

# Science Policy for Scientists and Engineers

One Credit Course

**Spring 2009 – Wednesdays 3:00 – 4:15pm**

**Location: College of Design South, Rm 143**

CHM 501 (LN #12231) MAE 591 (LN #27086)

**Ira M. Bennett**, Consortium for Science, Policy & Outcomes

**Jonathan Posner**, Mechanical and Aerospace Engineering, Chemical Engineering

**Jameson M. Wetmore**, Consortium for Science, Policy & Outcomes, School of Human Evolution & Social Change

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.

This semester's course will focus on the process by which science is communicated. Much of the work done by scientists in secluded labs eventually has an impact on people around the world. Because of this policy makers and the general public like to be informed about the latest scientific findings. Scientists generally like to keep these groups informed because that is where money comes from. We'll look at both sets of interactions throughout the semester.

## 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.

**Public Presentation of Science** – During the month of March the course will be devoted to exploring ways in which scientists and engineers can help the general public better understand science and its implications. This effort will focus on the development of a display/presentation for the 2009 edition of Nanodays (<http://www.nisenet.org/nanodays>). Students will be divided into groups and charged with developing a project that will be presented at the 2009 Tempe Festival of the Arts. Each group will then write up their project in the NISE Net format (30% of grade).

**Policy Brief** – In addition to the general public, scientists also have a duty to explain their work to policymakers. During the last third of the course students will write a policy brief explaining their work to a congressional staffer. The first draft will be due on April 15<sup>th</sup>. The final draft is due on April 29<sup>th</sup> (20% of grade).

## Course Calendar

January 21 – Introduction

January 28 – **Daniel Sarewitz**, “Human Well-being and Federal Science -- What's the Connection?” in: *Science, Technology, and Democracy*, edited by Daniel L. Kleinman, (Albany: SUNY Press), 2000, pp. 87-102.

February 4 – **Harry Collins and Trevor Pinch**, “The Naked Launch: Assigning Blame for the Challenger Explosion,” *The Golem at Large: What you should know about Technology* (New York: Cambridge University Press, 1998) pp. 30-56.

February 11 – **T. F. Gieryn and A.E. Figert**, “Ingredients for a Theory of Science in Society: O-Rings, Ice Water, C-Clamp, Richard Feynman, and the Press.” *Theories of Science in Society*. S. Cozzens and T. F. Gieryn (Bloomington, Indiana University Press, 1990), pp. 67-97.

February 18 – **Jameson Wetmore**, “The Crashworthiness Revolution,” Unpublished manuscript (so you can be assured that it’s really good!).

February 25 – **David H. Guston**, “On Consensus and Voting in Science: From Asilomar to the National Toxicology Program,” in Scott Frickel and Kelly Moore (eds), *The New Political Sociology of Science: Institutions, Networks and Power* (University of Wisconsin Press, 2006), Chapter 14. With guest speaker.... David H. Guston!

March 4 – Trip to Arizona Science Center (leave at 1:00pm). Meeting with **Laura Martin**, Director of Science Interpretation

☞ Spring Break ☛

March 18 – Explore the **NISE Net** catalogue at: <http://www.nisenet.org/catalog>  
Be prepared to discuss some of the “cart demonstrations”

March 25 – Last minute prep of Nanodays presentations

March 27-29 – Nanodays presentation at Tempe Festival of the Arts

April 1 – guest speaker – **Shep Ryen**, former staff member, U.S. House Committee on Science and Technology

April 8 – review each other’s policy briefs

April 15 – guest speaker – **Rachel Levinson**, Director, Special Projects and Research Initiatives, Office of the Vice President for Research and Economic Affairs, ASU Washington, DC office

☞ **First draft of Policy Briefs Due** ☛

April 22 – guest speaker – **Ed Hackett**, former director of the Division of Social and Economic Sciences, National Science Foundation

April 29 – guest speaker – **Dan Sarewitz**, director of CSPO, Washington, DC office

☞ **Final draft of Policy Briefs Due** ☛