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**History of Science, Medicine and Technology 140.601
An Introduction to Historical Methods Fall 2007**

This course is composed of three strands: 1. An introduction to current topics in the history of science, medicine, and technology. 2. An introduction to the history of the discipline(s). 3. An introduction to historical research and writing methods. Class time will be focused on discussion of assigned articles and of research tactics and strategies based on your own research project for the semester or year. Written assignments are designed to strengthen analytic skills and to complement your own ongoing research in other seminars. When the written assignments focus on your own research project during the second half of the course, you are still expected to take notes on each article in terms of methods and sources, contributions, limitations, and questions left unanswered. Articles on-line at MSE's e-reserves under Hanson/Fissell.

Required Book: Ludmilla Jordanova, *History in Practice* 2nd ed. (London: Hodder Arnold Publishers, 2006). Available at Medical School bookstore on East Monument St.

Week 1 Sept. 6 Introduction: Primary Sources & Historical Evidence

The first class will meet at the 3505 Charles St History of Science and Technology Department seminar room. We may alternate with East Baltimore seminar room depending on location of colloquium. Handouts on primary sources given in class.

Friday Sept. 7 3-5: Visit Walters Museum, Cabinet of Curiosities Exhibition

We will meet at the 600 North Charles Street entrance: <http://www.thewalters.org>

Read: Harold Cook, "Time's Bodies: Crafting the Preparation and Preservation of Naturalia," in Pamela Smith and Paula Findlen, eds., *Merchants & Marvels: Commerce, Science, and Art in Early Modern Europe* (New York/London: Routledge, 2002): 223-47.

Week 2 Sept. 13 From Whence We've Come: The Scientific Revolution Issue

Thomas Kuhn, *The Structure of Scientific Revolutions*, 2nd rev. ed., (Chicago: University of Chicago Press 1970): 10-42, 92-110.

Andrew Cunningham and Perry Williams, "De-centring the 'big picture': 'The origins of modern science' and the modern origins of science," *British Journal for the History of Science* 26 (1993): 387-483.

Peter Dear, "What Is the History of Science the History Of? Early Modern Roots of the Ideology of Modern Science," *Isis* 26 (2005): 390-406.

Nathan Sivin, "Why the Scientific Revolution did not take place in China—or didn't it?" *Chinese Science* 5 (1982): 45-66.

Read: Jordanova, *History in Practice*, ch. 1, "Introduction," 13-34.

Assignment: Respond in 3-4 pgs to Cook's arguments and the Cabinet of Curiosities exhibition in light of the issues regarding the "Scientific Revolution" raised in one of this week's articles.

Week 3 Sept 20 LIBRARY SESSION WITH CHRISTINE RUGGERE

Assignment: Prepare by working through exercises in library research handout.

Week 4 Sept 27 Nature and Empire

9:30-10 MSE History of STM librarian, Susan Vazakas, will introduce research resources.

Michael Adas, ch. 3 "Global Hegemony and the Rise of Technology as the Main Measure of Human Achievement," *Machines as the Measure of Men: Science, Technology, and Ideologies of Western Dominance* (Cornell University Press, 1989): 133-98.

Bruno Latour, ch. 6 "Centres of Calculation" in *Science in Action* (Harvard University Press, 1987): 215-37.

Niels Brimnes, "Coming to Terms with the Native Practitioner-Indigenous Doctors in Colonial Service in South India 1800-1825," (Forthcoming in 2007): 1-48.

Ruth Rogaski, "Nature, Annihilation, and Modernity: China's Korean War Germ Warfare Experience Reconsidered," *JAS* 61.2 (2002): 381-415.

Jordanova, *History in Practice*, ch. 2, "Mapping the Discipline of History," 35-58.

Written Assignment: Write a one-page summary of one of these articles, summarizing the article rather than recounting it in detail. Cut to the chase; get to the core of the argument.

Week 5 Oct 4 Workplaces 1: The Laboratory

Owen Hannaway, "Laboratory Design and the Aim of Science. Andreas Libavius versus Tycho Brahe," *Isis* 77 (1986): 585-610.

Jole Shackelford, "Tycho Brahe, Laboratory Design, and the Aim of Science. Reading Plans in Context," *Isis* 84 (1993): 211-30.

Nathan Sivin, "Chinese Alchemy and the Manipulation of Time," In Sivin, ed. *Science and Technology in East Asia, History of Science: Selections from Isis* (New York: Science History Publications, 1977): 109-22.

Bruno Latour, "Give Me a Laboratory and I will Raise the World," *Science Studies Reader* 258-275. (1983, abridged 1998). Originally in Karin Knorr-Cetina and Michael Mulkay, eds., *Science Observed* (London: Sage, 1983).

Warwick Anderson, "Where Every Prospect Pleases and Only Man is Vile': Laboratory Medicine as Colonial Discourse," *Critical Inquiry* 18.3 (1992): 506-29.

Jordanova, *History in Practice*, ch. 3 "History and Other Disciplines," 59-86.

Writing Assignment: Compare two of the assigned articles by discussing their methods, primary sources, contributions, and limitations. 3 pp max. [For guidelines on how to write a balanced assessment, see e-reserves George Sarton, "Notes on the Reviewing of Learned Books," *Science* vol. 131, No. 3408 (1960): 1182-87.]

Week 6 Oct. 11 Workplaces 2: The Field

Lynette Schumaker, "A Tent with a View: Colonial Officers, Anthropologists, and the Making of the Field in Northern Rhodesia," *Osiris* 11 (1996): 237-58.

Donna Haraway, "Teddy Bear Patriarchy: Taxidermy in the Garden of Eden, New York City 1908-1936," in *Primate Visions: Gender, Race, and Nature in the World of Modern Science* (Routledge, 1989): 26-58.

Michael Lynch and John Law, "Pictures, Texts, and Objects: The Literary Language Game of

Bird-Watching," *Science Studies Reader* (Routledge, 1999): 317-41.
Hayden Lorimer and Nick Spedding, "Locating field science: a geographical family expedition to Glen Roy, Scotland," *BJHS* 38.1 (March 2005): 13-33.
Jordanova, *History in Practice*, ch. 4 "The Status of Historical Knowledge," 87-104.

Assignment: The History of the Disciplines. You may work as a group on this project. Choose a representative year from the 1930s, the 1950s, the 1970s and the 1990s from *Isis*, *Bulletin of the History of Medicine*, or *Technology and Culture*. (nb. *T&C* only starts in 1959 -- choose a year from the early 1960s, the '70s and the '90s). Analyze the changes and continuities in the journals over time in a presentation in class. Questions you might consider include: What kinds of topics and arguments were made? Was there a chronological or geographical focus? Can you tell what sorts of people were publishing? What kinds of sources did they use? What else was in the journal besides scholarly articles?

Other Possible Journals: *British Journal of the History of Science*, *Minerva*, *Osiris*, *Social History of Medicine*, *Social Studies of Science*, *Medical History*. For history of *Chinese Science/East Asian Science Technology and Medicine*, see Hanson, "New Directions in the History of Science in East Asia," *East Asian Science Technology & Medicine* 19 (2002): 107-19.

Week 7 Oct 18 Making Knowledge: Material Practices

Katharine Park, "The Life of the Corpse: Division and Dissection in Late Medieval Europe," *Journal of the History of Medicine and Allied Sciences* 50 (1995): 111-32.
Francesca Bray, "Technics and Civilization in Late Imperial China: An Essay in the Cultural History of Technology," *Osiris* 13 (1998): 11-33.
William K. Storey, "Guns, Race, and Skill in Nineteenth-Century Southern Africa," *Technology & Culture* (2004): 687-711.
Chandra Mukerji, "Tacit Knowledge and Classical Technique in Seventeenth-Century France: Hydraulic Cement as a Living Practice among Masons and Military Engineers," *Technology & Culture* 47 (Oct 2006): 713-33.
Jordanova, *History in Practice*, ch. 5 "Periodisation," 105-25.

Written Assignment based on your research: Write 2 pp on the questions you are asking and the primary sources you are planning to use in your research paper. Include a preliminary biblio. Be prepared as well to discuss the "art of footnotes." In-class handout.

Week 8 Oct 25 Making Knowledge: The Workers

Stuart W. Leslie, "Blue Collar Science: Bringing the Transistor to Life in the Lehigh Valley," *Historical Studies in the Physical and Biological Sciences* 32.1 (2001): 71-113.
Steven Shapin, "The Invisible Technician," *American Scientist* 77 (1989): 554-563.
Deborah Harkness, "Managing an Experimental Household. The Dees of Mortlake and the Practice of Natural Philosophy," *Isis* 88 (1997): 247-262.
Ann Secord, "Science in the Pub: Artisan Botanists in Early Nineteenth-century Lancashire," *History of Science* 32 (1994): 269-315.

Written Assignment: In 3 pp present a primary source (or type of source) you are using in your research paper. Analyze the problems and prospects of the source: who produced this source? why did they produce it? what cautions are necessary in using it? Be prepared to present your

analysis to your classmates in terms of the sources reliability, typicality, and historical value.

Week 9 Nov 1 Making Knowledge: The Tools

Ken Alder, "Innovation and Amnesia: Engineering Rationality and the Fate of Interchangeable Parts Manufacturing in France," *Technology & Culture* 38 (1997): 273-311.

Albert van Helden, "Telescopes and Authority from Galileo to Cassini," Issue on "Instruments" *Osiris* 9 (1994): 9-29.

Richard Sorrenson, "The Ship as a Scientific Instrument in the Eighteenth Century," Issue on "Science in the Field" *Osiris* 11 (1996): 221-236.

Carolyn Thomas de la Peña, "'Bleaching the Ethiopian': Desegregating Race and Technology through Early X-Ray Experiments," *Technology & Culture* 47 (Jan 2006): 27-55.

Jordanova, *History in Practice*, ch. 6 "Public History," 126-149.

Written Assignment: Write an overview of the secondary literature on your research topic, a "literature review" in 3 pp. Pay attention to how you position your own research in the field.

Weekend Nov 1-4, History of Science Society Meeting, Arlington, VA, Marriott Crystal Gateway Hotel. (Transportation will be worked out depending on who is attending)
Attendance one day highly recommended. Write a 2 pp response to one of the panels attended.

Week 10 Nov 8 Power and Patronage

Nicolas Jardine, "The Places of Astronomy in Early-Modern Culture," *The Journal of the History of Astronomy* 29 (1998): 49-62.

Nathan Sivin, "Calendar Reform and Occupation Politics," *Ziran kexueshi yanjiu* 自然科学史研究, 24. Supplement (2005): 58-67.

Chu Pingyi, "Scientific Dispute in the Imperial Court: The 1664 Calendar Case," *Chinese Science* 14 (1997): 7-34.

Martha Baldwin, "The Snakestone Experiments: An Early Modern Medical Debate," *Isis* 86 (1995): 394-418.

Written Assignment: Revise your literature review in light of comments given, lessons learned, and be prepared to discuss the state of your research project in class.

Week 11 Nov 15 Writing Knowledge

Stephen M. Stowe, "Singleton's Tooth: Thoughts on the Form and Meaning of Antebellum Southern Family Correspondence," *Southern Review* 25 (1985): 323-33.

Steven Shapin and Simon Schaffer, *Leviathan and the Air Pump* (Princeton University Press, 1985): 22-79.

Stephen M. Stowe, "Seeing Themselves at Work: Physicians and the Case Narrative in the Mid-Nineteenth-Century American South," *American Historical Review* 101 (1996): 41-79.

Charlotte Furth, "Producing Medical Knowledge through Cases: History, Evidence, and Action," in Furth, Zeitlin, Hsiung, eds., *Thinking With Cases: Specialist Knowledge in Chinese Cultural History* (Honolulu: University of Hawai'i Press, 2007): 125-51.

Jordanova, *History in Practice*, ch. 7 "Historians' Skills," 150-73.

Written Assignment: building on your analysis of a primary source, pick a case available in the

JSTOR online version of the *Philosophical Transactions*. Discuss it in light of arguments used in articles assigned for this week. 2 pp.

Week 12 Nov 22 Drawing Knowledge [Discuss change to M-W alternatives]

Lorraine Daston and Peter Galison, "The Image of Objectivity", *Representations* 40 (1992): 81-128.

Mary E. Fissell, "Hairy Women and Naked Truths: Gender and the Politics of Knowledge in Aristotle's Masterpiece," *William and Mary Quarterly* LX (2003): 43-74.

Pamela Smith, "Art, Science, and Visual Culture in Early Modern Europe," *Isis* 97 (2006): 83-100.

Norton Wise, "Making Visible," *Isis* 97 (2006): 75-82.

Jordanova, *History in Practice*, ch. 8 "Trends," 173-95.

Assignment: Present (in class) one of your primary sources from the perspective of visual evidence—what kinds of questions do you need to ask of a picture or title page? What other evidence, textual and visual, would you require for a full analysis of the image? 1-2 pp handout.

Week 13 Nov 29 Consuming Knowledge

Colin Jones, "The Great Chain of Buying: Medical Advertisement, the Bourgeois Public Sphere, the Origins of the French Revolution," *American Historical Review* 101 (1996):13-40.

Ronald Kline and Trevor Pinch, "Users as Agents of Technological Change: The Social Construction of the Automobile in the Rural United States," *Technology & Culture* 37 (1996), pp. 763-95.

Roger Chartier, "Culture as Appropriation: Popular Cultural Uses in Early Modern France," in Steven L. Kaplan, ed., *Understanding Popular Culture: Europe from the Middle Ages to the Nineteenth Century* (Mouton Publishers, 1984): 175-91.

Volker Scheid, "Patients and the Transformation of Chinese Medicine," in *Chinese Medicine in Contemporary China: Plurality and Synthesis* (Duke University Press, 2000): 107-33.

Written Assignment: Making an argument: Complete a preliminary outline of your research paper asking yourself what work is your evidence doing for your central argument? Indicate what evidence you are using and what interpretative methods you are employing. 2-3 pp.

Week 14 Dec 6 Gender and Science

Emily Martin, "The Egg and the Sperm: How Science has constructed a romance based on stereotypical male-female roles," *Signs: Journal of Women in Culture and Society* 16.3 (1991): 485-501.

Margaret Pelling, "Compromised by Gender: the role of the male medical practitioner in early modern England," in Hilary Marland and Margaret Pelling, eds., *The Task of Healing: Medicine, Religion and Gender in England and the Netherlands, 1450-1800* (Erasmus Publishing, 1996): 101-33.

Sharon Traweek, "Pilgrim's Progress: Male Tales Told during a Life in Physics," *Science Studies Reader* (Routledge, 1999): 525-42.

Written Assignment: Turn in a detailed outline of your research paper, more than 3 pp.