Science Policy for Scientists and Engineers

One Credit Course

Fall 2008 – Tuesdays 3:00 – 4:15pm
Location: TBA
CHM 501 (Section #1008 / Class #88187)
MAE 591 (Section #1003 / Class #88231)
BIO 591 (Section #1045 / Class #88207)
ASB 591 (Section #1014/ Class # 855220)

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Science and technology are powerful transforming forces in today's global society. They have fueled the world's economy to new heights; been an integral part of controlling disease; and provided new ways of traveling and communicating. But they have also been implicated in fostering unemployment, economic inequity, environmental destruction, and the development of new diseases. This class will examine the ways in which science and technology contribute to large scale societal transformations. As it analyzes the processes by which S&T are shaped, developed, and integrated into society, it will look for ways in which scientists and engineers can increase the likelihood that the social, political, economic, environmental outcomes of their work are desirable.

Course Requirements

Participation in Seminar – The primary component of the course will be the seminar. It is imperative that you not only attend the seminars but that you also engage and participate in seminars as well. To emphasize this, a significant part of your grade (50**%**) of the class will be based on your engagement in the seminar. This includes not only attending class, but participating in conversation and asking questions as well. You may be assigned specific responsibilities to facilitate discussion as well.

Critical Analysis – In order to participate in conversation well, you'll need to prepare. This means more than simply reading the required articles. You'll need to reflect on them as well. As part of this reflection, for each class you will write up 3 questions that will help us to explore the readings in class. These questions will count for 25% of your overall grade.

News Article Presentations – In addition to the assigned readings, on a regular basis we will also briefly discuss a recent popular news article that explores an interesting angle on some issue in technology and society. Each student will be responsible for submitting one to two articles during the semester. You will need to post the article to blackboard two days before class is held and lead a brief discussion about it at the beginning of class. This exercise will count for 25% of your overall grade.

Course Calendar

August 28 – Introduction and acronym assignment

The Nuts and Bolts of Science Policy

September 4 – **Dan Sarewitz** "Does Science Policy Matter?" *Issues in Science and Technolo*gy, Summer 2007

September 11 – **W. Patrick McCray**, "Will Small Be Beautiful? Making Policies for Our Nanotech Future." in *History and Technology*, **21**(2) (2005), pp. 177-203.

September 18 – The Precautionary Principle, Guest Lecture by **Troy Benn**

September 25 – **Lawrence Lessig**, "Code is Law," *Code: And Other Laws of Cyberspace* (New York: Basic Books, 1999), pp. 3-8; 85-90.

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October 2 – **E.M. Forster**, "The Machine Stops," *Oxford and Cambridge Review*, November 1909, pp. 83-122.

October 9 – **Trevor J. Pinch and Wiebe Bijker**, "The Social Construction of Facts and Artifacts" in W. Bijker, T.P. Hughes, and T.J. Pinch (eds.), *The Social Construction of Technological Systems* (Cambridge, Mass., MIT Press, 1987), pp. 17-50.

October 16 –**Langdon Winner**, "Do Artifacts have Politics?" *The Whale and the Reactor: a Search for Limits in an Age of High Technology* (Chicago: University of Chicago Press, 1986), pp. 19-39.

October 23 – **George Ritzer**, "Control," *The McDonaldization of Society* (Thousand Oaks, CA.: Pine Forge Press, 2000), pp. 104-122.

October 30 – **Fabio Salamanca-Buentello, Deepa L. Persad, Erin B. Court, Douglas K. Martin, Abdallah S. Daar, Peter A. Singer**, "Nanotechnology and the World," *PLoS Medicine*, **2**(5) May 2005, pp. 383-386. **Noela Invernizzi and Guillermo Foladori**, "Nanotechnology and the Developing World: Will Nanotechnology Overcome Poverty or Widen Disparities?" *Nanotechnology Law & Business*, Vol **2**(3) September/October 2005, pp. 294-303.

Science, Policy & Outcomes

November 6 – **National Science & Technology Council**. 1999. *Nanotechnology: Shaping the World Atom by Atom*. Washington, DC: NSTC.

November 13 – **Bill Joy**, "Why the Future Doesn't Need Us," *WIRED*, Vol. 8, No. 4, April 2000, pp. 238-262.

November 20 – **Jameson M. Wetmore**, "Amish Technology: Reinforcing Values, Building Community," *IEEE's Technology & Society Magazine* 26(2), June 2007, pp. 10-21.

December 4 – **D. H. Guston and D. Sarewitz.** 2002. "Real-Time Technology Assessment." *Technology in Society* 24:93-109.