

History of Science 555
Undergraduate Capstone Seminar in the History of Science, Medicine, and Technology
Spring 2010 Topic: "Progress" in Science, Technology, and Medicine
Instructor: Lynn K. Nyhart

Meets: 9:55-11:50 Fridays in Sterling Hall 1323
262-3491; office hours Tuesdays 1:30-3:30 and by appointment.

This capstone seminar for majors in the history of science focuses on *researching and writing* history, not just reading what others have written about it. The main requirement will be to prepare and write a 15-20-page research paper using primary sources.

The theme for Spring 2010 is "progress" in science, medicine, and technology, with our initial primary-source examples coming mainly (but not exclusively) from nineteenth- and twentieth-century exhibitions and fairs in Britain and America. We will also read secondary literature discussing historical claims about progress in science, medicine, and technology, which will provide models for research-based writing. And we will read arguments by historians, philosophers, and sociologists about how science, medicine, and technology progresses (or perhaps does not). Collectively, these primary and secondary sources will provide takeoff points for students' individual research papers.

Books:

John Losee, *Theories of Scientific Progress: An Introduction* (New York: Routledge, 1994)
Robert Rydell, *World of Fairs: The Century-of-Progress Expositions* (Chicago: University of Chicago Press, 1993)

Grading:

40% class participation, including attendance, participation in discussion, postings on Learn@UW, positive critical discussion of others' presentations, and peer review of others' paper drafts.

60% research project, including timely progress on its stages: Ideas sheet, draft proposal presentation, proposal/outline and annotated bibliography, paper draft, and final paper.

Note: "postings" mentioned in the syllabus are required by 7 pm the night before the relevant class meeting.

I. Defining Progress

1/22: Introduction: The Idea of Progress

Reading: Robert Nisbet, "The Idea of Progress: A Bibliographical Essay" (orig. 1979), available online at:

<http://oll.libertyfund.org/index.php?Itemid=259&id=165&option=com_content&task=view>

Research/Writing: Please come to class having thought about questions or topic areas that interest you and that might be related to ideas of progress in science, medicine, and/or technology.

1/29: The "Naturalness" of Progress?

Reading:

*Stephen Jay Gould, *Wonderful Life: The Burgess Shale and the Nature of History* (New York: WW Norton, 1989), Chapter 1, "The Iconography of an Expectation," 23-52.

*George Gaylord Simpson, *The Meaning of Evolution*, revised ed. (New Haven: Yale University Press, 1967), 239-62

John Losee, *Theories of Scientific Progress*, 140-151

For class: What role does "progress" play in evolutionary theory, as represented here by the paleontologist/historian Gould and the paleontologist Simpson? How have philosophers carried over evolutionary ideas into theories of the progress of science?

Research/Writing: Please post at least one **question** raised for you by these readings that might be carried over to a research topic. You may post more than one.

II. Representing Progress

2/5: Natural Human Progress? Eugenics, Race, and Empire

Rydell, *World of Fairs*, Introduction through chapter 3, pp. 1-92.

*Richard Keller, "Taking Science to the Colonies: Psychiatric Innovation in France and North Africa," chapter 2 in *Psychiatry and Empire*, ed. by Megan Vaughan and Sloan Mahone (London: Palgrave MacMillan, 2007), 17-40.

Research/Writing: Please post at least three **topics** that present themselves to you in these readings as potentially worthy of further research, accompanied by at least one **question** about each, which is different from the questions asked by these authors. Provide at least one source (primary or secondary) from the footnotes of these readings that you would want to investigate further if you were to pursue **one** of these questions. (Note: This is an exercise; you are in no way committing yourself to any of these topics or questions.)

2/12: Who Controls the Representation of Progress?

Rydell, *World of Fairs*, Chapters 4-5, pp. 92-156

*Peter Kuznick, "Losing the World of Tomorrow: The Battle over the Presentation of Science at the 1939 World's Fair," *American Quarterly* 46.3 (Sept. 1994), 341-73

Research/Writing: Come to class with a 50-word summary of the **arguments** of each of Rydell's chapters and Kuznick's article. (That is a total of 3 summaries.) Note: 50 words is short!! Be compact and go for the essence of each one.

For Class: how do Rydell's and Kuznick's views differ?

2/19: Developing a Research Topic

Ideas Sheet due; meet individually w/ Prof. Nyhart

If you are looking for inspiration, read through the excellent website that Bill Cronon and his students in the History Dept. have set up to guide you through the craft of research:

<<http://www.williamcronon.net/researching/index.htm>>

III. Explaining Progress

2/26: Explaining Technological "Progress"

*Eric Schatzberg, Ideology and Technical Choice: The Decline of the Wooden Airplane in the United States, 1920-1945, *Technology and Culture* 35.1 (1994), 35-69.

*Deborah Fitzgerald, "Accounting for Change: Farmers and the Modern State," pp. 189-210, in *The Countryside in the Age of the Modern State: Political Histories of Rural America*, ed. Catherine McNicol Stock and Robert D. Johnston (Ithaca, NY: Cornell University Press, 2001)

For Class: Identify the **thesis** for which each author argues. What sorts of **evidence** does each use to support their argument? What do we learn about how "progress" in technology and society come about from their discussions?

Research/Writing: Proposal question, research strategy, preliminary bibliography of primary materials due.

3/5: Explaining Scientific Progress I: Progress as Incorporation

John Losee, *Theories of Scientific Progress: An Introduction*, 1-16, 28, 38-50

*Steven Turner and Karen Sullenger, "Kuhn in the Classroom, Lakatos in the Lab: Science Educators Confront the Nature-of-Science Debate," *Science, Technology, and Human Values* 24 (1), Winter 1999, 5-30.

For Class: What is the basic model of "progress as incorporation," as described by Losee? How do Turner and Sullenger situate the philosophical issues that Losee raises? How is their argument structured?

Research/Writing: Keep plugging away at your research. Take good notes.

3/12: Explaining Scientific Progress II: Progress as Revolution

Losee, 63-91

*Michael Graham and Paul K. Dayton, "On the Evolution of Ecological Ideas: Paradigms and Scientific Progress," *Ecology* 83 (6), 2002, 1481-1489.

*Suman Seth, "Crisis and the Construction of Modern Theoretical Physics," *British Journal for the History of Science* 40 (1), March 2007, 25-51.

For Class: How do Graham and Dayton, on the one hand, and Seth, on the other, make use of Kuhn's ideas about revolutions in explaining historical episodes? What aspects do they adopt, what do they reject? To what end, and with what view of "progress"?

Research/Writing: Keep asking questions as you read your research materials. Follow one text to another.

3/19: Draft proposal presentations (10 min. max. **Practice** to keep in time.)

3/26: No group meeting; Individual meetings during the week. Formal proposals/outlines and annotated bibliographies due Friday, 3/26 by classtime (may be turned in earlier).

Spring Break: 3/27-4/4

IV. Workshopping Papers

4/9: Group A readings (no more than 20 pages apiece!) To be posted by Monday 4/5, along with a commentary of no more than one page on how these readings are relevant to your research.

In Class: Discussion of Group A's projects, troubleshooting, questions.

4/16: Group B readings (no more than 20 pages apiece!) To be posted by Mon. 4/12, along with a commentary of no more than one page on how these readings are relevant to your research.

In Class: Discussion of Group A's projects, troubleshooting, questions.

4/23: Group A draft workshop (drafts to be posted on L@UW by 8 a.m. Monday 4/19).

Divide into two small groups (2 from group A, 2 from group B: group B people read both group A papers; group A people read each other's papers. So each paper gets 3 peer reviewers.)

4/30: Group B draft workshop (drafts to be posted on L@UW by 8 a.m. Monday 4/26).

Reverse the A's and B's from 4/23.

5/7: Last class meeting: Wrap-up. Papers due.