

History of Science 720: *Proseminar in Historiography and Methods*

Professor Nicole Nelson
Bradley Memorial Building, Room 207
ncnelson@wisc.edu
Office hours: TBA

Fall 2014
332 Bradley Memorial Building
M 9:00–11:30

This course provides an introduction to the scholarly field that is the history of science. It gives a necessarily brief and partial overview of some of the major themes and issues that occupy the field, and it offers an opportunity to investigate ways in which influential scholars in the field have gone about their work. We will critically examine a variety of dominant themes, issues, and approaches in the field with reference to epistemological, methodological, and general historiographical questions concerning science as a subject of historical inquiry.

In the first half of the course, we will read texts that were formative in the development of the history of science (such as Kuhn's widely read book *The Structure of Scientific Revolutions*), as well as texts that are representative of different approaches that are paradigmatic in the field (such as a focus on material agency and scientific practice). The second half of the course is comprised of clusters of readings that represent different subfields or areas of research interest within the history of science, and each of these weeks will be co-led by a guest instructor from the department who works in that area. This section of the course has a dual purpose: to introduce you to faculty members from the department and their research strengths, and to give you a sampling of the variety of topics and issues that are currently animating scholarship in the field. The interests of the students enrolled in the class will direct the final weeks of the course. For week 13, we'll discuss potential questions or research areas relating to your interests that are not well covered by the assigned readings, and I will develop a reading list tailored towards these collectively defined needs. The last class meeting will be reserved primarily for a discussion of your final paper assignments and the observations and issues you are encountering in your writing.

Assignments: In addition to your active participation in weekly class discussions, you are also required to submit a weekly reading response for 10 of the 12 weeks with assigned readings (this means you get two opportunities to pass on doing a reading response, which you can take whenever best suits your needs). These reflections should be about 500 words and can be informal in nature, touching on issues such as: common themes or arguments in the readings, contrasts between the readings, the purpose or value of the readings and/or approaches, or questions that you would like to discuss in class. The aim of the readings responses is to prime the pump and get you thinking about the issues raised by the readings in advance of class, and we'll use the reading responses to help set the agenda for each discussion session. Please post your reading responses to the forum on the Learn@UW website at least 24 hours before class to allow time for your classmates and me to read them.

Your final paper assignment for this class will be an essay written in the style of a review article that reflects on a particular historical question, subfield of literature, or methodological approach. You can reflect either on texts and issues that we have discussed in class or on a body of literature in history of science (perhaps relating to your research interests) that we did not cover in class, but keep in mind that this is not intended to be a research paper and extensive source work should not be necessary. As part of the scheduled readings we will read several review essays that can serve as exemplars for writing a review essay. Your paper should be about 15 pages in length, and will be due during the exam period after classes end (exact date to be discussed in class).

Readings: Course books will be available on reserve at College Library, and links to articles that are available through UW Madison's electronic holdings will be compiled in the electronic course reserves page. Any remaining texts not available through either the physical or electronic reserves will be posted on the Learn@UW site.

Course Schedule

Sept 8: Course introduction

No readings

Sept 15: Origins and outlines of the history of science

- Thomas S. Kuhn. 1996. *The structure of scientific revolutions*. 3rd ed. Chicago: University of Chicago Press (including the postscript)
- Victor L. Hilts. 1984. "History of Science at the University of Wisconsin." *Isis* 75 (1): 63-94. <http://www.jstor.org/stable/232359>
- Lorraine Daston. 2009. "Science studies and the history of science." *Critical Inquiry* 35 (4): 798-813. http://criticalinquiry.uchicago.edu/uploads/pdf/Daston,_Science_Studies.pdf

- Peter Dear and Sheila Jasanoff. 2010. “Dismantling Boundaries in Science and Technology Studies.” *Isis* 101 (4): 759–774. doi:10.1086/657475

Sept 2: Producing knowledge and social order

- Steven Shapin and Simon Schaffer. 1989. *Leviathan and the air-pump: Hobbes, Boyle, and the experimental life*. 1st Princeton pbk. print. with corrections. Princeton, NJ: Princeton University Press
- Steven Shapin and Simon Schaffer. 2011. “Up for Air: Leviathan and the Air-Pump a Generation On.” In *Leviathan and the air-pump: Hobbes, Boyle, and the experimental life*, 2nd ed., xi–xlix. Princeton, NJ: Princeton University Press. <http://press.princeton.edu/chapters/i9440.pdf>
- Mi Gyung Kim. 2014. “Archeology, genealogy, and geography of experimental philosophy.” *Social Studies of Science* 44 (1): 150–162. doi:10.1177/0306312713507329

Sept 29: Great men of science?

- Janet Browne. 1996. *Charles Darwin: A Biography*. Princeton, N.J.: Princeton University Press (selections)
- Crosbie Smith. 1998. *The science of energy: a cultural history of energy physics in Victorian Britain*. Chicago: University of Chicago Press (selections)
- Margaret W. Rossiter. 1993. “The Matthew Matilda Effect in Science.” *Social Studies of Science* 23 (2): 325–341. <http://www.jstor.org/stable/285482>
- Mary Jo Nye. 2006. “Scientific Biography: History of Science by Another Means?” *Isis* 97 (2): 322–329. doi:10.1086/504738

Oct 6: Science in action

- Bruno Latour and Steve Woolgar. 1986. *Laboratory life: the construction of scientific facts*. Princeton, N.J.: Princeton University Press
- Léna Soler et al. 2014. “Introduction.” In *Science After the Practice Turn in the Philosophy, History, and Social Studies of Science*, edited by Léna Soler et al., 1–43. New York: Routledge
- Park Doing. 2008. “Give Me a Laboratory and I Will Raise a Discipline: The Past, Present, and Future Politics of Laboratory Studies in STS.” in *The Handbook of Science and Technology Studies*, 3rd ed., edited by Edward J. Hackett et al., 279–295. Cambridge, MA: The MIT Press

Plus two of:

- Heinz Otto Sibum. 1995. "Reworking the mechanical value of heat: Instruments of precision and gestures of accuracy in early Victorian England." *Studies in History and Philosophy of Science Part A* 26 (1): 73–106. doi:10.1016/0039-3681(94)00036-9
- Hugh Gusterson. 1996. "Nuclear Weapons Testing: Scientific Experiment as Political Ritual." In *Naked science: anthropological inquiry into boundaries, power, and knowledge*, edited by Laura Nader, 131–147. New York: Routledge
- Simon Schaffer. 1989. "Glass Works: Newton's Prisms and the Uses of Experiment." In *The Uses of Experiment: Studies in the Natural Sciences*, edited by David Gooding, Trevor Pinch, and Simon Schaffer, 67–104. Cambridge: Cambridge University Press
- Harry M. Collins. 1974. "The TEA Set: Tacit Knowledge and Scientific Networks." *Science Studies* 4 (2): 165–185. <http://www.jstor.org/stable/284473>

Oct 13: Material agency and actants

- Bruno Latour. 2005. *Reassembling the social: an introduction to actor-network-theory*. Clarendon lectures in management studies. Oxford: Oxford University Press ("Introduction" and "Objects too have agency")
- Andrew Pickering. 1993. "The Mangle of Practice: Agency and Emergence in the Sociology of Science." *American Journal of Sociology* 99 (3): 559–589. <http://www.jstor.org/stable/2781283>
- Michel Callon. 1986. "Some elements of a sociology of translation: Domestication of the scallops and fishermen of St. Brieuc Bay." In *Power, action and belief: a new sociology of knowledge?*, edited by John Law, 196–233. Sociological Review Monograph (University of Keele) 32. New York: Routledge
- Harry M. Collins and Steven Yearley. 1992. "Epistemological Chicken." In *Science as Practice and Culture*, edited by Andrew Pickering, 301–326. Chicago: University of Chicago Press
- Michel Callon and Bruno Latour. 1992. "Don't Throw the Baby Out With the Bath School! A Reply to Collins and Yearley." In *Science as Practice and Culture*, edited by Andrew Pickering, 343–368. Chicago: University of Chicago Press

Oct 20: Science and macro politics

- Michel Foucault. 1995. *Discipline and punish: the birth of the prison*. 2nd ed. New York: Vintage Books ("The body of the condemned," "Docile bodies," and "Panopticism")
- Sheila Jasanoff. 2006. "Biotechnology and Empire." *Osiris* 21 (1): 273–292. <http://www.jstor.org/stable/10.1086/507145>

- Paul Forman. 1973. "Scientific Internationalism and the Weimar Physicists: The Ideology and Its Manipulation in Germany after World War I." *Isis* 64 (2): 151–180. <http://www.jstor.org/stable/229595>
- Robert K. Merton. 1938. "Science and the Social Order." *Philosophy of Science* 5 (3): 321–337. <http://www.jstor.org/stable/184838>
- Steven Shapin. 1988. "Understanding the Merton Thesis." *Isis* 79 (4): 594–605. <http://www.jstor.org/stable/234749>

Oct 27: Non-Western science (with Pablo Gomez)

- Pablo F. Gomez. 2013. "The Circulation of Bodily Knowledge in the Seventeenth-century Black Spanish Caribbean." *Social History of Medicine* 26 (3): 383–402. doi:10.1093/shm/hkt014
- Neil Safier. 2010. "Global Knowledge on the Move: Itineraries, Amerindian Narratives, and Deep Histories of Science." *Isis* 101 (1): 133–145. doi:10.1086/652693
- Stacey A. Langwick. 2011. "Healers and Scientists: The Epistemological Politics of Research About Medicinal Plants in Tanzania, or 'Moving Away From Traditional Medicine.'" In *Evidence, Ethos and Experiment: The Anthropology and History of Medical Research in Africa*, edited by Wenzel Geissler and Catherine Molyneux, 263–295. New York: Berghahn Books
- Duana Fullwiley. 2006. "Biosocial Suffering: Order and Illness in Urban West Africa." *BioSocieties* 1 (4): 421–438. doi:10.1017/S1745855206004042
- Annemarie Mol and John Law. 1994. "Regions, networks and fluids: anaemia and social topology." *Social Studies of Science* 24 (4): 641–671. doi:10.1177/030631279402400402
- Warwick Anderson. 2014. "Making Global Health History: The Postcolonial Worldliness of Biomedicine." *Social History of Medicine* 27 (2): 372–384. doi:10.1093/shm/hkt126

Nov 3: Experts and expertise (with Tom Broman)

- Harry M. Collins and Robert Evans. 2002. "The Third Wave of Science Studies Studies of Expertise and Experience." *Social Studies of Science* 32 (2): 235–296. doi:10.1177/0306312702032002003
- Christopher Hamlin. 2008. "Third Wave Science Studies." In *The challenge of the social and the pressure of practice: science and values revisited*, edited by Martin Carrier, Don Howard, and Janet A. Kourany, 160–185. Pittsburgh, PA: University of Pittsburgh Press
- Chandra Mukerji. 2009. *Impossible engineering: technology and territoriality on the Canal du Midi*. Princeton Studies in Cultural Sociology. Princeton, NJ: Princeton University Press (ch. 1–4)

- Eric H. Ash, ed. 2010. *Expertise: practical knowledge and the early modern state*. Osiris, 2nd ser. v. 25. Chicago, Ill: University of Chicago Press (introduction and chapters by Walton, Murphy, and Maerker)
- Thomas Broman. 2014. "Working Knowledge: Technical Practices, Social Identities, and Expertise in Early Modern Europe." *Historical Studies in the Natural Sciences* 44 (1): 80–89. doi:10.1525/hsns.2014.44.1.80

Nov 10: Technoscience and the consumer (with Eric Schatzberg)

- Ronald R. Kline. 2000. *Consumers in the country: technology and social change in rural America*. Revisiting rural America. Baltimore, Md: Johns Hopkins University Press
- David Edgerton. 1999. "From innovation to use: Ten eclectic theses on the historiography of technology." *History and Technology* 16 (2): 111–136. doi:10.1080/07341519908581961
- Eric Schatzberg. 2006. "Technik Comes to America: Changing Meanings of Technology before 1930." *Technology and Culture* 47 (3): 486–512. doi:10.1353/tech.2006.0201. http://muse.jhu.edu/journals/technology_and_culture/v047/47.3schatzberg.html
- Thomas Parke Hughes. 1987. "The Evolution of Large Technological Systems." In *The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology*, edited by Wiebe E. Bijker, Thomas Parke Hughes, and Trevor Pinch, 51–82. Cambridge, MA: MIT Press

Nov 17: Science, medicine, and the public (with Susan Lederer)

- David Rosner and Gerald Markowitz. 2009. "The trials and tribulations of two historians: Adjudicating responsibility for pollution and personal harm." *Medical History* 53 (2): 271–292. doi:10.1017/S0025727300003665
- Susan E. Lederer. 2007. "Dark Victory: Cancer and Popular Hollywood Film." *Bulletin of the History of Medicine* 81 (1): 94–115. doi:10.1353/bhm.2007.0005
- Susan E. Lederer. 2002. "Porto Ricochet': Joking about Germs, Cancer, and Race Extermination in the 1930s." *American Literary History* 14 (4): 720–746. http://muse.jhu.edu/journals/american_literary_history/v014/14.4lederer.html
- Pam Scott, Evelleen Richards, and Brian Martin. 1990. "Captives of Controversy: The Myth of the Neutral Social Researcher in Contemporary Scientific Controversies." *Science, Technology & Human Values* 15 (4): 474–494. doi:10.1177/016224399001500406
- Michel Callon and Vololona Rabeharisoa. 2003. "Research "in the wild" and the shaping of new social identities." *Technology in Society, Studies in Science, Technology, and Society (STS) North and South*, 25 (2): 193–204. doi:10.1016/S0160-791X(03)00021-6

Nov 24: Model organisms and multi-species ethnography

- Robert E. Kohler. 1994. *Lords of the fly: Drosophila genetics and the experimental life*. Chicago: University of Chicago Press (selections)
- Nicole C. Nelson. 2013. "Modeling mouse, human, and discipline: Epistemic scaffolds in animal behavior genetics." *Social Studies of Science* 43 (1): 3–29. doi:10.1177/0306312712463815
- S. Eben Kirksey and Stefan Helmreich. 2010. "The emergence of multispecies ethnography." *Cultural Anthropology* 25 (4): 545–576. doi:10.1111/j.1548-1360.2010.01069.x
- Donna Jeanne Haraway. 2008. *When Species Meet*. Minneapolis: University of Minnesota Press ("Sharing Suffering")

Dec 1: Student directed readings

Readings TBA

Dec 8: Wrap up and student paper topic discussion

No readings