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Reforming Science and Technology Policy Advice

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Themes

- Honest, unbiased science and technology policy advice is a necessity not a luxury
- The system is badly broken
- There's plenty of blame to go around
- The excuse that "they've always done it" is a slippery slope.
- Structural changes are possible (and needed)



Why It Matters:

- national and homeland security
- sustainable environment for 9 billion people
- high quality US jobs
- improved health care and reduced morbidity

Some Vexed Decisions

(a partial list)

- Light Water Reactor Design
- Climate policy
- Mag-lev trains
- Fuel additives (MBTE)
- Genetically Modified Organisms
- Manned space exploration
- Stem cells
- Missile Defense
- Federal research priorities
- Safety of biological research

Ground Rules:

- Analysis is not a substitute for values
- Don't confuse (a) absence of solid analysis, (b) decision-makers who ignore the analysis, (c) intentional misuse or distortion of analysis.
- Uncertainty must be explained and the risks clearly understood. It is not an excuse for inaction
- Sound policy depends on a rough and tumble marketplace for ideas, with multiple opportunities for getting ideas and getting reviews and criticism.
- Absolute objectivity is impossible but good procedures exist

Conflicting Objectives

- Integrate technical advice into practical decisions (private advice)
- Raise the threshold of pain for anyone deciding to make decisions ignoring technical advice (public advice)



Federal S&T Advice

- Congress:
 - GAO, CBO, CRS (OTA the late lamented)
 - Hearings
 - Staff rolodex
 - Google
- Administration
 - OSTP (PCAST)
 - Advisory Panels
- The National Academies
- The press, NGOs, interest groups

Criteria

- Schedule (and funding) tailored to the decision-making process
- Draw on expertise from specialists around the country
- Explanations of the uncertainties in costs and benefits can be compared
- Ease with interdisciplinary research. Ease with academic/corporate/government
- Understand concerns of companies and stakeholders
- Develop practical policy alternatives
- Lack of bias (real and apparent)
- Provide results in a format that is relevant to the decision at hand

Federal Advisory Committees

- About 1000 Committees (down from 5000 in 1972)
- 1500 FTEs of staff time to support
- Cost \$281M/year
- Freedom of Information Act (1966) and Federal Advisory Committee Act (1972) established uniform procedures



Federal Advisory Committees:

Criticism:

- Bias in selection of members
- Closed meetings
- Incomplete publication of results

Solutions:

- Explicit break between political advisors and external reviewers
- Selection and review by external groups
- Publish and public review of prospective members
- Increased reliance on private foundations?



The President's Science Advisor and OSTP

- Checkered history
- Role & Powers far from those available to the NSC
- Few professional staff survive changes of administration

Options for White House Science and Technology Advice

- Separate Science Advisor (parallel to the other White House Agencies) and OSTP
- Role of private organizations (new AAAS, State Department science)
- Better Public Reporting (selection of topics, funding flexibility)
- New office in OMB?

Congressional Advice: The Criticism

- Can Congress operate effectively as an independent branch of government without an ability to undertake independent S&T analysis? Deterrence?
- Risk that special interest influence grows if independent analytical capabilities wither
- Concern that virtually all Committee Hearings have become little more than PR events



What Was Lost with OTA?

- Technical analysts able to understand the Congressional process & communicate effectively
- Members and staff know how to ask questions a technical group can answer
- Ability to anticipate

Congressional Science Advice: Solutions

- Reinvent OTA
- Expand experiments at GAO (Bills introduced in House and Senate)
- Expanded role for NAS
- Privately funded analytical groups (e.g. new MacArthur centers, science fellows, etc.)

Generic Problems

- Confusing Committee Jurisdictions
- Omnibus bills
- Fewer hearings
- Growing irrelevance of authorizations
- Not enough slots for technical staff



Secrecy Policy: The Criticism

“ The possibility of excessive restrictions on scientific publication, motivated by security concerns, [poses] clear threats to science today.... Some of the plans being proposed could severely hamper the U.S. research enterprise and decrease national security”

Bruce Alberts, NRC

Guiding Principles

- Is the information otherwise available in public domain? (Or can it be readily deduced from first principles?)
- Is there specific reason to believe the information could be used by terrorists? Are there countervailing considerations that would militate in favor of disclosure, i.e. could it be used for beneficial purposes?
- Is there specific reason to believe the information should be public knowledge to improve public oversight of environmental or other matters?

This works pretty well:

- **AEC act, Espionage Act, Intelligence Identities Protection Act, others** provide statutory authority
- **The Freedom of Information Act (FOIA)** public right to access agency records, subject to applicable exemptions.
- **Executive Order 12958 Classified National Security Information** 1995 amended by Executive Order 13142, 1999
- **Electronic Freedom of Information Act** 1996 (E-FOIA) frequently requested records made available on the Internet.
- **Interagency Security Classification Appeals Panel (ISCAP).**

Sensitive But Unclassified

- ..departments and agencies maintain and control sensitive information related to America's homeland security that might not meet one or more of the standards for classification set forth in Part 1 of Executive Order 12958.
- The need to protect such sensitive information from inappropriate disclosure should be carefully considered, on a case-by-case basis, together with the benefits that result from the open and efficient exchange of scientific, technical, and like information.

DoJ March, 2002

Homeland Security FOUO For Official Use Only

- Unlike classified information, any DHS employee or contractor can designate information as FOUO even if it falls outside of specified categories.
- Unlike classified information no provision for oversight of the new FOUO policy is included.
- Unlike the classification system, DHS FOUO restriction will never lapse unless and until the originating authority so decides.

Source: DHS directive (MD 11042) on "Safeguarding Sensitive But Unclassified (For Official Use Only) Information," dated May 11, 2004

Essential Elements of Information Security

- Clear set of principles guiding protection of information developed by an open process: presumption of openness
- Clearly defined and transparent procedures for applying these principles
- A clear appeals process overseen by an organization not under the control of the agency making the original ruling

A Separate Front

- Absence of a clear career path for anyone interested in science and technology policy
- Few universities have programs that can prepare people with the needed technical, policy, and communication skills

FOIA exemptions

1. criteria established by an Executive order to be kept **secret in the interest of national defense** or foreign policy and (B) are in fact **properly classified** pursuant to such Executive order;
2. related solely to the **internal personnel rules** and practices of an agency;
3. **specifically exempted** from disclosure by statute
4. **trade secrets** and commercial or financial information
5. [material] would not be available by law to a party other than an **agency in litigation** with the agency;
6. **personnel and medical files** and similar files [constituting an] invasion of personal privacy;
7. records or **information compiled for law enforcement purposes** [narrowly defined
8. [material prepared for] **regulation or supervision of financial institutions**; or
9. geological and geophysical information ..concerning **wells**.

Toxic Chemical Information

- **Emergency Planning and Community Right-to-Know Act (EPCRA), 1986** establishes State Emergency Planning Commissions and Local Emergency Planning Committees to help prepare for chemical releases
- **Clean Air Act Amendments, 1990**
requires each facility that has chemicals on-site above specific thresholds to prepare a risk management plan, specify the quantities of chemicals that may be released, potential population exposures, and develop “worst case scenarios”
- **EPA has four criteria for assessing the sensitivity of our information resources:**
 - **type** (location, volume, acute effects)
 - **specificity** (level of detail provided)
 - **connectivity** (utility for building a scenario)
 - **“availability” of information** in other public sources