

**DEPARTMENT OF HOMELAND SECURITY
APPROPRIATIONS FOR FISCAL YEAR 2004**

THURSDAY, APRIL 10, 2003

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 2:35 p.m., in room SD-192, Dirksen Senate Office Building, Hon. Thad Cochran (chairman) presiding.
Present: Senators Cochran, Domenici, Byrd, and Inouye.

DEPARTMENT OF HOMELAND SECURITY

SCIENCE AND TECHNOLOGY DIRECTORATE

STATEMENT OF DR. CHARLES McQUEARY, UNDER SECRETARY

Senator COCHRAN. The hearing will please come to order.

Today we continue our review of the fiscal year 2004 budget request for the Department of Homeland Security. We will consider at this hearing the programs and activities under the Department's Science and Technology Directorate.

I am pleased to welcome the Under Secretary for Science and Technology, Dr. Charles E. McQueary.

The Science and Technology Directorate is one of four directorates that makeup the Department of Homeland Security. The Homeland Security Act of 2002 transferred certain research and development functions of the Department of Defense, the Department of Energy, and the Department of Agriculture to the Department of Homeland Security. These functions and activities that have been transferred are now under the jurisdiction of the Science and Technology Directorate.

For fiscal year 2004, the President's budget requests \$803 million for activities of this directorate.

Mr. Secretary, thank you very much for submitting a prepared statement to the committee which we will print in full in the committee's hearing record. We invite you to make any statement and explanation of the budget request which you think would be helpful to the committee as we review the request for appropriations.

I am pleased now to yield to my friend from West Virginia, the distinguished Senator from West Virginia, Mr. Byrd for any statement he might have.

Senator BYRD. I do not have any opening statement. I will just reserve my time for questions. Thank you.

Senator COCHRAN. Thank you. Senator Inouye.

Senator INOUE. Thank you very much, Mr. Chairman. I just wanted to come by and congratulate and welcome our new under secretary. May I request that questions be submitted?

Senator COCHRAN. Without objection, it is so ordered.

They will be submitted. Mr. Secretary, we hope you will be able to respond to those questions within a reasonable time.

Senator INOUE. May I be permitted to leave? I have got some conference matters.

PREPARED STATEMENT

Senator COCHRAN. Of course, best wishes to you. I also ask that a statement submitted by Senator Craig be submitted in the record.

[The statement follows:]

PREPARED STATEMENT OF SENATOR LARRY CRAIG

I appreciated meeting with Dr. McQueary prior to his confirmation, to discuss use of Department of Energy national laboratories to implement the research agenda of the Department of Homeland Security. Prior to the creation of the Homeland Security Department, the national laboratories of the Department of Energy were already investigating many of these security challenges related to critical infrastructure protection, detection of dirty bombs, cybersecurity and sensors to detect chemical and nuclear materials. In my view, the Department of Homeland Security, through its Directorate for Science and Technology, should continue and expand this important work but it should not re-invent the wheel. In addition to saving money, using the Department of Energy national labs for this research will also serve the purpose of deploying these technologies into the field, and enabling them to protect us, sooner rather than later.

Senator COCHRAN. Mr. Secretary, you may proceed.

STATEMENT OF DR. CHARLES MCQUEARY

Mr. MCQUEARY. Thank you, sir.

Good afternoon Chairman Cochran, Senator Byrd, and Senator Inouye also, even though he has had to leave.

It is a pleasure for me to be here with you today to discuss the President's fiscal year 2004 budget request for the Department of Homeland Security's Science and Technology Directorate. Secretary Ridge has already testified and provided the Department's overall fiscal year 2004 budget request and the role expected of Science and Technology to make the Nation safer.

It is a great honor and a great responsibility to lead the science and technology efforts of this Directorate and the Department to meet the challenges of protecting our homeland and our way of life.

The most important mission for the Science and Technology Directorate is to develop and deploy cutting edge technologies and new capabilities so that the dedicated men and women who serve to secure our homeland can perform their jobs more effectively and efficiently and indeed, those men and women are my customers.

FISCAL YEAR 2004 PLANS AND MISSIONS

Our plans for fiscal year 2004 reflect this relationship and our desire to provide capability to the field as rapidly as possible.

Our mission is to conduct, stimulate, and enable research and development, test and evaluation, and timely transition of homeland

security capabilities to Federal, State and local operational end users.

The Information and Analysis Infrastructure Protection Directorate is supported by Science and Technology through our Threat and Vulnerability, Testing and Assessment and Critical Infrastructure Portfolios. In addition, the Science and Technology Directorate will support the mission needs of the Border and Transportation Security Directorate, the United States Coast Guard, the United States Secret Service, and the Emergency Preparedness and Response Directorate through coordinated and focused research and development programs.

Throughout the initial planning process for the Science and Technology Directorate we were guided by current and future threat assessments, our current capability to respond to that threat, and by the priorities spelled out in the President's National Strategy for Homeland Security.

SCIENCE AND TECHNOLOGY DIRECTORATE GOALS

Our goals are several and they are: develop and deploy state-of-the-art high-performance, low operating cost systems to prevent the illicit traffic of radiological and nuclear materials and weapons into the United States; provide state-of-the-art high-performance, low operating cost systems to rapidly detect and mitigate the consequences of the release of biological and chemical agents; provide state-of-the-art high-performance, low operating cost systems to detect and prevent illicit high explosives transit into and within the United States; enhance missions of the Department's operational units through targeted research, development, test and evaluation and systems engineering and development; develop and provide capabilities for protecting cyber and other critical infrastructures; develop capabilities to prevent technology surprise by anticipating emerging threats; and finally, develop, coordinate, and implement technical standards for chemical, biological, radiological, and nuclear (CBRN) countermeasures.

The threats to our homeland are many. We must constantly test and assess our threats and vulnerabilities, develop new or improved capabilities to counter these threats, and mitigate their effects should an attack occur. Our program must also enhance the missions of the Department to protect and provide assistance to civilians in response to natural disasters, law-enforcement needs, and other activities. We will develop close partnerships with private industry, academia and government agencies to focus a national research and development effort aimed at protecting the homeland. We are requesting \$803 million in fiscal year 2004 to conduct our mission. We will implement our activities through focused portfolios that support our mission. These portfolios are Biological Countermeasures; Chemical and High Explosives Countermeasures; Radiological and Nuclear Countermeasures; Critical Infrastructure Protection; Threat and Vulnerability Testing and Assessment; and the standards State and local program.

HOMELAND SECURITY ADVANCED RESEARCH PROJECTS AGENCY

Through the Homeland Security Advanced Research Projects Agency, our program will explore cutting-edge approaches to as-

sessing current and emerging threats. It is our estimate that at least \$350 million of the overall request will be carried out by HSARPA in fiscal year 2004. Our strategy includes evaluation, prototyping and rapid deployment of available technologies to the field. To do this, we will establish a technology clearinghouse in partnership with the Technical Support Working Group which has performed a similar mission for the past several years with great success for the Departments of State and Defense. Through this partnership we will encourage and support innovative solutions to enhance homeland security and will engage the private sector in rapid prototyping of homeland security technologies.

EDUCATIONAL PROGRAMS

A knowledgeable workforce focused on homeland security is essential to our ability to address advancements in science and technology. Declining enrollments in specific academic fields such as radiochemistry is leading to a lack of workers in areas of science and technology which is important to America's effort to protect the homeland. Thus, we will establish fellowship programs at the graduate and post-graduate levels to encourage research activities in these areas and thus develop the foundation America needs to sustain our technical advantage in the war against terrorism. We will also establish University Centers of Excellence to provide an enduring and focused resource to the Nation in this effort.

PREPARED STATEMENT

Mr. Chairman, I thank you again for the opportunity to appear before the Subcommittee. This concludes my prepared statement and I do thank you for including my more lengthy remarks in the record.

[The statement follows:]

PREPARED STATEMENT OF CHARLES MCQUEARY

Introduction

Good afternoon. Chairman Cochran, Senator Byrd, and distinguished members of the subcommittee, it is a pleasure to be with you today to discuss the President's fiscal year 2004 budget request for the Department of Homeland Security's Science and Technology Directorate. Secretary Ridge has already testified and provided the Department's overall fiscal year 2004 budget request and the role expected of science and technology to make the nation safer. It is a great honor and a great responsibility to lead the science and technology efforts of this Directorate and the Department to meet the challenges of protecting our homeland and our way of life.

The most important mission for the Science and Technology Directorate is to develop and deploy cutting edge technologies and new capabilities, so that the dedicated men and women who serve to secure our homeland can perform their jobs more effectively and efficiently—they are my customers. Our plans for fiscal year 2004 reflect this relationship, and our desire to provide capability to the field as rapidly as is possible.

The threats to our homeland are many. We must constantly monitor these threats and assess our vulnerabilities to them; develop new or improved capabilities to counter chemical, biological, radiological, nuclear, explosive, and cyber threats; and mitigate the effects of terrorists attacks should they occur. The Science and Technology Directorate's program must also enhance the conventional missions of the Department to protect and provide assistance to civilians in response to natural disasters, law enforcement needs, and other activities.

Throughout the initial planning process for the S&T Directorate we have been guided by current threat assessments, our understanding of capabilities that exist

today or that can be expected to appear in the near term, and, importantly, by the priorities spelled out in the President's National Strategy for Homeland Security.

Thus, our key specific areas of emphasis are to:

- Develop and deploy state-of-the art, high-performance, low-operating-cost systems to prevent the illicit traffic of radiological/nuclear materials and weapons into and within the United States.
- Provide state-of-the art, high-performance, low-operating-cost systems to rapidly detect and mitigate the consequences of the release of biological and chemical agents.
- Provide state-of-the art, high-performance, low-operating-cost systems to detect and prevent illicit high explosives transit into and within the United States.
- Enhance missions of all Department operational units through targeted research, development, test and evaluation (RDT&E), and systems engineering and development.
- Develop and provide capabilities for protecting cyber and other critical infrastructures.
- Develop capabilities to prevent technology surprise by anticipating emerging threats.
- Develop, coordinate and implement technical standards for chemical, biological, radiological, and nuclear (CBRN) countermeasures.

Research, Development, Test and Evaluation Portfolio

We are requesting \$803 million in fiscal year 2004 to provide applied research, development, demonstrations, and testing of products and systems that address these key areas of emphasis. The Science and Technology Directorate will implement its activities through focused portfolios that address biological, chemical, radiological and nuclear, and cyber threats; support the research and development needs of the operational units of the Department; and receive innovative input from private industry and academia as well as national and Federal laboratories. In particular, the Homeland Security Advanced Research Projects Agency (HSARPA) will have an essential role in meeting the goals and objectives of the Department and the Directorate across the range of the portfolios. These portfolios and activities are described as follows:

Biological Countermeasures.—Biological threats come in many forms. They can be toxins, viruses, or bacteria, distributed by airborne aerosols, or in food or water supplies, or in the case of contagious diseases, spread among infected people or animals. Some biological threats require considerable technical sophistication on the part of the adversary and others do not. Timely detection and early initiation of prophylaxis and decontamination is the key to mitigating the consequences of any biological attack, should it occur. We are requesting \$365 million in fiscal year 2004 to:

Develop and deploy a Biological Warning and Incident Characterization System (BWIC). BWIC will consist of two major elements: a nationwide biosurveillance system that looks for early indicators of the exposure of people, animals and plants to biological agents; and environmental monitoring networks in selected cities that can detect the agent directly. This activity will be available as a pilot in fiscal year 2004.

Continue the National Biodefense Analysis and Countermeasures Center (NBACC), initiated in fiscal year 2003, as a key component in implementing the President's National Strategy for Homeland Security. The NBACC will leverage the expertise of America's cutting-edge medical and biotechnical infrastructure to focus on the biological agent threat, including performing risk assessments and determining which countermeasures require priority research and development. It is an essential, new approach to integrating national resources for homeland security, supporting public health, law enforcement, and national security. The analytical capabilities of the NBACC will be functional in fiscal year 2004.

Protect our agricultural infrastructure by providing the most rapid means of detecting infected animals before they exhibit signs of the disease to contain the original introduction, providing vaccines and/or therapeutics and a vaccination/therapy program to deter the spread of the disease, and providing genetic data that can be quickly used to identify the source, virulence and potential for spread of an introduced foreign disease.

Chemical Countermeasures.—According to the National Research Council's Report Making the Nation Safer, "chemicals continue to be the weapon of choice for terrorist attacks. They are readily available and have the potential to inflict significant casualties." In fact, terrorist attacks on civilian populations with chemical warfare agents have already occurred. In the Aum Shrinrikyo attack on the Tokyo subway, casualties were limited only because the attackers did not use an effective agent dispersal method. Similarly, accidental releases of toxic industrial chemicals have dem-

onstrated that materials relatively widely available in modern industrial societies can result in large number of casualties.

Significant work on chemical defense in military situations has been conducted, focused on battlefield attacks using chemical warfare agents. However, major gaps exist regarding civilian defense, most notably in strategies for dealing with the broader spectrum of threats (e.g. toxic industrial materials); detection systems capable of continuous monitoring with very low false positive rates; deployed chemical defense systems; and a robust forensic capability. The Chemical Countermeasures portfolio is requesting \$55 million to address these shortcomings through a balanced mix of activities: (1) systems studies will be used to prioritize efforts amongst the many possible chemical threats and targets; (2) new detection and forensic technologies will be developed and demonstrated; (3) protective systems that integrate physical security, ultra-sensitive detection, information management, and consequence management strategies will be developed and piloted in selected high value facilities such as airports and subways; and (4) the Science and Technology Directorate will work with the Information Analysis and Infrastructure Protection Directorate to characterize and reduce the vulnerability posed by the large volumes of toxic industrial materials in use, storage or transport within this Nation.

High Explosives.—Detection of high explosives and mitigation of their use has been a prime focus, historically of the Federal Aviation Administration, and now the Transportation Security Administration (TSA). The current terrorist threat extends beyond air transport to all other modes of transportation and to fixed facilities. The Department of Homeland Security will build on TSA's R&D in this area to develop and deploy more effective explosives detectors that can address the broader threats. Development of reliable stand-off detection capability of large quantities of explosives, especially in vehicles, is particularly needed. For this purpose \$10 million in fiscal year 2004 is requested.

Radiological and Nuclear Countermeasures.—Countering the threat of radiological or nuclear attack is one of the top priorities of the Department of Homeland Security and the Science and Technology Directorate. The Radiological and Nuclear Countermeasures portfolio is requesting \$137 million to address this threat through a comprehensive systems approach that emphasizes early detection; effective intervention capabilities at the Federal, State and local levels; development of mitigation technologies and science-based consequence management programs for use should an attack occur; and effective training at all levels of response. Concurrent efforts focused on deployment, evaluation and improvements to currently available technologies; a research and development program for advanced technologies and their continuous insertion into operational use; and the provision for an enduring science and technology base to address long-term challenges such as the detection of highly-enriched uranium and heavily shielded radioactive sources is used to address both today's threats and those of the future.

Threat and Vulnerability, Testing and Assessment.—The purpose of the Threat and Vulnerability, Testing and Assessment (TVTA) program is to create advanced modeling, information and analysis capabilities that can be used by the organizations in the Department to fulfill their missions and objectives. One thrust of this program is to develop advanced computing, information, and assessment capabilities in support of threat and vulnerability analysis, detection, prevention and response. This portfolio also conducts extensive research and development activities in the area of cybersecurity, addressing areas not currently addressed elsewhere in the Federal Government. An example of this is developing tools and techniques for assessing and detecting the insider threat. The TVTA program uses a strategy of multi-year investments that infuse new capabilities into the DHS mission directorates on a regular basis based on strategic 5 year road maps. A spiral development process ensures early use and feedback by intended users and operators of all technologies developed within the program. Successively more complete and refined prototypes lead to operational pilots and fully operational systems for the Department organizations. \$90 million is requested in fiscal year 2004 to support this activity.

Critical Infrastructure Protection.—Our national infrastructure provides the continual flow of goods and services that are essential to the defense and economic security of the United States. Many of these functions are so vital that major disruptions would cause severe consequences to the behavior and activities of our citizens. Our free society and the high quality of life that we value depend upon the reliable operation of the infrastructure. In addition, we must protect the lives of our citizens (especially whenever they gather in large numbers) and key assets including many national monuments and icons.

The Critical Infrastructure Protection (CIP) portfolio has three primary goals: (1) develop, implement, and evolve a rational approach for prioritizing CIP strategies

and resource allocations using modeling, simulation, and analyses to assess vulnerabilities, consequences, and risks; (2) propose and evaluate protection, mitigation, response, and recovery strategies and options; and (3) provide real-time support to decision makers during crises and emergencies. \$5 million is requested in fiscal year 2004 for this activity, which also leverages work being done elsewhere in the Federal Government and the Department of Homeland Security.

Standards/State and Local Program.—Standards should be applied to all elements of the homeland security infrastructure to ensure a robust capability to defend against and to respond to any crisis situation—whether it is the result of terrorism, natural causes, or a catastrophic accident. Organizing and integrating the efforts of the government and the private sector will enable the Department of Homeland Security to develop standards for equipment used for detection of materials that could be used in a terrorist attack. This will reduce the probability of a successful terrorist attack on the United States and facilitate development of a vital and enduring ability to respond to national emergencies.

The Standards/State & Local Program will provide consistent and verifiable measures of effectiveness of homeland security related equipment and systems in terms of basic functionality, appropriateness and adequacy for the task, interoperability, efficiency, and sustainability. The Science and Technology Directorate will facilitate the development of guidelines in conjunction with both users and developers. The guidelines will encompass user needs and operating conditions, as well as the capabilities and the limitations of the technologies. The Standards/State and Local Program will develop, in collaboration with operational end-users, performance measures, testing protocols, certification methods, and a reassessment process appropriate to each threat countermeasure and for the integrated system. The Standards/State and Local Program will address all elements of the homeland security mission including equipment, information, analyses, personnel, and systems. Special emphasis will be placed on soliciting input from the actual users in the State and local response communities, and on providing effective methods for communicating information back to these agencies.

Major program objectives include working with the private sector to establish a network of homeland security certification laboratories. This will provide a consistent level of assurance in the effectiveness of detection and other operational equipment. Consistent standards for training and certification of personnel will also be developed. The program will continue to broaden the suite of technical standards for various forms of equipment and systems and will provide protocols and standard data collection formats for test and evaluation projects undertaken by the Science and Technology Directorate. \$25 million is requested in fiscal year 2004 to support this important effort.

Support to Department of Homeland Security Components.—The Science and Technology Directorate has the responsibility to provide Federal, State and local operational end-users with the technology and capabilities to protect the United States homeland from catastrophic terrorist attacks and enhance their capabilities for conducting their conventional missions. An essential component of this responsibility is to coordinate and collaborate with the other components of the Department to assist and enhance their technical capabilities through integrated research and development activities. The integration of the Science and Technology Directorate research and development efforts with the Information Analysis and Infrastructure Protection Directorate is specifically described in the Threat and Vulnerability, Testing and Assessment, and the Critical Infrastructure Protection portfolios. In addition, the Science and Technology Directorate will support the mission needs of the Border and Transportation Security Directorate, the United States Coast Guard, the United States Secret Service and the Emergency Preparedness and Response Directorate through coordinated and focused research and development programs. Research and development in potentially high payoff technologies will be emphasized. \$55 million is requested in fiscal year 2004 for this purpose.

Rapid Prototyping Program.—Significant capabilities exist in private industry for the rapid development and prototyping of technologies in support of the homeland security mission. A mechanism to quickly and easily access the capabilities of private industry will allow the Department of Homeland Security to more effectively fulfill its mission requirements.

The Science and Technology Directorate will establish a partnership with the Technical Support Working Group (TSWG) to provide the Department with a technology clearinghouse to encourage and support innovative solutions to enhance homeland security and to engage the private sector in rapid prototyping of homeland security technologies. \$30 million is requested in fiscal year 2004 to solicit from the private sector near-term capability that can be rapidly prototyped and fielded.

Homeland Security Fellowship Programs/University Programs.—Advancements in science and technology have the potential to change or increase the threats to our security; these advancements also improve our ability to thwart these emerging threats. A knowledgeable workforce focused on homeland security is essential to our ability to address advancements in science and technology.

The vast scope of the science and technology needed to address homeland security coupled with declining enrollments in specific areas such as nuclear science and technology, and radiochemistry are leading to a lack of qualified applicants for relevant research and development. This program requests \$10 million to support strategic partnerships with the academic community to provide support for qualified students and faculty.

Emerging Threats.—Advancements in science and technology have the potential to change or increase the threats to our security. These advancements also improve our ability to thwart these emerging threats.

The Emerging Threats program will support the exploration of innovative, cross-cutting, out-of-the box approaches for anticipating and responding to new and emerging threats. It will also establish and support studies and analyses to be conducted by the new Homeland Security Institute. \$22 million is requested in fiscal year 2004 for this purpose.

The scope of the work to be conducted by this budget is broad but focused on the areas that improve our capabilities to thwart terrorist attacks by early detection and identification of the threat, effective protection and intervention technologies, mitigation of potential consequences should an attack occur, and a robust forensics and attribution capability. Our strategy includes early deployment of off-the-shelf technologies to provide initial defensive capability and near-term utilization of emerging technologies to counter today's terrorist threats and the development of new capabilities to thwart future and emerging threats. A key part of our efforts will be conducted through the Homeland Security Advanced Research Projects Agency to engage industry, academia, government, and other sectors in innovative research and development to meet operational needs. Although I have described the budget request along product lines, such as biological and chemical countermeasures, it is our estimate that at least \$350 million of the overall request will be carried out by HSARPA in fiscal year 2004.

Mr. Chairman and members of the subcommittee, this concludes my prepared statement. I would be pleased to address any questions.

COOPERATION WITH DHS AND NON-DHS ENTITIES

Senator COCHRAN. Thank you very much, Mr. Secretary.

While there were certain specific functions transferred to the Department of Homeland Security over which you now have jurisdiction or responsibility, there were some that were left out that are under the overall Department's responsibility, such as the Coast Guard, the Secret Service and others.

Does that present any kind of challenge administratively for you, or do you share in the responsibility for working on science and technology issues with those other parts of the Department of Homeland Security, even though they are not directly under your jurisdiction?

Mr. MCQUEARY. Yes, sir, we do share in that responsibility. In fact, as a part of our organization with in Science and Technology, we have individuals who have transferred into the S&T organization from all of those agencies that you mentioned, to be in our spaces, if you will, to help influence the Science and Technology portfolio direction that we will take.

So while the organizations that you mentioned do not report directly to me, we do have oversight responsibility for the science and technology work done in those organizations. We have also already established a partnership with the laboratory directors from all of those agencies that you mentioned so that we can begin working closely with them. And so far I have been very pleased to see the great enthusiasm with which the leaders of the scientific organiza-

tions have come together, recognizing that there is more power in a larger scientific community than there is in what I would call smaller groups.

Senator COCHRAN. There are other Federal agencies, too, and activities of the Federal Government not within the Department of Homeland Security that have responsibilities for helping to protect our homeland against terrorist attacks. I think immediately of the Postal Service and the challenge that they have in trying to help ensure that we are able to detect any efforts to transmit through the mail anthrax and other harmful agents.

To what extent will your office be involved in providing information, in terms of science and technology, to those other independent agencies or other departments of Government such as the U.S. Postal Service?

Mr. MCQUEARY. First of all, it is very important that one of the first things that we do is understand exactly what is going on not only within the government but also in private industry and universities in the areas that relate to homeland security.

In the specific instance of the Post Office, the Office of Science and Technology Policy has been working with the Post Office since we had the anthrax issue right after 9/11. I have already established a very close relationship with Dr. John Marberger, who heads up the OSTP organization. So we will have very close coordination with the work that is being done there. If we need to have working groups with the Post Office, I would see no reason why there should be an impediment to doing so.

ROLE OF THE PLUM ISLAND ANIMAL DISEASE CENTER

Senator COCHRAN. If a terrorist decided to target American farms and ranches with some effort to carry out a bioterrorism act, we are limited in what we know about how diseases can be transmitted and spread. But we are trying, through the activities of the Plum Island Animal Disease Center which is now part of the Department of Homeland Security, to understand how to better fight efforts that would target America's farms and ranches.

To what extent is your Directorate going to be involved in helping to map a strategy to effectively quarantine animals or to prevent the spread of diseases in this kind of situation?

Mr. MCQUEARY. Certainly. As you correctly point out, Plum Island does transfer into the Department of Homeland Security. That occurs on the first of June.

We had interactions as the planning process was going through. I have not personally been to Plum Island yet, although that is high on my list of things to be done within the next several days, to get more familiar with Plum Island and the details thereof.

As I see it, though, they play a very important function, particularly in helping to protect our country from animal diseases that could come in inadvertently. And therefore by doing this, they also put us in a better position to understand how to protect against those diseases.

CRITERIA FOR DETERMINING CENTERS EXCELLENCE

Senator COCHRAN. I know that there are probably going to be a lot of requests from around the country from colleges and univer-

sities to ask you to designate them as “Centers of Excellence” in research in this area. How are you going to approach that challenge? How are you going to pick and choose among all the colleges and universities as to who gets to be a center?

Mr. MCQUEARY. Well, first of all, I am pleased with the legislation as it came out in giving us the latitude to be able to work that issue. There are a number of criteria that are called out in the legislation establishing the Department of Homeland Security, and certainly that will be an important part of what we need to examine as we decide what to do.

My opinion, if I might render a professional opinion at this point, is that it would be very difficult to find a single university that has the breadth and expertise so that they could call themselves the very best there is in the country in all of the expected areas. So my personal preference is to do an early assessment of where the best work is being done in the areas of counterterrorism interest, and then choose centers of excellence based upon that judgment.

And I would certainly expect that we will call upon the scientific community to help us render that judgment. That will not be strictly a Department of Homeland Security S&T call by itself.

Senator COCHRAN. Senator Byrd.

ADEQUACY OF EXISTING TECHNOLOGIES AND CAPABILITIES

Senator BYRD. Mr. Secretary, the Homeland Security Act gives you the responsibility to develop a national policy and strategic plan for identifying priorities, goals, objectives, and policies for and coordinating the Federal Government civilian efforts to identify and develop countermeasures to chemical, biological, radiological, nuclear and other emerging terrorist threats.

In recent testimony, FBI Director Robert Mueller said his greatest concern is that our enemies are trying to acquire dangerous new capabilities with which to harm Americans. Terrorists worldwide have ready access to information on chemical, biological, radiological, and nuclear weapons via the Internet.

Mr. Secretary, our agencies have identified new and existing technological capabilities that can be used today to help prevent terrorism, but they have not received the budgets to obtain them. Do you think that our agencies are adequately equipped and prepared with existing technologies and capabilities?

Mr. MCQUEARY. Sir, I believe the reason the Science and Technology Directorate was created as a part of the Department of Homeland Security was to help improve the overall situation at our borders and provide added protection. So I think the answer has to be that the country has decided we are not adequately protected and we still have work to be done. And I believe that we are chartered with the responsibility of leading that effort in concert with the other units that make up the Homeland Security Department, deciding what needs to be done and doing it.

I do believe that it is very important that we understand quickly what kinds of capabilities exist in the country today, so that we can implement those things that will make a difference as quickly as we can because speed is important in the business that we are in.

IDENTIFICATION OF SCIENCE AND TECHNOLOGY NEEDS

Senator BYRD. Last year Congress appropriated additional funds to purchase technology and equipment critical to homeland security but the Administration rejected the funding. This year, as we continue to operate under a heightened state of alert, the Administration did not request specific funding for this technology in the supplemental spending bill.

I speak with respect to technology that has been identified by the agencies, such as radiation portable monitors and non-intrusive inspection equipment for the Bureau of Customs and Border Protection and radiation pagers and isotope identifiers for Coast Guard officers who board suspect vessels. There were attempts to add funding to the emergency supplemental a few days ago that would have provided Homeland Security agencies with additional technologies and capabilities.

Secretary Ridge and the Attorney General have said that there was a high-risk of a terrorist attack right now. Are you working with the various Homeland Security agencies to identify existing technologies and capabilities that could immediately be deployed to the men and women securing our homeland?

Mr. MCQUEARY. Yes, sir, that is a significant responsibility that we have. And indeed, the role that we play in the Department of Homeland Security is to be the supplier of technologies to the other agencies and units that make up the Department of Homeland Security.

I have described this as a customer/supplier model, if you will, having come from the industrial side of things, in which they are the customers, as are the people working on the front lines. And we are to be the suppliers of the technologies that are needed. And our job is to help evaluate, determine what should be done and help implement the rapid deployment of those things that are needed.

Senator BYRD. Could you provide the subcommittee with some examples?

Mr. MCQUEARY. Examples of things that we are doing?

Senator BYRD. Are you working with the various Homeland Security agencies to identify existing technologies and capabilities that could immediately be deployed to the men and women securing our homeland?

Mr. MCQUEARY. If I may, we have been in existence just since the first of March. We have a relatively small staff at this particular point. I take that fully as a responsibility that we have.

I cannot tell you today specific examples other than there are radiological detectors at our borders even today and there are upgrades that are underway in many of those locations. But has Science and Technology affected those in any great way to date? The answer would be no, simply because we have not been in existence nor have we had people.

If you would recall when Homeland Security was formed, there were no people that transferred into Science and Technology. So we are building our organization a person at a time today in order to be able to do the work and accomplish the responsibilities that the Congress has given us in the construction of the bill.

Senator BYRD. Since the threat of terrorism is imminent, should you be focusing on both longer-term development of technologies and technologies that are currently available so that the Homeland Security personnel can work more efficiently and effectively?

Mr. MCQUEARY. Yes, sir. I believe that is very important that we have a multi-layered strategy in what we do. And in fact, that indeed is a part of our planning and strategic plan that we are working on, and that we expect to publish in the near future. Very important.

If I may, the Homeland Security issue is a very large systems engineering problem if I may describe it coming from the background which I do, in which we have large numbers of inputs and outputs. And the important thing is to understand how this system needs to work to provide the protection.

From that understanding will come the ability to be able to determine what we must do in terms of long-range developments, as well as to be able to use those things that we know already exist. And there are many companies that have things out there today, as certainly you alluded to, that maybe, that probably will be, very beneficial to us as we make this country safer than what it is today.

MANPAD STRATEGY

Senator BYRD. There has been much talk about the need to secure our commercial airliners from the threat of shoulder-fired surface-to-air missiles. Last November it was reported that Al Qaeda operators fired two shoulder-fired missiles at an Israeli passenger plane. The cost to purchase these weapons is roughly \$5,000 to \$30,000, and over 500,000 are available worldwide on the black market.

Secretary Ridge announced on Tuesday that the Government should pay for research and technology to protect commercial airliners from this type of attack. Has the Secretary discussed this with you? And if he has, what steps are you taking to pursue this?

Mr. MCQUEARY. Yes, sir, he has discussed it with us a few weeks ago. We are aware of the MANPAD strategy you describe. It is a very serious issue and one in which we have already begun to participate in a systems engineering analysis to determine what would be an equitable approach for our private airline industry.

There has been work. It has gone on in the Department of Defense, and certainly we would build upon that work. But there is not a system, as I understand it, that exists today that one could simply apply onto a commercial airliner with no additional development work.

Senator BYRD. I want to yield shortly to the Chairman, who will in turn then call upon Senator Domenici, but let me get this further question, if I may.

Your budget justification does not include anything specifically on this issue. TSA has requested \$75 million in research and development to improve current security technology. Industry estimates that the cost to design and certify effective countermeasures for different aircraft types will cost close to \$55 million. So can you tell me where the funding will come from to do this?

Mr. MCQUEARY. Sir, I cannot today. I can tell you that we have included within the budget the study work that would be necessary for Science and Technology to provide its technical judgment on how to approach this problem and that is not a large expense. In fact, I would estimate that is a \$1 million to \$2 million maximum kind of effort for us.

Of course, the major cost would be in the procurement of such systems and I have not been engaged in the discussion about how that would be paid for.

Senator BYRD. Thank you.

Senator COCHRAN. Thank you very much, Senator. Senator Domenici.

Senator DOMENICI. Mr. Chairman, I have to chair another subcommittee, as I think you are aware, but I very much appreciate the opportunity to ask one question.

COLLABORATION WITH NATIONAL LABORATORIES

First, Dr. McQueary, it is good to see you. You have a very big job and we look forward to working with you.

As you know, in my State, we have two great national laboratories. And one of my subcommittees is the subcommittee that funds all of the national laboratories for the Department of Energy, some 18 laboratories from Argonne to ones in New York and up and down the line.

Obviously, I am correct in saying you intend to work with those laboratories as they have either know-how or technology that would be helpful to you in implementing your role; is that correct?

Mr. MCQUEARY. Yes, sir, that is absolutely correct. They have great talent in those laboratories.

HOMELAND SECURITY ADVANCED RESEARCH PROJECTS AGENCY

Senator DOMENICI. Homeland Security Advanced Research Projects Agency is known as, I guess, HSARPA.

Mr. MCQUEARY. HSARPA, some call it. I wish I had been here sooner to name it something else, but I was not.

Senator DOMENICI. We will try our best.

As we understand it, the purpose for that is to use it as a tool to move ideas from the drafting board to the front lines as quickly as possible. And in so doing, to use your funds so that you can bring to bear all of the resources of the United States, including private industry, universities, and the national laboratories, on an issue or a need in this particular field; is that correct?

Mr. MCQUEARY. That is absolutely correct, sir.

Senator DOMENICI. When do you think that that agency is going to be up and running?

Mr. MCQUEARY. I believe it will be up and running soon. We have done a lot of planning for it. It will actually be up and operational around the first of October simply because of the way the budgets are done.

Senator DOMENICI. Who do you think will head it up?

Mr. MCQUEARY. I have interviewed many people and I am still looking for people to do that. I think it is essential that we get the right kind of technical talent to lead that. And therefore, I am continuing to look.

Senator DOMENICI. Do you have any idea how many employees would be working there and where they might be located, Doctor?

Mr. MCQUEARY. We have not reached that point because that is an organization whose size will be driven largely by the number of programs that we have implemented, and so we will need program managers to run programs, and so the size will be driven by that.

Senator DOMENICI. Once again, it is very important that the way you set it up will permit it to interact with the national laboratories in the best possible way; is that not correct?

Mr. MCQUEARY. That is absolutely correct.

Senator DOMENICI. Without that, you are losing a great deal of talent and capacity that already exists. You do not have to duplicate that.

Mr. MCQUEARY. And we will not, or we will make every effort not to duplicate it, I can assure you.

Senator DOMENICI. I have some additional questions with reference to how you are going to go about doing that, but I just wanted to leave you with the further admonition that just because we have a new problem, we do not have to, in each instance invent a new agency or a new institution to solve it.

You have a very big job. Part of it is to make things work and pull things together that are already out there and apply them to an existing problem. And I am hopeful that in the months to come, as we bring you here, you will be able to show us how you have arranged this so that the great strength of our private sector research and our laboratories is brought to bear on some of these terrorist issues.

Are you going to give us assurance that that is the direction that you will be moving?

Mr. MCQUEARY. I can assure you, that is my intent, sir.

Senator DOMENICI. Thank you very much. Thank you, Mr. Chairman.

COMPREHENSIVE ENTRY EXIT SYSTEM

Senator COCHRAN. Thank you, Senator.

Let me ask you another question on the subject of the Border and Transportation Security Directorate. There is a project that is being planned, as I understand it, which is called the Comprehensive Entry Exit System. There is a legislative requirement that the Entry Exit System be able to read biometrics, which is the system to use fingerprint technology, facial recognition technology, or maybe even iris scan technology, to verify the identity of people traveling into or even maybe out of the United States.

There have been investments already by the Department of Justice in improving fingerprint technologies. Do we need to do the same sort of thing for facial recognition technology and iris scan technology, in your opinion?

Mr. MCQUEARY. I believe that those two latter areas that you mentioned are certainly behind fingerprint recognition systems, though a lot of good work has been done in the industry and I think that we can draw upon that to make the decision of what direction we should go in choosing one of the two latter ones you mentioned as being the added biometric to be used for the Border Entry Exit System.

BIOMETRIC TECHNOLOGIES

Senator COCHRAN. Do you plan to use funds that are appropriated to your Directorate to develop a new generation of biometric technologies?

Mr. MCQUEARY. Sir, I cannot remember at this point whether we have included that in this budget or not. If I may answer the question. The answer is yes. I apologize, I should have known but it has been a long day and I simply did not remember.

TECHNOLOGY CLEARINGHOUSE

Senator COCHRAN. We are already beginning to get inquiries from people around the country who know about the new department. And those of us who serve on this funding subcommittee are being contacted and urged to be sure that their ideas and their suggestions get reviewed. How are you going to go about reviewing all those requests? You are going to have more suggestions and more ideas about how to improve the state of the world in so many different areas. Are you going to establish a clearinghouse of some kind to review these things?

Mr. MCQUEARY. Yes, sir.

Senator COCHRAN. How are you going to deal with that?

Mr. MCQUEARY. As I mentioned in my opening statement, we have partnered already with the Technical Support Working Group, which has been in existence for several years. We expect to issue broad agency announcements indicating what areas of technology we are interested in in industry. We have a reprogramming action that has been proposed and if it gets approved as we proposed it, we then will issue the broad agency announcements, and industry will be able to see the areas that we are interested in.

With that being said, what I am asking in people who come to see me is, do not ask me how can you use my thing in your solution. I am asking people to help me define what the solution needs to be. Because this, as I mentioned, is a very large systems problem. We are going to have some very talented people. But I can assure you we will not have the talent to be able to conceive of all the possibilities.

So we need people who come in with ideas to help us think about how it can be used in a large system context because that is the problem that we face.

Senator COCHRAN. Our job is to decide how much money you need.

Mr. MCQUEARY. Yes sir.

UNIVERSITY-BASED CENTERS

Senator COCHRAN. Of course, we consider the request that is submitted by the President, but sometimes, and I am not suggesting this is true with this Administration, but sometimes Administration officials submit numbers knowing the Congress is going to have to increase the number. That just happens. No use to pretend that it does not.

I wonder about the \$15 million that is requested in this budget, for example, to establish university-based centers and support stra-

tegic partnerships with the academic community. That sounds like a pretty small amount of money to me.

Mr. MCQUEARY. I do not believe it is so small when you are just starting out. I think it is important that we have a good plan in place. I think it is important that we not take a lot of time to figure out what the plan is.

But I would like to be able to come before you and present a plan that I know I have studied sufficiently to be able to say I believe this is the one that can and should be implemented to accomplish the things that the Congress has asked us to do in the legislation.

So I am not personally uncomfortable with the amount of money in that area now, quite frankly.

Senator COCHRAN. Thank you, very much. Senator Byrd.

DEFENSE DEPARTMENT'S BIOMETRICS INITIATIVE

Senator BYRD. On biometrics, Dr. McQueary, are you aware of the Defense Department's biometrics initiative?

Mr. MCQUEARY. Sir, I am only aware in a very general sense. I have not had a scientific review of that, but it is certainly an important thing for me to do.

Senator BYRD. Do you plan to work with the Defense Department and other agencies to build on the testing already done and the lessons already learned?

Mr. MCQUEARY. I would view that we have not done our job unless we do that. We certainly must do that, because that is the way we determine how much money really should be spent, by knowing that we are using what has already been done.

Senator BYRD. The Defense Department has been quite active in this area, and I hope that you will pursue that opportunity to build on the testing there.

Mr. MCQUEARY. I assure you we will.

MANPAD STRATEGY

Senator BYRD. If Secretary Ridge believes that there is a serious threat of a shoulder-launched missile being fired at a commercial airliner, why did the Administration oppose an amendment in the Senate a few days ago to provide \$55 million to test existing technologies on commercial aircraft?

Mr. MCQUEARY. Sir, I do not know the answer to the question, but I can try to find out to respond back to you. But I do not know.

Senator BYRD. Could you give us a timeline for coming forward with your recommendations?

Mr. MCQUEARY. I, first of all, have to determine in concert with Secretary Ridge whether it is appropriate that the Science and Technology group make that recommendation or whether it should come out of one of the operational directorates. I cannot answer the question today but certainly I should be able to answer it soon. And I can certainly discuss that with Secretary Ridge and get back to you.

Senator BYRD. Would you supply to the subcommittee an answer to that question, after you have had that discussion?

Mr. MCQUEARY. Yes sir.

PERFORMANCE MEASURES

Senator BYRD. You are responsible for developing a national policy and strategic plan for identifying priorities, goals, objectives, and policies for and coordinating the Federal Government's civilian efforts to identify and develop countermeasures to chemical, biological, radiological, nuclear and other emerging terrorist threats, including annual measurable objectives and specific targets.

On page 26 of your budget justification, you find these words: performance measures for the Science and Technology Directorate have not been established. And yet you are requesting an \$803 million budget, including \$242 million or a 43 percent increase over last year.

How is this subcommittee supposed to evaluate your request if we do not have any performance standards to go by?

Mr. MCQUEARY. I think you should ask us to provide those performance measures and I agree with that. The response that we have there is the one we have today but it is not satisfactory long-term. And we do need to have performance measures. I agree. I come out of an industry where if you cannot measure it, you cannot be sure it has been done.

Senator BYRD. Exactly. I would suggest that you do your best then, Mr. Secretary, to provide the subcommittee with reliable performance measures during the fiscal year 2004 budget process, so that we can evaluate your \$803 million request.

Mr. MCQUEARY. Yes sir.

Senator BYRD. Congress has appropriated billions of dollars since 9/11, much of which has gone to the development of technological capabilities to prevent terrorist attacks. This subcommittee is going to be working very hard to make sure that the investment is spent wisely. So please take steps, since you do not have anything on paper, please take steps to develop performance measures, as you have indicated you will, so we will know if the money is appropriately being spent effectively.

Mr. MCQUEARY. Yes sir.

HOMELAND SECURITY ADVANCED RESEARCH PROJECTS AGENCY

Senator BYRD. I have one other question.

Public Law 107-296, the Homeland Security Act, created the Homeland Security Advanced Research Projects Agency. The agency is modeled on the Advanced Research Projects Agency except that the goal of the agency is to develop technologies that would benefit homeland security.

In your prepared testimony you estimate that \$350 million of your overall request of \$803 million would be carried out by this new Advanced Research Projects Agency. But the Homeland Security Agency Act authorizes only \$500 million. Why is there a \$150 million gap between your funding requests and the authorized amount?

Mr. MCQUEARY. Sir, my approach, having come out of the industrial side, is we are in the business of funding products and systems, and those products and systems in general will cut across not only the Homeland Security Advanced Research Project Agency, but the work that is done in the laboratories.

And so my belief, and a strong belief, is that developing a budget based upon products and systems is a better way than doing an organizational budget which would be equivalent to saying how much are we going to spend in HSARPA? I assume the \$500 million may have been an estimate that someone had and the \$350 million that we have estimated is certainly that. It is an estimate, because the detailed programs have not been put together through competitive approaches or through work that is done in the laboratories.

Senator BYRD. In 1959, Congress approved \$485 million for what was then known as the Advanced Research Projects Agency, ARPA. This was the first year it received an annual appropriation.

I do not know what is the matter with my throat today. I am not smoking any cigars, although I do like them.

Mr. MCQUEARY. Perhaps I could join you in a private moment then, with one of those.

Senator BYRD. Let us try that. Do you have anything else on your hip?

I think you would acknowledge that to date research and development activities in support of homeland security have been underfunded. In light of that, what do you think an appropriate funding level for this agency would be?

Mr. MCQUEARY. I missed which agency, sir. For the Department of Homeland Security?

Senator BYRD. The next question is pertinent. Are you planning to request a higher level for HSARPA in future years?

Mr. MCQUEARY. Sir, it is premature to say yes or no to that, because I think it is important that we examine the needs of the directorates that make up the Department of Homeland Security, and from that determine what the program should be. Those needs will be looked at from the standpoint of "do we need to be funding work ourselves or do we need to simply be buying what already exists out in America today?"

And we have to answer that question, and you have every expectation that we should.

Senator BYRD. Thank you, Mr. Secretary. Thank you, Mr. Chairman.

Senator COCHRAN. Thank you, Senator Byrd.

FISCAL YEAR 2003 REPROGRAMMING REQUEST

Mr. Secretary, yesterday we received a request from the Department of Homeland Security to reprogram fiscal year 2003 appropriations for your Directorate.

Mr. MCQUEARY. Yes.

Senator COCHRAN. This reprogramming could not have been anticipated when the budget request we are reviewing today was composed. Will the request for fiscal year 2004 be changed if this reprogramming request is approved? Specifically, do you believe that the balance of funds resulting from a reprogramming will be sufficient to carry out the biological research and defense activities for the Fort Detrick Biowarfare Center for the remainder of this fiscal year?

Mr. MCQUEARY. Yes, I do. In fact, the budget for Fort Detrick, we explicitly know that that is sufficient for this year because, as you know, we do not have a lot of the fiscal year left, and therefore

it is not necessary to spend as much. And that is part of the thinking that went into that.

STANDARDS FOR FIRST RESPONDER EQUIPMENT

Senator COCHRAN. The detection equipment used by first responders to alert the public of threats from chemical, biological, or radiological sources is an important line of defense for first responders to use to alert the public if a terrorist attack is taking place or has taken place. There currently are no standards for much of the equipment that is being used for the detection of these attacks. Once standards and technologies are developed, the Homeland Security Act authorizes the Secretary to create a system for transferring Homeland Security technologies to Federal, State and local Governments in the private sector.

Can you tell us if there are standards and criteria being developed now by the Department for the equipment that will be used to respond or alert the public to a terrorist attack when it occurs?

Mr. MCQUEARY. We specifically have a group working on standards. That group is working in concert with NIST and the American National Standards Institute because we are not trying to create standards all by ourselves. We are relying upon work, very good work, that has been done within the Government previously.

We have already issued a draft, I believe it is a draft, for radiation detectors for comment already. So that has been done and we are actively working on that.

And you will see we have, in the fiscal year 2003 reprogramming action, as well as in the proposed budget for fiscal year 2004, we have money in there to continue to work the standards issue. It is a very important issue to help the local responders be able to save money because now with no standards they are more or less subjected to whatever happens to be sold to them and rendering the judgments themselves.

Senator COCHRAN. Do you intend to take into account the views and suggestions of the local end-users, such as the first responders themselves, who have had experience in these matters, the police, fire, the transit authorities, so that you can develop the most sophisticated detection devices possible?

Mr. MCQUEARY. Sir, those are the customers for what we do and the answer is emphatically yes, because that is where we need to be getting the requirements for what we do, is at the first responder level. We do have plans in place to be able to accomplish that, so that we do have their inputs.

Senator COCHRAN. Will there be any effort by the Department to provide funding to those in the private sector who are working on these standards and technologies for devices?

Mr. MCQUEARY. I would view the standards work as being more—where the opportunity would be is when you have development of laboratories that would be testing—similar to Underwriters Laboratories. We certainly do not intend to build a government laboratory. So anything that we would do would go to the private sector or the Government, if labs are available to be able to do that.

Senator COCHRAN. Or could some of this research be done at the university centers?

Mr. MCQUEARY. Absolutely. Yes sir.

APPLICATION OF DEPARTMENT OF DEFENSE TECHNOLOGIES, EXPERIENCE AND EXPERTISE TO MEET HOMELAND SECURITY REQUIREMENTS

Senator COCHRAN. The U.S. military has methods of detecting chemical attacks, and certainly in the Operation Iraqi Freedom this is something that has been utilized. But there is a large difference between the military and the private sector and the civilian population.

How do you intend to utilize the expertise and the experience of the Department of Defense in helping develop technologies for the civilian population and our civilian agencies that will be called upon to help protect our homeland?

Mr. MCQUEARY. We certainly intend to draw on the enormous amount of work the Department of Defense has done in this area. As I would see it, a crucial issue for us, however, is that we have to have a low false alarm rate. The military is in a slightly different position. If they have a false alarm and go to general quarters, they can stand down if they find there was nothing. Whereas in the civilian population, we cannot afford to constantly have our people being in an excited state because alarms were put forth and they turned out to have no merit.

So I see the major effort that we have to accomplish is in that area of determining, from a technological standpoint, how we can keep the false alarm rate at a level the country can live with in the civilian population.

Senator COCHRAN. I know our staff members have reviewed the statement that you submitted very carefully. We will probably be submitting some additional questions to you to fill out our hearing record to be sure we understand the request you have submitted, and to be assured that we know enough about it to make an intelligent decision about the amount of funding you need for the coming fiscal year.

But we wish you well in this undertaking. This is a very important responsibility that you have assumed. We appreciate your service and the good work that the Department officials are doing to organize this new department, get it running, and get it off to a good start.

We wish you well.

Mr. MCQUEARY. Thank you very much. I look forward to it and I look forward to working with this committee and to better educate you on what we are doing because I think the better off we all will be. So I look forward to that.

ADDITIONAL COMMITTEE QUESTIONS

Senator COCHRAN. Senator Byrd, any further comments or questions?

Senator BYRD. I join with you in your good wishes and I thank the Secretary and wish him well.

Mr. MCQUEARY. Thank you, sir.

Senator COCHRAN. Mr. Secretary, we appreciate your cooperation with our committee. Other Senators may submit written question,

as well, and we ask you to respond to them within a reasonable time.

[The following questions were not asked at the hearing, but were submitted to the Department for response subsequent to the hearing:]

QUESTIONS SUBMITTED BY SENATOR THAD COCHRAN

DEVELOPMENT OF STANDARDS

Question. The detection equipment used by first responders to alert the public of chemical, biological, or radiological threats is the front-line of defense for first responders to alert the public if a terrorist attack took place. As you are aware, there are currently no standards for much of the equipment that is being used for the detection of these attacks. Once these standards and technologies are developed, the Homeland Security Act authorizes the Secretary to create a system for transferring homeland security technologies to Federal, State, local governments and the private sector. What standards and criteria are being developed by the Department of Homeland Security for the equipment that will detect and respond to any attack that may occur?

Answer. The need for standards and criteria for equipment being developed by the Department of Homeland Security (DHS) was recognized during the initial stages of developing the Science and Technology (S&T) Directorate's long-range strategy. During the transition phase, the need for standards to address design, procurement, deployment, and use of the radiological and biological detectors was determined to be a key need. In collaboration with the National Institute of Standards and Technology (NIST), the American National Standards Institute (ANSI) and the Institute of Electrical and Electronic Engineers (IEEE), the DHS S&T transition team began development of standards for four high-priority classes of radiation detection equipment. The four classes are personal dosimeters ("pagers"), alarming hand-held detectors, hand-held isotope identifiers, and radiation portals. These standards have been released in draft form and will soon go to ballot, in accordance with ANSI standard requirements for national consensus standards. A contract to develop a standard test method for hand-held bulk anthrax immunoassay kits is being prepared.

Work is also progressing in the areas of training standards and personnel certification. Additional standards needs for both detection and response are being identified as part of a systematic evaluation of capabilities versus needs for standards to support the homeland security mission related equipment, operators, models and analyses, data and information, and integrated systems.

Question. How will the Department take into account the needs of the local end-user, such as the police or the mass transit authorities, to develop the most sophisticated detection devices? Does the Department intend on providing any pilot or seed money to involve the private sector in working on these sets of standards? What are the complexities in establishing such a system, and how would you characterize your progress so far in meeting this responsibility?

Answer. The needs of the local end-user community are a key part of the DHS S&T standards development process. The very first step in our process includes input from users to help determine performance guidelines. The actual development of performance measures, facilitated by standards experts, represents a balance among three drivers. The user is engaged to provide guidance on operating conditions, procedures and functionality. Analysts who help define the threats provide information on the problem to be solved by detection devices. Finally, developers who understand governing scientific principles and the relative sophistication of the equipment provide information on the technical capabilities and limitations of the detectors. Reassessment of the standards based on lessons learned and equipment evolution is also an integral part of the planned process.

The actual mechanism for engaging the user community—which includes State, local, and Federal Government end-users—varies. For the standards currently in development, the users have been engaged through established organizations that represent a wide range of users. One example is the Interagency Board for Equipment Standardization and Interoperability (IAB). The State Homeland Security Advisors are also anticipated to be key resources for providing the right staff for input to the process. We expect that these groups and other technical organizations will provide a nucleus around which a capability will be built to obtain State and local responder participation in future standard development efforts and to provide information about how specific technologies conform with standards for procurement purposes. Organizations throughout the Department work with representatives of these enti-

ties and other key end users on a day-to-day basis, and we will leverage user input and feedback through these relationships.

The private sector has already been involved in the process of developing voluntary consensus standards. Manufacturers, academics, and professional societies have been strongly represented in the groups that have already been activated. The traditional method for producing standards involves volunteers to lead and staff the writing groups. Some funding has been set aside to support the writing committee chairs. Funds have also been planned to help support the ANSI Homeland Security Standards Panel that will aid in cataloging and coordinating standards development with the professional societies that are the traditional source for United States' national voluntary consensus standards.

In terms of the complexity in establishing a system that addresses standards relevant to DHS, the development of a suite of standards is a significant undertaking. The interrelated nature of the homeland security defensive system for emergency response—plus the need to ensure that the emergency system is interoperable and integrated with the existing infrastructure also adds to complexity. Incorporating the requirements of Federal, State, and local responders into a coherent and flexible system is essential but creates a very large-scale problem set. Finally, we are dealing with both a rapidly evolving threat and with constantly evolving technologies. Therefore, there is a crucial need to ensure flexibility in the standards that are developed or they will quickly become unusable, and an obstacle to the deployment of next generation technologies.

We would characterize our progress to date as satisfactory. The process for developing standards traditionally takes a minimum of 18 months and some standards have taken up to 15 or more years to develop. The proposed radiation detection standards have been developed in about 6 months—and the rollout of the draft occurred less than a month after the Department became operational. Our future efforts will continue to use the ANSI existing standards development organizations and their memberships to expedite development and adoption of relevant standards. We also will provide funding to support what were heretofore strictly volunteer efforts, to expedite writing of critical standards for homeland security. We will champion the inclusion of users in all major stages of standards development—including the formulation of operational test protocols. We will also encourage the use of automated tools and web-based review and tracking to streamline the process. The assets provided by ANSI will be leveraged to build on existing standards and standard development expertise to fill the gaps and needs in our current system of standards.

CONCERNS FOR RURAL AREAS

Question. While there is concern about the Nation's largest urban areas being vulnerable to terrorist attacks there should also be equal concern about the Nation's rural areas. Much of the Nation's critical infrastructure such as bridges, highways, railroads, electric power lines, pipelines, and drinking water reservoirs and dams are located in rural America. Advances that have been made in information technology and the internet should make the task of securing the homeland easier and more cost effective by putting this technology to work in rural America to protect these critical infrastructures.

(a) Does the threat and vulnerability, testing and assessment program include funding for technologies and systems which meet the threats that may arise in rural America?

(b) Can you elaborate on the proposed formation and activation of the advanced research and development center that will include advanced technology support to the Department?

Answer. (a) The Threat and Vulnerability, Testing and Analysis (TVTA) program's planned activities address the needs of rural regions in several ways. We are developing advanced information systems, tools and sensors in order to better detect possible terrorist intentions, and to help analysts map threats to specific targets including rural reservoirs, power generation plants, and agriculture. Many of these tools will be designed to be usable by local officials to aid in regional efforts to combat terrorism. The cost of deploying new sensor technologies in remote areas has often been high due to communication infrastructure needs. To enable a lower cost, rapidly deployable alternative, we are planning a demonstration of new capabilities to link sensors to central monitoring stations using existing Federal and private communications infrastructures. New portable technologies to detect threats, such as improved radiation and biological agent detectors, are being developed by the S&T Directorate. Sensors alone cannot solve the problems associated with potential terrorist threats. Looking beyond sensor technology, we will develop models of the be-

havior and motivations of terrorist organizations to better understand the conditions that may lead to a rural attack.

(b) It is the S&T Directorate's role to support the needs and requirements of the Department of Homeland Security. The Science and Technology Directorate carries the responsibility for ensuring that the necessary research, development, test and evaluation (RDT&E) activities are carried out to support the Information Analysis and Infrastructure Protection (IAIP) mission in cybersecurity. To satisfy this mission as it relates to cybersecurity, it is our intention to create a RDT&E center for the Department's cybersecurity needs.

The DHS Cybersecurity Center will team through partnership and cooperation with NSF and NIST. This center will be available to us through the academic community—including partners from industry, the national labs and other government programs. We see this as critical—to combine all resources and efforts across the government R&D community to accelerate the technical solutions towards this issue.

The Center will have five primary roles or functions, as follows:

- Provide communication and coordination among various public and private organizations dealing with the many diverse aspects of cybersecurity. The Center will foster national and international cooperation in creating a robust and defensible cyber infrastructure.
- Support the operational needs of the IAIP Directorate relative to vulnerability assessments and new tools and methods for enhancing cybersecurity. Through public-private interactions, this center will also facilitate the implementation of security-enhancing tools and methods by government and private agencies.
- Direct Support to IAIP: in addition to responding to DHS RDT&E needs, the center may be asked to provide on-call technical expert capabilities in support of emergency response for rapid vulnerability mitigation in response to cyber threats.
- The center will further identify and then implement RDT&E programs to address specific gaps in the R&D community. A unique feature of the DHS Center will be the utilization of existing or the development of test beds where new cybersecurity methods, tools, and approaches can be exercised in a controlled environment and evaluated against common, accepted standards. Developing the test beds and measurement-performance standards will be an element of the center's program.
- In order to have the necessary human resources who possess the requisite knowledge and skills to advance and secure the nation's cyber infrastructure, the center will foster educational programs and curriculum development. This will be done in conjunction with participating universities who can serve as a nucleus for developing and disseminating new materials to have the broadest possible benefit to the nation and the upcoming stream of scientists and engineers.

DEPARTMENT OF HEALTH AND HUMAN SERVICES COORDINATION

Question. The Homeland Security Act authorizes Secretary Ridge to set research and development priorities for anti-terrorist countermeasures, but it also gives authority to the Secretary of Health and Human Services to set priorities in civilian human health-related terrorism countermeasures.

Have you entered into discussions with the Department of Health and Human Services to establish priorities for basic and applied biodefense research?

Answer. Yes. In compliance with Homeland Security Act of 2002, Public Law 107-296, Section 302(2), the Department of Homeland Security (DHS) and the Department of Health and Human Services (HHS) are working together on biodefense research priorities. During the transition period leading to establishment of the DHS, the HHS provided an individual to the Homeland Security Transition Planning Office. Subsequently, several steps were taken to formalize a continuing interaction. An interagency coordinating committee, co-chaired by The Executive Office of the President's National Science and Technology Council (NSTC), the Homeland Security Council (HSC) and the Office of Management and Budget (OMB), has been established as the vehicle for coordinating and prioritizing the national bio-defense research, development, test and evaluation agenda. A Memorandum of Understanding (MOU) between the Department of Health and Human Services and the Department of Homeland Security has been established to enable closer coordination on issues that are specific to DHS and HHS.

Question. How do you propose to cooperate with the Department of Health and Human Services to set priorities and resolve conflicts?

Answer. Two key steps are being taken to formalize our cooperation with the Department of Health and Human Services in setting priorities and resolving conflicts. First, an interagency coordinating committee, co-chaired by The Executive Office of the President's National Science and Technology Council (NSTC), the Homeland Security Council (HSC) and the Office of Management and Budget (OMB), has been established as the vehicle for coordinating and prioritizing the national bio-defense research, development, test and evaluation agenda. This Chemical, Biological, Radiological and Nuclear Research Coordinating Committee (CBRN-RCC) will be the primary vehicle for coordinating and prioritizing the multi-agency annual bio-countermeasures research agenda and portfolio and will be responsible for planning for specific R&D efforts in bio-countermeasures. Second, the Memorandum of Understanding (MOU) established between the Department of Health and Human Services and the Department of Homeland enables closer coordination on issues that are specific to DHS and HHS.

HOMELAND SECURITY ADVANCED RESEARCH PROJECTS AGENCY (HSARPA)

Question. The newly created Homeland Security Advanced Research Projects Agency (HSARPA) was patterned after the Department of Defense's (DoD) Advanced Research projects Agency and intends to speed up the development of technologies that would address homeland security vulnerabilities. There is concern whether the \$350 million requested can be effectively and efficiently used and whether the Department of Defense's Advanced Research projects Agency is applicable for homeland security research and development.

What is your schedule for creating this agency, do you intend to staff it with existing personnel or new personnel, and when do you expect it will begin operations?

Answer. HSARPA will be operational no later than June 1, 2003. At that time it will have few dedicated staff, and will be operated by personnel from S&T headquarters in a "dual-hatted" mode. HSARPA will be staffed with new personnel.

Question. What are the major tasks that must be accomplished to create this agency, and what do you consider to be the most difficult challenges you will face its creation?

Answer. Key tasks are staffing, and developing the contracting processes needed to access the private sector. Staffing HSARPA with people of the highest quality, and with knowledge and skills at the cutting edge of technology, represents the most difficult challenge in setting up the Agency.

Question. Of the \$350 million requested for this new entity in how much of these funds include efforts funded elsewhere in the Department or by other agencies in fiscal year 2003 and prior years and how much represents funding for new activities?

Answer. All of the efforts contemplated for HSARPA in fiscal year 2004 are either new starts in fiscal year 2004, or continuations of activities started within DHS (S&T) in fiscal year 2003.

Question. How much of the \$803 million requested for the Science and Technology Directorate in fiscal year 2004 continues ongoing programs, and how much funds new research and development activities? How much of these funds goes for actual technology and systems development and how much for more generic basic and applied research?

Answer. \$400 million of the \$803 million represents new activities. The remainder are continuations or enhancements to activities initiated in fiscal year 2003. How much of the funds will go for actual technology development versus basic and applied research is difficult to answer at this time; DHS does not break down its RDT&E efforts into 6.1-6.4 categories like DOD. It is safe to say, however, that our initial focus will not be in basic research (6.1), but rather 6.2-6.3 (to use DOD categories). There are exceptions, however. Some of the cyberforensics efforts will be 6.1 in nature, as will our efforts in the social sciences (such as behavioral or autonomic indicators of hostile intent, or efforts to develop an understanding to peoples' reactions to threat warnings).

Question. The largest component of these funds is \$365 million for Biological Countermeasures, much of which may be executed through the less than 1-year old National Biodefense Analysis and Countermeasures Center that transferred from DOD. How much of these funds are for new activities, and how much for efforts less than 1 year old that have transferred from DOD?

Answer. Of the \$365 million in the fiscal year 2004 Biological Countermeasures budget, approximately \$180 million is for the National Biodefense Analysis and Countermeasures Center (NBACC). Of that \$180 million, \$90 million is for continuation of activities begun in fiscal year 2003 to address recognized deficiencies in the nation's preparation and response to bioterrorism. The remaining \$90 million is for

initiation of construction of the NBACC facility that is a continuation of the \$5 million fiscal year 2003 investment in construction planning and design. These are activities over and above existing Department of Defense programs, the need for which was recognized by both the then Office of Homeland Security and the Department of Defense in their original request for NBACC. The Homeland Security Act of 2002 transferred these responsibilities to the new Department of Homeland Security.

Question. How much of these funds are for continuing older activities at DOD?

Answer. None of the requested NBACC funding is for continuing older activities at the DOD. The NBACC appropriations and programs were initiated in fiscal year 2003 to address recognized deficiencies in the nation's preparation and response to bioterrorism. These are activities over and above existing Department of Defense programs, the need for which was recognized by both the then Office of Homeland Security and the Department of Defense in their original request for NBACC.

Question. Do you intend to alter any of the research priorities established by DOD for these programs?

Answer. There is no intent to alter the vision or research priorities of the National Biodefense Analysis and Countermeasures Center (NBACC) program identified by the Department of Defense (DOD). The Department of Homeland Security (DHS) supports the NBACC research priorities originally established by the DOD, and now supported by DHS. The NBACC program includes addressing the issues of characterization of these biological threats. Highest priority is given to this risk and vulnerability analysis, which identifies the nature of newly emerging threats and potential countermeasures to mitigate these threats. This information and data will comprise a net assessment and will be used to provide a scientific foundation to comply with the provisions of Public Law 107-296, Section 302(2). The NBACC will operate in a hub and spoke laboratory model, with the majority of the funds distributed to high value facilities in academia, industry and the national laboratory system. Four centers are being established in fiscal year 2003, each setting research priorities, and each partnered with a principal Federal agency. The Bioforensics Center, as an example, is partnered principally with the Federal Bureau of Investigation (FBI) to develop an unimpeachable program for analysis and attribution studies of biological materials obtained from legal casework or foreign materials identified as potential bio-terrorist or biological warfare threats.

Question. The submitted statement indicates that the \$137 million sought for Radiological and Nuclear Countermeasures will, in part, fund concurrent efforts to deploy, evaluate, and improve currently available technologies and R&D on advanced technologies.

Concurrent efforts usually require a certain level of maturity in the underlying technologies before they can be deployed successfully. What technologies in this area do you think will be mature enough to support this type of development in fiscal year 2004?

Answer. Nuclear material portal monitors, hand-held search and isotope identification equipment, personal dosimetry devices, and imaging systems are commercially available. Immediate limited deployment in fiscal year 2004 of this equipment in varied operational and environmental contexts will meet three objectives: getting available nuclear detection equipment into the field at key locations, focusing research and development by more thorough elucidation of technical limitations and operational issues and constraints of existing commercially available equipment, and establishing field test-beds for rapid testing and evaluation of prototype equipment as it becomes available. This three-pronged approach is important for assuring that the right research and development projects are pursued and that the products can be quickly and effectively implemented into the countermeasure system that meet end-user needs.

Question. Within the limits of unclassified information, what are the most promising advanced technologies that you will be developing in the Radiological and Nuclear Countermeasures area?

Answer. The existing nuclear technology base was developed for applications including nuclear materials safeguards, environmental monitoring and clean-up, and nuclear facility decommissioning and demolition. This technology base is an important starting point for advanced technology research and development initiatives that address current and future nuclear and radiological threats. These initiatives include technologies for passive detection and discrimination of radiological and nuclear materials that will benefit multiple DHS missions. Specific passive detection thrust areas include room temperature detector technologies, imaging systems, low-cost detector concepts, and mobile detection systems. Active interrogation technologies will also be developed to address critical gaps in our current capabilities (e.g. detection of highly enriched uranium and shielded nuclear and radiological ma-

terial). Concepts in this area include gamma-induced fission systems and neutron interrogation systems. New capabilities to search for and neutralize threats are needed and will be pursued; specific areas include broad area search and characterization, information analysis and assessment, and render safe technologies. Development efforts to provide rapid detection, triage and decontamination technologies will address identified consequence management and recovery technology gaps.

Question. The submitted statement discusses plans for “continuous insertion (of these advanced technologies) into operational use.” A major challenge for research and development activities is the actual transition of technologies into fielded systems. Incomplete, delayed, or unsuccessful transition is not uncommon, at least in Defense Department advanced technology programs.

What specific steps will you take to minimize the problems usually associated with transitioning advanced technologies into operational use?

Answer. Technology transition is a key goal for the DHS S&T Directorate. We are taking a multilayered approach. First, we involve the user community at the outset of any project we undertake in order to develop program goals. As the program matures, the user community will also contribute to the development of system requirements and operational concepts. Second, we will engage in demonstrations periodically through the development process to generate feedback from the user and reduce technical risk. Finally, HSARPA will engage, where appropriate, in pilot deployments of the technology, where operators use the equipment in an operational setting while DHS S&T provides technical support and funds the operations and support costs. This pilot deployment concept reduces operational risks to the user, provides insight for product improvement, and allows the user to budget for system procurement and support costs at an appropriate level of maturity.

Question. In providing support for other DHS components, such as the Coast Guard and Border and Transportation Security Directorate, you stated says “research and development in potentially high payoff technologies will be emphasized.”

What potentially high payoff technologies exist in this area, and how do they differ from those already being developed by R&D funds sought in separate R&D budget requests in some of these components, such as TSA and the Coast Guard?

Answer. The purpose of DHS S&T is to ensure alignment with the National Strategy and implement an overall DHS/S&T strategy. The DHS S&T strategy includes coordinating and incorporating the strategies of individual components such as TSA and Coast Guard to ensure our efforts are leveraged to the maximum extent possible.

From the Coast Guard’s perspective, the greatest opportunities with S&T funding lie in developing technologies for the detection of threats in the chemical, biological, radiological and nuclear (CBRN) domain. The tools developed by S&T’s investments will have significant applicability for the U.S. Coast Guard in the maritime environment. The Coast Guard is positioned in this effort to work with S&T to help integrate various types of sensors to improve overall capability, including portability, and to identify capability gaps in detection where technology offers opportunities. The support and collaboration DHS S&T provides will accelerate the development and deployment of these critical CBRN detection technologies and capabilities; clearly the CG enjoys a complimentary relationship with DHS S&T in this endeavor.

Another high payoff technology example is Unmanned Aerial vehicles (UAVs) for both Border and Transportation Security as well as Coast Guard applications. DHS S&T is investigating whether implementing UAVs could strengthen security along the borders and ports as well as monitoring the safety and integrity of critical infrastructures. Additionally, as part of the Integrated Deepwater System, the Coast Guard plans to utilize UAVs.

High payoff technologies to detect and counter biological, chemical, and radiological and nuclear threats and attacks will benefit multiple components of DHS.

Question. DHS statements about its R&D activities frequently refer to rapid prototyping, and \$30 million of the \$803 million requested is “to solicit from the private sector near-term capability that can be rapidly prototyped and fielded.”

Is this \$30 million the only funding for rapid prototyping efforts, and what are the key technologies and capabilities that you believe are ready for rapid prototyping?

Answer. The \$30 million is intended to solicit from industry near-term technologies that may be available for rapid prototyping in priority areas in homeland security. Our expectation is that this will be sufficient funding for that purpose. Areas of interest where we expect substantive responses include personal decontamination technologies; protective gear; remediation technologies; sensors; cybersecurity capabilities; public training and outreach tools; and forensics.

Question. The private sector is naturally optimistic about the readiness of its technologies for rapid prototyping. What factors will you evaluate to assess whether rapid prototyping potential is real or overstated?

Answer. We will rely heavily on evaluating the technology on its scientific and engineering merits; the maturity of same; operational suitability (in terms of false alarm and miss probabilities, throughput, training, reliability, and support costs); and manufacturability.

Question. What are the principal components of the \$803 million request that comprise the \$350 million intended for the new Homeland Security Advanced Research Projects Agency?

Answer. The research activities that we will conduct in HSARPA cut across the priorities for DHS S&T. Thus, the research activities planned include:

- Biological Countermeasures.*—This includes remediation technologies, and development of the next generation of environmental sensors.
- Chemical Countermeasures.*—This includes remediation technologies and development of facilities monitoring and response systems.
- High Explosives Countermeasures.*—Included here are activities designed to detect at range large quantities of high explosives (i.e. truck bombs).
- Radiological and Nuclear Countermeasures.*—Included here are new concepts for actively probing for the presence of fissile material, and for taking advantage of long residence times in ship containers to passively detect fissile material.
- Critical Infrastructure Protection.*—Included here is reaching out to the academic community to develop and test methodologies for systematically revealing interdependencies among infrastructures.
- Support to DHS Components.*—Included here are activities supporting conventional missions of the Department, such as advanced biometrics, and advanced techniques for monitoring the border.
- Rapid Prototyping Program.*—Organizationally, the technology clearinghouse is managed under HSARPA. Thus, the TSWG BAA, and rapid prototyping activities occur here.
- IT Infrastructure.*—Included here is developing advanced scalable techniques for organizing extant disparate databases and conducting queries of same efficiently.

QUESTIONS SUBMITTED BY SENATOR TED STEVENS

SAFETY ACT

Question. The purpose of the SAFETY Act provisions (at Subtitle G—Sections 861–865) in the Homeland Security Act was to encourage immediate deployment of existing anti-terrorism technologies—especially for high risk potential targets. However, nothing has yet been done to implement the SAFETY Act. We understand that OMB has drafted implementing regulations that are awaiting review at the Department of Homeland Security.

When will these regulations be issued?

Answer. It is not possible at this time to identify a specific date on which these regulations will be issued. The regulations to implement the SAFETY Act are a high priority and are presently under review at DHS. DHS is working with the Office of Management and Budget (OMB) to finalize an initial set of SAFETY Act regulations. We expect to publish these regulations for comment very shortly. Following the public comment period, the regulations will be finalized and issued.

Question. Will they be effective immediately?

Answer. The point at which the regulations will become effective following their finalization is also under discussion.

Question. How does DHS plan to staff implementation of the SAFETY Act so that technologies can be qualified quickly?

Answer. DHS has researched using a combination of private and public sector certification efforts to help understand the likely needs—in terms of process, facilities, and staff. DHS will reach out to the private sector to staff and perform specific tasks in the process. DHS will also leverage current USG assets and processes to the extent possible to proceed quickly with SAFETY Act implementation.

Question. In order to avoid the delay associated with a lengthy rulemaking and qualification process, will DHS consider an emergency qualification process that at least lets the top 10 high risk sites get technology in place?

Answer. There are plans for both an immediate implementation path, as well as for a longer-term “ideal state” process that would implement the SAFETY Act. The

technologies that will be considered in both types of processes will focus on those technologies and systems that have been demonstrated to make the largest contribution to risk reduction for the homeland security defensive system—and that meet the criteria contained in Subtitle G. Each geographical site and type of facility will have different types of vulnerabilities. They will also have different probabilities for attack and different means of attack will have different consequences. Understanding the contribution of a specific technology on the total system must include consideration of the synergies and the respective degree of impact on overall risk.

Question. What steps can DHS take right away to qualify key technologies for high priority sites?

Answer. An expedited process for consideration of high profile, high-consequence technologies is being developed. The technologies must meet the criteria of Subtitle G. They must also be assessed to be effective with respect to significant reduction of overall system vulnerability and adequate information and data must be available to allow DHS to address the effectiveness and adequacy of the technology in the system context.

Question. Is it correct that DHS has several pending applications for qualification?

Answer. DHS does not have an application process in place. The process will be contingent upon issuance of regulations. Public notification of the application process and of the select categories of technologies that will be considered for certification will be made through the DHS website after regulations are issued.

Question. Does DHS have a list of high priority sites and their needs?

Answer. DHS has been considering overall system vulnerabilities and methods to assess gaps and needs. Many methods have been used to develop this understanding, and much of this knowledge has been derived from studies done by other USG agencies that had homeland security responsibilities prior to March 1, 2003. This process will become increasingly more rigorous as a more complete suite of tools is developed and implemented. Thus, we expect our assessment of high priority aspects of the system to evolve in response to both increased understanding and with changing conditions.

Question. If not, what can be done to get that information rapidly before DHS?

Answer. The question of specific sites versus system vulnerability is answered above.

Question. What else can we do to reduce delay in making this technology available?

Answer. It is critical that, both in the initial stages of SAFETY Act implementation as well as in the future when the process has reached its ideal state, that only the most important technologies, in terms providing major risk reduction, are considered for certification. The system will quickly become overloaded and extremely burdensome if every conceivable technology must be reviewed or evaluated.

Question. Can you report back to us within a week as to how an emergency process might begin?

Answer. Until DHS and OMB have completed their review and have issued guidance for the actual implementation of the SAFETY Act, it would be premature to discuss an emergency process. However, much thought and research is going into this topic so that the Department will be prepared to move out quickly after issuance of the guidance.

QUESTIONS SUBMITTED BY SENATOR MITCH MCCONNELL

Question. Would you please describe the process that the Department, or more specifically, the Science and Technology Directorate, will use in soliciting and evaluating research proposals so as to ensure that the highest quality proposals receive funding?

Answer. In all cases the Department will rely on review by experts in the field. In addition, for directed (e.g. applied) research, selection criteria will also include responsiveness to the programs needs, schedule and cost realism, and key personnel.

Question. Would you please describe what proportion of the Science and Technology efforts of DHS will focus on basic research and what proportion will focus on application of new technology?

Answer. This question is difficult to answer at this time; DHS does not break down its RDT&E efforts into 6.1–6.4 categories like DOD. It is safe to say, however, that our initial focus will not be in basic research (6.1), but rather 6.2–6.3 (to use DOD categories). There are exceptions, however. Some of the cyberforensics efforts will be 6.1 in nature, as will our efforts in the social sciences (such as behavioral

or autonomic indicators of hostile intent, or efforts to develop an understanding to peoples' reactions to threat warnings).

Question. Presumably, universities and private sector industries will conduct much of this research. What proportion of total research funding will be provided to universities and what proportion will be provided to the private sector?

Answer. At this time, no requests for proposals for the work have been issued or proposals received. We will award funds based on technical merits, responsiveness to program needs, schedule and cost realism, and other metrics as appropriate. However, some funds will be applied to university centers of excellence, and to graduate and postdoctoral research efforts in support of homeland security. The President's budget request includes \$10 million for these latter activities.

Question. In your testimony you mentioned that you are requesting "\$10 million to support strategic partnerships with the academic community to provide support for qualified students and faculty." I believe other Federal agencies that fund research also fund graduate fellowship or traineeship programs. Will the Department, or more specifically, the Science and Technology Directorate, fund graduate fellowships or traineeships? If so, would you please describe in general terms how that funding program will operate?

Answer. The S&T Directorate is committed to building a cadre of dedicated scientists and engineers who will pursue careers in homeland security related disciplines and who will, in turn, encourage the next generation of experts to follow in their footsteps. To that end, we are working with national organizations such as the American Association of Universities, American Association for the Advancement of Science, the National Academy of Sciences, and the National Science Foundation to develop mechanisms that maximize our ability to tap the wealth of talent at the nation's universities and colleges to pursue disciplines related to the diverse portfolio of homeland security programs. A key element of this effort will be the establishment of the Homeland Security Scholarship and Fellowship Program. Our goal is to make this a premier program—on par with those of NIH, NRC, NASA and others—that encourages outstanding students and faculty to work in homeland security related fields. The key to making this program a success will be the engagement of university and college faculty and administration throughout the process. In fiscal year 2004 we will model the execution of this program on the fellowship/scholarship programs sponsored by the National Science Foundation.

QUESTIONS SUBMITTED BY SENATOR RICHARD SHELBY

Question. What is the Directorate doing to develop a national structure for science and technology analysis and development?

Answer. Section 302(2) of the Homeland Security Act requires the development of a national strategy and policy for homeland security research, development, test and evaluation (RDT&E). In fiscal year 2003, DHS S&T is committing \$10 million to develop this strategy, which includes efforts to catalog Federal efforts in this area, and, working with the Information Analysis and Infrastructure Protection Directorate, conducting threat analysis and vulnerability assessments to assist in prioritizing the national effort.

Question. Alabama, and specifically the Huntsville metropolitan area, offer a unique opportunity for the Department of Homeland Security's Science and Technology Directorate. The Huntsville area maintains one of the highest, if not the highest, number of PhD's per capita in the nation. These individuals' immeasurable expertise in areas unique to the Homeland Security and Defense industries is too great a resource to leave untapped by the Department. I would encourage you to consider the Huntsville area when you continue to discuss the framework of the Science and Technology Directorate. To that end, what is the Directorate doing to take advantage of this great source of information, analysis, and invention?

Answer. DHS S&T is well aware of the technical and scientific capabilities resident in the Huntsville area, which includes many significant Federal systems engineering and scientific facilities such as NASA, SMDC, MICOM, as well as a significant and highly capable contractor base. DHS S&T will avail itself of the entire National RDT&E enterprise, including as appropriate the significant capabilities resident in Huntsville, Alabama. Dr. McQueary visits the Huntsville area on May 12, 2003, as a result of their invitation.

QUESTIONS SUBMITTED BY SENATOR LARRY CRAIG

CRITICAL INFRASTRUCTURE PROTECTION

Question. I have worked with the Department of Energy for some time, on programs to secure the nation's critical infrastructure from attack. I have worked to provide funding in Energy and Water for the establishment of a Critical Infrastructure Protection Test Range at the Idaho National Engineering and Environmental Laboratory. I think it is essential to actually put these systems under mock attack and see if the protection technologies work. Much effort is being expended to develop extensive models of our critical infrastructures and their interdependencies. There is no question that protection of our critical infrastructures is a vital priority for our nation. However, I have concerns that huge sums are being invested in computer models without having adequate data to support them. Idaho's lab provides a unique capability to do this, because it is a remote, 900 square mile Federal installation with its own electrical, communications and water systems. Almost like a virtual city, it has everything from its own traffic lights to its own nuclear reactors. Given my work on this issue, however, I would suggest to you that your requested budget for critical infrastructure protection—\$5 million out of a budget of \$803 million—is inadequate. This isn't sufficient to develop technologies, much less test them. I will be looking closely at your plans in this area.

Please explain the requested level of your budget given our security needs in this area.

Answer. The S&T Directorate has actually budgeted a total of \$15 million for Critical Infrastructure Protection for fiscal year 2004. In addition, there will be several technology programs in the Critical Infrastructure Protection area supported by the Information Analysis and Infrastructure Protection Directorate which is DHS' lead component for critical infrastructure protection, and with which S&T's activities are coordinated. There is a need for data for model validation and experimental verification of all computer models, simulations, and analyses. We have met with the staff of the Idaho National Engineering and Environmental Laboratory and they are working with us to develop Critical Infrastructure Protection R&D programs.

RADIOLOGICAL ATTACK

Question. Much of the work of countering the threat of radiological attack resides in detecting these materials before they are brought into an area and detonated. Department of Energy national laboratories have been doing work on this issue for years. Through their work on nuclear fuel cycles, DOE labs such as Argonne, have a lot of expertise in detecting and measuring radiological events. I would not want to see this work duplicated elsewhere.

Could you provide for the record any plans you have for conducting research on detection and intervention capabilities along these lines at the national laboratories?

Answer. Detecting materials that might be used in a radiological attack requires understanding the potential threats and how specific technologies and systems of multiple technologies can impact these threats. Research and development in systems integration and systems analysis will provide an effective, integrated system architecture and the capability for regularly assessing and rapidly optimizing the nuclear countermeasure system. Development of needed detection technologies and countermeasure systems will build on the previous efforts of the national laboratories. Detecting radiological and nuclear threats before they become dangerous requires new capabilities for new operational deployment strategies. These new technologies and systems will augment the currently available capabilities (commercially or from government and academic laboratories) that can be employed today in the nuclear countermeasure system.

QUESTIONS SUBMITTED BY SENATOR ROBERT C. BYRD

UNDER SECRETARY FOR SCIENCE AND TECHNOLOGY

Question. For each portfolio and activity described in the congressional budget justification, please provide a detailed description of the programs and initiatives being funded in your base budget as well as the request for fiscal year 2004, including the cost associated with each.

Answer. See table below. For the fiscal year 2003 base, which reflects activities transferred to the Department in Public Law 107-296, a reprogramming letter has been submitted to the House and Senate Appropriations Committees.

	Appropriated FY03	FY03 Reprogrammed	2004 Request
Biological Countermeasures			
Sys analysis	\$ 4	\$ 8	\$ 8
Urban/NSSE deploy	\$ 273	\$ 49	\$ 23
Albuquerque Demo	\$ 29	\$ 29	\$ -
Decontamination	\$ 5	\$ 5	\$ 10
Adv sensor development / Detection	\$ 37	\$ 57	\$ 40
Health/Vag surveillance	\$ -	\$ 2	\$ 4
Plum Island	\$ 16	\$ 16	\$ 30
Nat'l Biodefense & Countermeasures Center (R&D)	\$ 113	\$ 78	\$ 90
Nat'l Biodefense & Countermeasures Center (Const)	\$ 5	\$ 5	\$ 90
Bioforensics	\$ 10	\$ 10	\$ 15
Command and Control Systems	\$ 5	\$ 5	\$ 5
Signatures/Assays	\$ 20	\$ 20	\$ 30
Field Tests	\$ -	\$ -	\$ 20
Subtotal:	\$ 517	\$ 284	\$ 365
Radiological and Nuclear Countermeasures			
Systems Analysis	\$ -	\$ 5	\$ 5
Systems Integration	\$ -	\$ -	\$ 5
Sensor R&D	\$ 10	\$ 40	\$ 77
Detection Systems Product Improvement	\$ -	\$ 15	\$ 15
Remediation/Rad/nuc Consequence Mgmt	\$ -	\$ 7	\$ 15
Response team R&D / Rad/nuc Crisis Response	\$ -	\$ 3	\$ 10
Rad/nuc attribution	\$ -	\$ -	\$ 5
Demonstrations	\$ -	\$ 5	\$ 5
Subtotal:	\$ 10	\$ 75	\$ 137
Chemical Countermeasures			
Systems analysis	\$ -	\$ 1	\$ 2
Detection technologies	\$ 12	\$ 15	\$ 20
Forensics and Attribution	\$ -	\$ -	\$ 6
Remediation	\$ -	\$ 3	\$ 20
Field Tests	\$ -	\$ -	\$ 5
Systems Analysis & Mod-Sim	\$ -	\$ -	\$ 2
Subtotal:	\$ 12	\$ 19	\$ 55
High Explosives Countermeasures			
Threat and Vulnerability Testing and Assessment	\$ -	\$ -	\$ 10
Prototype / Testbeds & Interoperability Demos	\$ -	\$ -	\$ 3
WMD Assessments	\$ 7	\$ 7	\$ 10
Advanced Scientific Computation	\$ 3	\$ 5	\$ 7
Cyber Security	\$ -	\$ 5	\$ 7
Threat Analysis & Warning System R&D	\$ -	\$ -	\$ 18
Determination of Intent	\$ -	\$ 15	\$ 15
Net Assessment	\$ -	\$ -	\$ 15
Threat Analysis and Warning System Prototype	\$ -	\$ -	\$ 15
Subtotal:	\$ 10	\$ 32	\$ 90
Standards/State&Local Programs	\$ 5	\$ 20	\$ 25
Rapid Prototyping	\$ -	\$ 33	\$ 30
Emerging Threats	\$ -	\$ 13	\$ 22
Critical Infrastructure Protection	\$ -	\$ 5	\$ 5
Support to DHS Components			
Emerg. Resp. & Recovery Mission R&D Suppl	\$ -	\$ -	\$ 15
Borders & Transport. Mission R&D Suppl.	\$ -	\$ -	\$ 30
USCG Mission Support	\$ -	\$ -	\$ 5
USSS Mission Support	\$ -	\$ -	\$ 5
Subtotal:	\$ -	\$ -	\$ 55
HS Fellowship Programs / Univ Programs	\$ -	\$ 3	\$ 10
Botulinum Antitoxin	\$ -	\$ 50	\$ -
IT Infrastructure	\$ -	\$ 20	\$ -
TOTALS:	\$ 554	\$ 554	\$ 804

Numbers rounded to nearest thousand.

Question. Provide the number of FTE associated with each portfolio and activity described in your fiscal year 2004 budget justification.

Answer. See table below:

	Fiscal Year Request	FTE
Biodefense	\$365	63

	Fiscal Year Re- quest	FTE
Nuc/Rad	137	22
Chemical Countermeasures	55	10
High Explosives	10	2
Threat and Vulnerability Testing and Assessment	90	16
Standards/State & Local Programs	25	4
Rapid Prototyping	30	5
Emerging Threats	22	4
Critical Infrastructure Protection	5	2
Support to DHS Components	55	10
HS Fellowship Programs/Univ Programs	10	2
TOTALS	804	¹ 140

¹ Excludes 40 FTE's associated with the Directorate's management and 61 FTE's for the Environmental Measurements Laboratory.
Note: Numbers rounded to nearest thousand.

Question. For each office on the "S&T Organizational Chart" provided to the Subcommittee provide a budget estimate and associated FTE's for fiscal year 2003 and fiscal year 2004.

Answer. The Directorate will have 79 FTEs associated with the Office of the Under Secretary; the Office of Plans, Programs and Budget; the Office of Research and Development; and HSARPA. The estimated salary cost of fiscal year 2003 FTE's is approximately \$8.5 million. The S&T Directorate plans to have a staffing level for fiscal year 2004 of approximately 180 FTEs plus 61 FTE for the Environmental Measurements Laboratory (EML). The estimated salary cost of these FTEs is approximately \$22 million to \$27 million.

Question. On page 25 of your budget justification, no funding is provided for "Adjustments Necessary to Maintain Current Levels." Does the fiscal year 2004 budget account for the President's proposal for pay or any other economic assumptions? Provide an explanation of why "Adjustments to Maintain Current Levels" are not included in your fiscal year 2004 budget estimates.

Answer. Yes, the budget accounts for the President's pay and economic assumptions. These amounts are included in the budget numbers in fiscal year 2004 but not specifically broken out in Adjustments to Maintain Current Levels. Because most of the Science and Technology fiscal year 2004 activities are new or significantly increased, the portfolio-by-portfolio estimates were developed assuming that increases for pay and other economic assumptions would be accounted for within the overall portfolio growth.

Question. Pursuant to Public Law 107-296, provide a detailed list of the functions transferred from other agencies to the Science & Technology Directorate, including personnel (FTE) transferred, physical infrastructure (if any), and associated funding with each function transferred.

Answer. The Environmental Measurements Laboratory, Department of Energy, with an authorized 61 FTE's and 53 existing personnel transferred to the S&T Directorate. Six FTE's as well as the six incumbents of the National Nuclear Security Administration (NNSA), Department of Energy, also transferred to the Directorate.

Transferred From	Program Description	FTEs	Personnel	Funding
Energy	Chemical Biological National Program	4	4	\$48,005,527
	Nuclear Smuggling			
	Nuclear Assessment Program	2	2	5,584,000
	Biological and Environmental Research			20,000,000
	Advanced Scientific Computing R & D			3,068,000
Agriculture	Environmental Measurements Laboratory	61	53	3,048,287
	Plum Island Animal Disease Center			(¹)
Defense	Biological Research and Defense programmatic activities			420,000,000

¹ Determination Order has not been finalized, since Plum Island Animal Disease Center transfers 6/03 to DHS.

Question. What is your current on-board staffing level? What is your estimated staffing level for the end of fiscal year 2003? To better understand the makeup of the Science and Technology Directorate's workforce, provide a list of all positions by grade and job title or job classification.

Answer. As of April 22, 2003, the entire S&T Directorate has 92 personnel working. Thirty-seven are in the immediate Office of the Under Secretary; the Office of Plans, Programs, and Budget; and the Office of Research and Development. Two are in HSARPA. Fifty-three are at the Environmental Measurements Laboratory (EML)

in NYC. The 92 personnel consist of permanently assigned employees, employees detailed from within and outside DHS, Intergovernmental Personnel Act (IPA) assignments, and contractor support from the National Laboratories. The Directorate anticipates filling its 79 authorized FTE's, not including the 61 authorized the EML, by the end of fiscal year 2003. The Directorate may not be able to fill the 8 vacant FTE's at EML until the funding issue is resolved. Funding was transferred from DOE to cover only the 53 filled positions.

The Directorate is currently writing position descriptions and having them classified. At this point, we are unable to provide a list by title, series and grade. Most of the positions will be classified as GS-13, 14, 15, ST, and SES and will be in the engineering (800) and sciences (400, 600, and 1300) series. Supporting positions will be primarily administrative, analytical, and program management at the GS-7 through 15 in the 301, 340, 343, and 1515 series.

Question. Provide the number of employees detailed from other agencies that are currently working for the Science and Technology Directorate.

Answer. As of April 22, 2003, the Directorate had a total of seven personnel on detail from outside the Department

Question. Provide a list (if any) of contracts entered into with federally funded research and development centers in fiscal year 2003, including the name of the research center and the amount of the contract.

Answer. No contract has been entered into at this time in fiscal year 2003 with any FFRDC. DHS (S&T) is planning on contracting in the near term with the MITRE Corp to provide studies and analyses in support of our system engineering mission, for a sum of \$1.2 million.

Question. When will the Homeland Security Advanced Research Projects Agency (HSARPA) be established? How many employees will be employed at the HSARPA?

Answer. HSARPA was established by Public Law 107-206, November 2002, and will be operational no later than June 1, 2003. At that time it will have few dedicated staff, and will be operated by personnel from S&T headquarters in a "dual-hatted" mode. HSARPA will be staffed with new personnel. Currently planned FTE count is 56 at the end of fiscal year 2004. This number may change as program requirements and workload are analyzed in more detail.

Question. Provide a list of all ongoing R&D activities, by agency and funding amounts, within the Department of Homeland Security.

Answer. Outside of the S&T directorate, the following R&D activities are underway in the Department of Homeland Security:

- The Transportation Security Administration (TSA) request includes \$75.2 million for research through TSA's Technology Center.
- The Coast Guard request includes \$22 million in fiscal year 2004 for research and development projects in areas such as contraband detection, vessel stopping, Command Center Concept Exploration, and Intelligent Waterways Research.
- The Information Analysis and Information Protection (IAIP) Directorate request includes \$5 million in fiscal year 2004 for cybersecurity research projects conducted by the National Communications System.

Question. Describe efforts underway to coordinate and integrate all research, development, demonstration, testing, and evaluation activities of the Department of Homeland Security.

Answer. The S&T Directorate is working very closely with the other operational directorates in DHS to coordinate and integrate the RDT&E portfolio of the Department. To that end, all the S&T Portfolio managers also serve as liaisons to one of the operational organizations (e.g., BTS, IAIP, EP&R, USCG, USSS) with many of these staff being matrixed from their home organizations. The S&T budget directly reflects requirements identified by these end-users. In addition, the S&T Directorate has assumed government oversight for the Federal laboratories that transferred into the Department in fiscal year 2003. The S&T Directorate has an Office of Federal Laboratories that is responsible for ensuring that these facilities and programs are integrated into the overall RDT&E enduring capability of the Department.

Question. Provide a list of Research & Development contracts the Science & Technology Directorate has entered into in fiscal year 2003 and those planned for fiscal year 2004. For fiscal year 2003, the list should include the amount for each contract and the entity receiving the contract.

Answer. The S&T Directorate has not yet entered into any new R&D contracts in fiscal year 2003. The S&T Directorate has assumed responsibility for direction and guidance for those programs transferred from other agencies to the S&T Directorate, including their existing R&D contracts. We will provide additional information on the scope and nature of those transferred programs upon request.

The S&T Directorate has not yet determined the R&D contracts needed for fiscal year 2004 as these will be based on the final fiscal year 2004 program plans and user requirements to meet the DHS mission.

Question. For the Homeland Security Institute and the Homeland Security Science and Technology Advisory Committee, provide a timeline for the establishment of each organization, including progress to date and associated costs.

Answer. The Homeland Security Science and Technology Advisory Committee will be established before the end of fiscal year 2003. The Homeland Security Institute will also be established before the end of fiscal year 2003. For the latter, a draft Request for Proposal (RFP) has been created, in consultation with Department of Defense FFRDC management.

Question. Provide a summary of the Homeland Security Institute and the Homeland Advisory Committee's roles and responsibilities in furthering the development of homeland security science and technology.

Answer. The Homeland S&T Advisory Committee will operate as a board of directors for the Directorate, in terms of providing strategic advice, management advice, and undertaking focused studies and projects as needed. The Homeland Security Institute will provide analytic support of unquestioned objectivity in such areas as threat and vulnerability assessments, technical assessments, cost analyses, systems analyses, test and evaluation criteria, and actuarial analyses.

Question. Provide a list of cities where the Biological Warning and Incident Characterization System (BWIC) has been deployed, including plans for future deployment.

Answer. The first phase of BWIC is known as BioWatch. The BioWatch deployment is more extensive than originally planned because of the war in Iraq and the associated heightened alert status. As a result, BioWatch is currently collecting data in 26 of the most populated cities. These cities are: New York, Los Angeles, Chicago, Houston, Philadelphia, Phoenix, San Francisco, Dallas-Ft. Worth, Boston, Detroit, Atlanta, Miami, Minneapolis-St. Paul, Cleveland, San Diego, St. Louis, Denver, Tampa, Washington D.C., Baltimore, San Antonio, Austin, Columbus, and Milwaukee. Please treat this list as For Official Use Only since revelation as to which cities do or do not have BioWatch might influence subsequent terrorist activity.

If the current decreased alert status continues, it is our intent to scale back at the end of fiscal year 2003 the number of BioWatch cities to a subset of those highest on the threat list and to work with the Environmental Protection Agency (EPA) and the Centers for Disease Control and Prevention (CDC) to seek transition funding for these. In fiscal year 2004, we will field a pilot of the next generation wide area detection system in one of these cities. That system will support 50 samples per day at the same operational cost as the existing BioWatch system which handles 10–12 samples per day. Local public health officials have identified this increased sampling as a critical step toward improved consequence management. Concurrently, we will be conducting R&D on advanced detectors which should enable us to upgrade BioWatch by replacing the air filters, which are currently collected manually and then brought to a central analysis lab, with distributed detectors that do the analysis at the point of collection and within an hour—thereby greatly reducing the warning time without increasing the operational costs.

Question. Your fiscal year 2003 reprogramming request, received on April 9, 2003, makes reference to the Biowatch program. What is the difference between the BWIC and Biowatch programs?

Answer. BioWatch is the first phase of an enhanced capability within the Bio-Warning and Incident Characterization System (BWIC). Deployed in response to the heighten tensions surrounding the Iraq conflict, BioWatch provides for early detection of possible aerosolized release of key agents in many of our cities and metropolitan areas. It does so by deploying aerosol collectors at existing EPA sites in and around these cities, then collecting the filters from these collectors every 24 hours and taking them to the nearest CDC Laboratory Response Network (LRN) lab for analysis. As noted in the answer to S&T-S52 above, the plan is to upgrade this capability in the future to provide increased spatial and temporal sampling while maintaining or reducing the operational costs associated with the current BioWatch pilot.

This upgraded environmental portion is one of three critical arms of BWIC. The second key arm of BWIC is an integrated biosurveillance system. Integrated biosurveillance will augment traditional clinical surveillance with less traditional surveillance techniques such as syndromic surveillance, advice nurse calls, over the counter drug sales and veterinary reports in the desire to provide a still earlier indication of potential exposure to a pathogen. We are currently working with CDC to define the key elements of such an integrated surveillance system. The third key arm of BWIC is to integrate the information from both the environmental moni-

toring (BioWatch) and biosurveillance systems with appropriate consequence managements tools (e.g. plume hazard prediction models and epidemiological models) to provide the incident commanders with the best possible estimate of the extent of the event so as to better guide the response. The integrated combination of these three elements—environmental monitoring, biosurveillance, and their integration into consequence management tools—comprises the BWIC system.

Question. For the \$91 million included in the Lands and Structures Object Classification line, please provide a detailed description of the project or projects planned with this funding, the amount for the project or projects previously appropriated, and the total amount necessary to complete the project or projects, the total amount currently authorized (if any), and whether additional authorization is required for the project or projects planned with this funding.

Answer. The National Biodefense Analysis and Countermeasures Centers (NBACC) is to be established on a hub and spoke model with the NBACC hub—high security, biocontainment facilities—located at Fort Detrick, Maryland. The NBACC spoke facilities are partnering Federal laboratories as well as contract public and private sector specialty labs. Existing national biocontainment laboratory infrastructure, especially with the capability for safe, effective and controlled generation of biothreat agent aerosols within biocontainment laboratories, is insufficient to meet NBACC program needs. This was demonstrated by conducting a publicly advertised, sources sought, market survey in April 2002, and by examination of others' construction plans. The NBACC is comprised of four centers: (1) Bioforensics Analysis Center for unassailable analysis to support attribution of the use of biothreat agents (BTA) by criminals, state and non-state actors; (2) Bio-Countermeasures Test and Evaluation Center for validated countermeasure testing against BTA aerosol lab challenge; (3) Biodefense Knowledge Center to provide relevant training, data integration, analysis, and information dissemination while exploiting artificial intelligence technologies; and (4) Biothreat Assessment Support Center for laboratory studies of potential BTA and countermeasure efficacy to provide the essential scientific basis for a BTA net assessment and prioritization. The fiscal year 2003 appropriation supporting the NBACC contained \$5 million for facility planning analysis and design; these studies are presently incomplete. Additionally, the NBACC is being planned and coordinated as a component of the biocontainment laboratory infrastructure on the Fort Detrick BioDefense Campus. Participants include the Department of Defense and other Federal departments having operations at Fort Detrick. Since plans are presently incomplete, the full scope of NBACC facility requirements-individually and as shared infrastructure-and the detailed costs and schedules to complete these construction projects is not yet available. Existing authorization for these efforts is sufficient.

Question. Will there be a National headquarters laboratory within the Science & Technology Directorate? If so, where?

Answer. In accordance with the Homeland Security Act, the S&T Directorate has established an Office of National Laboratories. This office has the ability to access the expertise of all of the existing national laboratories through a Memorandum of Agreement signed by the Secretary of Homeland Security and the Secretary of Energy in February 2003. DHS does not intend to establish a headquarters laboratory, but rather, it will sponsor homeland security programs at a variety of sites that leverage the vast talent of the national laboratory complex. The national laboratories are crucial elements of the enduring scientific and technical capability that DHS needs to execute its mission in the long term.

Question. Describe the role the Science & Technology Directorate has played (if any) in responding to the Sudden Acute Respiratory Syndrome (SARS).

Answer. S&T is monitoring the SARS outbreak closely with other Federal and State public health officials. The S&T Directorate has not funded any activities associated with SARS that normally fall under the jurisdiction of HHS, CDC and the Public Health Service.

Question. Your budget shows a \$30 million increase in equipment costs in fiscal year 2003 and then a decrease of \$30 million in fiscal year 2004. Why was there such a large increase for equipment costs in fiscal year 2003?

Answer. The \$30 million is for equipment associated with the Bio-Watch system that will be purchased and deployed in the fiscal year 2003.

QUESTIONS SUBMITTED BY SENATOR DANIEL K. INOUE

UNDER SECRETARY FOR SCIENCE AND TECHNOLOGY

Question. In your written testimony you state, a key part of our efforts will be conducted through the Homeland Security Advanced Research Projects Agency. It is my understanding that this agency will be modeled after DARPA, a program I have seen first-hand meet with great success. Your fiscal year 2004 budget request assumes that approximately \$350 million will be used for this purpose. Could you please provide us with an update on the creation of that Agency and an estimated timetable for solicitation of the first round of grants?

Answer. HSARPA will be operational no later than June 1, 2003. At that time it will have few dedicated staff, and will be operated by personnel from S&T headquarters in a "dual-hatted" mode. However, it is anticipated that several Broad Agency Announcements that cut across the portfolios within the Directorate will be issued soon afterwards.

Question. I support the Directorate's Homeland Security Fellowship Program as an effort to support university-level study of science and technology. It is anticipated that this will help meet our country's need for qualified applicants for security related research and development positions. However, enrollment of U.S. citizens in graduate science and engineering programs has not kept pace with that of foreign students. I understand that this program would provide support to students and faculty, but I believe we need to work to encourage students to enter these fields, not only support those who choose these fields. How would the fellowship program work to entice U.S. citizens to enter into these fields?

Answer. The S&T Directorate is committed to building a cadre of dedicated scientists and engineers in the United States who will pursue careers in homeland security related disciplines and who will, in turn, encourage the next generation of experts to follow in their footsteps. A key element of this effort is the establishment of the Homeland Security Scholarship and Fellowship Program. Our goal is to make this a premier program—on par with those of NIH, NRC, NASA and others—that encourages outstanding students and faculty who are U.S. citizens to work in homeland security related fields. The key to making this program a success will be the engagement of university and college faculty and administration throughout the process.

Question. Your Directorate will develop standards for State and local homeland security infrastructure equipment. Do you anticipate that these standards will be guidelines and suggestions, or do you anticipate that our State and local entities will be required to purchase equipment and implement training programs in compliance with the standards your Directorate develops? If these standards will be mandatory, what financial assistance will the Department provide for the purchase of compliant equipment?

Answer. In accordance with OMB Circular-119, the standards developed and used by DHS for homeland security equipment will primarily be voluntary consensus standards. As such, these equipment standards will function as guidelines that set minimum performance specifications to ensure that the equipment will have basic functionality, will be adequate for the task for which it is intended, and demonstrates a basic level of efficiency, interoperability, and sustainability. In general, specific equipment purchases will not be mandated by DHS. However, we anticipate that the existing grant programs will tie allowable purchases to equipment that has been shown to meet an accepted DHS standard. In addition, if equipment standards are established or mandated as part of a National Incident Management System, then failure to adopt those standards will, per Homeland Security Presidential Directive #5, render a jurisdiction ineligible for any preparedness-related grant or contract funding, not just equipment-related grants. Our plan is to ensure that training programs providing proficiency on equipment that meets standards will also be covered to some extent by the existing USG funding programs. There is great interest from the State and local emergency response community in having the standards needed to make intelligent and potentially life saving decisions when it comes to equipment purchase. Therefore, providing these standards is a very important component of our mission.

HR5005 invests the Secretary with regulatory authority. There may be some very specialized cases where issues of human health and safety dictate promulgation of regulations. Those special cases where specific types of equipment are made mandatory will likely be considered separately in terms of government funding that would be made available for deployment.

SUBCOMMITTEE RECESS

Senator COCHRAN. This concludes our hearing today.

We will continue to review the fiscal year 2004 budget request for the Department of Homeland Security on Wednesday, April 30, at 10 a.m. in room 106 of the Dirksen Senate Office Building. Our witness at that time will be the Secretary of Homeland Security, Tom Ridge.

The subcommittee stands in recess.

[Whereupon, at 2:54 p.m., Thursday, April 10, the subcommittee was recessed, to reconvene at 10 a.m., Wednesday, April 30.]