Values* (Autumn 1995), pp. 408-437.
- R. Sclove, "Town Meetings on Technology: Consensus Conferences as Democratic Participation," Ch. 2 in *Science, Technology, and Democracy*, D. Kleinman, ed. (Albany: SUNY Press, 2000), pp. 33-48.
- N. Hassanein, "Democratizing Agricultural Knowledge Through Sustainable Farming Networks," Ch. 3 in *Science, Technology and Democracy*, pp. 49-66.
- B. Wynne, "Misunderstood Misunderstandings: Social Identities and Public Uptake of Science," in A. Irwin and B. Wynne, eds., *Misunderstanding Science? The Public Reconstruction of Science and Technology* (Cambridge: Cambridge University Press, 1996), pp. 19-46.

M. Brown, "Citizen Panels and the Concept of Representation," *Journal of Political Philosophy*: Volume 14, Number 2, 2006, pp. 203-225.

May 7	Presentations
--------------	----------------------

Papers Due

Class Presentations