

Paula Findlen (pfindlen@stanford.edu)  
Spring 2005  
Office Hrs: Monday 10-12 (200-118)

Wed 2:15-4:05  
380-380D

### Senior Colloquium (STS 200) Scientific Visions, Technological Dreams since the Renaissance

Since at least the sixteenth century humans have been trying to understand the meaning of a scientific and technological society, as both of these activities became more fundamental to the structure, development, and comprehension of the world. Science and technology need to be studied both in their technical specificity and in relation to the societies which foster them. Understanding the nature of science and technology requires a close investigation of the development of these kinds of knowledge and their applications to a wide variety of human and environmental problems. But we should also consider the nature of societies whose social, political, and economic infrastructure is built upon the premise of scientific and technological knowledge. It is the interaction between the two phenomena that forms the core of STS as an interdisciplinary field of study.

This seminar, designed for senior STS majors who have taken at least four STS Core courses, explores the intersections of science, technology, and society at an advanced level through close reading of some of the most important theoretical works in the study of STS and key sources designed to provoke discussion about the meaning of a scientific or technological society across the centuries. You should come to class prepared to think broadly about the key issues of STS, as a field of study, and the relationship of these readings to your work in previous classes in the major. In other words, think of this seminar as an opportunity to reflect on what you have learned and to integrate actively it into our discussions.

The other primary goal of STS 200 is the production of a substantial senior research paper (ca. 20 pp.) on a topic of your choosing in consultation with the instructor (required of all students except those writing honor theses). All class participants, including thesis writers, will be required to present a week's reading once in the quarter and to report on the development of their research projects throughout the quarter, culminating in a final project presentation in week 9.

A selection of final projects from the two STS 200 seminars will be published in *TECHNE*, the STS online student journal.

#### Course Readings

The following books can be purchased at the Stanford Bookstore and can also be found on two-hour reserve in Green Library. Readings marked (R) can be found in the Course Reader:

Ken Alder, *The Measure of All Things*  
Elizabeth Eisenstein, *The Printing Revolution in Early Modern Europe*  
Thomas Kuhn, *The Structure of Scientific Revolutions*  
Thomas Hughes, *Human-Built World*  
C. P. Snow, *The Two Cultures*  
Course Reader (available through Field Copy, 323-3155)

**Week One (3/30): Introduction: Approaches to STS**

**Week Two (4/6): What is Science?**

Thomas Kuhn, *Structure of Scientific Revolutions*

**Week Three (4/13): Revolutions in Knowledge**

Elizabeth Eisenstein, *The Printing Revolution*, pp. 3-107, 187-278

Francis Bacon, *New Atlantis* (R)

**N.B. We'll meet in the Barchas Room of Special Collections, Green Library**

**Week Four (4/20): The Emergence of the Scientist**

Joseph Ben-David, *The Scientist's Role in Society* (R)

Sydney Ross, "Scientist: The Story of a Word," *Annals of Science*  
18 (1962): 65-85 (R).

\*\*\* *Project proposal due: Friday, April 22* \*\*\*

**Week Five (4/27): Science, Technology, and Politics**

Ken Alder, *The Measure of All Things*, pp. 1-159, 235-261, 291-345 (skim rest)

\*\*\* Film night: Chaplin's *Modern Times* (Tues, May 3@ 6pm, dinner included; location tba) \*\*\*

**Week Six (5/4): Modern Technologies and Society**

Thomas Hughes, *Machine-Built Worlds*

Filippo Tommaso Marinetti, "The Founding and Manifesto of Futurism" (1909) and  
"Electrical War" (1911-15) (R)

E. M. Forster, "The Machine Stops" (1909) (consult online @  
<http://www.plexus.org/forster/index.html>)

**Week Seven (5/11): Science and Modern Culture**

C. P. Snow, *The Two Cultures*, pp. 1-100 (skim intro)

Alan Lightman, *A Sense of the Mysterious*, pp. 3-48 (R)

View *Proteus: A Nineteenth Century Vision* before class

**Week Eight (5/18): Living with Science and Technology**

Margaret Pugh O'Mara, *Cities of Knowledge* (R)

*Visit by Professor Pugh O'Mara to the seminar*

**Week Nine (5/25): Presentations of Final Projects**

\*\*\* *Rough Drafts Due, Friday, 5/27 at 5 pm* \*\*\*

**Week Ten (6/1): No Class**

\*\*\* *Final Paper Due (ca. 20 pp.): Monday, June 6* \*\*\*

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### STS 200 COURSE READER

Francis Bacon, *New Atlantis* (1627), in Francis Bacon, *Selected Philosophical Works*, ed. Rose-Mary Sargent (Indianapolis: Hackett, 1999), pp. 239-268.

Joseph Ben-David, *The Scientist's Role in Society: A Comparative Study* (Chicago: University of Chicago Press, 1984), 2<sup>nd</sup> ed.

Sydney Ross, "Scientist: The Story of a Word," *Annals of Science* 18 (1962): 65-85

Filippo Tommaso Marinetti, "The Founding and Manifesto of Futurism" (1909) and "Electrical War" (1911-15), in *Marinetti: Selected Writings*, ed. R. W. Flint, trans. R. W. Flint and Arthur A. Coppotelli (New York: Farrar, Straus & Giroux, 1971), pp. 40-44, 104-108.

Alan Lightman, *A Sense of the Mysterious: Science and the Human Spirit* (New York: Pantheon, 2005), pp. 3-48.

Margaret Pugh O'Mara, *Cities of Knowledge: Cold War Science and the Search for the Next Silicon Valley* (Princeton: Princeton University Press, 2004), pp. 1-141, 225-234.