

History of Science 720: Proseminar in Historiography and Methods

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Office hours: by appointment

Fall 2015
332 Bradley Memorial Building
M 1:00–3:30

This course provides an introduction to the scholarly field that is the history of science. It gives a brief overview of some of the major themes and issues that occupy the field, and the different approaches scholars have used to address their questions. 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 the turn towards studying the practices of science instead of ideas or concepts). The second half of the course is comprised of clusters of readings that represent different subfields or areas of research interest with 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 thirteen 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/or 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, things that you didn't understand in the readings, or questions that you would like to discuss in class. The aim of the readings responses is to get you thinking about what you'd like to talk about 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. Class participation and reading responses count for 50% of your final grade.

Your final paper assignment for this class will be a historiographical essay 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 about trends or themes in the discipline. 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). The final essay counts for the other 50% of your final grade.

Evaluation You will receive feedback on and an interim letter grade for your class participation and reading responses at mid semester. Your cumulative participation/reading responses and final paper will be assigned letter grades at the end of the semester.

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 14: Course introduction

Joseph Dumit (2012) "How I read" Available at: <http://dumit.net/how-i-read/>

Sept 21: 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 28: Producing knowledge and social order

- Steven Shapin and Simon Schaffer. 1989. *Leviathan and the air-pump: Hobbes, Boyle, and the experimental life*. 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

Oct 5: Great men of science?

- Janet Browne. 1996. *Charles Darwin: A Biography*. Vol. 1 – Voyaging. Princeton, N.J.: Princeton University Press (Introduction, Chapters 12–15, 21)
- Crosbie Smith. 1998. *The science of energy: a cultural history of energy physics in Victorian Britain*. Chicago: University of Chicago Press (Chapters 1–4, 14, Epilogue)
- 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 12: The practice turn

- Bruno Latour and Steve Woolgar. 1986. *Laboratory life: the construction of scientific facts*. Princeton, N.J.: Princeton University Press (Chapters 1–4)
- 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

Plus any 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. 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. New York: 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 19: Material agency and "actants"

- Bruno Latour. 2005. *Reassembling the Social: An Introduction to Actor-Network-Theory*. Oxford: Oxford University Press ("Introduction" and "Objects too have agency")
- Andrew Pickering. 1995. "The mangle of practice; Machines: Building the bubble chamber." In *The Mangle of Practice*, 1–67. Chicago: University of Chicago Press
- Ian Hacking. 1999. "Madness: biological or constructed?" In *The Social Construction of What?*, 100–124. Cambridge, MA: Harvard University Press
- Michael Callon. 1986. "Some Elements of a Sociology of Translation: Domestication of the Scallops and the Fishermen of St Brieuc Bay." In *Power, action, and belief: a new sociology of knowledge?*, edited by John Law, 196–223. London: Routledge & Kegan Paul
- Timothy Mitchell. 2002. "Can the mosquito speak?" In *Rule of Experts: Egypt, Techno-Politics, Modernity*, 19–53. Berkeley: University of California Press

Oct 26: Visual history of science/science and technology studies (with Gregg Mitman)

- In-class screening of *In the shadow of Ebola*
- Somatosphere roundtable discussion on *In the Shadow of Ebola* (link TBA)
- Peter Galison. 2015. "Visual STS." in *Visualization in the Age of Computerization*, edited by Annamaria Carusi et al., 197–225. Routledge Studies in Science, Technology and Society. New York: Routledge
- Gregg Mitman and Kelley Wilder (forthcoming) "Introduction" in *Documenting the World: Film, Photography, and the Scientific Record*
- Gregg Mitman (forthcoming) "A Journey without Maps: Film, Expeditionary Science, and the Growth of Development" in *Documenting the World: Film, Photography, and the Scientific Record*

Nov 2: Practice and material culture in the history of chemistry (with Catherine Jackson)

- Catherine M. Jackson. 2008. "Visible Work: The Role of Students in the Creation of Liebig's Giessen Research School." *Notes and Records of the Royal Society of London* 62 (1): 31–49. <http://www.jstor.org/stable/20462649>
- Catherine M. Jackson. 2015. "The "Wonderful Properties of Glass": Liebig's Kaliapparat and the Practice of Chemistry in Glass." *Isis* 106 (1): 43–69. doi:10.1086/681036
- Jack B. Morrell. 1972. "The Chemist Breeders: The Research Schools of Liebig and Thomas Thomson." *Ambix* 19 (1): 1–46. doi:10.1179/amb.1972.19.1.1
- Melvyn Usselman et al. 2005. "Restaging Liebig: A Study in the Replication of Experiments." *Annals of Science* 62 (1): 1–55
- David Gooding. 1985. "In Nature's School': Faraday as Experimentalist." In *Faraday rediscovered: essays on the life and work of Michael Faraday, 1791–1867*, edited by David Gooding and Frank A. J. L. James, 105–132. New York: Stockton Press

Nov 9: Telling the history of feminist women's health care workers (with Judy Houck)

- Michelle Murphy. 2012. "Assembling Protocol Feminism." In *Seizing the Means of Reproduction: Entanglements of Feminism, Health, and Technoscience*, 25–67. Durham, NC: Duke University Press
- Jennifer Nelson. 2015. "Conserving feminist health care, confronting anti-abortion: The Atlanta Feminist Women's Health Center." In *More than Medicine: A History of the Feminist Women's Health Movement*, 123–166. New York: New York University Press
- Sandra Morgen. 2002. "Into our own hands: feminist health clinics as feminist practice." In *Into Our Own Hands: The Women's Health Movement in the United States, 1969–1990*, 70–105. Camden, NJ: Rutgers University Press
- Wendy Simonds. 1996. "Feminist work: health care provision and identity." In *Abortion at Work: Ideology and Practice in a Feminist Clinic*, 25–59. Camden, NJ: Rutgers University Press
- Judith A. Houck. 2012. "The Best Prescription for Women's Health: Feminist Approaches to Well-Woman Care." In *Prescribed: Writing, Filling, Using, and Abusing the Prescription in Modern America*, edited by Jeremy A. Greene and Elizabeth Siegel Watkins, 134–156. Baltimore, MD: Johns Hopkins University Press
- Judith A. Houck, draft chapter

Nov 16: 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>

Nov 23: Forensic Science (with Mitra Sharafi)

- Christopher Hamlin. 2013. “Forensic cultures in historical perspective: Technologies of witness, testimony, judgment (and justice?)” *Studies in History and Philosophy of Biological and Biomedical Sciences* 44 (1): 4–15. doi:10.1016/j.shpsc.2012.09.005
- Tal Golan. 2004. “Blood will out: Distinguishing Humans from Animals and Experts from Charlatans.” In *Laws of Men and Laws of Nature: The History of Scientific Expert in England and America*, 144–175. Cambridge, MA: Harvard University Press
- Projit Bihari Mukharji. 2014. “From serosocial to sanguinary identities: Caste, transnational race science and the shifting metonymies of blood group B, India c. 1918–1960.” *The Indian Economic and Social History Review* 51 (2): 143–176. doi:10.1177/0019464614525711
- Mitra Sharafi, “Precipitin Blood Testing and the Imperial Serologist in Colonial India” (draft paper)

Nov 30: “Care” as a site of inquiry and action?

- Bruno Latour. 2004. “Why Has Critique Run out of Steam? From Matters of Fact to Matters of Concern.” *Critical Inquiry* 30 (2): 225–248. doi:10.1086/421123
- Maria de la Bellacasa. 2011. “Matters of care in technoscience: Assembling neglected things.” *Social Studies of Science* 41 (1): 85–106. doi:10.1177/0306312710380301
- Annemarie Mol, Ingunn Moser, and Jeanette Pols. 2010. “Care: putting practice into theory.” In *Care in Practice: On Tinkering in Clinics, Homes and Farms*, edited by Annemarie Mol and Ingunn Moser, 7–26. Bielefeld, Germany: Transcript-Verlag

- Donna Jeanne. Haraway. 2008. "Sharing suffering." In *When species meet*, 69–93. Minneapolis: University of Minnesota Press
- Nicole C. Nelson. 2015. "Model Homes for Model Organisms: Intersections of animal welfare and behavioral neuroscience around the environment of the laboratory mouse." *BioSocieties* (June 8). doi:10.1057/biosoc.2015.19

Dec 7: Student choice readings

Readings TBA

Dec 14: Wrap up and student paper topic discussion

No readings