Policy Topics

Science, Ethics, and Public Policy: What kind of social institutions should we have in the 21st century? — The Role of the U.S. National Academy of Sciences —

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1. When President Abraham Lincoln signed the charter of the U.S. National Academy of Sciences in 1863, it stated that "The academy shall, whenever called upon by any department of the government, investigate, examine...and report upon any subject of science or art, ... but the academy shall receive no compensation whatsoever for any services to the government of the United States." Thus, from its birth the NAS was different from all other national honorary societies, which limited their mission to honoring the best scientists and perhaps providing opportunities for them to share ideas with one another. President Lincoln, with an eye on the future, recognized that scientific knowledge would play a vital role in many public policies. But even someone as wise as Lincoln could not have anticipated how many public debates would hinge on scientific questions.

2. The NAS with its partners the National Academy of Engineering (1964) and the Institute of Medicine (1970) and through its operating arm the National Research Council (NRC) (1916) produce more than 200 reports a year, 85% of which are requested by the U.S. government. Each of these reports is the product of a committee of carefully chosen experts who donate their time, and all reports must be approved by a group of additional experts to certify their accuracy and fairness. Because of the quality of the committee members (some but not all of whom are members of NAS, NAE, or IOM) and the rigor of the review process, these reports have powerful influence among policymakers. It is not unusual for a report's recommendations to be written directly into legislation that is then voted on in Congress.

3. The reports fall into two broad categories: policy for science and science for policy. Policy for science involves recommendations about government needs to do to maintain the health of the research enterprise. This might mean more funding for infectious disease research or development of a new space telescope. Science for policy involves the use of scientific expertise in the process of developing solutions to societal problems. Obvious examples are what atmospheric chemists can tell us about the relative effects of various greenhouse gases, what geologists can tell us about the safety of underground storage of nuclear waste, or what biologists can tell us about the causes of cancer and the need to regulate industrial chemicals.

4. With the progress of science the questions that NAS must confront are becoming more complex and difficult. Some of the new problems we are confronting include the ethics of stem cell research and reproductive cloning and what new insights into neuroscience tell us about the fundamental questions of free will and human identify. We expect that further developments in science will raise ever more perplexing problems.

5. NAS is not interested to addressing only government officials. We believe that the public should be better informed about these critical issues. All NAS reports are available for purchase from the National Academies Press, and the full text of all NAS reports is available for free on our website (www.

nationalacademies.org). Our belief is that the best path to wise policy is through well-informed leaders and a well-informed public.

6. In recent years, NAS has tried to encourage science academies to become more active in public debates. It helped form the InterAcademy Council (www.interacademycouncil.net), an alliance of many of the world's science academies, with the goal of providing expert guidance to world leaders on a number of global issues. The IAC has already produced reports on women in science, sustainable energy, and African agriculture.

7. NAS does not believe that scientists alone should be making public policy. Policy should reflect the insights and values of all parts of the population. But NAS believes that if public policy is to achieve its social goals, it must be aware of and consistent with the latest scientific knowledge. It is the responsibility of the scientific community to provide that knowledge in a form that is understandable and useful to government leaders and the public.

8. Even though all the committee members are volunteers, NAS operations require a large infrastructure and significant financial resources. NAS maintains two large office buildings in Washington, DC, plus conference centers in California and Massachusetts. In order to do their work, the committees need paid professional staff to make meeting arrangements, interact with government agencies and foundations to secure funding for the studies, and to assist in the preparation and publication of written reports.

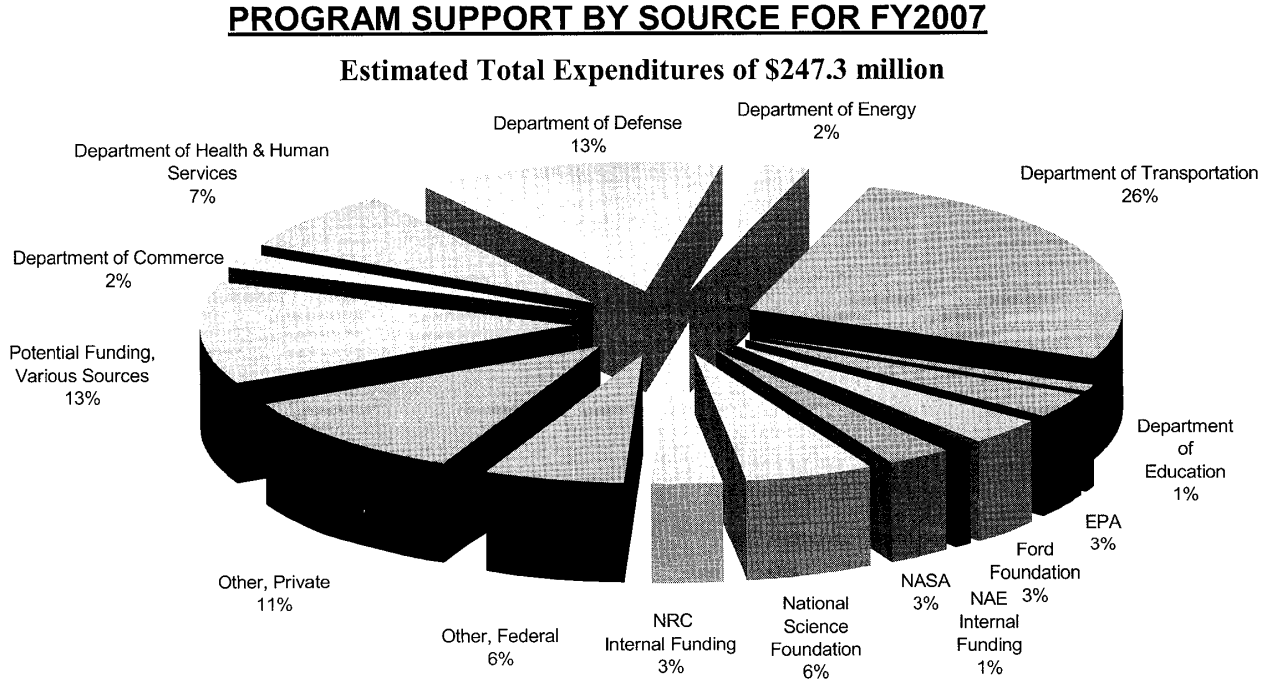
9. The combined staff of NAS, NAE, IOM, and the NRC is approximately 1,300. The staff includes administrative people who handle travel, finance, publications, and publicity as well as a large professional staff that facilitates the committees' work and helps with research, writing, and report review. The professional staff includes many Ph.D.s in the sciences and public policy. Many staff members have also worked in government, academia, and business.

10. The NAS manages two types of committees. The first is standing committees of senior scientists in broad areas such as climate change, agriculture, life sciences, ocean studies, public transportation. Membership changes over time, but members typically serve for about five years in overlapping terms. These committees help select the members and guide the work of the second type of committee – the study committee. The study committee is formed to conduct a specific study that has been requested by government or a foundation. The committees complete their work in 18-24 months and then disband.

11. The NAS annual budget is approximately $240 million. Support comes from a wide variety of government agencies (the Departments of Defense, Transportation, Energy, Health and Human Services, Commerce plus the National Science Foundation, Environmental Protection Agency, and the National Aeronautics and Space Administration), which provide about 75% of total funding. Private foundations and the institutional endowment are the other major source of funds.

12. The cost of a typical study ranges from roughly $300,000 to $450,000. (NAS sometimes conducts short-term studies for as little as $100,000 and comprehensive multipart studies – for example, how to improve the quality of health care-that result in several book – length reports and cost more than $1 million.) The money covers the travel and meeting expenses for about 15 committee members who meet perhaps a dozen times. Some studies also require specialized subcommittees, and money is sometimes used to pay for additional research. E-mail, conference calls, and video conferences can reduce travel costs a little, but the committees usually find that there is no substitute for sustained in-person

interaction to develop consensus on complex and controversial topics. The funds also go toward the preparation and publication of a report, usually a book of 250-500 pages. When a study is complete, committee members are usually asked to come to Washington to brief government officials and to testify at congressional hearings. All reports are also prepared in electronic form and made available for free on the NAS website, which now has the full text of more than 3,000 book-length reports.



解説：本稿は、2007年5月17日、総合政策学部研究会主催で、総合政策学部と理工学部の2講義(上野/早藤)合同の講演会の内容をまとめたものである。

講演者は1991年より米国科学アカデミーが出版する季刊誌「ISSUES IN SCIENCE AND TECHNOLOGY」の編集長を務める。「ISSUES」誌は20年以上にわたって、＜科学のための政策＞と、＜政策のための科学＞を双方向に橋かけ、科学と倫理と公共政策をつなぐより適切な政策選択のための*政策議論の場*を提供してきたといえる。すなわち、極めて急速に高度化専門化精緻化する科学技術と情報の発展を、いかに人々の、社会の、そして世界の問題の解決のために用いることが出来るか、少なくとも科学技術を人類の破壊のために用いることがないように、科学者の責任、政策形成者の責任を問いかけてきた。誌は科学者、技術者、研究者、学生、政治家、政策担当者、ジャーナリスト、そしてすべての民主主義社会の構成員たる市民に理解できる(専門用語でなく)共通言語を用いて、議論材料を提供しようとしてきたといえる。現在多くの大学のテキストに使われている。(http://www.issues.org)

当講演は、この季刊誌の発行母体である米国科学アカデミー(NAS)の組織理念と活動、機構、運営について述べている。日本では(特に科学者にとっては)関心が薄いトピックであるが、実はノーベル賞受賞科学者200名を抱える、このノンプロフィット政策研究組織のあり様は、米国の科学者の地位と影響力の強さを保障し、(多くの問題はあるものの)結果として、米国の社会の強靭さを示すものである。日本に早急に求められる非営利独立型政策研究機関(シンクタンク)のひとつのモデルとして、この示唆するものは大きい。

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