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Luncheon Address

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Thank you for inviting me to lunch today. One of the unexpected aspects of my job as Director of the Office of Science and Technology Policy is the role I play as *de facto* "science minister" for the United States. I have led numerous delegations to bilateral meetings here and in other countries under various science and technology agreements, represented our interests at the World Summit on the Information Society, met with numerous international delegations to explain U.S. science policy, and engaged in a wide variety of trouble-shooting and arm-twisting exercises not only with other countries, but also among U.S. agencies in connection with international issues. My prior experience with international science was what you might expect given my career as a research scientist, a university president, and the director of a national laboratory. Many of my colleagues over the years have been citizens of other countries, and I have always viewed science as a global enterprise.

The 1976 law establishing the Office of Science and Technology Policy refers to international affairs in several places. In Section 101, findings and declarations, the Congress asserted that "(a)(3) the scientific and technological capabilities of the United States, when properly fostered, applied, and directed, can effectively assist in improving the quality of life, in anticipating and resolving critical and emerging international, national, and local problems, in strengthening the Nation's international economic position, and in furthering its foreign policy objectives." and in "(b) science and technology should contribute to the following priority goals …: (1) fostering leadership in the quest of international peace and progress toward human freedom, dignity, and well-being by enlarging the contributions of American scientists and engineers to the knowledge of man and his universe, by making discoveries of basic science widely available at home and abroad, and by utilizing technology in support of United States national and foreign policy goals." The law requires the Director in 205(a)(9) "[to] assess and advise on policies for international cooperation in science and technology which will advance the national and international objectives of the United States;"

This language is rather vague, and at some point early in my tenure as Director, I asked myself exactly what justifies spending American taxpayer dollars to foreign scientists and institutions. I found ten reasons and wrote a short personal manifesto that I have distributed widely and used in speeches like this one.

U.S. Objectives for International Research and Development Programs

Like any other investment of public resources, international collaborations on science and technology need to be justified by their value to the American people.

Societies support science for two reasons: it is intrinsically worth pursuing as a basic human endeavor, and it is useful. International collaborations make science more productive in both aspects eventually for all people everywhere. In particular, the United States supports international research and development to achieve one or more of the following national objectives.

1. To maintain and continually improve the quality of U.S. science by applying global standards of excellence. (Performing science to the highest standards.)

2. To provide access by U.S. scientists to the frontiers of science without regard to national borders. (Access to the frontiers of science)

3. To increase the productivity of U.S. science through collaborations between U.S. scientists and the world's leading scientists, regardless of national origin. (Access to scientific talent)

4. To strengthen U.S. science through visits, exchanges, and immigration by outstanding scientists from other nations. (Augmentation of scientific human capital)

5. To increase U.S. national security and economic prosperity by fostering the improvement of conditions in other countries through increased technical capability. (Security through technology-based equity)

6. To accelerate the progress of science across a broader front than the U.S. may choose to pursue with its own resources. (Leveraging on foreign science capabilities)

7. To improve understanding by other nations of U.S. values and ways of doing business. (Science diplomacy)

8. To address U.S. interests of such global nature that the U.S. alone cannot satisfy them. (Global support for global scientific issues)

9. To discharge obligations negotiated in connection with treaties. (Science as a tradable asset)

10. To increase U.S. prestige and influence with other nations. (Science for glory)

It seems to me that if we cannot place an international program under one or more of these headings, then we should not be supporting it with public funds.

Having got clear on the principles, the next step is implementation. The legislation I quoted earlier gives the OSTP Director certain responsibilities for interagency coordination with language like the following: 205(a) "… the Director shall – (1) seek to define coherent approaches for applying science and technology to critical and emerging national and international problems and for promoting coordination of the scientific and technological responsibilities and programs of the Federal departments and agencies in the resolution of such problems;" In general, the Director is charged with "assist[ing] the President in providing general leadership and coordination of the research and development programs of the federal government." One of the instruments established by statute is what is today called the National Science and Technology Council, an interagency mechanism that "shall consider needs for – (9) ways and means of effectively integrating scientific and technological factors into our national and international policies;"

What OSTP does not do is manage programs or duplicate the functions of the line agencies through which funding flows for grants and operations supporting science and technology. OSTP is a staff office that coordinates, trouble-shoots, establishes uniform policies, and identifies gaps and issues requiring attention. It assists agencies and other parts of government by articulating and interpreting Administration policy as it is relevant to science and technology.

The November 15, 2001 report of the NSB that was included in the materials for today's workshop, "Toward a More Effective Role for the U.S. Government in International Science and Engineering," includes several recommendations directed toward OSTP. Unfortunately these recommendations have not had much impact, and in some cases are inconsistent with OSTP's role. For example, Recommendation 1 states that OSTP should strengthen its international focus to ensure and effective, integrated, visible, and sustained role in monitoring, coordinating, and managing U.S. international S&E research and education activities." OSTP does not manage programs or activities, and attempting to carry out this recommendation would swamp our office. We do have a staff position devoted to international issues, currently filled ably by Ms Joan Rolf, and we do provide science policy advice and support to the Department of State and other departments and agencies in connection with their international programs.

Science has always been a global enterprise, and it is not surprising that most science agencies within U.S. government have an international component in their programs. Sometimes this component is indirect, as in support for collaborations where the principal is a U.S. investigator, but members of the team are from other countries. Some agencies provide direct support to international scientists. These programs and activities are designed to address various specific agency missions, and are appropriately managed within the agencies, not by a centralized office. Each agency has its own international affairs officer who maintains contact with the State Department, in most cases with the Bureau of Oceans and International Environmental and Scientific Affairs (OES) currently headed by Assistant Secretary Claudia McMurray. The Science Advisor to the Secretary of State, George Atkinson, also makes frequent contact with science agencies and assists them on the international aspects of their programs.

In this era of globalization, international affairs is an intrinsic aspect of the operation of nearly every federal agency. Different agencies, and different programs within agencies, engage other countries in different ways. I believe a top-down approach to manage or account for these activities is likely to be counterproductive. Even the budget crosscut recommended in the 2001 report is problematic. The Office of Management and Budget strongly resists adding to the list of existing crosscuts (many mandated by Congress) because these are expensive for the agencies. I would agree, however, with the finding that more interagency coordination would achieve greater international impact of agency programs, and is needed to ensure agencies do not inadvertently work at cross purposes with national foreign policy. This is not obviously a function of OSTP, and is usually accomplished by arrangements between the agency and the State Department. What is needed is an interagency assessment of the roles and responsibilities of the various government actors with respect to international science programs, and an ongoing mechanism to coordinate agency actions consistent with these. The Department of State has primary responsibility for such coordination, and occasionally convenes meetings of agency chief scientists in cooperation with OSTP.

International science programs work effectively only when they are consistent with the aims and interests of the agencies responsible for funding them. In most cases, OSTP and the State Department act as service providers to agencies whose needs or missions require an international dimension. The State Department may approach agencies for assistance in carrying out their own mission of international relations, and OSTP will assist State in technical aspects of their mission and help to develop international policies that have a technical dimension.

I hope these brief remarks give you some insight into how OSTP views its role with respect to international partnerships. I appreciate the interest of the National Science Board in the international aspects of federally funded science and technology programs, and look forward to discussing these topics in more detail.