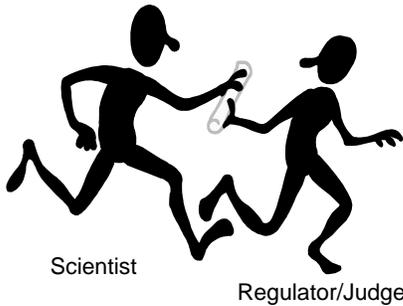


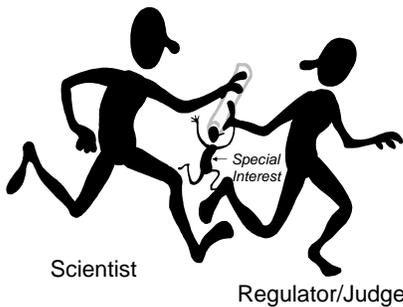
Beware of Special Interests Selling Science

Wendy Wagner,
University of Texas School of Law

The "Hand-off" from Science to Policy is not Easy



The "Hand-off" from Science to Policy is not Easy



The "Hand-off" from Science to Policy is not Easy

Part I: Major obstacles

PROBLEM #1:

Science can be manipulated by affected parties.

PROBLEM #2:

The line between science and policy is a fuzzy one.

Part II: Recommendations

The "Hand-off" from Science to Policy is not Easy

Part I: Major obstacles

PROBLEM #1:

Science can be manipulated by affected parties.

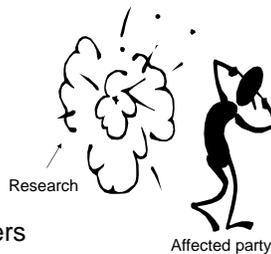
PROBLEM #2:

The line between science and policy is a fuzzy one.

Part II: Recommendations

How is Regulatory Science Manipulated?

- A. Commission Biased Research
- B. Suppress Adverse Findings
- C. Manufacture Controversy
- D. Intimidate Researchers



A.

AMPHIBIAN DECLINES

Conflict Brewing Over Herbicide's Link to Frog Deformities

A witches' brew of controversy is bubbling up over the potential link between atrazine, one of the most widely used herbicides in the United States, and the decline of amphibians. The latest addition to the brew are new findings from developmental endocrinologist Tyrone Hayes's group at the University of California, Berkeley, suggesting that exposure to very low levels of atrazine in the wild is turning male frogs into hermaphrodites. But new experimental results in another frog species, to be presented by experimental toxicologist James Carr of Texas Tech University in Lubbock and other researchers at a meeting later this month, cast doubt on such low-dose effects. At stake could be continued regulatory approval for atrazine.

Earlier this year Hayes set the Lurie building when he reported in the Proceedings of the National Academy of Sciences that in the lab, male tadpoles exposed to low levels of atrazine developed into hermaphrodites or had other reproductive-organ deformities, apparently due to disruptions in their endocrine system (Science, 19 April, p. 847). The study used African clawed frogs (*Xenopus laevis*), known as the "lab rat" of amphibian toxicologists' studies.

The U.S. Environmental Protection Agency (EPA) is currently reevaluating the risk that atrazine could affect human or ecological health at environmental levels. The possible link between atrazine and reproductive-organ abnormalities in frogs is so important to this reevaluation that the agency is delaying the process to convene a specially selected panel of scientists to evaluate the available data, according to an EPA spokesman. Amphibian populations have been declining precipitously in the past decade or more, ecologists have reported, and Hayes and others have proposed



Digging up trouble: Tyrone Hayes, here building frog traps in Nebraska, finds that atrazine makes male frogs hermaphroditic.

Tyrone B. Hayes, There Is No Denying This: Defusing the Confusion about Atrazine, 54 BioScience 1138 (2004).

... [T]he published and unpublished data presented to the EPA by the Syngenta-funded panel (and touted in the popular press) suffer from contaminated laboratory controls; high mortality; inappropriate measurements of hormone levels in stressed, sexually immature animals during nonreproductive seasons; and contaminated reference sites. The confounding factors in the industry-funded studies severely limit any conclusions about the adverse effects of atrazine on amphibians and prevent meaningful comparisons with my laboratory's published data.

Other examples of commissioned science

- 1. Assembly-line silicosis (and asbestosis) diagnoses commissioned by plaintiff attorneys
- 2. The "funding effect" in pharmaceutical research
- 3. Tobacco research



Judge Jack

B. Suppression

Antidepressant Makers Withhold Data on Children

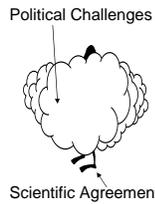
By Shankar Vedantam

Washington Post, Thursday, January 29, 2004; Page A01

Makers of popular antidepressants such as Paxil, Zoloft and Effexor have refused to disclose the details of most clinical trials involving depressed children,....

C. Manufacture Scientific Controversy

Voters believe that there is **no consensus** about global warming within the scientific community. Should the public come to believe that the scientific issues are settled, their views about global warming will change accordingly. Therefore, you need to continue to make the lack of scientific certainty a primary issue in the debate,



Frank Lutz

D. Harass Researchers through Abuse of Legal Tools

- * Dr. Herbert Needleman

Effects of lead on children

- * Dr. Paul Fischer

Effects of Joe Camel logo in marketing cigarettes to children



The Pulse of Scientific Freedom in the Age of the Biotech Industry

Conference at Berkeley, December 2003



Arpad Pusztai - Consultant, Norwegian Food Sciences Institute



Tyrone Hayes - Associate Prof., UC Berkeley



John Losey - Associate Prof., Cornell



Ignacio Chapela - Assistant Prof., UC Berkeley

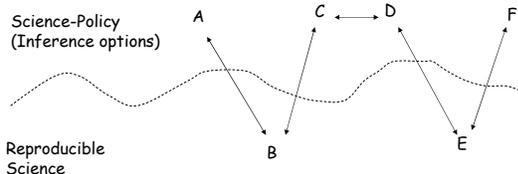
Dr. Donald Kennedy, Editor of *Science*:

"I know what many of my fellow scientists are saying to one another . . . Many are wary of work that may find use in some regulatory proceeding. They wonder whether the data underlying their findings may be subject to examination and reinterpretation, perhaps with some 'spin' supplied by the revisionists. They know that charges of research misconduct could arise from hostile access to their scientific work. They know they are vulnerable to personal attack from those whose interests may be adversely affected by the product of their research."

- from Prologue in *Rescuing Science from Politics* (forthcoming 2006):

PROBLEM #2

The Line Between Science and Policy is a Fuzzy One



PROBLEM #2

The Line Between Science and Policy is a Fuzzy One

Alar scare

Why might special interests make science-policy look scientifically ordained?

1. Avoids ugly value-laden controversies
2. Limits public involvement and elevates their influence
3. Increases the appearance of credibility and expertise

The “Hand-off” from Science to Policy is not Easy

Part I: Major obstacles

PROBLEM #1:
Science can be manipulated by affected parties.

PROBLEM #2:
The line between science and policy is a fuzzy one.

Part II: Recommendations

Current Legal Responses to Special Interest Science

A. Courts

Screen evidence with *Daubert*

B. Regulation: New tools for engaging in special interests attacks

1. Data Quality Act and progeny
2. Data Access Act
3. Cost-benefit Analysis



II. Recommendations

A. Better control of how science is conducted and reviewed

1. NAS reports
2. Professional societies
 - * APHA
 - * AAAS



II. Recommendations, continued

- B. Identify sponsor constraints on scientists
- C. Penalize harassment and abuse
- D. Remain attentive to the fuzzy line between science and policy

