HSD 602 – Syllabus

Professor: Clark A. Miller

Time: Fridays, 9 a.m. – 12:30 p.m.

Location: LSE 244

**Course Description:**

HSD 601 and 602 form an integrated, yearlong seminar that provides the theoretical and methodological foundations for PhD research in the Human and Social Dimensions of Science and Technology. This sequence is the central focus of student coursework during their first year in the HSD PhD program, although students in other programs are also welcome to participate. Readings focus on the interdisciplinary integration of four key fields of study of science and technology: conceptual and philosophical; historical; social and institutional; and policy and political. Additional emphasis will be placed on research design and methods in the humanistic and social study of science and technology. HSD 602 explores the theoretical foundations for understanding the interactions of science, technology, power, politics, policy, and democracy in contemporary and historical societies. Today, rationality and democracy form to the foundational pillars of political organization and policy development. At times, they support one another closely—at other times they are in tension. This course will help students to better understand and assess these relationships.

**Course Objectives:**

Upon successful completion, students will have acquired an understanding of**:**

1. The basic conceptual and theoretical foundations for research and analysis in the humanistic and social studies of science and technology, including:

* *Conceptual and philosophical foundations*: problems of epistemology and ontology in science; logics and grammars of reasoning and classification; problems of evidence, objectivity, credibility, and rationality.
* *Historical foundations*: emergence and formation of scientific ideas, practices, and institutions, and technological systems; historical contexts of science and technology and their social uptake.
* *Social and institutional foundations*: social and institutional arrangements of contemporary science, e.g., the research university, the laboratory, the field; social and institutional dimensions of technological systems.
* *Political foundations*: relationships between science, technology, and the state; relationships between science, technology, and democracy.

1. The skills required to successfully integrate ideas, concepts, theories, data, and analyses from the foundational disciplines into comprehensive understandings of the human and social dimensions of science and technology.
2. Research strategies and techniques for humanistic and social studies of science and technology, including:

* The variety of research techniques and methods common to the humanistic and social studies of science and technology.
* The ethical dilemmas of humanistic and social science research in science and technology and responsible conduct of research.
* The importance of research design and the strategies involved in collecting, interpreting, and representing research materials and finding.

**Course Readings:**

Course readings will be provided on-line or through the course blackboard site, available through my.asu.edu.

**Course Requirements:**

Course Discussions and Leadership (20%): Students will lead at least two seminar discussions and come to class prepared to participate in every class meeting. When leading discussion, students will be expected to prepare an outline for the class that covers the general arguments of the assigned reading and an evaluation of the findings or conclusions.

Soapbox Entries (20%): Students will write a 500-800 word, typed Soapbox entry for each class session except the first. Blogs have become a major form of communication, and students will have an opportunity to try their hand. Each entry will relate some aspect of the day’s reading to a contemporary problem in S&T policy, offering a clear viewpoint about what the reading means for how we think about S&T today. Each week students will also be asked to provide peer feedback to one other person in the class about their Soapbox entry.

Research Proposal (60%): Students will complete a proposal for their 2nd-year project for the HSD program. This will include a series of preliminary components (15%), a research presentation (10%), and an NSF-format research proposal (35%). This proposal should be developed in collaboration with the student’s primary advisor. The final proposal must include a project summary (1 page, with a statement, each, of intellectual merit and broader impact), a project description (15 pages), and a bibliography. The research presentations will take place on April 30. Additional instructions will be forthcoming in class.

**Jan. 22 – Introduction and Overview**

No readings required.

**Jan. 29 – Historical Perspectives on Science and the State in the 20th Century**

Selections from John Krige and Dominique Pestre, *Science in the 20th Century* (Taylor and Francis, 1997).

* Dominique Pestre, “Science, Political Power, and the State”
* Theodore Porter, “The Management of Society by Numbers”
* Everett Mendelsohn, “Science, Scientists, and the Military”
* W. B. Carlson, “Innovation and the Modern Corporation”
* Deborah Fitzgerald, “Mastering Nature and Yeomen”
* Daniel Kevles, “From Eugenics to Genetic Manipulation”

**Feb. 5 – Theories of Co-Production**

Selections from Sheila Jasanoff, ed., *States of Knowledge: The Co-Production of Science and Social Order* (Routledge, 2004).

* Sheila Jasanoff, “The Idiom of Co-Production”
* Sheila Jasanoff, “Ordering Knowledge, Ordering Society”
* John Carson, “The Science of Merit and the Merit of Science: Mental Order and Social Order in Early 20th Century United States and France”
* Michael Dennis, “Reconstructing Socio-Technical Order: Vannevar Bush and US Science Policy”
* Yaron Ezrahi, “Science and the Political Imagination in Contemporary Democracies”

We will need to reschedule this class for another day.

**Feb. 12 – Knowledge, the State, and Social Imagination**

**Assignment: Preliminary Theoretical and Substantive Contribution Statement Due**

* James Scott, “Nature and Space” and “Cities, People, and Language” in *Seeing Like a State* (Yale, 1998).
* Bjorn Wittrock and Peter Wagner, “Social Science and the Building of the Early Welfare State,” in D. Rueschemeyer and T. Skocpol, eds. *States, Social Knowledge, and the Origins of Modern Social Policies* (Russell Sage, 1996).
* Benedict Anderson, “Map, Museum, and Census,” in *Imagined Communities* (Verso, 1983).
* Samer Alatout, “’States of Scarcity’: Water, Space, and Identity Politics in Israel, 1948-1959,” *Environment and Planning D: Society and Space* 26:959-982. 2008.
* Svetlana Alpers, “Mapping” in *The Art of Describing: Dutch Art in the Seventeenth Century* (Chicago, 1984).
* Review Hacking and Gusterson from HSD 601.

**Feb. 19 – Knowledge, Deliberation, and Democracy**

* Clark Miller, “Civic Epistemologies: Constituting Knowledge and Order in Political Communities,” *Sociology Compass* 2(6): 1896-1919. 2008.
* Clark Miller, “Interrogating the Civic Epistemology of American Democracy: Stability and Instability in the 2000 US Presidential Election,” *Social Studies of Science* 34(4): 501-530.
* Stephen Hilgartner, “Introduction” and “Staging Authoritative Advice,” in *Science on Stage: Expert Advice as Public Drama* (Stanford, 2000).
* Steven Epstein, “Introduction” and “The Critique of Pure Science,” in *Impure Science: AIDS, Activism, and the Politics of Knowledge* (U. California Press, 1996).
* Brian Wynne, “Misunderstood Misunderstandings: Social Identities and the Public Uptake of Science,” In A. Irwin and B. Wynne, eds., *Misunderstanding Science?* (Cambridge, 1996).
* Review the readings on credibility from HSD 601.

**Feb. 26 – Science and Representation**

**Assignment: Preliminary Data Collection Plan Due**

* Mark Brown, *Science in Democracy: Expertise, Institutions, and Representation* (MIT, 2009).

**Mar. 5 – Science and Values**

* Heather Douglas, *Science, Policy, and the Value-Free Ideal* (Pittsburgh, 2009).

We will need to reschedule this class for another day.

**Mar. 12 – Socio-Technological Constitutions**

**Assignment: Preliminary Data Analysis Statement Due**

* Langdon Winner, “Technologies as Forms of Life,” “Do Artificats Have Politics,” and “Techne and Politeia” in *The Whale and the Reactor* (Chicago, 1986).
* Shobita Parthasarathy, “Architectures of Genetic Medicine: Comparing Genetic Testing for Breast Cancer in the USA and the UK,” *Social Studies of Science* 35(1): 5-40. 2005.
* Charis Thompson, “Sex, Drugs, and Money: The Public, Privacy, and the Monopoly of Desparation,” in *Making Parents: The Ontological Choreography of Reproductive Technologies* (MIT, 2005).
* Review Daemmrich and Krucken from HSD 601.

**Mar. 26 – The Politics of Things**

* Bruno Latour, *We Have Never Been Modern* (Harvard, 1993). Or
* Bruno Latour, *The Making of Law* (Polity, 2010).

**Apr. 2 – Political Cultures of Innovation and Regulation in Democratic Societies**

**Assignment: Preliminary Statement of Intellectual Merit and Broader Impacts Due**

* Sheila Jasanoff, *Designs on Nature: Science and Democracy in Europe and the United States* (Princeton, 2005).

**Apr. 9 – Knowledge and Power in Transnational Contexts**

* James Fairhead and Melissa Leach, “Rethinking the Forest-Savanna Mosaic: Colonial Science and Its Relics in West Africa,” in M. Leach and R. Mearns, eds., *The Lie of the Land* (International African Institute, 1996).
* Abby Kinchy, “Anti-Genetic Engineering Activism and Scientized Politics in the Case of ‘Contaminated’ Mexican Maize,” *Agriculture and Human Values* 2009. DOI 10.1007/s10460-009-9253-2.
* Stephen Lansing, “Introduction” in *Perfect Order* (Princeton, 2006).
* Andrew Mathews, “Power/Knowledge, Power/Ignorance: Forest Fires and the State in Mexico,” *Human Ecology* 33(6): 795-820. 2005.
* Clark Miller, “Resisting Empire: Globalism, Relocalization, and the Politics of Knowledge,” in S. Jasanoff and M. Martello, eds., *Earthly Politics* (MIT, 2004).

**Apr. 16 – Democratizing Science and Technology**

**Assignment: Preliminary Proposal Introductory Statement Due**

* James Wilsdon and Rebecca Willis, *See-Through Science: Why Public Engagement Needs to Move Upstream* (Demos, 2004).
* Brian Wynne and Ulrike Felt, *Taking European Knowledge Society Seriously* (European Commission, 2007).
* Steve Rayner, “Trust and the Transformation of Energy Systems,” *Energy Policy* 2009. doi:10.1016/ j.enpol.2009.05.035.

**Apr. 23 – Anticipatory Governance**

**Assignment: Preliminary Statement of Your Skills and Contributions to Your Career Due**

* Barben, Daniel, Erik Fisher, Cynthia Selin and David H. Guston. 2008. “Anticipatory Governance of Nanotechnology: Foresight, Engagement, and Integration.” *The Handbook of Science and Technology Studies, Third Edition*, eds. Edward J. Hackett, Olga Amsterdamska, Michael Lynch and Judy Wajcman, 979-1000. Cambridge, MA: MIT Press.
* Miller, Clark A. and Ira Bennett. 2008. “Thinking Longer Term about Technology: Is there Value in Science Fiction-inspired Approaches to Constructing Future.” *Science and Public Policy*, 35(8): 597-606.
* Larry Bell, “Engaging the Public in Technology Policy: A New Role for Science Museums,” *Science Communication* 29: 386-398. 2008.
* Jennifer Kuzma, James Romanchek, and Adam Kokotovich, “Upstream Oversight Assessment for Agrifood Technology: A Case Studies Approach,” *Risk Analysis* 28(4): 1081-1098. 2008.
* Risto Karinen and David Guston, “Toward Anticipatory Governance: The Experience with Nanotechnology,” *Governing Future Technologies: Nanotechnology and the Rise of an Assessment Regime*, eds. M. Kaiser, M. Kurath and C. Rehmann-Sutter. Dordrecht, The Netherlands: Springer. 2009.

**Apr. 30 – Final Wrap-Up Session**

No readings. We will listen to your research presentations today and review the class.

**Your research proposal and research presentation are due today!**