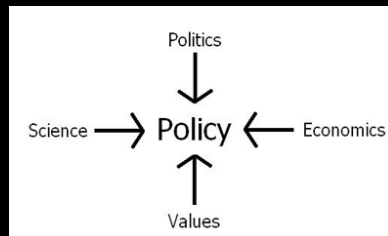


Union of Concerned Scientists Scientific Integrity Curriculum Guide Sampler

I. Lecture slide samples

Science in the Policy Arena

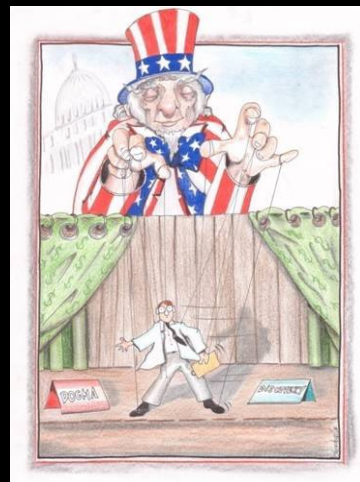
- Science is an increasingly important factor in decisions the government makes about health, security, and sustainability
- Science is only one aspect of the policy process, but it must remain an independent one



- Manipulation or suppression of science *before* it enters the public policy arena is not politics as usual and is not OK

Political Interference

- Attempts to inappropriately undermine, alter, or otherwise interfere with the scientific process or scientific conclusions for political or ideological reasons



Solutions and Reforms

- The government should develop policies that will ensure:
 - Openness
 - Transparency
 - Accountability
 - Prevention



Distortion of Scientific Advice

Scientific advisory panels, which review the scientific basis for federal regulations, have been manipulated by:

- Selecting members with questionable qualifications or conflicts of interest
- Misrepresenting the panel's scientific advice
- Dismissing the panel entirely



II. Worksheet Samples

Consequences Worksheet

4. **Post-9/11 public health.** Two days after the September 11, 2001, terrorist attack on the World Trade Center, the EPA assured the people of New York City that the air near “ground zero” was safe to breathe. However, a 2003 report from the EPA’s Office of the Inspector General charged that the agency lacked the information needed to determine air quality in the days following September 11. In fact, the EPA’s initial assessment was terribly inaccurate; the collapse of the buildings actually released 2,000 tons of asbestos and hundreds of thousands of tons of concrete dust into the air.

All the official statements released by the EPA during this time were vetted by the National Security Council before they were released. In addition, the White House Council on Environmental Quality urged the EPA to “add reassuring statements and delete cautionary ones.” An EPA scientist later told CBS News that the agency knew the dust was dangerous and had lied. Mount Sinai Hospital in New York found in 2006 that “seven out of ten World Trade Center rescue and wreckage workers had new or worsened lung problems after the attacks.”

Scientific integrity issue(s):

Consequences:

Scientific Consensus Worksheet

There are two unfortunate obstacles to an accurate public understanding of scientific consensus and its importance. First is a tendency to exaggerate the number of times scientific consensus has been overturned. This comes, in part, from the excitement of scientists, the public, and the media to new and untested ideas. When these attention-grabbing ideas prove mistaken or exaggerated during subsequent scientific review, this can give the impression that science has “failed.” There are certainly times when scientific consensus has been overturned, but such instances are rare.

4. How should policy makers react to cutting-edge science? Are there situations where policy decisions should be made before a scientific consensus has been reached, or should governments wait until the science is very clear?

5. How should policy makers handle scientific uncertainty? When a scientific consensus has been reached but uncertainty remains about specific aspects of the science, are those uncertainties a legitimate excuse for policy action or inaction?

III. Assignment Samples

1. Scientific integrity should be an important issue to the public, since the U.S. economy and public health can suffer if policy decisions are not based on the best available science. Find a creative way to make a scientific integrity issue easily accessible to the general public; for example:

- write a short speech
- create a brochure or pamphlet
- design a poster
- write a script for (and/or produce) an original TV or radio infomercial

Keep the focus of your assignment narrow, but be sure to give your audience enough background information to illustrate why the issue is important.

2. Prepare a briefing memo for one of your elected officials on a scientific integrity issue. A briefing memo attempts to summarize an issue in a single page of text without watering down any of the relevant facts; it should contain all the necessary background information and enough detail so your representative can pull “talking points” from it. Be sure to address how the issue is relevant to the representative’s constituency, as well as any broader (national or international) implications.

3. Write an original news story on a scientific integrity issue. Since most news is event-driven, check the websites of newspapers and other media, Congress, or nonprofit groups for topics. Don’t worry if the topic is a bit dated; just focus on writing a piece with substance, solid background research, and relevant quotes.

IV. Essay Topics

1. **Mercury pollution.** Mercury is a neurotoxin that can cause brain damage and harm reproduction in women and wildlife. The nation’s largest source of mercury air emissions—about 48 tons annually—is coal-fired power plants. Several scientific integrity issues have arisen from attempts to regulate these emissions, including the suppression of an independent scientific advisory panel and agency scientists being pressured to alter their findings.

Starting points:

- Union of Concerned Scientists. “Information on power plant mercury emissions censored.” Online at http://www.ucsusa.org/scientific_integrity/interference/mercury-emissions.html.
- Environmental Working Group. “Mercury in seafood.” Online at <http://www.ewg.org/issues/siteindex/issues.php?issueid=5010>.