

# **HISTORY OF TECHNOLOGY, ENVIRONMENT, & HEALTH: THEORY & METHOD**

## **Graduate Seminar**

History 26: 510: 598

## **SPRING 2006 SYLLABUS**

### **Stephen Pemberton, Ph.D.**

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New Jersey Institute of Technology / Rutgers University, Newark

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#### **Class Meetings**

Cullimore Hall 307  
Thursdays 5-7:30 p.m.

#### **Office & Contact**

Cullimore Hall 324, NJIT Campus  
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#### **Office Hours**

Mondays 4-6 p.m. and by appointment

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This course provides an introduction to the histories of technology, environment, health and medicine while examining some of the diverse strategies that historians in these fields are currently using to make sense of the past. We will explore what is distinctive about these fields of history, as well as what it means to engage in the historical study of technology, health, medicine, science, and the environment. How, for example, do historians of technology, environment, and health interpret society, culture, and politics? What assumptions and approaches do they share with the social historian, the cultural historian, the political historian, or the student of global history? How, for instance, do historians of technology, environment, and health treat matters of class, race, and gender? And how have these historians employed the theories and methods of other scholarly disciplines in their work, including the insights of anthropologists, biologists, philosophers, political activists, and sociologists. As these questions suggest, the principle goal of the course is to introduce the student of history to some of the vital ideas, scholarly trends, and methods that inform our efforts to gain historical perspective on matters of technology, environment, and/or health.

## **Requirements:**

### Readings

Weekly reading assignments will average one book and one article per week through the first ten classes. In two of those weeks, a set of articles will be used rather than a book. The readings will emphasize an important aspect of the history of technology, environment, and/or health. Before coming to class, you should familiarize yourself with the factual content of the readings as well as the author's argument and his or her use of sources. In class, I will encourage you to think critically about the theoretical and methodological issues raised in the readings. This goal will only be attainable if you come prepared.

Books for the course can be purchased through New Jersey Books, which is located at the corner of University and Bleeker (973-624-5383). Copies of the assigned articles will be available online through the DANA library electronic reserve. Full citations for the books and articles appear in the attached bibliography at the end of this syllabus.

### Attendance and Class Participation

Class participation should involve active listening and engagement. Attendance is both expected and required.

### Discussion Responsibility

During the first class, I will outline discussion responsibilities for the semester. I will ask each student to take responsibility for an assigned article or chapter at two or three points during the semester. On days that you are responsible for a reading, you should prepare notes that foster critical discussion rather than a mere restatement of the reading material. Areas you might want to focus class discussion include: the author's argument/s, the author's use of sources, his or her methodology, how the weekly reading on theory relates to this methodology, the organization of the book and whether or not it works successfully, and how the readings for that week relate to the other material you have learned.

### Final Paper

You will write a final paper of 15-25 pages in length. For this paper you will select a primary document of interest to you that also concerns a subject of relevance to the history of technology, environment, and/or health. I will ask you to do a close historical "reading" of that document in your paper. This historic document can be a conventional text such as an environmental law, a government report, a scientific journal article, or a transcription from an oral interview. It might also be a less conventional text, including a technological landscape, a novelistic treatment of an illness or natural disaster, or even a nature or public health film. Your interpretation of your chosen document should place the source in its historical context as well as attempt to make an analytical argument

about the document's historical meaning. In doing this, you will be asked to make explicit use a theoretical and/or methodological approach in your interpretation of the document. Preferably, you will use one of the theories and/or methods that we will discuss in the course of the semester. Because you must select a document and have it approved by the sixth week of the course, you should begin thinking about this assignment during the early part of the semester. You will also present your paper project before the class during one of the last three meetings of the semester. As a class, we will use the presentations as an opportunity to discuss and critique individual progress on these final papers. The final paper is due without exception by May 4 at 5 pm.

### The Four Stages to the Final Paper: Primary Document Assignment, Annotated Bibliography, Project Description, and Project Presentation

The writing of your final paper will occur over the course of the semester. In order to facilitate the writing of the paper, I will ask you to do four tasks along the way. The first task is to identify your primary document and write a short document explaining its historical significance (February 23). The second task is to write an annotated bibliography that lists secondary source materials of relevance to your project (March 9). Because the final paper is not an extensive research paper, your list of secondary materials should be limited to four or five sources. The third task is to draft a project description that will form the basis of a rough draft for your project presentation and final paper (March 23). The fourth task is to present your project to the class (April 13, 20, and 27).

### Assignment Due Dates

Week 6 (February 23): Primary Document  
Week 8 (March 9): Annotated Bibliography  
Week 8 (March 23): Project Description  
Weeks (April 13, 20, or 27): Project Presentations  
Week 16 (May 4): Final Paper

### Grading

15% for overall attendance & participation  
15% for leading discussion of an article-length reading  
20% for project presentations  
50% for final paper (including the document, bibliography, and project description)  
Consistent effort and improvement will be weighted heavily in grading

## **Semester Schedule**

### **January 19. Theory & Method: Their Import for Historical Understandings of Technology, Environment, & Health**

### **January 26. Technology, Progress, & Historical Understanding**

Readings: (1 book, 2 articles)

Edward Tenner, *Why Things Bite Back?*

Robert L. Heilbroner, “Do Machines Make History?” and “Technological Determinism Revisited”

### **February 2. The History of Technology**

Reading: (1 book)

Ruth Schwartz Cowan, *A Social History of American Technology*

### **February 9. Explorations in the History of Technology**

Readings: (6 articles)

Ruth Schwartz Cowan, “The Consumption Junction: A Proposal for Research Strategies in the Sociology of Technology”

Thomas Hughes, “The Evolution of Large Technological Systems”

Rosalind Williams, “Cultural Origins and Environmental Implications of Large Technological Systems”

Merritt Roe Smith, “Technological Determinism in American Culture”

Michael L. Smith, “Recourse of Empire: Landscapes of Progress in Technological America”

Jeffrey Stine and Joel Tarr, “At the Intersections of Histories: Technology and the Environment”

### **February 16. Environment & History**

Readings: (1 book, 1 article)

Alfred Crosby, *The Columbian Exchange: The Biological and Cultural Consequences of 1492*

William Cronon, “The Trouble with Wilderness: or, Getting Back to the Wrong Nature”

## **February 23. Explorations in Environmental History I.**

### Due: Primary Document Assignment

#### Readings: (7 articles)

Donald Worster, “Transformations of the Earth: Toward an Agroecological Perspective in History”

Alfred Crosby, “An Enthusiastic Second”

Richard White, “Environmental History, Ecology, and Meaning”

Carolyn Merchant, “Gender and Environmental History”

William Cronon, “Modes of Prophecy and Production: Placing Nature in History”

Stephen Pyne, “Firestick History”

Donald Worster, “Seeing Beyond Culture”

\* These articles belong to a “Round Table” forum on environmental history that appeared in the *Journal of American History* in March 1990. I want you to think about the kinds of environmental history articulated in each of the readings you engage.

## **March 2. Explorations in Environmental History II.**

### Reading: (1 book, selections)

William Cronon, *Nature's Metropolis: Chicago and the Great West*

## **March 9. Life Sciences & History**

### Due: Annotated Bibliography

#### Reading: (1 book, selections, & 1 article)

Selections from Robert Kohler, *Lords of the Fly: Drosophila Genetics and the Experimental Life*

Stephen Pemberton, “Canine Technologies, Model Patients”

## **March 16. No Class – Spring Break.**

## **March 23. Health & Medicine & Their Histories**

### Due: Project Description

#### Readings: (1 book, 1 article)

Charles Rosenberg, *The Cholera Years: The United States in 1832, 1849, and 1866*

Charles Rosenberg, “Framing Disease: Illness, Society, and History”

**March 30. Explorations in the History of Medicine**

Readings: (1 book, 1 article)

Keith Wailoo, *Drawing Blood: Technology and Disease Identity in Twentieth Century America*

Sarah Chinn, “‘Liberty’s Life Stream’: Blood, Race, and Citizenship in World War II”

**April 6. Explorations in the History of Health.**

Reading: (1 book)

Julie Livingston, *Debility and the Moral Imagination in Botswana*

**April 13. Project Presentations**

**April 20. Project Presentations**

**April 27. Project Presentations**

**May 4. Final Paper Due by 5 p.m. (No Class)**

## Course Bibliography

### **Books**

- Ruth Schwartz Cowan, *A Social History of American Technology* (Oxford University Press, 1997)
- William Cronon, *Nature's Metropolis: Chicago and the Great West* (Norton, 1992)
- Alfred Crosby, *The Columbian Exchange: The Biological and Cultural Consequences of 1492* (Praeger Paperback, 30<sup>th</sup> Anniversary edition, 2003)
- Julie Livingston, *Debility and the Moral Imagination in Botswana* (Indiana University Press, 2005)
- Robert Kohler, *Lords of the Fly: Drosophila Genetics and the Experimental Life* (University of Chicago Press, 1994)
- Charles Rosenberg, *The Cholera Years: The United States in 1832, 1849, and 1866* (University of Chicago Press, 1987)
- Edward Tenner, *Why Things Bite Back: Technology and the Revenge of Unintended Consequences* (Vintage Books, 1996)
- Keith Wailoo, *Drawing Blood: Technology and Disease Identity in Twentieth Century America* (Johns Hopkins University Press, 1997)

### **Journal Articles and Book Chapters**

- Sarah Chinn, "'Liberty's Life Stream': Blood, Race, and Citizenship in World War II," in *Technology and the Logic of American Racism: A Cultural History of the Body as Evidence* (Continuum Press, 2000), 93-140.
- William Cronon, "Modes of Prophecy and Production: Placing Nature in History," *Journal of American History* (March 1990): 1122-1131.
- William Cronon, "The Trouble with Wilderness: or, Getting Back to the Wrong Nature," in William Cronon, ed. *Uncommon Ground: Toward Reinventing Nature* (Norton 1995), 69-90.
- Alfred Crosby, "An Enthusiastic Second," *Journal of American History* (March 1990): 1107-1110.
- Robert L. Heilbroner, "Do Machines Make History?" and "Technological Determinism Revisited" in Merritt Roe Smith and Leo Marx, ed. *Does Technology Drive History? The Dilemma of Technological Determinism* (MIT Press, 1994), 53-78.
- Thomas Hughes, "The Evolution of Large Technological Systems," in Wiebe E. Bijker, Thomas P. Hughes, and Trevor J. Pinch, eds., *The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology* (MIT Press, 1987), 51-82.
- Carolyn Merchant, "Gender and Environmental History," *Journal of American History* (March 1990): 1117-1121.
- Stephen Pemberton, "Canine Technologies, Model Patients: The Historical Production of Hemophiliac Dogs in American Biomedicine," in Susan Schrepfer and Philip Scranton, ed. *Industrializing Organisms: Introducing Evolutionary History* (Routledge, 2004), 191-213.

- Stephen Pyne, "Firestick History," *Journal of American History* (March 1990): 1132-1141.
- Charles Rosenberg, "Framing Disease: Illness, Society, and History," in Charles Rosenberg and Janet Golden, eds., *Framing Disease: Studies in Cultural History* (Rutgers University Press, 1992), xii-xxvi.
- Ruth Schwartz Cowan, "The Consumption Junction: A Proposal for Research Strategies in the Sociology of Technology," in Bijker, Hughes, and Pinch, eds., *The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology* (MIT Press, 197), 261-280.
- Michael L. Smith, "Recourse of Empire: Landscapes of Progress in Technological America" in Merritt Roe Smith and Leo Marx, ed. *Does Technology Drive History? The Dilemma of Technological Determinism* (MIT Press, 1994), 37-52.
- Merritt Roe Smith, "Technological Determinism in American Culture" in Merritt Roe Smith and Leo Marx, ed. *Does Technology Drive History? The Dilemma of Technological Determinism* (MIT Press, 1994), 1-35.
- Jeffrey Stine and Joel Tarr, "At the Intersections of Histories: Technology and the Environment," *Technology and Culture* 39 (October 1998): 601-640.
- Richard White, "Environmental History, Ecology, and Meaning," *Journal of American History* (March 1990): 1111-1116.
- Rosalind Williams, "Cultural Origins and Environmental Implications of Large Technological Systems," *Science in Context* (August 1993) 6: 75-100
- Donald Worster, "Seeing Beyond Culture," *Journal of American History* (March 1990): 1142-1147.
- Donald Worster, "Transformations of the Earth: Toward an Agroecological Perspective in History," *Journal of American History* (March 1990): 1087-1106.