

History 619/SI 719/Rackham 619

## Knowledge/Power/Practice in Science, Technology & Medicine

Paul N. Edwards and Alexandra Minna Stern

Winter 2014

office hours: by appointment

**Mondays 1-4pm**

**2448 Mason Hall**

This graduate readings seminar provides a comprehensive introduction to the major themes and issues in Science & Technology Studies (STS, or S&TS). Drawing on scholarship in history, sociology, anthropology, American studies, and information studies, the course mixes theoretical material with more empirically oriented studies. The course focuses particularly on the relation between social, political, and cultural contexts and the development of ideas, practices, tools, and objects within science, technology, and medicine.

Work for the seminar includes reading approximately 200-350 pages per week, brief weekly response papers, two discussion papers based on a week's reading, and a final project of 10-12 pages.

This course is required for students enrolled (or planning to enroll) in the [STS Graduate Certificate Program](#). While some background in science, technology and/or medicine is helpful, the course does not require any particular expertise.

### Requirements: Assignments and Expectations

#### Reading

All required readings *except books* are available for download through the course CTools site.

**Students should purchase the following books. Copies are also on reserve at Hatcher Library.**

Harry Collins & Trevor Pinch, *The Golem: what you should know about science* (Cambridge University Press, 1998), 2nd edition

Steven Epstein, *Impure Science: AIDS, Activism, and the Politics of Knowledge* (Berkeley: University of California Press).

Joel Howell, *Technology in the Hospital: Transforming Patient Care in the Early Twentieth Century* (Baltimore: Johns Hopkins University Press, 1996).

Sheila Jasanoff, *Science at the Bar: Law, Science, and Technology in America* (Harvard: Harvard University Press, 1997).

Bruno Latour, *Reassembling the Social: an introduction to actor-network theory* (Oxford University Press, 2007)

Annemarie Mol, *The Body Multiple: Ontology in Medical Practice* (Durham: Duke University Press, 2003).

Thomas Misa, *Leonardo to the Internet: Technology and Culture from the Renaissance to the Present* (Johns Hopkins University Press, 2<sup>nd</sup> edition, 2011)

Nikolas Rose, *The Politics of Life Itself: Biomedicine, Power, and Subjectivity in the Twenty-First Century* (Princeton: Princeton University Press, 2007)

James C. Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have failed* (New Haven: Yale, 1999)

**Optional for purchase** (but this is an STS classic, and you should probably own it):

Steven Shapin and Simon Schaffer, *Leviathan and the Air-Pump* (University of Chicago Press, 1985)

**Those interested in overviews of the field (or its subfields) may find the following texts useful:**

Jan Golinski, *Making Natural Knowledge: Constructivism and the History of Science* (Cambridge: Cambridge University Press, 1998)

Sergio Sismondo, *An Introduction to Science and Technology Studies* (Oxford: Blackwell, 2004)

Edward Hackett, Olga Amsterdamska, Michael Lynch, and Judy Wajcman, eds., *The Handbook of Science and Technology Studies, Third Edition* (MIT Press, 2008)

Francesca Bray, "Gender and Technology," *Annual Review of Anthropology* 36 (2007): 37-53

### Writing

There are three types of writing assignment:

- 1) **Weekly responses.** Every week — except for the ones in which you are leading discussions and doing the recommended reading — you must turn in a 400-600 word response to the required reading. This should be **double-spaced**. Rather than merely summarize the reading, you should engage with it analytically. ***The electronic version of this response is due no later than 8 a.m. on the day of the seminar, submitted to that week's Resources folder in CTools. Also bring 1 printed copy to class.***

**You can skip one response paper between February and April. No skips in January.**

**SEE CTOOLS RESOURCES FOLDER FOR EXAMPLES OF EXCELLENT RESPONSE PAPERS.**

- 2) **Discussion papers.** Two are due during the semester. Your due dates will be determined on the first day of class. See below under "Discussion" for further details.
- 3) **Final project.** Your final project will be a paper of around 3000 words (10-12 pp). The choice of topic and format is up to you. You may write a literature review, a grant proposal, an analysis of current events, or whatever other format best suits your professional training and needs. Whatever you choose, you must directly engage with some aspect of the STS literature. This assignment has three parts:
  - (a) A *proposal* that clearly describes your topic and how it relates to course materials and concepts. This should consist of a 300-500 word narrative description, along with a preliminary bibliography of 5-7 works. We strongly recommend that you discuss your ideas with one of us before submitting this proposal. This is due on **March 24<sup>th</sup> in class (bring two printed copies).**

- (b) A good draft of the paper is **due by email on April 18<sup>th</sup> by midnight to the professors and all class members**. This should be at least 1500 words, and should include a full bibliography with annotations of 50-70 words for each item. You are expected to read everyone's draft in order to have an effective wrap-up discussion on April 21st, the last day of class. We will divide the class up into thematic clusters; you will be providing substantial written comments on the other papers in your cluster.
- (c) The *final version*, edited, revised, and proofread, is **due by email** to the professors by April 23<sup>rd</sup> at midnight.

### Discussion

**This is a discussion seminar. Its success depends on the commitment, involvement, and timeliness of all participants. Therefore, you are expected to arrive in class on time and thoroughly prepared to participate actively in all discussions.**

**Cold calling:** to encourage full involvement and preparation, the professor will "cold call" several students during each class. This means that we will ask you a direct question on the readings; we will expect answers that demonstrate your knowledge of the material and your ability to draw interesting connections from them to other readings. This practice is not intended to embarrass anyone. Instead, its goal is to help you prepare for class and to learn to think and talk "on your feet," a crucial skill required by almost any profession.

**We will grade you on both the regularity and the quality of your participation, including your responses to cold calls. Attendance without regular, thoughtful, constructive participation is not acceptable.**

**Leading discussion:** Twice during the term, you will help lead class discussion. This will involve:

- Selecting and reading one of the **starred** books or 3 of the **starred** articles from the "recommended reading" list for that week.
- If reading a book, find 2 scholarly reviews of the book.
- Writing an 800-1200 word "think piece" that reviews the book and/or articles and relates them to the primary assigned reading. **You must pre-circulate this piece to the entire class no later than 5 pm on the day before the seminar (Sunday). Bring a printed copy to class, stapled to a printed copy of the scholarly book reviews (if applicable).**
- Meeting with the other student(s) presenting in that session and collectively preparing a one-page handout as an aid to class discussion. This handout should list what you consider to be the three or four most interesting analytical points for the week's reading, including both the main assignment and the recommended reading you did. The handout should also offer two questions designed to provoke interesting, wide-ranging general class discussion. The questions should focus on the concepts, theories, or historiographical frames from the readings.
- Distribute hard copies of this handout to all class members at the start of the seminar.
- At the beginning of that class session, presenters will jointly spend **no more than 20 minutes** outlining the themes from the common readings and elaborating your discussion questions. Presentations should draw upon the recommended readings as appropriate, but they should NOT engage in extended reviews of those readings (that's what the pre-circulated "think pieces" are for). All presenters should participate in the presentation and be involved in leading the discussion.

- **Presentations will be timed.** You will receive a 5-minute warning at the 15-minute mark. A timer will go off at the 20-minute mark, and you must stop talking then. Again, this is not intended to embarrass you. Rather, it is meant to prepare you for professional presentations, which are always time-limited. Speaking concisely and effectively is an important skill in any profession.

### Grading breakdown

- Weekly responses: 25 percent
- Discussion “think piece” and presentation: 30 percent (15 percent each)
- Participation: 25 percent
- Final paper (including prep stages and peer comments): 20 percent

All assignments must be turned in on time. Lateness is reflected in the final course grade.

### Science, Technology, Medicine & Society Colloquium

Everyone is welcome and encouraged to attend the Science, Technology, Medicine, and Society (STeMS) faculty-graduate student colloquium. STeMS meets 4-6 times each semester, usually on Monday afternoons from 4-5:30 (usually but not always in 1014 Tisch Hall).

Three semesters of attendance at the STeMS colloquium are required for the STS Graduate Certificate Program. To receive credit toward the certificate, you must register for Rackham 571 (a 1-credit course) each semester.

## Course Schedule

### January 13 — Week 1. Introduction: Social Construction of Scientific Knowledge

Alex & Paul

- Harry Collins and Trevor Pinch, *The Golem: What You Should Know about Science*  
 Steven Shapin and Simon Schaffer, *Leviathan and the Air-Pump* (Chicago: University of Chicago Press, 1985), pp. 3-79 and 332-344  
 David Bloor, “The Strong Programme in the Sociology of Knowledge,” in *Knowledge and Social Imagery*, 2<sup>nd</sup> ed. (Chicago: University of Chicago Press, 1991) (orig. 1976), pp. 3-23

#### Recommended:

- \*\*\*Michael Lynch, *Scientific Practice and Ordinary Action: Ethnomethodology & Social Studies of Science*  
 \*\*\*Steven Shapin, *A Social History of Truth*  
 \*\*\*Harry Collins, *Changing Order: Replication and Induction in Scientific Practice*  
 Barry Barnes, *Scientific Knowledge: A Sociological Analysis*  
 Trevor Pinch, *Confronting Nature*

Skim: Paul N. Edwards, “[How to Read a Book](#)”

STeMS Colloquium 4-5:30 pm

Suman Seth, [Enlightenment Race Science in the Colonies: Edward Long and the History of Jamaica](#)

**January 20 – no class, attend MLK Jr. events**

**January 27 — Week 2. Social Construction of Technology (SCOT)**

**Alex & Paul**

Thomas J. Misa, *Leonardo to the Internet*

David Noble, "Social Choice in Machine Design," in MacKenzie and Wajcman, *The Social Shaping of Technology*, 2<sup>nd</sup> edition, pp. 161-176

Thomas Hughes, "The Evolution of Large Technical Systems," in Wiebe Bijker, Thomas Hughes, and Trevor Pinch, eds. *The Social Construction of Technological Systems* (Cambridge MA: MIT Press, 1987), pp. 51-82

Recommended:

\*\*\*Thomas P. Hughes, *Networks of Power*

\*\*\*David Noble, *Forces of Production*

\*\*\*Ruth Oldenziel, *Making Technology Masculine: Men, Women, and Modern Machines in America, 1870-1945*

\*\*\*Susan J. Douglas, *Inventing American Broadcasting, 1899-1922*

Wiebe Bijker, *Of Bicycles, Bakelites, and Bulbs: Toward a Theory of Sociotechnical Change*

Nelly Oudshoorn & Trevor Pinch, *How Users Matter: the Co-Construction of Users and Technology*

Claude Fischer, *America Calling: A Social History of the Telephone to 1940*

Shoshanna Zuboff, *In the Age of the Smart Machine*

**February 3 — Week 3. Social Construction of Medicine (SCOM)**

**Alex & Paul**

Ian Hacking, *The Social Construction of What?* (Cambridge MA: Harvard University Press, 1999), chapters 1 and 4.

Michelle Murphy, "The 'Elsewhere within Here', and Environmental Illness, or How to Build Yourself a Body in a Safe Space," *Configurations* 8:1 (2000), 87-120

Geoffrey C. Bowker and Susan Leigh Star, *Sorting Things Out*, Chapters 1, 3, 7-8 (CTools)  
[New York Times article on ICD-10](#)

Recommended:

\*\*\*Steven Epstein, *Inclusion: The Politics of Difference in Medical Research*

\*\*\*Robert Aronowitz, *Making Sense of Illness: Science, Society, and Disease*

\*\*\*Conevery Bolton Valencius, *The Health of the Country how American Settles understood themselves and their land*

**February 10 — Week 4. Actor-Network Theory**

**Alex & Paul**

Bruno Latour, "Give Me a Laboratory and I will Raise the World," in Karin Knorr-Cetina and Michael Mulkay, eds. *Science Observed: Perspectives on the Social Study of Science* (Sage 1983)

Madeleine Akrich, "The De-Description of Technical Objects," in Bijker and Law, eds., *Shaping Technology/Building Society* (MIT, 1992), pp 205-224  
Bruno Latour, *Reassembling the social: an introduction to actor-network theory* (Oxford University Press: Oxford 2007)

Recommended:

\*\*\*Bruno Latour, *Science in Action: How to Follow Scientists and Engineers through Society*

\*\*\*John Law, *Aircraft Stories: Decentering the Object in Technoscience*

\*\*\*Stefan Helmreich, *Silicon Second Nature: Culturing Artificial Life in a Digital World* (2nd edition)

John Law and John Hassard (eds), *Actor Network Theory and After*

Bruno Latour, *Gifford Lectures on Natural Religion* (2013)

Bruno Latour, *We Have Never Been Modern*

Michel Callon, "Some Elements of a Sociology of Translation: Domestication of the Scallops and the Fishermen of St. Brieuc Bay," in *Power, Action, Belief*, ed. John Law (London: Routledge and Kegan Paul, 1986), pp 196-233

John Law (1992), "Notes on the Theory of the Actor Network: Ordering, Strategy and Heterogeneity"

Nowotny, Helga (1990), "Actor-networks vs. science as self-organizing system: A comparative view of two constructivist approaches." *Sociology of the Sciences* 14: 223-239

Callon, M. and B. Latour (1981), "Unscrewing the Big Leviathan: how actors macrostructure reality and how sociologists help them to do so," K. D. Knorr-Cetina and A. V. Cicourel (Eds.), *Advances in Social Theory and Methodology: Toward an Integration of Micro- and Macro-Sociologies*: 277-303

STeMS Colloquium 4-5:30 pm

Jeffrey Sklansky, [Money in Motion: Circulation in Early Modern Science, Political Economy, and Debates Over Currency and Banking](#)

**February 17 — Week 5. Science, Expertise, and Democracy in Comparative Perspective**  
**Shobita Parthasarathy**

Steven Epstein (1996). *Impure Science: AIDS, Activism, and the Politics of Knowledge*. Berkeley: University of California Press.

Sheila Jasanoff (1991). "Acceptable Evidence in a Pluralistic Society." In *Acceptable Evidence: Science and Values in Risk Management*. New York: Oxford University Press.

Shobita Parthasarathy (forthcoming). "Co-Producing Knowledge and Political Legitimacy: Comparing the hESC Patent Controversies in Europe and the United States." To appear in *Science and Democracy: Emerging Trends*. Edited by Stephen Hilgartner, Clark Miller, and Rob Hagendijk. Routledge.

Shobita Parthasarathy (2011). "Gene Patents and Democracy". Nature.com. April 1.

Recommended:

BOOKS:

\*\*\*Yaron Ezrahi (1990). *The Descent of Icarus: Science and the Transformation of Contemporary Democracy*. Cambridge, MA: Harvard University Press.

\*\*\*Sheila Jasanoff (2007). *Designs on Nature: Science and Democracy in Europe and the United States*. Princeton, NJ: Princeton University Press.

Marion Fourcade (2010). *Economists and Societies: Discipline, Profession, and Profession in the United States, Britain, and France, 1890s to 1990s*. Princeton, NJ: Princeton University Press.

ARTICLES:

- \*\*\*Shobita Parthasarathy (2010). "Breaking the Expertise Barrier: Understanding Activist Challenges to Science and Technology Policy Domains." *Science & Public Policy*. (Vol. 37, No. 5, pp. 355-367.)
- \*\*\*Brian Wynne, "Misunderstood Misunderstandings: Social Identities and Public Uptake of Science," in *Misunderstanding Science?*, ed. Alan Irwin and Brian Wynne (Cambridge, 1996), 19-46.
- Daniel Sarewitz (2004). "How Science Makes Environmental Controversies Worse." *Environmental Science & Policy*. 385-403.
- Bernard Reber (2007). "Technology Assessment as Policy Analysis: From Expert Advice to Participatory Approaches." In Frank Fischer, Gerald J. Miller, and Mara S. Sidney, eds. *Handbook of Public Policy Analysis: Theory, Politics, and Methods*. New York: CRC Press.
- Maarten Hajer and Emilie Gomart (2003). "Is that Politics? For an Inquiry into Forms in Contemporary Politics". In Bernard Joerges and Helga Novotny, eds. *Social Studies of Science and Technology: Looking Back, Ahead*. Boston: Kluwer Academic Publications, pp. 33-61.

**February 24 — Week 6. Law in STS, STS in Socio-legal Studies**  
**Anna Kirkland**

- Sheila Jasanoff, *Science at the Bar: Law, Science, and Technology in America* (1994), Chapters 1, 2, 3, and 10 and browse the other topical chapters based on your interests.
- Sheila Jasanoff, "Making Order: Law and Science in Action," (2008) in Hackett et al, eds. *The Handbook of Science and Technology Studies*, 3<sup>rd</sup> Edition, pp. 761-786
- Bruno Latour, "Scientific Objects and Legal Objectivity," (2004) trans. Alain Pottage in Alain Pottage and Martha Mondy, eds. *Law, Anthropology and the Constitution of the Social: Making Persons and Things*, Cambridge: Cambridge University Press, pp. 73-114.
- Susan Silbey and Patricia Ewick (2003), "The Architecture of Authority: The Place of Law in the Space of Science," in Austin Sarat, Lawrence Douglas and Martha Umphrey, eds., *The Place of Law*, Ann Arbor: University of Michigan Press, pp. 75-108.

Applications/Recommended:

- \*\*\*Keith Guzik (2013), "Taking Hold of the Wheel: Automobility, Social Order, and the Law in Mexico's Public Registry of Vehicles (REPUVE)," *Law & Society Review*, 47: 523–554. doi: 10.1111/lasr.12032
- \*\*\*Catherine Lee and John D. Skrentny (2010), "Race Categorization and the Regulation of Business and Science," *Law & Society Review*, 44: 617–650. doi: 10.1111/j.1540-5893.2010.00418.x
- \*\*\*Mark Suchman (2003), "The Contract as Social Artifact," *Law & Society Review*, 37: 91–142. doi: 10.1111/1540-5893.3701003
- Kevin Davis, Benedict Kingsbury, and Sally Engle Merry (2012), "Indicators as a Technology of Global Governance," *Law & Society Review*, 46: 71–104. doi: 10.1111/j.1540-5893.2012.00473.x

**March 3 – no class, winter break**

**March 10 — Week 7. Anthropology and STS**

**Liz Roberts (.5 session)**

Annemarie Mol, *The Body Multiple: Ontology in Medical Practice* (Durham: Duke University Press, 2003)

Liz Roberts, "Assisted existence: an ethnography of being in Ecuador," *Journal of the Royal Anthropological Institute* 19 (2013), 562-80

Recommended:

\*\*\*Margaret Lock *Encounters with Aging: Mythologies of Menopause in Japan and North America* (Berkeley: University of California Press, 1995)

\*\*\*Evelyn Fox Keller, *The Mirage of a Space between Nature and Nurture* (Durham: Duke University Press, 2010)

\*\*\*Charles E. Rosenberg, "The Therapeutic Revolution: Medicine, Meaning, and Social Change in Nineteenth-Century America,": in M.J. Vogel and Charles E. Rosenberg, eds., *The Therapeutic Revolution: Essays in the Social History of American Medicine* (Philadelphia: University of Pennsylvania Press, 1979), 3-25

Béhague, Dominique. 2002. "Beyond the Simple Economics of Cesarean Section Birthing: Women's Resistance to Social Inequality." *Culture, Medicine and Psychiatry* 26(4): 473–507

Margaret Lock and Vinh-Kim Nguyen, *An Anthropology of Biomedicine* (New York: Wiley, 2010)

Julie Guthman and Becky Mansfield, "The implications of environmental epigenetics: A new direction for geographic inquiry on health, space, and nature-society relations," *Progress in Human Geography* 37 (2013), 486-504

**March 17 — Week 8. Biopower, Biopolitics, and STS**

**Alex Stern**

Nikolas Rose, *The Politics of Life Itself: Biomedicine, Power, and Subjectivity in the Twenty-First Century* (Princeton: Princeton University Press, 2007)

Sujatha Raman and Richard Tutton, "Life, Science, and Biopower," *Science, Technology & Human Values* 35:5 (2010), 711-734

Recommended:

\*\*\*Michel Foucault, *The history of sexuality* volume I (New York: Pantheon, 1978)

\*\*\*Paul Rabinow, *Essays on the anthropology of reason* (Princeton: Princeton University Press, 1996)

\*\*\*Michelle Murphy, *Seizing the Means of Reproduction: Entanglements of Feminism, Health, and Technoscience* (Durham: Duke University Press, 2012)

Michel Foucault, *Society must be defended: Lectures at the College de France, 1975-1976* (New York: Picador, 2003)

Thomas Lemke, *Biopolitics: An Advanced Introduction: Medicine, Technoscience, and Health* (New York: NYU Press, 2011)

STeMS Colloquium 4-5:30 pm

Joy Knoblauch, [The Work of Diagrams: Translations from Factory to Hospital](#)



## March 24 — Week 9. Race, Gender, and Digital Technologies

Lisa Nakamura (.5 session)

Donna Haraway, "A Cyborg Manifesto" and "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective," in *Simians, Cyborgs, and Women: The Reinvention of Nature* (New York: Routledge, 1991), pp. 149-203

Lisa Nakamura, "Indigenous Circuits: Navajo Women and the Racialization of Early Electronic Manufacture"

danah boyd, "White Flight From Networked Publics," in *Race After the Internet*

### Recommended:

\*\*\*Lisa Nakamura, *Digitizing Race*, University of Minnesota Press, 2008

\*\*\*Jenna Burrell, [Invisible Users: Youth in the Internet Cafes of Urban Ghana](#) (The MIT Press)

\*\*\*Sadie Plant, *Zeroes and Ones*

Chow-White and Nakamura, eds., *Race After the Internet* (Routledge, 2011)

Dourish, Irani, et al ["Postcolonial Computing,"](#) CHI 2010

## March 31 — Week 10. High Modernity: Radical Simplification, State Power, and Development Perrin Selcer

James Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (New Haven: Yale UP, 1998).

Perrin Selcer, book proposal and "The Soil Map of the World and the Politics of Scale," manuscript chapter from *Constructing Spaceship Earth*

### Recommended:

\*\*\*Nick Cullather, *The Hungry World: America's Cold War Battle against Poverty in Asia* (Cambridge, Mass: Harvard UP, 2010)

\*\*\*James Ferguson, *The Anti-Politics Machine: 'Development,' Depoliticization, and Bureaucratic Power in Lesotho* (Cambridge: Cambridge UP, 1990)

\*\*\*Timothy Mitchell, *Rule of Experts: Egypt, Techno-Politics, Modernity* (Berkeley: University of California Press, 2002)

Matthew Connelly, "Seeing Beyond the State: The Population Control Movement and the Problem of Sovereignty," *Past and Present* 193 (Nov. 2006), 197-233

Ken Alder, "Making Things the Same: Representation, Tolerance and the End of the Ancien Regime in France," *Social Studies of Science* 28: 4 (Aug., 1998), 499-545

Jess Gilbert, "Rural Sociology and Democratic Planning in the Third New Deal," *Agricultural History* 82: 4 (2008), 421-438

Nils Gilman, *Mandarins of the Future: Modernization Theory in Cold War America* (Baltimore: Johns Hopkins UP, 2003)

Neil Smith, *American Empire: Roosevelt's Geographer and the Prelude to Globalization* (Berkeley: University of California Press, 2003)

Matthew Edney, *Mapping an Empire: The Geographical Construction of British India, 1765-1843* (Chicago: University of Chicago Press, 1997)

STeMS Colloquium 4-5:30 pm

Clapperton Mavhunga, [What Can STS Do for Africa that Marx Couldn't?](#)

## April 7 — Week 11. Feminist Bioscience Studies

Sari Van Anders

- Fausto-Sterling, A. (2005). "The Bare Bones of Sex: Part 1—Sex and Gender," *Signs* 30, 1491-1527
- Lloyd, E. A. (2002). Pre-theoretical assumptions in evolutionary explanations of female sexuality. In Janet Kourany (Ed.), *The Gender of Science*. Prentice Hall.
- Markowitz, S. (2001). "Pelvic politics: Sexual dimorphism and racial difference," *Signs* 26, 389-414
- van Anders, S. M. (2013). "Beyond masculinity: Testosterone, gender/sex, and human social behavior in a comparative context." *Frontiers in Neuroendocrinology* 34, 198-210 (and also see corrigendum – should be online soon – for Figure 1).

### Recommended:

- \*\*\*Evelyn Fox Keller & Helen E. Longino (Eds.), 1996: *Feminism and Science*. Oxford: Oxford University Press
- \*\*\*Oudshoorn, N. (1994). *Beyond the Natural Body: An Archaeology of Sex Hormones*. London: Routledge.

## April 14 — Week 12. Technology and Medicine

Joel Howell

Joel Howell, *Technology in the Hospital: Transforming Patient Care in the Early Twentieth Century* (Baltimore: Johns Hopkins University Press, 1996).

### Recommended:

- \*\*\*Keith Wailoo, *Drawing Blood: Technology and Disease Identity in Twentieth-Century America* (Baltimore: Johns Hopkins University Press, 1999)
- \*\*\*[Technology and Culture, special issue](#) "Fitting for Health" 54:3 (July 2013): Christine Rabier, "Introduction: The Crafting of Medicine in the Early Industrial Age," Liliane Hilaire-Pérez and Christine Rabier, "Self-Machinery?: Steel Trusses and the Management of Ruptures in Eighteenth-Century Europe," Francois Zanetti, "Curing with Machines: Medical Electricity in Eighteenth-Century Paris," Anna Maerker, "Anatomizing the Trade: Designing and Marketing Anatomical Models as Medical Technologies, ca. 1700-1900," Claire L. Jones, "Instruments of Medical Information: The Rise of the Medical Trade Catalog in Britain, 1750-1914"

## April 21 — Week 13. Wrap-up discussion

Alex & Paul

### Assignment:

- Read pre-circulated drafts of final paper
- Provide written comments on drafts in your theme cluster
- Come to class prepared to discuss the "big picture" that emerges from our semester (including the readings you did for your paper)