

S&T Policy Making

AP Seminar Fall 2014



Science and Technology Policymaking: A Primer

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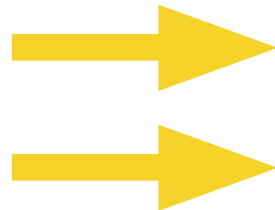
Summary

Scientific and technical knowledge and guidance influences not just policy related to science and technology, but also many of today's public policies as policymakers seek knowledge to enhance the quality of their decisions. Science and technology policy is concerned with the allocation of resources for and encouragement of scientific and engineering research and development, the use of scientific and technical knowledge to enhance the nation's response to societal challenges, and the education of Americans in science, technology, engineering, and mathematics.

The science and engineering community, however, is not represented by one individual or organization. On matters of scientific and technical knowledge and guidance, its opinions are consensus-based with groups of scientists and engineers coming together from different perspectives to debate an issue based on the available empirical evidence. In the end, consensus is achieved if there is widespread agreement on the evidence and its implications, which is conveyed to policymakers. Policymakers then determine, based on this knowledge and other factors, whether or not to take action and what actions to take. If there are major disagreements within large portions of the community, however, consensus is not yet achieved, and taking policy actions in response to a concern can be challenging.

Contents

Who makes decisions?



Overview of U.S. Science and Technology Policy	1
Science and Technology Policy Facets	2
Historical Changes in U.S. Science and Technology Policy	4
Definition of Research and Development	6
Industries Linked to Science and Technology	6
What are Some Perspectives on Science and Technology Policy?	7
Science and Technology Community and Policymakers.....	7
Federal Funding of Research	9
Policy for Science and Science for Policy	10
Policy for Technology and Technology for Policy	10
Who Makes Decisions Regarding Science and Technology Policy in Congress?	14
Committees	15
Caucuses	16
Who Makes Decisions Regarding Science and Technology Policy in the Executive Branch?	18
The President and the White House	19
Office of Science and Technology Policy	19
Office of Management and Budget	21
Other White House Science and Technology Policy Related Offices	21
Agency Leadership	22
Federal Agencies	22
Who Makes Decisions in the Judicial Branch Regarding Science and Technology Policy?	24
What Organizations Provide Science and Technology Advice to Policymakers?	25
Federal Advisory Committees	26
Congressionally Chartered Honorific Organizations	29
Federally Funded Research and Development Corporations (FFRDCs)	29
International Intergovernmental Organizations	30
Other Sources of Advice	31
Policy Institutes	31
Public and Individual Opinion Leaders	31
Professional Organizations and Disciplinary Societies	32
Universities and Colleges	33
Advocacy, Special Interest, or Action Groups	34
Industry and Trade Associations	34
Labor	35
What are the Opportunities and Challenges of the Current Science and Technology Policy Decisionmaking Process?	36

Who Makes Decisions Regarding Science and Technology Policy in Congress?

Congress makes decisions regarding all four of the S&T policy facets described earlier: *science for policy*, *technology for policy*, *policy for science*, and *policy for technology*. Science and technology policy guidance can be used to frame policy issues, craft legislation, oversee federal activities, and govern. In addition, the decisions Congress makes influence S&T issues such as the funding of research and technological development, setting priorities for that funding, and supporting science, technology, engineering, and mathematics education. In making its decisions, Congress receives advice from both internal sources such as congressional staff, S&T policy

Committees³⁸

Almost every congressional committee is in some way involved in S&T policy decisionmaking or uses the scientific and technical knowledge currently available to help them make decisions. Generally these issues fall into the category of *science for policy* and *technology for policy*. Examples include how to improve nutrition and food safety in the nation's schools, implement the Endangered Species Act, determine drinking water standards, respond to a bridge collapse, and create jobs.

The House and Senate Committees on Appropriations play an important role in S&T policy. Although the authorization of federal funding of research often has wide and bipartisan support, appropriated research funding faces a greater challenge when it competes for the limited amount of discretionary funding with other federal programs. In addition, several Appropriations subcommittees may discuss issues related to science and technology policy. For example, the funding for NSF, NASA, NIST, and the White House Office of Science and Technology Policy (OSTP) is generally discussed by the House and Senate Committees on Appropriations' Subcommittee on Commerce, Justice, Science, and Related Agencies. Funding for energy research activities is generally discussed by the House and Senate Committees on Appropriations' Subcommittee on Energy and Water Development. For NIH, it is the House and Senate Committees on Appropriations Subcommittee on Labor, Health and Human Services, Education, and Related Agencies. For DOD, it is the House and Senate Committees on Appropriations Subcommittee on Defense.



In December of 2012, Senator Mikulski became Chairwoman of the Senate Appropriations Committee. She is the first woman to lead the Committee and the longest-serving women in U.S. Senate history.

Mikulski on Senate approval of \$225 million for Iron Dome

For Immediate Release

Date: August 1, 2014

Contact: Vince Morris (202) 224-1010

WASHINGTON, DC— U.S. Senator Barbara A. Mikulski (D-Md.), Chairwoman of the Senate Appropriations Committee, today issued the following statement following the passage of an Emergency Supplemental Funding bill to assist Israel:

FY15 E&W Subcommittee Reported Bill and Draft Report

Release Date:

Thursday, July 24, 2014

WASHINGTON, DC – Today, the Senate Appropriations Committee released the fiscal year 2015 Energy and Water Development Subcommittee reported [bill](#) and draft subcommittee [report](#).

<http://www.appropriations.senate.gov/>



Serving Kentucky's 5th Congressional District since 1981, Hal Rogers is currently in his 16th term representing the people of southern and eastern Kentucky, and is the longest serving Kentucky Republican ever elected to federal office.

Focused on economic development, job creation, fighting illegal drug use and preserving the natural treasures of Appalachia, Rogers has a reputation for listening to his constituents and fighting for the interests of the region where he was raised.

Nationally, as Chairman of the powerful House Appropriations Committee, his focus is on reducing the size and scope of the government through reductions in federal spending, conducting rigorous but thoughtful oversight of federal agencies, and performing targeted outreach inside and outside of the Congress.

The twelve subcommittees engage in comprehensive oversight – including in-depth public hearings - to find waste and abuse wherever it occurs. View the Committee's hearing schedule.

Chairman Rogers Introduces Short-Term Continuing Resolution to Maintain Government Operations, Prevent Shutdown

Sep 9, 2014 - House Appropriations Chairman Hal Rogers today introduced a short term Continuing Resolution (CR) (H.J.Res.124) to prevent a government shutdown at the end of the fiscal year on September 30, 2014.

House Approves Fiscal Year 2015 Energy and Water Appropriations Bill

Jul 10, 2014 - The U.S. House approved the fiscal year 2015 Energy and Water Development, and Related Agencies Appropriations bill on a bipartisan vote of 253-170. The legislation provides annual funding for national defense nuclear weapons activities, the Army Corps of Engineers, various programs under the Department of Energy (DOE), and other related agencies.

<http://appropriations.house.gov/>

Who Makes Decisions Regarding Science and Technology Policy in the Executive Branch?

Science and technology policy issues tend to reach the Presidential level if they involve multiple agencies; have budgetary, economic, national security, or foreign policy dimensions; or are highly visible to the public. In recent years, ethical issues, such as federal funding of stem cell research, have also reached this level of attention.

PRESIDENT OBAMA'S RECENT HIRES



Kerry
STATE



Hagel
DEFENSE



Lew
TREASURY



Jewell
INTERIOR



Moniz
ENERGY



Burwell
OMB



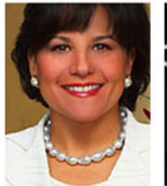
Brennan
CIA



Perez
LABOR



Foxx
TRANS



Pritzker
COMMERCE



Froman
TRADE



McDonough
CHIEF OF STAFF



McCarthy
EPA



Wheeler
FCC



Watt
FHFA

must be confirmed by Senate

must be confirmed by Senate

REMAINING IN CABINET



Holder
AG



Vilsack
AG



Sebelius
HHS



Donovan
HUD



Duncan
EDUCATION



Shinseki
VETS



Napolitano
DHS



Rice
UN AMB



The President and the White House

Within the EOP, the OSTP, the Office of Management and Budget (OMB), the Council on Environmental Quality (CEQ), and the Council of Economic Advisors (CEA) play a critical role in advising the President, the Vice-President, and other senior Administration officials on issues related to science and technology policy. The President and other White House leaders take their views, along with federal agency leaders and others not involved in S&T policy, into consideration when making a decision.⁴⁴ The role each EOP organization plays in S&T policy decisionmaking changes with each President. Particularly for OSTP and CEQ, the influence of these organizations has been variable.

Office of Science and Technology Policy⁴⁵

OSTP serves as a “source of scientific and technological analysis and judgment for the President with respect to major policies, plans, and programs of the Federal Government.”⁴⁶ OSTP defines its major objectives, based on the act, as follows:

- Advise the President and others within the Executive Office of the President on the impacts of science and technology on domestic and international affairs;⁴⁷
- Lead an interagency effort to develop and implement sound science and technology policies and budgets;
- Work with the private sector to ensure Federal investments in science and technology contribute to economic prosperity, environmental quality, and national security;
- Build strong partnerships among Federal, State, and local governments, other countries, and the scientific community; and
- Evaluate the scale, quality, and effectiveness of the Federal effort in science and technology.⁴⁸



Dr. John P. Holdren is Assistant to the President for Science and Technology, Director of the White House Office of Science and Technology Policy, and Co-Chair of the President's Council of Advisors on Science and Technology (PCAST).



Office of Management and Budget

Office of Management and Budget

The Office of Management and Budget (OMB) assists the President in overseeing the preparation of the federal budget and supervises its administration in Executive Branch agencies.⁵⁶ Specific actions include formulating the President's spending plans, evaluating the effectiveness of agency programs, policies, and procedures, assessing competing funding demands among agencies, setting funding priorities, and ensuring that agency reports, rules, testimony, and proposed legislation are consistent with the President's Budget and with Administration policies.⁵⁷

Each year, the directors of OSTP and OMB issue a joint memorandum outlining the President's priorities and the Research and Development Investment Criteria.⁵⁸ The OMB staff are often a key component in implementing the President's budgetary priorities including which federal science and technology programs are proposed for elimination as well as funding decreases or increases.



Shaun Donovan, Director

Shaun Donovan was sworn in as the 40th Director of the Office of Management and Budget on July 28, 2014. Donovan has committed his life to public service focused on good government and smart investment, while also building his leadership skills in the private, non-profit, and academic sectors.

Prior to OMB, Donovan served as the 15th Secretary of the U.S. Department of Housing and Urban Development, where he managed the Department's \$47 billion budget — helping families buy homes, aiding households in fighting off foreclosure, revitalizing distressed communities and combating homelessness. While at HUD, Donovan made critical investments to speed economic growth, while also offering new savings proposals and ensuring fiscal responsibility.

Prior to his service in the Obama Administration, Donovan served as Commissioner of the New York City Department of Housing Preservation and Development (HPD) where he created and implemented HPD's New Housing Marketplace Plan to build and preserve 165,000 affordable homes, the largest municipal affordable housing plan in the nation's history.

Federal Agencies

Federal agencies are generally broken up into two categories: agencies that conduct or sponsor research, and agencies whose mission is related to science and technology. Federal agencies whose major focus is conducting or funding research include the

- National Science Foundation (NSF),
- National Institutes of Health (NIH),
- National Aeronautics and Space Administration (NASA),
- National Institute of Standards and Technology (NIST),
- National Oceanic and Atmospheric Administration (NOAA), and
- U.S. Geological Survey (USGS).

In addition, many important federal research agencies and major research activities are located within more general departments including

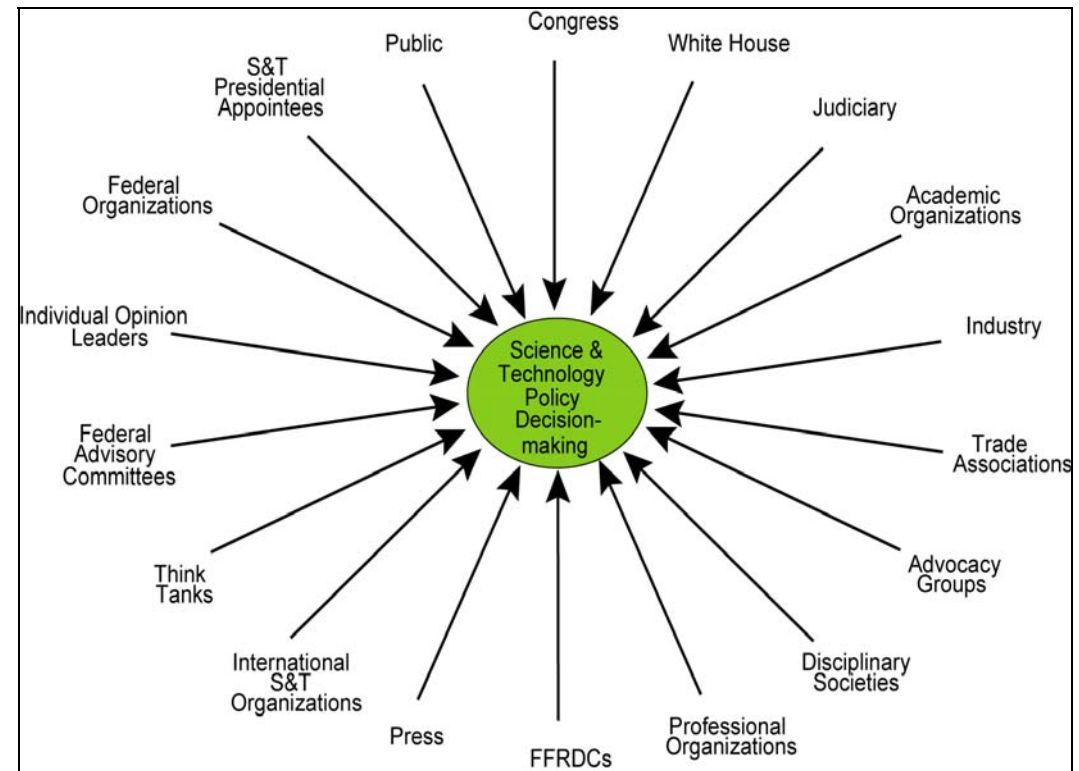
- Department of Defense (DOD),
- Department of Energy (DOE),
- Department of Health and Human Services (HHS),
- U.S. Department of Agriculture (USDA),
- Department of Homeland Security (DHS),
- Department of Transportation (DOT),
- Department of Veterans Affairs (VA),
- Department of Education (ED),
- Department of Justice (DOJ),
- Department of Interior (DOI), and
- Department of Labor (DOL).

For example, NIH, Food and Drug Administration (FDA), Centers for Disease Control and Prevention (CDC), Agency for Toxic Substances and Disease Registry (ATSDR), and Agency for Healthcare Research and Quality (AHRQ) are all part of the Department of Health and Human Services (HHS). Additional independent federal organizations that support research and development include

- Environmental Protection Agency (EPA),
- Social Security Administration (SSA),
- U.S. Agency for International Development (USAID),
- Consumer Product and Safety Commission (CPSC), and
- Smithsonian Institution.

In some cases, many federal agencies work together on an issue where a variety of scientific and technical expertise is needed. Examples include nanotechnology and climate change.⁶⁵ Science.gov is a search engine for government science information and research results.

Figure 5. Organizations and Individuals Who Influence Science and Technology Policy Decisionmaking



Source: Congressional Research Service

Science and technology policy decisionmaking is both democratic and decentralized. In other words, many organizations and individuals representing a wide array of ideas and opinions participate in S&T policy decisionmaking. No one organization or individual is viewed as speaking on behalf of the entire scientific and technical community—either inside or outside the federal government. Each freely offers sources of knowledge and advice. This provides policymakers with an overwhelming amount of information, and it can be challenging to sort through it all to determine which information is the most germane to a particular issue or decision.

To Change Policy, You need to Inform Decision Makers

- Who is(are) the right decision maker(s) to implement policy?
- How to convey scientific and technical knowledge without jargon?
- How to be direct, clear, and impactful?
 - ▶ Timing
 - ▶ Your credentials and your context
 - ▶ The importance of your issue, citing facts not emotion, framing the issue nationally, not personally.
 - ▶ Request action/decision and offer assistance
 - ▶ Brief: One page letter, or two page report summary