

Applying Science to Affect Policy Change

Science produces information that can be useful for policymaking. Science can identify problems, contribute to the process of defining and evaluating policy options, and help assess the actual effects of policy decisions. At the same time, communication difficulties and differences between academic/scientific, government, political, and business cultures inhibit the use of science. Successful application of science to policymaking is largely dependent on overcoming such barriers. Furthermore, scientific information is often a relatively minor component of a policy decision process that is dominated by value judgments and political and economic considerations. This presentation will examine some of the ways science is used and not used in the policy process, based largely on the author's experience as a participant in US national climate change policy deliberations from 1995-2001. Topics to be covered include:

- Executive branch agencies and White House offices involved in climate policy
- Policy instruments – treaties, laws, executive orders, regulations, voluntary measures, policy proposals, and the budget
- The policy process - ways these institutional players interact to craft policy
- Constraints and barriers
- Opportunities and techniques for inserting science into the policy process

Suggested Reading:

"The Target List" by Anne Applebaum, *Washington Post*, July 14, 2004.

"Tales from a Troubled Marriage: Science and Law in Environmental Policy" by Oliver Houck, *Science*, 12 December 2003.

Additional Reading:

Historical Changes:

Science and Engineering Indicators 2000, Chapter 1, "Science and Technology in Times of Transition: the 1940s and 1990s", pp 1-1 to 1-40

David H. Guston, "Retiring the Social Contract for Science," *Issues in Science and Technology*, Summer, 2000, pp. 32-36.

Executive Branch:

Harvey Brooks, "Science and Technology Advice", in William T. Golden, ed., *Science and Technology Advice to the President, Congress, and the Judiciary*, (New Brunswick: Transaction, 2nd ed., 1995, 1st pub. 1993), pp. 51-64

David M. Hart, "Managing Technology Policy at the White House," in Lewis M. Branscomb and James H. Keller, eds., *Investing in Innovation* (Cambridge: MIT Press, 1998), pp. 438-461

Gregg Herken, *Cardinal Choices: Presidential Science Advising from the Atomic Bomb to SDI* (New York: Oxford University Press, 1992), pp. 177-180.

Legislative Branch:

Bruce Bimber and David H. Guston, "Politics by the Same Means: Government and Science in the United States", in Sheila Jasanoff, Gerald E. Markle, James C. Petersen, and Trevor Pinch, eds., *Handbook of Science and Technology Studies* (Thousand Oaks, CA: Sage, 1995), pp. 554-571;

Megan Jones, David H. Guston and Lewis M. Branscomb, *Informed Legislatures: Coping with Science in a Democracy* (Lanham MD: University Press of America, 1996), pp. 9-36 and 40-47.