

Summary of Meeting – Public Session

U.S. DEPARTMENT OF HOMELAND SECURITY

Homeland Security Science and Technology Advisory Committee (HSSTAC)

At

William F. Bolger Center for Leadership Development Potomac, Maryland

February 26, 2004

Meeting Summary:

This summary describes the discussions of the inaugural meeting of the Homeland Security Science and Technology Advisory Committee (HSSTAC). The meeting was held from 11:00 AM – 2:00 PM on Thursday, February 26, 2004 at the William F. Bolger Center for Leadership Development in Potomac, Maryland.

The HSSTAC met for the purposes of: (1) welcoming and introducing members of the committee; (2) receiving briefings on the mission and organization of the Department; (3) receiving briefings on the mission and approaches of the Science and Technology Directorate; (4) holding roundtable discussions with the committee members; (5) discussing the role of the committee in advising the Department; (6) receiving briefings on detailed historical background, organization, programs, accomplishments and plans of the Science and technology Directorate; (7) receiving briefings on activities on activities and accomplishments of the Office of Research and Development, the Homeland Security Advanced Projects Research Agency, the Office of Systems Engineering and Development, and the Office of Weapons of Mass Destruction Operations and Incident Management.

Participants:

Committee Members in Attendance:

Larry D. Welch, Chair
Ronald M. Atlas
Russell W. Bessette
Lillian C. Borrone
Bran Ferren
Baruch Fischhoff
Alice P. Gast
William Happer
Anthony P. Ibarra
Ted G. Kamatchus

Ernest Mitchell
Lawrence Papay
Richard T. Roca
Kenneth I. Shine
Reginald I. Vachon
Vincent Vitto

U.S. Department of Homeland Security Representatives in Attendance:

Charles E. McQueary, Under Secretary, Science and Technology
Penrose C. Albright, Assistant Secretary, Science and Technology
Victor J. Tambone, Chief of Staff, Science and Technology
Ronald D. Taylor, Executive Director, Homeland Security Science and Technology
Advisory Committee
Georgia Abraham, Acting Committee Management Officer, Office of the Executive
Secretariat
John Mitnick, Associate General Counsel, Science and Technology
Nicole Marcson, Office of the General Counsel, Science and Technology
Mary Karen Walker, Office of Research and Development, Science and Technology
Craig Wilson, Office of Studies and Analysis, Science and Technology

Members of the Public in Attendance:

Approximately 20 members of the public attended the meeting.

HSSTAC Meeting Called to Order

DR. TAYLOR: My name is Ron Taylor. I'm Executive Director for the Homeland Security Science and Technology Advisory Committee. General Welch, Under Secretary McQueary, Mr. Tambone, distinguished members of the Homeland Security Science and Technology Advisory Committee, members of the public, I'd like to welcome you to the very first meeting of the committee. This is a special moment for all of us. And I'm sure this is -- with the first anniversary celebrations that are taking place this week for the Department of Homeland Security -- one of many special moments during this week that will appropriately mark a unique step in the history of this country. With that, I would like to turn this meeting over to the Chairman, General Welch.

GENERAL WELCH: Thank you, Ron. I'll add my welcome to members of the committee and those who serve in the Department of Homeland Security, and those members of the public that might be here.

As Ron has noted, this is the inaugural meeting of the Homeland Security Science and Technology Advisory Committee. I'm Larry Welch, Chairman of the committee. We are getting ourselves organized. A reminder to all of us that this committee was established to provide independent scientific and technical planning advice to Dr. McQueary on areas within his responsibility, which are extensive and very important to the country, and therefore, important to everyone in this room. I will not spend any time on the responsibilities he carries, since we will hear from him a bit later.

Let me say, though, that this committee will focus intensely on providing useful advice to Dr. McQueary. Our membership has been selected to insure that the group is made up of distinguished and accomplished people who bring the expertise in science, engineering, medical research, industry, academe, and government that should make it possible for us to provide useful advice. And that's how we will grade ourselves.

I think it will facilitate our work if we begin this meeting by mutually understanding the expertise and the experience and the perspective that each of us brings. To that end, I would like for each to take three or four minutes to provide that introduction on who you are, what your interests are, and what your qualifications are that might relate to the work of this committee. I will start, and then I'll move to Dr. Fischhoff to follow me.

As I said, I'm Larry Welch. I served 40 years in the military, two years in the National Guard and 38 years in the Air Force as a fighter pilot, systems analyst, planner, programmer, and operational unit commander. I completed my Air Force service as Chief of Staff and moved on to become the president and the CEO of the Institute for Defense Analyses for 13 years. My particular focus for a number of years has been enabling more effective operations through technical, operational, and policy innovation. I hope that same focus will be appropriate to Homeland Security, and I'm sure it will be.

DR. FISCHHOFF: My name is Baruch Fischhoff. I'm a cognitive psychologist and decision scientist at Carnegie Mellon University. I'm in two interdisciplinary departments. One is called Engineering and Public Policy. The second is called Social and Decision Sciences.

In the first, we try to integrate analyses involving social, natural, and engineering sciences. In the other, we try to do more basic research that involves the interface of psychology, economics, management, science, and operations research. So we try in both to bridge the disciplines and to bridge basic and applied research. My specialty is decision-making having to do with risks. I serve on a comparable body, the Environmental Protection Agency Scientific Advisory Board, and President-elect of the Society for Risk Analysis.

I think there are three aspects of human behavior that I would hope that I can contribute to this committee's activities. One is in the area of risk communication. That is, helping the public to understand what it's up against and what it is that we're trying to do on its behalf. And conversely, to hear from the public what are the issues that it wants to have addressed, and what are the kind of policies that the public believes are necessary to facilitate better risk communication.

The second area where I see behavior as being important is ensuring that our plans are behaviorally realistic. That is, we have expectations about how the public will respond to various actions, our own or of our enemies, in times of peace, in times of crisis. And it's important that we take best advantage of the best available social and behavioral science

to make certain that we have plans that work as they're intended, and are realistic, so we know the limits of our own understanding.

And the third area is that in the making of plans, human activity requires the exercise of intellect, the integration of data, and human judgment. And that's another area that people like me work on. So we would like the best available plans and analyses that we can get from our technical experts. But for those of us who have operational responsibilities and need to rely on those plans, we need to know just how good they are. We want to know whether they've done a terrific job of analyzing the stuff that's easy, but have left out a lot of stuff that's difficult.

MR. FERREN: My name is Bran Ferren. I'm currently Chief Creative Officer and Co-Chairman of a company called Applied Minds. We're interested in the impacts of technology on the world, and how to make the world a better place.

Prior to that, I was President of Research and Development and Creative Technology for the Walt Disney Company, where again, the focus was what is the future of the entertainment industry? How does technology pertain to that?

I come from a mixed background -- equal in art and design and science and engineering. I've always found both fascinating. I never quite decided why one should have to pick one or the other, and so you end up not knowing what you do for a living.

My interests are in design and all aspects of it, whether that's design of systems and system engineering, whether it's design of components or products, whether it's design of organizations, whether it's design of environments that make people work better and more effectively at high-performance jobs. All aspects of design interest me.

I find that the impact of technology on people's lives and how technologies can be used and focused to better mankind and civilization to be something of particular interest. And whether that's on an organizational basis within government or outside of government, we are living in a world where the only thing that is constant is that nothing is constant, and that change is around us. It's not just that change is accelerating, but the rate of change is accelerating. And the implications of how one deals with this to effectively predict and shape the future of our nation is something of great personal interest as well as what our company does for folks like General Motors and Northrop Grumman and a bunch of government agencies.

I spend my spare time -- and I use that guardedly -- on a number of government advisory boards in the areas of technology, intelligence, and again, basically, innovation of organizations and systems.

MR. IBARRA: My name is Tony Ibarra. I am CEO and founder of Digatron, Incorporated. We're based in Denver, Colorado, and have been in business for 23 years. We offer electronic surveillance systems integration, design, distribution, and manufacture digital video recorders.

I believe what I have to bring to this distinguished committee is that we as a small business were probably one of the first that brought digital video recording to the government sector. Some of our client base includes the U.S. Capitol; the U.S. Department of Justice; Federal Bureau of Prisons; U.S. Department of State, where we have deployed our digital video recorders throughout the country, where they can view all the cameras throughout the country in D.C. And we have recently contracted with Department of Homeland Security to secure the northern and southern borders of the United States.

I'd like to read a statement that Under Secretary McQueary made before the U.S. House of Representatives not so long ago. "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 protect and secure our homeland perform their jobs more effectively and efficiently."

I believe from a small business perspective, because we have been able to deploy technology on a rather quick basis, that we can continue to do that from the small business sector.

I'm also extremely proud to be part of Homeland Security's Science and Technology Committee, and look forward in determining ways that we can secure our homeland.

SHERIFF KAMATCHUS: My name is Ted Kamatchus. I'm the sheriff of Marshall County, Iowa. I'm just beginning my seventeenth year as sheriff. I have 28 years in law enforcement beginning at the small-town levels in Minnesota, and working my way up until being appointed sheriff 16 years ago.

I'm 3rd vice president of the National Sheriffs' Association. I have been very active in that association since 1993. I have chaired several committees for them; a couple on science and technology. I'm also a commissioner on the Board of Commissioners for the Commission on Accreditation for Law Enforcement Agencies, the internationally-known and acclaimed accrediting body for law enforcement throughout the country and across the world.

I've been on various law enforcement boards over the years, from president of the Iowa State Sheriffs and Deputies, and reserves in several areas.

I think what I really bring to this committee is the perspective of somebody who's actually on the road, actually doing things. Being from a small rural area, being very active, we deal with many things that come out of Washington, D.C., and many things that come out of the state capital of Iowa. And oftentimes, some of the best-laid plans, if you will, don't fit the road, and they still make sense.

And I hope that I can give you some input and listen to some of the things, so we can take those things and put them to good use so that we can have a positive effect when we're all said and done here. It's going to be a great learning experience for me.

I've had an opportunity to participate in other technological areas dealing with interoperability and communication and data exchange. And I hope that I can give some input based on those other experiences, my experience on the road, to help this committee and do a good job for the country. I'm looking forward it. Thank you.

DR. ATLAS: My name is Ronald Atlas. I'm Graduate Dean at the University of Louisville, where I'm also the co-director for the Center for the Deterrence of Biowarfare and Bioterrorism, the immediate past president of the American Society for Microbiology, and also for many years headed their task force on bio-weapons.

I have a background in microbiology, particularly in environmental microbiology, and detection methods for pathogens in the environment. We also now work in training physicians to recognize bio-threat diseases, and in developing public health communication systems. So my background and expertise is in the deterrence of bioterrorism.

DR. HAPPER: I'm Will Happer. I'm a physicist by vocation. I specialize in nuclear physics, lasers, magnetic resonance, both basic and applied. I've worked many years with the Federal Government on applications of science and defense.

I was a member of the National Academies committee put together after September 11 that issued the report titled *Making the Nation Safer*. I chaired the sub-panel on counters to nuclear and radiological weapons. I recently returned from Moscow a month or so ago looking at how well they're safeguarding their highly-enriched uranium and plutonium. So this is something that I have a very deep interest in, and I hope I can contribute in that way to this committee.

DR. SHINE: I'm a cardiologist and physiologist by training. I started out doing basic laboratory work, but got very interested in policy at an early stage when with another colleague, I was the leader of an effort to get a 911 number in Los Angeles County, where there are 84 jurisdictions. So I know a little bit about the difficulty of translating better health into public policy.

After serving as Dean at the UCLA School of Medicine, I went to the Institute of Medicine in 1992 and was President there for 10-1/2 years, where we did a number of studies with regard to metropolitan response before 9/11. And then immediately after 9/11, with my colleagues, we convened the committee that produced *Making the Nation Safer*. You can see by some of my colleagues here that we identified some very high-quality players for that activity.

For the last five years, I was a member of the Gilmore Commission, that was responsible for looking at issues of domestic terrorism. And I'm very interested in the problem of

technology transfer for first responders; how we find the right technologies to help them, how we educate them and ourselves as to the best ways to use that technology. And first responders, from my perspective, include the full range from police, fire, and medical people, to the media.

When I finished my term at the IOM, I established the RAND Center for Domestic and International Health Security where we developed strategies for evaluating public health preparedness at the local level using a variety of techniques.

I chair the Scientific Advisory Committee for the Food and Drug Administration and there I'm very interested in issues related to food safety and the use of technology to improve the way in which both food and medications are available. I'm very interested in vaccine policy, vaccine development, and patent policy.

I currently serve as Executive Vice Chancellor for the University of Texas, which, as you know, has just been awarded one of the two BL4 bio-containment laboratories. The University of Texas also has major activities in areas related to the biology of terrorism.

MR. TAMBONE: My name is Vic Tambone. I'm the Chief of Staff for Dr. McQueary. I've served 24 years in the Air Force as a pilot. I've served in staff and command positions. After I retired, I did some private sector business. And since the 24th of March, I was Dr. McQueary's Chief of Staff. I'm here to help Dr. McQueary, General Welch, and all of you to make the trains run on time, do whatever I can to make this a successful committee.

GENERAL WELCH: We will hear from Dr. McQueary in some detail later.

MR. VITTO: Hi, I'm Vince Vitto. I spent 39 years in the not-for-profit research and development sector, 32 of those years at MIT's Lincoln Laboratory, which is a federally-funded research and development center, and the last seven years as President of the Charles Stark Draper Laboratory, which is an independent not-for-profit, originally part of MIT, sponsored by MIT in 1973. We've been independent but not-for-profit over the last 20-some-odd years.

My areas of interest and expertise have been in space systems, dominantly space surveillance and communications, while at Lincoln Laboratory. Typically, most funding, and most work have been with the Department of Defense. Draper Laboratory is more involved in guidance, navigation and control, issues associated with ballistic missiles, tactical systems, and work for NASA.

I've been involved in government advisory committees for the past 25 years, dominantly for the Department of Defense, but also for the National Research Council, the National Academies, and some for NASA. I'm currently Vice-Chairman of the Defense Science Board. I'm Chairman of the NRC Naval Studies Board, and was a participant with Will Happer on the National Academies study that produced *Making the Nation Safer*.

On that study, I chaired the Systems Engineering Panel, and I was also asked to develop the section of the report that dealt with the cross-cutting technologies that came out of the study. I view myself as a systems engineer, and the systems engineering infrastructure protection aspects of Homeland Security is where I have interest.

DR. GAST: My name is Alice Gast. I'm a chemical engineer. I work in physical chemistry of surfaces and so-called complex fluids, which are just about anything that you'd like -- small particles, proteins, polymers.

I taught for 16 years at Stanford University, where I was involved with the Stanford Synchrotron Radiation Laboratory, and more recently involved in their Bio-X initiative to integrate science and engineering with medicine.

My research has focused on understanding the basic and fundamental processes in these complex fluid systems. More recently, it's evolved into so-called microfluidic devices, and more biophysical problems involving membranes and proteins.

A little over two years ago, I moved to MIT and assumed responsibilities as Vice President for Research. And in that role, I feel that my job is really to be the champion of interdisciplinarity, and MIT is a wonderful place to have that job. There are many opportunities where research cuts across disciplinary boundaries and brings together individuals who had not worked together previously for the purpose of producing new and exciting innovations. I think that's one area that I hope to contribute, both the bringing together of different people and topics from different backgrounds, as well as integration of research and education, which I think are so fundamentally important.

I also have been involved with some of the NRC counterterrorism work. I assumed the co-leadership of the Board on Chemical Sciences and Technology in the NRC in October of 2001, and I spent quite a bit of time looking at issues related to chemical terrorism and potential threats based on either our chemical industries or chemicals themselves. And so I've thought quite a bit about those issues, and hope to contribute in that way.

DR. PAPAY: I'm Larry Papay. My career has spanned from training and education to nuclear engineering. And then after doing some post-doctoral work in Europe on nuclear technology, I joined Southern California Edison, a utility, with the express purpose of starting up a research and development function at an electric utility, which was rather novel and unique in 1970.

In my career there, at one time or another, I had responsibility, as I like to say, for everybody but the lawyers and the accountants. Those experiences gave me access to knowledge of how to run an electric power system, an interconnected grid in the western part of the United States -- that's the Western Systems Coordinating Council -- power pools. And actually, Southern California Edison at that point in time had the fifth largest telephone system in the state because of its need to communicate internally.

After leaving Southern California Edison, I joined the Bechtel Corporation, heading up their technology and research organization. This gave me not only additional insight from an energy and environmental point of view, but exposure to and involvement in a more or less civil infrastructure because of the heavy dealings that a company like Bechtel has in those areas.

Four years ago, I joined SAIC Corporation, headquartered in La Jolla. SAIC is a very large government contractor, which is really a systems integrator, as well as being involved in a variety of technologies.

My position on this committee is for expertise in critical infrastructure other than information technology. I think it's quite evident that the more evolved a civilization is, if I can call it that -- or a society is -- the more fragile its infrastructure is, because it's more vulnerable, it's more complex. And if it's more complex, by necessity, it's more fragile.

If you compare the infrastructure here to what we commonly call Third World countries, critical infrastructure here is on an entirely different level, and the threats are entirely different in many respects than they are in other countries. This was brought to my attention most recently by taking part in a joint U.S./India symposium of how science and technology can counter terrorism. Their level and their concerns on terrorism are entirely different than ours. I'm not sure whether we're better off for that or not. And so I look forward to participating in the work of this committee, particularly as it might address issues such as these.

And just as a footnote, I also contributed to the National Academy report *Making the Nation Safer* in what originally was going to be one chapter and ended up being two; one on energy and one on cities and fixed infrastructure.

DR. ROCA: My name is Rich Roca. I am the Director of the Johns Hopkins University Applied Physics Laboratory, and I've been there since January of 2000. APL is a division of Johns Hopkins, and is a university-affiliated research center, in DOD jargon.

We focus in two broad areas. One is complex combat systems largely for the Navy, whether it be undersea surface or in the air, and the other is space science and technology, both for DOD and for NASA. The work originated because of the need for satellite technology in the '50s and '60s in order to advance at that time the Navy's agenda with precision navigation. And as people put more technology and complicated systems in the space, they discovered they knew less and less about space, and required the space science to go along with it.

Prior to coming to APL, I was at Bell Laboratories for over 30 years, or whatever Bell Laboratories was called as the Bell System morphed into its various forms. I left there eventually responsible for all the Internet services of AT&T from the R&D perspective.

I've been involved in large-scale communication systems -- if you will, the telephony analog to the electrical grid system that Larry just described -- concerned with how you design them, how you plan them, how you get the customers' expectations met, how you keep them going on sunny days and how you keep them going on rainy days. So I have one way or the other been involved throughout my career in the systems engineering and operations of fairly large-scale systems that had to withstand both intentional and unintentional disruptions, and how you plan for that.

DR. BESSETTE: My name is Russell Bessette. I am presently the Executive Director of the New York State Office of Science, Technology, and Academic Research. And in that capacity, I report directly to the governor, Governor George Pataki. Our agency was created in 1999, and in the past four years, has been an agency that has invested over one billion dollars in New York State universities in science and technology.

This has been a very interesting and challenging position that I've had for the past several years in being able to work with the universities and private enterprises in collaboration and identifying cutting areas of research, and investing in that research to create jobs and have economic impact within the state.

In the year 2002, the agency undertook a program, because of the events of 2001, that was focused in the areas of science and technology as applied to terrorism and issues surrounding security. And we have had a number of programs that have ranged from sensor detections of pollutants to water supplies to air contamination, and ranging from bioinformatics to nanotechnology.

In my prior life, I was a physician and surgeon. I trained as a general surgeon and as a head and neck reconstructive surgeon, and practiced for 23 years. I served as clinical professor in the State University of Medicine at Buffalo, as well as Department Chairman. I've served on President Bush's Transition Team as an advisor to the identification of new areas of expansion for the National Institute of Health, and have served as a private physician and six years in chairing the New York State Public Health Council.

CHIEF MITCHELL: My name is Ernie Mitchell. I'm the President of the International Association of Fire Chiefs, and the Fire Chief and Assistant Director of Disaster Preparedness in the City of Pasadena, California.

First, I want to thank Dr. McQueary and this Administration for the insight and the vision to include the first responder community in this effort to enhance and improve our ability to respond to events of terrorism and prevention.

As President of the International Association of Fire Chiefs, we have over 12,000 members across the country, as well as chiefs from foreign countries. Our primary purpose is to service and support those leaders of the fire service. So I look at this as an opportunity to open up an exchange with that community as well.

On a more personal note, I guess, I've been interested in technology all my life. I was an engineering student until I got sidetracked by the fire service. I'm most interested, both personally and professionally, in the opportunity for technology transfer, so we might better protect the first responders and our communities. And so I do see this as an outstanding opportunity for fire service and first responder involvement, and just looking forward to the possibilities that are before us.

GENERAL WELCH: I thank everyone for those very focused and concise descriptions of your experience and interest. It bodes well for the committee that we did that in half the allocated time, which says that you all are indeed focused and concise. And we hope that that will characterize our future discussions.

But in any case, as you noted from the e-mails you received, that we will be forming initially four subcommittees in order to actually do the work of the committee in a more productive environment than having 20 of us sit around a table. And we will form some recommendations based on your expressed interest and your experiences. We will talk more about that later. But it seems very clear that the range of experience and interests will very well match the range of challenges that Dr. McQueary has to deal with.

We are a bit early for lunch so I would ask Dr. McQueary to start and we can break for lunch at a convenient spot.

DR. MCQUEARY: First of all, let me thank each of you for agreeing to be a part of this activity. I can't tell you how important the role that you have agreed to be a part of is to not only the Science and Technology Directorate, but also to the Department.

I guess one of the things that you might ask yourself, how did we end up with the collection of you? As, of course, part of the legislation that created the Department of Homeland Security, we are required to have a Science and Technology Advisory Committee. And in addition to that, the Congress helped us out by being pretty specific about the number -- 20 people -- and category of backgrounds and capabilities that we should have on the committee.

When I first read the statute over a year ago, I thought, "Well, this is a strange collection of talents." After I got into the job, it became readily apparent that there was a great deal of foresight, and I thought Chief Mitchell summarized it very well as to why it's really important.

The Science and Technology organization exists as a service organization to the operational units that make up the Department of Homeland Security. Without the operational units, there would be no need for us to exist, because there's plenty of good science that goes on out in private industry, universities, as well as in the government too, and the various labs that are there.

So it's one of those areas where we exist in what I call a customer/supplier relationship, and that the Science and Technology Directorate has the responsibility to provide the

very best sites in technology, either directly or in an informational sense, to those operational units.

And the operational units, if you are not intimately familiar with how the Department is organized, are the Borders and Transportation Security Organization, Emergency Preparedness Response, Information Analysis and Infrastructure Protection, Coast Guard, and Secret Service being the major areas that we have responsibility for within the department.

Within that, the technologies that we talk about that we have to deal with are chemical, biological, radiological, nuclear, high explosives, cyber, and standards. And so when you take all of that together, for me, who is trained as a mechanical engineer, that's quite a wide range of scientific areas of responsibility that the Department has, and it obviously represents the kind of threats that this country faces from those who would do us harm.

So with that said, I think it becomes clear why the range of capabilities that we have represented by you on this committee is so important. While we may find interesting science to do, we must focus on the needs of the first responders. We must find ways to take technology to the field so that people who may not be trained as engineers -- very likely will not be -- nor have scientifically-based backgrounds can use the equipment, have high confidence in it, and know that it is doing things in order to make it easier for them to do the jobs that they have to do. Because in reality, whenever an event happens in this country again -- and it will -- it's the people that are the first responders that need to be given the best tools available in order to be able to do the jobs that they have to do.

So it is very important to me -- and my background would certainly drive in this direction -- it's very important to me that this organization deliver things. We are not in this business for scientific curiosity or looking to further science, necessarily, although that outcome could very well be a byproduct of what we do. The real important responsibility we have is to engage in those scientific areas that can result and will result in providing capability to first responders so that they can do the jobs that this country depends so strongly upon for its security and that of its people.

So with that background, that's the first half of what I would say. I do have some prepared remarks that I thought I would go over some parts of this to give you more of a sense of not only what the Science and Technology organization is all about. But I don't want to talk too long. Because what I would really rather do is have a chance for you to ask questions that might be on your mind. Because as we get started, we're all coming at this from different backgrounds, different venues, different areas of experience and knowledge about what we have to do.

So I think it's really important that we get on common footing in order to be able to do that. And I know General Welch would do that. And I want to publicly say thanks to you, General, for being willing to chair this very important group, and I look forward to working closely with you, as well as the other members of the organization.

Within the department, within Science and Technology, we get lots of people who have inputs in what we do. In fact, the Congress, as you know, has a lot of interest in what our responsibilities are. I spent two hours yesterday with Congressman Mac Thornberry and his Committee on Cyber Security, Science, and Research and Development, and there's a lot of interest -- a lot of supportive interest, I might add, in what we're doing within the organization. And so we get a lot of inputs, a lot of help. But ultimately, we have to have a plan of action and of execution as to what we're going to do.

I guess a question for the members of the committee. How many of you knew some other person in this group before you showed up?

(Show of hands.)

DR. MCQUEARY: All right. So we have more than half who knew someone else that's in the group. How many of you only knew one other?

(Show of hands.)

DR. MCQUEARY: All right. It's interesting. So we're going to get a chance to know one another and know what our capabilities are. So I think that's good for us.

GENERAL WELCH: A question for you, although if it's in your remarks, we can wait. The breadth of responsibilities that are called S&T in the Department of Homeland Security is significantly different than what's called S&T in other departments. It would be useful for us to be sure that we understand your view of that breadth.

DR. MCQUEARY: I'll give you sort of a top-level view of that in my four immediate reports, and I'll comment upon organizational structure as I get into this. But the four people who report to me are each going to come and give you rather extensive discussions about what they do as a part of that. And we'll start later with Dr. Parney Albright, assuming he was able to get out of a wet California on the red-eye last night.

I started to talk a moment ago about how we chose each of you. We actually looked for and received nominations and recommendations from many sources -- individual and organizational. As one example, and as called for in the statute, we used the National Academies. We then put you and all the nominees into categories associated with the kinds of expertise we needed. And so each of you were slotted into one or more areas where you might be able to communicate.

We then went through -- looked in detail at the biographies that we had on each of you. Because there's only two of you that I actually knew before I met you, and that was Will Happer and Rich Roca. And Rich and I worked together for many years at AT&T. But the rest of you, I don't believe we had met previously.

We went through putting you in categories of where we thought you could best serve, based upon your biography and information that we had. We then went through an

individual selection, made a recommendation to the White House as to which individuals we wanted to choose. And I think with the exception of one individual out of the recommendations that we made, we got approval for what we wanted to do. So you are the first team, and I want you to know that.

Let me talk a little bit about what the mission for the Department of Homeland Security is, and we've been working on the details of that. But fundamentally, the mission is that we will lead the unified national effort to secure America, and we will prevent and deter terrorist attacks and protect against and respond to threats and hazards to the nation. And we will ensure safe and secure borders, welcome lawful immigrants and visitors, and promote the free flow of commerce. That is the large over-arching reason why this department exists.

And the strategic goals for the department are centered on anticipating and responding effectively to terrorist threats in the scientific areas I talked about earlier, and taking the steps to reduce loss of life, restore services, and rebuild should an attack occur.

And, of course, we all know of the attack in New York. We also can look at how quickly the country responded in order to clean up that terrible tragedy and to move onward with what we're doing there. And I think that's a mark of what this country is all about. And, of course, in doing all of this, one of the great challenges is to make sure that we do have awareness.

I'm particularly interested in the comments that were made earlier, and I apologize for not getting all the discussions earlier. I think the point you made about communication with people and making them aware is really an important part of what we do. And, in fact, you'll see in this calendar year more activity throughout the department of trying to make sure that we do have better communication. Because an informed public will go a long way towards helping decide what needs to be done.

Because if we have an event, you can't sit and say, "Well, what does Washington now want us to do?" People have to have in their minds, just as they do now when we have catastrophic events in this country, we used to lose a lot more people in hurricanes and tornadoes than we lose now, because -- and I believe that, and I think the evidence bears this out, that the reason we don't have as many people killed is because we've done a better job of educating the American public as to what needs to be done in those times of crisis, and we've got to do a similar thing with the public as it deals with terrorism.

Well, on March 1st, the department will be one year old. It's hard to believe we've been at this a year, in one sense. And in another sense, it seems like it's been 10, because there are lots of things that are going on. And we do have a number of activities going on this week to celebrate that.

We have ramped up very rapidly in the department. There were many people who said it was impossible to take 22 agencies, combine them into one operational organization. And while none of us would declare victory, I think we would certainly say that we made

a large amount of progress, very good progress, particularly in the borders area where we have one face at the border, and the people that once represented three different governmental organizations in three different departments now work under one secretary, and I believe are performing better every day in the jobs that they have to do.

We had transferred in to us, obviously, the Coast Guard and Secret Service, two great agencies. If you don't know people that work in those organizations, you're missing a great opportunity to know some fine Americans and people who do first-class work.

Of course, the FEMA organization also existed prior to the formation of the department. And so really, those three things represented a tremendous foundation which the department could build upon to go forward.

And so I think those who said we couldn't make the combination failed to recognize that we had a tremendous foundation and capability to begin that building, and also had a great motivation among the people.

Just to let you know how large this problem is, I'll go through some statistics very quickly.

We have 95,000 miles of shoreline. We have 7500 miles of shared border between Canada and Mexico. We have 621 border points of entry into the United States.

And, on a daily basis: One million people cross those borders. There are 360,000 vehicles that come across the borders. There are 5100 trucks crossing the borders. Twenty-six hundred aircraft come into the country, including international flights. There are 600 vessels that come in to shores every day. We have 10,000 shipping containers.

And so if you go through all of this, it's roughly over a over a million operations a day that the department has an interaction of some sort, and all we have to do is be right 100 percent of the time. And so those of you who are statisticians and know a little bit about it, talking about what kind of error rate you can have, you're dealing in 10 to the minus six and smaller numbers.

So it's a very, very low error rate that we can tolerate. And when you consider that people are involved in these transactions, it's a tremendous responsibility that we have. And I, quite frankly, have not encountered anybody who says, "I don't want to do it, because it's too hard." We've got a lot of committed people that are ready to do what they think we need to do.

On top of that, the adversaries only have to be right once. So we have a tremendous responsibility and many interesting things that we have to do.

I think we all know that it's impossible to guard against all threats. I mean, no matter how hard we might work, we certainly know that there are things that people could do on small and large scales. And one of the things that we have to do and are doing is to

establish good relationships with both the Canadians and the Mexicans in order to be able to do the jobs that we have to with them, because we cannot deal with the border issues as just a U.S. issue. It's a bilateral issue that must be dealt with by both of those, and we've made great strides in that area.

I was fortunate enough last week to be able to go to Mexico City with the Secretary and a delegation to interact with the Mexican Government. Secretary Ridge signed some agreements on relationships with the Mexicans as to how we'll be working with them.

I had a chance to spend a couple of hours with the scientific groups in Mexico to understand a little bit about some of the challenges that they face. And one of the things that became obvious in the discussion is they have a tremendous problem on their southern border of people coming in from Central America.

And, in fact, that's a path, a clear path, where many of the difficulties that we have on our southern border finally manifest themselves. And so we're going to take a small team of people to work with them to see if there are some things that might be done to help them in their southern border area.

There's a choke point where I'm told where only a railroad and one road for traffic, automobile and truck traffic, comes through. In addition to that, it's an area where we may be able to use technology that would not be applicable to our southern or northern borders, because it takes too long. Whereas there, you have a longer period of time, and perhaps there's something that we can do in that area. So it's very important that we have good international relationships.

Also, in addition to those two I mentioned, we've had a number of interactions with the Israelis. And, of course, the Israelis have dealt with the issue of terrorism more than any other country and have made strides. And even today, the Israelis still have been unable to thwart suicide attacks. And that, of course, is not something we've experienced in this country. It would be an easy thing to do and a very difficult thing to protect against.

We've had a small group of scientific people go to Japan to maintain the proper level of interaction. So we're trying to make sure that we have the right level of international activity and connections where it makes sense.

Let's talk just a bit about the mission of the Science and Technology Directorate within the department. We have, really, four areas that we talk about. And I'll just briefly touch upon those, and I'll go to the organizational structure.

We're to partner with the operational end users to identify requirements and develop and field capabilities to counter threats. And I think it's really important to recognize when I say partnership, it truly has to be a partnership, because we need to know end-user requirements. And there's at least two ways that we can get that information.

It may be possible in many cases for the end users to specify what their requirements are. In some cases, it's not possible. They don't understand them well enough. I think in all cases, people can describe the problems they're facing. And in the latter case, I would view it as a responsibility of the Science and Technology Directorate to help turn problems into requirements that can be used to solve those problems, and we take that as a serious part of our responsibility.

We have a multi-pronged approach to engaging the scientific community in this country. It's important that we be engaged with not only those in government, but also in academe, as well as in private industry, to make sure that we're capturing the very best talent that we can for the kinds of things that we must do.

At least two or three of you touched upon something that is probably the foundation of my whole being in terms of the job that we have to do, and that is systems engineering. I truly believe that the basis for what we do in this department has to have a firm systems base for going forward.

I think it's important that we be able to characterize this "Homeland Security system" that we have at some level. It is important that we be able to characterize where we need to get to. And from that, we then are in a position -- will be in a position, I believe -- to define how we make the transition.

And one approach I want to make certain that we do not take is just attempt to do a bunch of things that people think would be interesting to be done. I've seen a lot of technologies already that would certainly be different from what we're doing right now. It's more difficult to find technologies that you can look at and say, "Aha. I know if I do that, I'm going to have a safer country than I have right now."

And so it's really going to be important, and I would hasten to say, in the systems area, we're weak in this area now just because we're building a new organization. We do not have a firm foundation in this area, and it's an area that I'll certainly look to all of you to help us and guide us in directions we can go in to make sure that we improve and do what we need to do.

And then our last -- and this is legislated in the act it created. We have a responsibility to create an enduring research and development capability within the country to support Homeland Security. And part of our job will be to determine what enduring capability means. And so we're working that now.

Dr. McCarthy, who will talk to you about our relationship with the National Labs and our university and fellowship programs, will touch on some of this, I believe, in her talk. But that really is extremely important to us.

Well, other things I mentioned earlier, that we have a number of areas where people help us, starting with the Congress. We also have a number of important documents that we use in order to establish, judge, through our scientific people, where our investments need

to be. We certainly have the Homeland Security Act of 2002. I mean, if people want to know what it is we are trying to do, you can go to that document and read about science and technology. And I can assure you, since it's signed by the President we take it very seriously that that's the major over-arching responsibility we have.

We have a number of national strategies. And also, there are nine Homeland Security Presidential Directives right now, several of which actually influence -- have direct influence on our scientific program in science and technology. There's a tenth one underway right now that's in draft form and deals with bio-security. It will call for a substantially increased role for Science and Technology.

One of the first things I read when I came on board a little over a year ago was *Making the Nation Safer*. That is a fine document -- extremely well-written and high quality. And I can assure you, in my early thinking, it helped stimulate my thinking about what needed to be done and how it needed to be done. And so again, I'm sure those of you who were involved with that effort had many things said to you, but I'd add mine to it, because it's well done.

Also, the Gilmore/Bremer/Hart/Rudman Committees have provided substantial inputs. But ultimately, as we take all these inputs, we've hired, I believe, within the Science and Technology Directorate, some very capable people.

Quite frankly, most of the people that we've hired, if not all, in the directorate are as good as any scientific people I ever encountered, including Bell Laboratories. We've got some very good people who I feel blessed that we've been able to attract. And I think the reason for that is because the mission that we have is such a fundamentally important mission, not only for the country, but also the people that are working on it, that people are highly motivated to be able to be a participant in that, and I'm blessed.

Let me just touch upon how we're organized. For those of you who run businesses, we're a highly-matrixed organization because I could not see any other way to operate this. And the reason for this is that we have technologies that are cross-cutting, all the way from where we need to do fundamental research to direct applications today. And so you pick a technology -- chemical detectors, or whatever it might be -- and that really spans multiple areas in our responsibility.

So we've organized -- and I'm not going to use stovepipe -- with vertical organizations. And the primary four are first plans, programs, and budgeting. You will hear from Dr. Parney Albright later today who will talk to you in some detail about his responsibility and what they do. But it's basically just what I said, plans, programs, and budgeting. He has the direct responsibility for translating requirements from the operational units so that the other three pieces that make up the directorate can do their jobs.

The second organization is the Office of Research and Development. In that organization, Dr. Maureen McCarthy, has responsibility for all of our work with the

National Labs at Livermore, Sandia, and so forth, the major DOE labs that we have direct access to by virtue of legislation that provided such access with the formation of the department. And she also has responsibility for our university programs, which includes scholarships and fellowships, as well as our Centers of Excellence. And we have one of those so far.

She also has responsibility for managing what I'll call the Federal Labs. And right now, there are two of those. One is the Environmental Measurements Lab, which focuses primarily on radiation detection technologies, and that's located in Manhattan. And then we also have the Plum Island Animal Disease Center that's just off the coast of New York. And that organization reports to her and has done so since June 1st.

The third organization we have is the Homeland Security Advanced Research Project Agency. And some people have said it's like DARPA. It has some similarity in that the ARPA is the same. But in terms of its mission and its responsibility it's quite a bit different from DARPA, at least at the present time.

This organization is the primary interface with private industry. And they are letting contracts today with private industry. But at least today, about 90 to 95 percent of the emphasis is on things that can be done now. And what I mean by "now" I mean tomorrow, six months from now, a year from now. By near-term I mean a couple of years. They're working on near-term with only about five to ten percent of their budget dealing with what I'll call forward-looking science.

Now, as we get to the stage where we've got this plan underway to evolve from where we are to where we need to be, then I would see the distribution between long-term scientific endeavor and near-term, that beginning to change shape. But right now, we need solutions today.

And then finally, the fourth organization is one that is called the Systems Engineering and Development organization. And you can think of that organization as when we've made a decision that we are going to go to the field with the final product, someone needs to be responsible for making sure it can be manufactured at an affordable cost, and work those kinds of issues. And that really is going to be a major interface with private industry, because the Federal and National Labs do not take product into final stages of development and manufacture. So it's really going to be a major interaction with private industry in order to make all this work together in an effective way.

MR. VITTO: Since you've organized around these four domains and you expressed an interest, as I did, in the systems engineering aspect of things, while you have a directorate called Systems Engineering and Development, as you pointed out, it's very product oriented and it does get the product to the operational field. So there's a potential danger in that process of too much focus only on off-the-shelf and things that are readily available. Where will the overall threat assessment, infrastructure modeling, understanding where vulnerabilities are, where will that level of systems modeling and systems engineering be done?

DR. MCQUEARY: A very good question. I failed to mention one very important part of the organizational structure and thank you for asking that question. I said we're a highly-matrixed organization and then proceeded to describe stovepipes. We have what are called portfolio managers that have the responsibility for cutting across all four organizations to do the job that has to be done. So, for example, we have a biological portfolio manager. Similarly, we have portfolio managers for chemical, radiological, and so forth.

And then we also have a portfolio that deals with threat vulnerability and threat assessment, which gets right to the heart of what you asked about. And that group of people works not only within the S&T organization, but also directly with the Information Analysis Infrastructure Protection organization that has the first-line responsibility for the IP part of what we do.

So we provide scientific capability, some work we've done in providing threat models for them as a part of the work that they have to do. But we have some people that are in direct residence with the IAIP people working with them to provide them scientific input.

MR. VITTO: And that organization that's doing the specific threat modeling and infrastructure modeling is located where?

DR. MCQUEARY: The people that are working on a day-to-day basis spend most of their time at the complex in Northwest D.C. The Science and Technology group is actually located in Southwest D.C. And so we're a 20-minute ride to get there. But we do have people that are essentially full-time located in residence with the IAIP people because it's important to have the interaction.

Some of the things that we accomplished within the last year we did set up a biological monitoring system called BioWatch. If you've seen that mentioned it's a capability that we've done jointly with the Departments of Health, as well as the Environmental Protection Agency, in those cities where it's located that has environmental air quality sensors at many locations.

And what we did was, in effect, put our BioWatch sensors at the same location as the EPA air quality monitoring sensors are. We take biological samples on a daily basis and make a determination as to whether anything has been detected there. It is time consuming and I think all of us would likely agree that when you're dealing with a biologic threat you're dealing with a temporal threat, because timing is everything, so a major emphasis for us is to shorten that time period.

And our concept is that we would have a sensor at a location that senses, does the assay, and telemeters the information to some central location saying there has been an event at that location, and it is time to put in place what I would hope are already the preventive measures that we need to be taking then.

In this system that we have, we have multiple sensors at each one of the major cities. We monitor on a daily basis. We have had at this stage more than half a million samples that have been taken by these monitors that have been checked. We've had no false alarms. And no, we don't have them turned off to avoid the false alarms.

We've actually made detections in a city where we detected tularemia on a couple of different occasions at multiple locations. We were able to take detections that we made and actually take some of our plume modeling capability in which we were able to make reasonably good estimates as to where these pathogens could have come from. And we've actually pointed possible solid waste storage areas that could be the source.

So the system has worked well. We've had no terrorist-based events at all in which we picked them up. But the system is working better, and indeed, it's worked well enough that in the fiscal year '05 budget, we expect to actually double the number of sensors that we have, and the associated work that goes with them.

We also have a system called PROTECT. I don't recall off the top of my head what the acronym stands for but it's a chemical detection capability in the subway system in Washington, D.C. We have chemical detectors at a number of different locations. There are also cameras around so that if an event happens the information is instantly sent to the central control area in Washington, D.C., the Washington Metropolitan Area Transit Authority, in which people then can decide what kind of actions need to be taken based upon what they see. Because you can see if people are starting to fall over – the first indication of some kind of a chemical attack – you can make decisions as to what needs to be done.

We also have our plume modeling capability from Lawrence Livermore tied into this so that if an attack occurred in a subway station, within about 30 minutes we can make educated estimates as to where a plume of some sort might actually drift, and therefore, aid in determining what kind of evacuation procedures might need to be put in place.

Now, this is obviously just in one area. It's not the whole country. But I think the important thing is we have been able to demonstrate that the system seems to work well. We've had no fundamental problems with it. Its greatest problem, I suspect, is the cost is about a million dollars per station to do this. And Washington, D.C., has its challenges as far as budgets are concerned, and they have paid for a substantial part of that.

In New York, at the Port Authority there, we've had radiation and nuclear warning systems actively working in that area. We have not made detections of any known real threats there. We have demonstrated that such systems can work.

We've generated interoperability guidelines to help local and federal public agencies communicate better. These are just standards and so we're not providing equipment as a part of that. But an important first step is providing standards.

We have issued the first 100 Homeland fellowships and scholarships. That's 50 undergraduate and 50 graduates that we have. And we were very pleased to get that program started in September of last year, and we'll be identifying our next 100 fellows and scholars over the next couple of months.

We established our first university-based Homeland Security Center of Excellence at the University of Southern California, with the focus there being on studying the consequences of terrorist threats, both economically as well as psychologically too. So there may be some opportunity for you to look into that as your interest develops.

The budget for fiscal year '05 as proposed by the President for us in Science and Technology is \$1.04 billion dollars, which is about a 14 percent increase over what we were in FY '04. But that \$126 million increase, about \$65 million of it will go towards increasing the BioWatch capability, and another \$34 million, I believe, is associated with a bio-containment building that we're putting at Fort Detrick. So we'll have that \$34 million, plus an \$88 million that we had from fiscal year '04 will be used to construct a building there that will be our building to be used for bioterrorism types of scientific investigation.

Cyber security is probably the area that is one of these words where if we all said, "I'm going to write down cyber security. Each of you, please write down what it means to you. We'll collect the papers, and we'll read them, and they won't all say the same thing. "

It's a hard problem, first of all. But trying to frame the conversation to have about the problem is a very challenging one that I found myself tangled up yesterday in the Congressional questions. Because it's very difficult to describe what it is we're going to do that we can point to and say, "I know if I do this that we're going to have a safer, more secure cyber infrastructure than what we have."

And, of course, we do have the National Cyber Security Center that reports in through the Information Analysis Infrastructure Protection Directorate. And our job in Science and Technology is to support them. And, quite frankly, we're working the issue daily to try to determine exactly how we make that relationship work. So I would welcome any professional thoughts and insights and guidance that you might have in helping us frame the issue in such a way that we can have a public discussion about it, and then be able to have a conversation that is meaningful to all participants about what we're actually doing.

In the aviation area, we were assigned the responsibility for doing the development work for the shoulder-fired missile threats that we view are possibilities for aircraft in this country, as well as around the world. That program is called a counter MANPADS, Man Portal Air Defense System.

We awarded three study contracts to contractors earlier this year and we expect to have demonstration models available in fiscal year '05 on what we view as a very aggressive schedule. Although there are those in Congress who would say, "Why don't we do it

tomorrow? Why don't we just pick what's being done on military aircraft and use it?" It's a much more complicated problem than that.

And, in fact, when we issued the study contracts, we told each contractor, "If you want to do it faster, just tell us how you're going to do that. We'd be interested in having that conversation with you." And none of them said, "We'd love to do it. We can do it in half the time," or "next week," or whatever it might be.

So it's not an easy problem. Because on commercial aircraft, you have a different set of requirements in order to verify the way the system works.

Well, I'm nearing the end of my preliminary remarks. But I think we've already talked about what your role is. General Welch talked about the four subcommittees, so I won't touch upon that, since you've already done it. I've touched upon a couple of things that I think is of interest to us.

One of the areas I would mention also that will have a lot of interest is in the whole issue of privacy. There is a huge issue in this country of how much information can be made available, how much information can be looked at. And so I certainly, as we go forward in deciding what kinds of areas are legitimate areas for us to be working in, certainly your advice and guidance on the privacy-related issues would be very helpful to us.

An area in which I have the responsibility on behalf of the department is to consolidate in some way the research and development activities within the Federal Government. Not only within the Department of Science and Technology, but also somehow get our arms around -- and when I say "consolidate," I do not mean transfer it in. That's not what it means -- but somehow determine all the related research and development work that's going on within the Federal Government, and try to help make sense out of it. Making sense out of it means it's relevant to what we're doing, and we don't have duplication of effort in multiple areas. And so I would welcome your help and guidance in deciding how we're going to do that, because I don't know just exactly how to do it.

We do have, working relationships at the working level with people in all of the relevant agencies. But what does it mean to provide consolidation in some meaningful way that could be looked at with favor by those who would evaluate what we're doing?

With just a wrap-up, one thing you may or may not know and may recall, it was exactly 11 years ago today that the World Trade Center was first attacked, in which we had six people killed and a thousand people injured. And so here we are 11 years later. It was eight years after that that the World Trade Center in New York was attacked again and destroyed.

And so the threats to our country are those that are people who are willing to wait long periods of time. And one of the concerns, I think, that we all need to be aware of and concerned about is how do we keep the level of readiness up in this country to deal with the issues we've got? Because American people, us being typical, have short attention

spans when it comes to staying focused on something, unless there's a continual reinforcement, some way of making it seem to be relevant. And when nothing ever happens, people can lose their interest.

So I think anything that we can do -- again, along the points that you made, sir, earlier -- about how important it is to be able to engage the American people. Because in one talk I gave, which is nothing profound here, but every American citizen represents a sensor and a communication channel. And so somehow, we need to get American people engaged so that they feel that they're a part of what needs to be done, and not just sitting back and waiting for the Federal Government somehow.

The Federal Government cannot solve this problem. Homeland Security is not a federal problem. It's a national problem that's got to be dealt with by people throughout the nation and agencies throughout the country. And our job is to try to help provide motivation, guidance, and direction that can be implemented in many different areas.

Again, thank you for being a part of this. I appreciate your indulgence in listening to me for the period of time you've done that at a time when lunch might taste better. But I am very much looking forward to the interaction we have, and I hope I have a chance to get to know each one of you well, and understand what your own points of view are, and what you think we should be doing.

Be assured we are going to be listening to you. And whether we can implement everything you tell us to do, I don't know. But I can promise you that I'll tell you directly. When you're telling us what you think we should do, I'll tell you if I think it's a good idea, I'll tell you if I think it's a bad idea, so you won't have to wonder. I've served on committees before in which you provide recommendations. The recommendations go on a book on a shelf or something like that. We're not going to run this committee that way. We will either agree with you and do the things that you said we should do or we'll tell you, "We don't think that's the right thing, and here are the reasons why we can't do it."

But we'll make sure that we do react to the work that you've put into this. Because it's important, and you're giving very valuable time, and you deserve to have a response from us based upon the input you give us. And we will do that. Thank you.

GENERAL WELCH: We'll pick up lunch and continue with a roundtable discussion during lunch.

(Whereupon, a brief lunch recess was taken.)

GENERAL WELCH: We want to welcome Lillian Borrone, who has joined us. And Lillian, everyone else took a few minutes and described who they are, and what they're interested in, and their experience. I invite you to do the same.

MS. BORRONE: Thank you very much, and good afternoon. I apologize for not being able to join you in the morning. I've been chairing another meeting here in Washington. And I apologize in advance, because I'm leaving to go to another session on something else tomorrow, so I will be only here a few hours.

My background is in transportation, management operations, policy planning -- a variety of things. I've had a transportation career that spanned about 35 years in transit, maritime, aviation, what might be called generally intermodal transportation, as well as in running significant transportation organizations.

I retired at the end of 2000 from the Port Authority of New York and New Jersey as assistant executive director. Prior to that, I had been the port director for New York/New Jersey for about 13 years and have been very involved in both international business development and regional economic development activities. This is largely because I, as part of my role at the Port Authority, ran the overseas offices and the development of businesses for the New York/New Jersey area in international commerce.

I am a member of the National Academy of Engineering and also have been an active member of the Transportation Research Board of the National Academies. And, in fact, I had the honor of being the first female chair of TRB in 1995 and 1996.

I am also currently a member of the U.S. Commission on Ocean Policy. We were authorized by a Congressional act in 2000, and we were appointed in 2001 by the President and the Congress. We are looking at all of the federal policies and laws and regulations that govern our activities in the oceans, whether they are environmental, military, economic, dealing with climate, dealing with research, or dealing with education. That body is chaired by Admiral Watkins. Its goal is to make recommendations to the President and the Congress this year. Our expectation is that we will have a report concluded by June. It is about ready to go to the Federal Register next month for comment by the federal agencies, and the governors, in particular, but anyone in the country who wishes to have one otherwise.

I also, in my retirement, am on a number of boards. I chair the ENO Transportation Foundation here in Washington, which is dedicated to framing emerging transportation issues and cultivating leadership in the broad transportation sector, not just in a particular modal interest area. And I'm on a couple of other private sector boards.

My interest really is in transportation operations management and policy, with a particular focus on security, but not solely. While I am described as a transportation security expert, I don't think of myself narrowly that way. I really think of my role as one of looking at the broader issues and trying to make sure that transportation functions in an appropriate way, incorporating the security concerns in the fashion that it needs to.

My specific experience after 9/11 running recovery and victim assistance for the State of New Jersey and working as a cabinet officer for the Governor on setting up our security task force and dealing with the business community and the transportation community

really helped to crystallize some of the issues that I think we are likely to deal with in terms of how we use technology and how we help the, from my point of view, transportation community, and in particular, the economic commercial aspects of that community, incorporate those technologies and enable DHS to better function is sort of the area that I'm not only curious about, but interested in helping to better define.

A lot of that interest stems from the work I had done as port director, working closely with the Coast Guard and other agencies in trying to find ways to better leverage the resources that we were committing to development or to strategic directions that were diminished, because there wasn't enough resource committed or because multiple agencies were overlapping and not achieving the kind of consistency and weight that I felt that they could achieve by working together.

So in my work with Admiral North and others, I was able to help bring the communities together through leadership positions I held in that era.

I think I can bring some experience, but I also think I can bring dialogue back to the industry community. I spent yesterday afternoon with an assistant secretary at DOT exploring whether they have been thinking about what DHS is looking at in terms of how they might interpret it for operational policy-setting and strategic implementation. And they really haven't to the degree that I think we need to see that occur.

So that's my long answer to your short question.

GENERAL WELCH: Thank you very much. You described a complex set of subjects.

We have time now, having digested Dr. McQueary's comments, to explore further. I have one question, and that has to do with how you see the role of the National Laboratories, first as it applies to DHS. But also, if you want to make a comment, since you suggested that one of the larger things that somebody has asked you to take on, which I would regard as formidable, is to look at the overall coherence of federally-funded research and development. But first, the kind of relationship and what kind of role they need to play for DHS S&T.

DR. MCQUEARY: There are actually nine National Labs that are relevant or potentially relevant, some more than others, to what we are doing or want to do. As some of you may know, we would identify labs that would be designated as intramural, meaning that they were going to have access to everything that we do, and therefore, would be insiders. And then the others, we would designate as extramural, and they would compete. What we were trying to do -- what we thought we were doing -- was make it maximally possible for each of the labs to be participants in our activities.

Well, without anyone really trying to understand fully our intent -- or at least that's my conclusion, although there are probably varying views -- we started getting a firestorm of Congressional criticism for having taken this approach.

So the bottom line is that we have agreed to have an independent group take a look at the criteria that we used for making this decision and taking this approach. We're going to do this over the next months or so.

With that as the backdrop, the labs are fundamental to our ability to be able to do the research and development work that we have to do. There's no question about that.

Right now, we have a memorandum of understanding signed by the Secretary of the Department of Energy and Secretary of the Department of Homeland Security that spells out that we can have free and open access to those labs.

An open issue, one that's not quite worked out, is exactly how we gain entree into the labs. DOE's preference would be to have that be through them. What we would prefer to have is our own direct contracting relationship with the lab, so that has to be worked. Anything you can do to help us move it in that direction, I think, would certainly be welcomed in that regard because we clearly do need to have a relationship.

The key issue, I believe, if you take a look just in this year, if I can use that as an indication of where we are, the nine Labs that I mentioned have close to \$9 billion. The amount of money the Department of Homeland Security will spend is \$300 million with the labs, and a hundred million of that is just helping Borders and Transportation Security do some work. Only \$200 million will actually come out of the Science and Technology Directorate.

So financially, we don't have much leverage at all. We need to make sure that we can get access. We need to make sure that we're not just a "when they don't have anything else to do, they'll work on our stuff," because we can't be dealt with in that way. And I don't mean for a moment to suggest that I feel that that's the way we're being treated, because we're not. They've put some very talented, very capable people to work on our problems. And we have a number of people that are on loan to us from the labs working with us, since it's an important resource there.

So this working relationship is very important. We'd like to have our own direct contracting relationship with them. I think that's the way to make sure that we are getting the attention that we need. But we need them, and I'm satisfied, at least, the way the relationship has been going so far, with that one little nuance.

GENERAL WELCH: There's another agency that has a name that sounds an awful lot like what you do, and that's the Defense Threat Reduction Agency. What kind of relationship do you see with them?

DR. MCQUEARY: We have a pretty good relationship. We've run some joint exercises and done some plume modeling work in Oklahoma City late last year, which was a joint activity. We have, essentially, a quarterly meeting with their folks at the senior level -- Paul McHale and Dale Klein -- to stay coordinated. And, of course, DTRA reports to Klein.

DR. ROCA: Dr. McQueary, you've scaled the problem earlier. There are millions of transactions a day with error rates that have to be 10 to the minus a lot. You've got any number of threats that are almost too long to list. There has to be some process for prioritizing what one does, other than the squeaky wheel one, of the loudest voice driving you on a given day. Have your folks been able to make any progress in coming up with some systematic way of identifying the threats and prioritize them?

DR. MCQUEARY: To a degree. And this is still being refined, you know, every time, and it really translates into where we spend our money. And I talked to someone at the break about this.

There are really two significant factors when we start looking at how we're going to make our investments. One, you look at what the consequences of what the event would be, or whatever that terrorist activity might be. And certainly, nuclear, there's a huge consequence if we had a nuclear weapon go off in this country. Biologic events have great consequences. Many of the others are certainly much less in terms of number of people that are killed.

Another factor, though, in terms of determining what the investment would be is the likelihood that the event would occur. And if you look at the likelihood of a nuclear weapon being set off in this country, there is a very low probability that that will happen.

The likelihood that someone or some people could do great damage to us in the biologic area is extremely high, because there are so many different venues that could be used, the ease with which things people could make, the distribution of, whether it's animal sicknesses, or human, or plant. You name it. It's a pretty straightforward, easily understood thing to be able to do. And therefore, the biologic area receives about 40 percent of our funding just based on the logic of thinking about it. I don't know if that gets to your question, or gives you an answer or not.

DR. ROCA: If I might continue. Even though at the next level of detail, you can introduce biological agents via the postal system, as we've discovered. You can introduce them through couriers. You can infect an individual. There are probably, you know, hundreds, if not thousands, of ways. I'm wondering more to what extent do you feel that the department has got a process in an ordered fashion attacking these issues?

DR. MCQUEARY: I don't think we would have something we can hold up to you and say, "This is our process." I think this is really -- it's an evolutionary issue. And right now, we've taken the various areas that I mentioned in looking at what we're supposed to be doing. We've hired a lot of smart people. And fundamentally we base our decisions on the efforts of these people. And Parney leads the effort on deciding where our budgetary emphasis is going to be. But this is done through a lot of conversation and discussions among the scientific staff that we have, and the expertise that they have in helping guide us as to where we're going to go.

Of course, the bottom line budget, if you will, is pretty much predetermined in advance. And so we work with that.

But I also hasten to say that I feel uncomfortable with the budget that we've got right now, or the budget that we had for the last three years, part of fiscal year '03 and '04. Because to date, we do not have an effective way of identifying the consequences of what we're doing in a quantitative way.

And I touched upon this earlier. I think it's very important to be able to quantify the improvements that we make as a result of the scientific investments we make. And we've got a ways to go, a substantial ways to go, to be able to really do that in an effective way. Some areas probably do it better than others.

We ultimately need to be able to say, in a way that can be explained for lay people to understand it, "If we do this, we're safer. And here are the end reasons why we are safer," in a way that people can relate to and understand.

DR. SHINE: Two questions. First, you emphasized the notion of sustainability. There are a large number of threats, only a small proportion of which are likely to actually happen. This situation raises the whole question of strategic investments in S&T based on dual use, and the notion that one might want to put one's highest priority. Not that one doesn't fund certain activities that, as you say, are very high risk for a major event, but that you do choose those areas where there is the potential to have an ongoing sustainable effect. And we're talking about biological. Obviously, I'm interested in that in terms of my view being West Nile is perhaps even more important in terms of our ability to recognize it early and to respond to it.

So I'm curious as to what your general philosophy is when you look at the S&T agenda about the notion of dual use, and how much that influences your thinking about where those investments ought to be.

The other much harder question is in your outline of activities, you described an activity in risk analysis. My question is where is the research agenda under S&T on risk communication which is, it seems to me, a different set of research questions of which Baruch has obviously made some reference.

DR. MCQUEARY: I'm going to let Parney take a shot at that, since he's been at this longer than I have, and had a more detailed involvement on a day-to-day basis.

DR. ALBRIGHT: Generally, when we make our investments and decide what it is we're going to do within the department, we tend not to initially ask the question is this something that is going to have, for example, public health benefit, or, you know, benefit the cop in the field, for example, for other reasons?

And the reason for that, of course, is that, you have to set your priorities based on what you perceive the terrorist threat to be. And the fact that something might have particular

public health benefits is not going to be the initial focus you take in determining what it is you're going to do.

However, having said that, deciding what specifically to do in a particular area -- for example, sort of a classic area to think about is medical surveillance technologies and information infrastructures, where clearly, once you decide that is something that's worth doing, from a bioterrorism point of view, you would then be foolish not to build into it the hooks and capacity that would allow it to be of benefit to the greater public health. Because as is implicit in your question, if it is of day-to-day benefit, then you'll sustain the investment over a long period of time.

But I will tell you that there are several things that we're doing within the department, radiation detection at the borders is a good example, where it's kind of hard to come up with a reason for doing that, other than to prevent the importation of a nuclear weapon into the country.

DR. SHINE: Hazardous chemicals, for example, is a dual-use area.

DR. ALBRIGHT: Sure. The point is where you can leverage things. And clearly, if it has a dual use, then you know it's something you want to do because you can sustain the investment.

You know, again, in the medical surveillance arena, you can get -- I mean, first of all, there's a mundane issue. You can get CDC to pay for it instead of DHS, which is a good thing.

But, it also has advantages to public health. We are in the process -- the President has got an initiative in bio-surveillance that he just put out in the most recent State of the Union address. And, we're interested in early detection of things like infectious diseases that aren't necessarily aerosolized. Things like smallpox.

Having said that, we're also going to be tracking every flu epidemic that comes through, every kid, every virus that, you know, goes through the elementary schools. Everything will be tracked. And we're going to get data and information out of this. We're going to get science out of this that we've never had access to before. So it will be interesting to see how that works out.

The same thing at the borders. We're making significant investments at the borders that we have never made before, because the problem was not perceived. INS has a long history of little pilot projects they've put up along the borders and Customs has a long history of doing this and other projects that never got carried through to fruition because no one was willing to make the investment. And the reason no one was willing to make the investment is because it was always below the cut in terms of priorities.

Well, now, Homeland Security has come along and raised the bar basically put these issues above the line. But now that they're above the line, it is now possible to make

investments at the border that not only make the country safer, but also expedite travel and make things more efficient.

Some of the things we're doing in terms of U.S. Visit, for example, have the potential of expediting people more rapidly through immigration. And we have the potential with things like the Container Security Initiative and things like that of getting the vast majority of the traffic expedited through the borders, as opposed to being randomly searched.

So there are certain advantages along those lines. These are, again, investments that would have led to efficiencies that just no one ever felt were important to make.

Now, going to risk management or risk communication. That's something we talk about a lot. It is something that, as you know, is a vexing problem. The idea of how does one communicate low-probability events to the public has always been a struggle. I mean, there are textbooks written on this.

And the answer to your question is no, we don't have anything in the pipeline in terms of a research agenda. There has been some talk about a potential one of these Centers of Excellence being focused on that. We haven't really made a decision on that yet.

Our public affairs people, Susan Neely and her staff, have been putting together an initiative to educate the media on risk, and educate them on some of the things that Dr. McQueary has been talking about, things like radiation and biological threats and that sort of thing.

But how does one, for example, communicate to somebody after an RDD has gone off what it really means when you say that the probability of their cancer risk has increased by one part in 10^5 ? What does that mean to people? That whole communication thing is something we're very concerned about, but we don't really have any good ideas, and no, we don't have a research agenda on that.

MR. FERREN: I think the words before lunch were very compelling about moving quickly and getting things out there that actually do our people good quickly. However, in my observation, large organizations in general, and federal procurement in specific, you seldom hear the words "quick" or "efficient" mentioned in terms of time domain on those classes of organizations or procedures.

I'm wondering if the department, and S&T in particular, has a strategy for how to move quickly within the constraints of large organizations and federal procurement regulations, which are really designed to make sure that doesn't happen.

DR. MCQUEARY: As a part of the Homeland Security Act, we were given some latitude in what we could do in terms of contracting. And let me illustrate by example what I mean by doing things quickly.

I talked earlier about the counter MANPADS work that we did. We actually put out the RFP in October and had the proposals in -- more than three, I think it was five or so, maybe more than that, and then we pared it down to five, and then down to three -- and we awarded our first contracts in early January. So it took us about three months from start to finish on that.

Now, we had people that were knowledgeable to be able to write the proposal. We had broad agency announcements that came out in late October or November. And we're issuing contracts now. We started a new Small Business Innovative Research Program just last month. And already we have proposals in. We have 66 we've chosen to be awarded. The contract negotiations are under way for that.

So with the latitude we've been given, we at least can make it move. Whether that latitude will stay there long-term or not, that remains to be seen.

But the way I've described it before, I cannot conceive of a situation in reality in which if we know from a scientific point of view what we need to do in order to make the country safer, and we say, "Well, it's going to take us seven years to procure it," I mean, that's a conversation one should never have to have. So we've got to be able to move it. I think what we have to do is every moment, step on those cases that seem to be getting in the way of moving quickly.

And I just encountered one a short time ago. We made our choice on our first Homeland Security Center of Excellence back in November. And the bureaucracy got in our way that we just finally got the money out to them yesterday or the day before. I mean they had \$5 million coming to them. And from my standpoint, if I say we're going to spend it, we made the choice, why should it take so long to do that? And I don't know the answer to my own question right now, though I'm going to find out. It doesn't make any sense to me that the system should be so cumbersome.

Perhaps one thing could be said. Better men than I have tried to solve that problem and failed.

MR. FERREN: Well, it seems that in large organizations, nobody has the ability to say yes, but anyone can say no.

MS. BORRONE: I'd like to ask Parney a follow-up on that last answer. As you see the opportunity for dual-use results products, are you involving the other federal agencies who may be the beneficiaries of these products up front in the framing of the research agenda? Or is it that you're informing them en route, and hoping that they translate it into useable forms? That's the first part of the question.

The second is I noticed in Dr. McQueary's testimony that there is a review going on of the R&D that's taking place in the federal structure. Can you give us some sense of the time frame for that product?

DR. ALBRIGHT: The answer to the first question is yes we do involve other agencies from the get-go. You know, again, on the borders and transportation side of things, clearly, there are some interactions with DOT that are obviously relevant. But a lot of those activities are now part of the department, especially the border issues.

Regarding, the bio-surveillance thing that I mentioned earlier, we meet very frequently with Julie Geberding and the CDC folks. They're the ones who have the responsibility for medical surveillance. That particular initiative involves much more than just medical surveillance. It involves agricultural surveillance. It involves food poisoning reports, EPA types of things, and all those people are playing a role.

As far as review of the overall RDT&E for Homeland Security within the Federal Government, we have a responsibility in Section 3022 of the Homeland Security Act to develop a national strategy and plan for research and development for civilian Homeland Security RDT&E. And we're not there yet. There are a couple of issues associated with that. One is an authority issue. We have a statutory responsibility to do that, but we still need to get executive authority to basically take the lead on that. And that's something we're working through with the White House and how to make that happen.

Secondly, that kind of coordination happens basically through the standard processes that exist within the White House, through the Homeland Security Council, OSTP, etc. There's an NSC counter-terrorism R&D activity. And I would say that we are very cognizant of what's going on in things across the Federal Government. But still you never know what you don't know. I wouldn't be surprised if I walked into a room somewhere and found out about something I didn't know about. But I think we've got our arms around almost all of it. In terms of creating a national strategy, I would say we're probably three or four months away from doing that.

DR. GAST: Dr. McQueary, I think everyone would agree that you listed a very impressive set of accomplishments, especially in such a short period of time. It's very comforting to see so many things started. And also, I think it's laudable to have set up a matrix-type organization. I guess my question is really how well you are able to, at these early stages, really integrate your portfolios and integrate your projects. I was struck by the nice descriptions of BioWatch and PROTECT being very exciting technologies and exciting things that will protect the public. But in both of those, you mentioned their immediate communication and immediate transmitted data to another location, which is obviously a very important piece of their functioning.

And so if I take communications and cyber security, which sounds a little fuzzier and less well-developed, my concern is how are you able to get portfolio managers focusing on these areas to really cross boundaries and think about "This won't work unless we can transmit the data"?

DR. MCQUEARY: I think at least a partial answer to the question comes back to a point I made earlier. I don't think we've done a very good job of getting the systems engineering responsibility that we have to pull all these things together. We have pockets

of capability and successes we could point to. BioWatch, I think, is a good one. I mean, it's almost a stand-alone system, but it does have to interact with a number of different agencies and so forth. So in that sense, it works well.

But to address the root of your question we've got to have a larger overarching system engineering capability, and I think we believe within the directorate the formation of the Homeland Security Institute will provide us the talent base that we will need in order to do a better job of addressing that issue. But you raise a very important point, and I agree, I believe, with the thrust of it.

DR. GAST: And the integration of the people up to a certain level in that area, not just to rely on yet another expert to bring on the integration.

DR. MCQUEARY: I'm missing the latter point.

DR. GAST: I think part of it is educating and teaching people to think beyond their portfolio, and learn their own means of systems integration from the systems integration experts.

DR. MCQUEARY: Right. Well, keep in mind, we have chosen who the portfolio managers are. And so I believe Dr. Albright has done a good job of selecting people. They're not only experts in their scientific areas of endeavor, but also people of great leadership skills to be able to do, I believe, at least some part, if not a substantial part, of the point that you're making.

DR. PAPAY: A comment and a question. In fact, the comment may be a question. As a follow-up to *Making the Nation Safer*, the National Academies have been doing some work in threat assessment risk analysis, and that report is fairly close to completion, I think, at this point. I don't know if you've interacted with them at all on that. But I'll give you a heads-up that there is one that is coming, and I think it could be used from that point of view to help to quantify the approach.

The question gets to what I'll call the bureaucratic cracks. And one area of particular interest is you tend to talk about what you can do at the borders, and perhaps to points of embarkation in terms of containers, et cetera. But using one specific example on nuclear weapons, especially technical weapons, rather than strategic weapons. There's obviously a lot that can be done upstream to be able to eliminate or reduce that threat. But you talk about the civilian population, civilian threats, et cetera.

What are the mechanisms to be able to move upstream in terms of some of these threats? That is, to go beyond our borders and address issues? Obviously, State Department, Defense, and some other agencies are involved. Can you give us a flavor of where you are on those approaches?

DR. MCQUEARY: Most of the interactions that are going on in the areas you just touched upon are being done outside of the Science and Technology Directorate

responsibilities; although I'm sure we have people that are intimately aware of what's going on.

I think to characterize the point that you're making, we must, as a Homeland Security department, do a better job of finding out things before they get to our borders. Because once they get to the borders, we're in a defensive mode. And when you're in a defensive mode, you tend to make more mistakes than you do when you're in an offensive mode.

And so we have to continue to work the issue of what we do in order to know that what's coming towards the borders. And certainly in the container security initiative, that the borders and transportation group has had underway, that attempts to make some steps in the direction of addressing the container part of the problem.

DR. ALBRIGHT: Let me just comment specifically on the nuclear one, because you brought that up. The Department of Energy has the MPCA Program, as I'm sure you're aware of, which involves safety and security of the actual source material, from the Soviet Union, primarily. And then, of course, there's the second line of defense activities that occur in the former Warsaw Pact countries.

You know, there have been a lot of issues associated with that problem. As you know, DTRA has a piece of that, State has a piece of that, and then DOE has a piece of it. Although I will say that all roads end up leading to DOE on this one, eventually.

That's gotten a lot better coordinated than I think it was a year ago. There was a GAO report that Senator Roberts commissioned that was very critical of the overseas programs.

You're exactly right, if you're going to control physical materials, absolutely the best way to do it is overseas. The goal-tending is something you prefer not to get into. That doesn't mean you don't have to have it.

Now, having said that, the Department of Energy has not invested a great deal in research and development activities associated with those activities. The biggest investment they've ever had in terms of improving sensor technology, for example, was \$10 million in FY '03, and that was a plus-up they got after September 11th. Typical investment for R&D in those activities was \$2 or \$3 million a year.

We've got \$129 million invested in rad nuke RDT&E in Department of Homeland Security, of which about \$60 or \$70 million -- I forget the number -- is specifically devoted to pushing the football a little bit further down the field in terms of sensor technologies.

So one of the important things for us to do as we go on that big push is to make sure that the things that we do are consistent with what the second line of defense might be able to use.

Now, as you know, they've got to buy it from the Russians as part of the treaty. So there's a lot of policy issues about how do we transfer this technology, how do we get it out overseas into the field. But nevertheless, that's something we work very close with.

By the way, that's a place where the White House coordination process really works well. There's actually a joint NSC/HSC Policy Coordinating Committee that looks at these issues that we participate in very heavily.

DR. FISCHHOFF: I guess I'll also take us downstream with a comment, and then a question. The comment is that I actually think the science gives us more reasons for optimism regarding our ability to communicate with the public than an audit of communication failures will show that they're often on the part of the transmitter rather than the part of the receptor. So I think that's actually -- I think that's probably more tractable.

Particularly where this comes up from the example that Parney mentioned earlier, I'm interested to know how the agency -- how the department deals with it -- this is a downstream question -- that we will have -- you know, if there are incidents, or there are even just serious false alarms, we have an issue of clean-up standards, or decontamination. And if we're thinking of what are the impacts in terms of the economic impacts and the social impacts, you know, contaminating a large area to a very low degree will be a significant disruption. If we wait until it happens, and then we have to decide well, are we going to clean these up to our traditional standards that grew out of the nuclear power industry, you know, for a tiny risk.

So how do we deal with achieving these standards. I think from a public health -- it's probably a scientific question. But I suspect from a public health perspective, getting the people back into resuming their lives in weekly active radioactive areas are probably good for their health, good for social cohesion, but it's going to be harder to do when people are stressed afterwards, and there's issues of trust and so on.

So there's partly a scientific question, but there's also a policy question. I just wonder how the department organizes around these kinds of things.

DR. MCQUEARY: Well, I wouldn't say we're organized around it, but certainly we're intimately aware of the issue. And the differences I think you're describing is the difference between, for example, what EPA environmental clean-up standards might be versus what is an acceptable level of whatever the contamination might be. There is a disconnect.

An area that we have a lot of concern about is what happens if we have an event. Because if the Federal Government then comes in after an event and starts trying to explain this away without having agreed among itself various components what the acceptable levels are, there will be a great deal of distrust in the American public, I think, inevitably, because it comes about "What's the Government trying to do to us now?"

So we are a part of discussions with EPA and others on the issue of how do we reconcile these things? And how long it's going to take to work through that, I don't know. Because I'm told there are instances where the radiation background in Denver is higher than the clean-up standards that we might have to be faced with if we follow EPA standards. And that, obviously, is not an answer -- the people in Denver are not clamoring to have the environment cleaned up there, as I understand it anyway.

Anything you want to add to that? It's an important issue.

DR. ALBRIGHT: We're working the problem very hard. There are a lot of authority issues that are involved -- you're right. The policy issues here are transcendent. You know, who makes the call?

There's also a fairly stiff regulatory environment that exists. You know, there are agencies -- Department of Energy, for example, surprisingly, has a lot -- I mean, they have a lot invested in terms of their regulatory environment in a particular set of numbers that they have to clean their labs up to, for example. And so there are a lot of bureaucratic issues here about what the right thing to do is.

And maybe when we go to the classified session, we can talk in a lot more detail about it. Right now, we're in a situation where you have absurd results, you know. You would be cleaning up an RDD in Washington, D.C., to a level lower than the national background in Denver, for example, based on EPA standards. So we're obviously working that very hard.

DR. ATLAS: I would first add to that the academy has an ongoing study on how clean is safe in the bio area, which is really complicated by the fact that we don't have the standards especially set out there.

But the question I was going to ask, I was going back to your description, sort of the vertical aspects as well as the cross-cut, and the border role of integration of DHS, there must be other scientific advisory boards both on your verticals and maybe on your cross-cuts. And my question is how this advisory board really relates to those in filtering and getting you the right strategic advice.

DR. MCQUEARY: The only formal advisory board that we interact with now would be Secretary Ridge's Homeland Security Advisory Council. And this board will have interaction with Jared Cohen and Dr. Ruth David, who chair and co-chair the Academe and Policy Research Senior Advisory Committee of that organization. I just met with them before coming in this morning. And I think one of the issues for this group to do is to work to decide what your interaction needs to be with them.

The thing I would like to avoid is having two separate advisory committees telling us what they think we should be doing. I'd rather have you act as our go-between between Secretary Ridge's committee. But other than that, I don't think we have any other advisory committees that we deal with.

DR. ATLAS: So the vertical ones, you don't have?

GENERAL WELCH: There are a number of inherited advisory committees. We will get for our next meeting a description of what's there and how active they might be.

DR. MCQUEARY: I would not view that any advisory committee that has existed in the past necessarily needs to continue to do so. I'd rather view that this committee will be our first point of contact to deal with advisory committees, and you help us decide what we need.

DR. BESSETTE: My question has to deal with, which you brought up earlier, sustainability of programs. And I wondered, does the department have any thoughts in terms of requirements of matching funds from either private industry for any of the funds that you distribute, or from other states in order to improve that sustainability and improve the leverage?

DR. MCQUEARY: We don't have any policy that I would point to in that regard. However, there's some what I'll call inevitable realities in all this. Eighty-five percent of the critical infrastructure in this country is in private hands. I can't personally conceive of a scenario where the Federal Government says, "It's our responsibility; and therefore, we'll ship money out to all of these private industries."

I think we're in an environment where terrorist threats are a reality of doing business in this country. And therefore, businesses have to step up to the plate and be prepared to deal with the responsibility that goes with having a responsibility to shareholders and board of directors.

And it is also -- along the same lines, it's my view that those companies that move out quickly and position themselves as having worked the issue of protection against terrorist threats will find themselves in a better competitive position. Because if you or I are trying to decide where we want to invest, and you've got two "equal opportunities," one of which is the companies have done a good job of doing the things, whether it's cyber or physical security or whatever it might be, and another hasn't, it's pretty easy to think, "I think I'll put my money in the one where they've done the right thing."

So I believe there is an opportunity in a competitive society such as our own for doing things that improve the protection of one's capability can be a competitively advantageous thing to do. And from my standpoint, that's the way I would view it.

I just don't believe that this is an issue where the Federal Government -- I think that the Government needs to provide standards, it needs to provide guidance, it needs to provide help in certain critical areas, and we've done that with grant programs and so forth.

But ultimately, businesses have to step up to it. And then to the degree that they can, state and locals have to. And then we do have mechanisms in place for the Federal

Government to step in and provide additional funding and support in those areas, particularly in the first responder area.

Whether there's ever enough in any given year, I don't know. I suspect no matter what the size that one might distribute, you can always find one more thing it would be nice to be able to do that year. So it becomes a question of how much the country can afford, to a degree.

GENERAL WELCH: Thank you. For the members of the public who are here, we didn't have time today to receive any oral commentary. However, we appreciate your interest. If you have any comments, you can e-mail them to hsstac@dhs.gov, and we will pay attention to them. Thank you.

(Whereupon, at 1:50 p.m., the meeting was concluded.)

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