

**Statement of**  
**The Honorable John H. Marburger, III**  
**Director of the Office of Science and Technology Policy**

**Before the**  
**Subcommittee on Emerging Threats and Capabilities**  
**Committee on Armed Services**  
**United States Senate**

**April 10, 2002**

Madame Chairman and Members of the Subcommittee, I appreciate the opportunity to appear before you today to discuss the efforts of the Office of Science and Technology Policy (OSTP) in combating terrorism and weapons of mass destruction.

**INTRODUCTION**

The federal research and development (R&D) budget is an important tool for accomplishing national objectives in the war on terrorism. The President's proposed budget for 2003 calls for total federal spending of \$2.1 trillion. Of that amount, \$112 billion is for R&D and \$37.7 billion is devoted to homeland security. The R&D portion of the combating terrorism budget is estimated to be \$3 billion, which is as much as triple the level of comparable combating terrorism R&D for FY 2002. At \$2.4 billion, the largest portion of this funding is devoted to the area determined to be in greatest need – protection against biological weapons.

These funds have been requested by the President, on behalf of the agencies that will carry out the R&D programs that address the needs of the homeland security effort. Immediately after September 11, the key science agencies assessed their capabilities and began implementing programs, some of which are mentioned below, that responded to needs that were immediately apparent. OSTP's role is to track and coordinate such cross-cutting activity, and I will describe how that has been done. Before I discuss these organizational details, let me draw your attention to a few areas of technology that are relevant to combating terrorism. Other speakers today will provide more concrete detail.

A major role for technologies in combating terrorism is the detection of chemical, biological, radiological, nuclear or conventional weapons of mass destruction. In order to protect against them, or respond to their use quickly enough to mitigate their consequences, we need sensitive, effective and affordable detection systems. We need detectors that show a high probability of detecting threats, while at the same time low rates for false alarms. These systems should be cost-effective, and easy to operate and

maintain, if we are to deploy them in large numbers and in civilian venues. We have some capability today, but significant performance improvements are needed.

An example of technology being developed includes work at the Department of Energy on new detectors and algorithms focused on nuclear weapons material. This new technology can detect nuclear materials, while at the same time suppressing the effect of background radiation that leads to false alarms in current detection systems.

Another example where cutting-edge science is being used to combat terrorism is in the detection of biological agents. Substantial efforts are underway that use “polymerase chain reaction” techniques in very sensitive and highly selective detectors. This technique multiplies the DNA of specific pathogens in order to detect their presence in even a very small sample.

There are, of course, many other important and technologically exciting areas where the rich scientific and technological base within the United States is being deployed in the war on terrorism. These include better vaccines, treatments and decontamination methods to combat biological weapons, new methods for mitigating the health consequences associated with the use of radiological weapons, and biometric techniques that address the need to authenticate the identity of foreign visitors at our borders. The testimony of my colleagues from agencies where the actual work is done will provide many more examples of techniques and systems under development.

## **ROLE OF OSTP IN COORDINATING FEDERAL R&D**

While OSTP plays an essential role in helping the President ensure coordination among agencies conducting R&D applicable to national security, our efforts reach beyond the federal government. My staff and I work not only with the White House, Congress and federal agencies, but also with the science community, the private sector and higher education. OSTP has worked to define an effective relationship with each sector.

### **The White House and the Office of Homeland Security**

Since the inception of the Office of Homeland Security (OHS), OSTP accepted responsibility to coordinate the various R&D activities associated with the OHS mission.

My Assistant Director for Homeland and National Security has filled the post of Senior Director for Research and Development within OHS. This provides OHS seamless reach-back into the scientific talent resident in OSTP staff, and provides OSTP awareness of the various issues OHS is confronting, while bringing the resources of the science and technology community to bear on homeland security issues in an efficient and timely manner.

Working closely with OHS, an interagency working group called the Counter-Nuclear Smuggling Working Group has been created to develop a fully coordinated

program for addressing the threat of nuclear smuggling across borders, both overseas and in the United States.

This working group will develop a strategic plan with a unified set of program goals and priorities, including within its scope the programs that implement and deploy current capabilities, as well as programs that research and develop new capabilities. This group is co-chaired with the National Security Council and has been constituted under the Office of Homeland Security's Research and Development Policy Coordinating Committee.

### **The Federal Agencies and the National Science and Technology Council**

OSTP facilitates R&D across federal agencies primarily through the National Science and Technology Council (NSTC). Following the terrorist attacks of September 11, I created a Rapid Response Team within the NSTC structure. This team draws on technical experts within relevant federal agencies to address critical time sensitive technical issues. An example of this was OSTP's assembling of a technical team to assist the United States Postal Service in evaluating the effectiveness of various proposals for sanitizing mail contaminated with anthrax spores.

I also established an Antiterrorism Task Force under the NSTC. That Task Force has produced four working groups:

- The Biological and Chemical Preparedness Working Group coordinates federal antiterrorism R&D efforts and is responsible for setting a five-year research agenda in that area by August 1 of this year;
- The Radiological, Nuclear and Conventional Detection and Response Working Group performs the same function within its focus areas;
- The Social, Behavioral and Educational Working Group addresses social science R&D relevant to terrorism; and
- The Protection of Vulnerable Systems Working Group is concerned with the nation's physical infrastructure and is intimately connected with the coordination efforts of the Special Advisor to the President for Cyberspace Security Richard Clarke. Together, we co-chair a Research and Development Working Group focused on this important homeland security mission.

In support of this activity, at my request the RAND Corporation is conducting a survey of each agency to create an inventory of antiterrorism activities. This survey will provide a snapshot of efforts underway throughout the federal enterprise, identifying gaps or duplication of effort.

OSTP also is engaged fully in such interagency groups as the Non-Proliferation and Arms Control Technology Working Group, led by the Department of State, and the Counterproliferation Program Review Committee, chaired by the Department of Defense. These groups serve to coordinate programs in the treaty verification and counterproliferation areas.

## **The Science and Technology Community Outside of the Federal Government**

My office and I are working closely with the nation's science and technology community to bring its resources to bear on national and homeland security issues. For example, NSTC's Antiterrorism Task Force is deliberately designed to be compatible with a similar structure formed by the National Academy of Sciences. This arrangement allows OSTP to communicate effectively with some of the best and most experienced scientists in the nation – many of whom had been thinking about domestic terrorism prior to September 11<sup>th</sup>.

I also am working with Floyd Kvamme of the President's Council of Advisors on Science and Technology, which we co-chair, to study ways in which the nation's private R&D sector can be better engaged in the fight against terrorism.

OSTP also maintains regular contact with numerous science, engineering and technology societies, as well as with higher education organizations, such as the American Council on Education and the Association of American Colleges and Universities.

As these examples indicate, the Office of Science and Technology Policy is fully engaged with the White House, federal agencies, and the nation's science and technology community in coordinating the variety of science and technology efforts underway.

## **CLOSING**

As noted earlier, current interagency processes, whether through the NSTC, the OHS Policy Coordinating Committees or other existing structures within the executive branch, are intended to avoid unnecessary duplication, while allowing for the exploration of alternative approaches to the complex problems associated with homeland security. Within the nation's overall homeland and national security enterprise, I expect that science and technology will continue to play a pivotal role; it represents *our* "asymmetric" advantage. Although sobered by the threats we face and the fight we are in, I am optimistic that by relentlessly pursuing this advantage, the nation and the world will be made not just safer and more secure, but also better and more productive. I appreciate the long history of support you have afforded this enterprise, and I look forward to working with you in the future. Thank you for the opportunity to appear before you today.