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VA RESEARCH: INVESTING TODAY TO GUIDE TOMORROW'S TREATMENT

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VA RESEARCH: INVESTING TODAY TO GUIDE TOMORROW'S TREATMENT

THURSDAY, APRIL 27, 2006

U.S. SENATE,
COMMITTEE ON VETERANS' AFFAIRS,
Washington, DC.

The Committee met, pursuant to notice, at 10 a.m., in room SR–418, Russell Senate Office Building, Hon. Larry E. Craig, Chairman of the Committee, presiding.

Present: Senators Craig, Burr, Thune, Isakson, Akaka, Jeffords, Obama, and Salazar.

OPENING STATEMENT OF HON. LARRY E. CRAIG, CHAIRMAN, U.S. SENATOR FROM IDAHO

Chairman CRAIG. Good morning, ladies and gentlemen. The Committee on Veterans' Affairs will now be in order.

We have entitled this hearing today "VA Research: Investing Today to Guide Tomorrow's Treatment." Today's hearing will focus on an aspect of the VA Health Administration that often goes without the full measure of recognition that, I believe and I think most who know about it believe it, is due. The Medical and Prosthetic Research Program, VA's research program, encompasses bench science, clinical research, health service research, and rehabilitation research. Today these research activities have vastly contributed to the scientific knowledge base, led to the development of new technologies and improved the delivery of health services at VA medical facilities across the country.

VA research has played a major role in a number of historic breakthroughs: the first successful liver transplant, the development of the first cardiac pacemaker, and the technology that led to the development of the CT scan, just to name a few. Impressively, VA has accomplished all of this on a limited budget. Each year, direct appropriations for VA R&D are leveraged with the NIH grant funding and resources from VA-affiliated nonprofits. Due in part to this maximization of research funds, the roughly $400 million of annual appropriations for VA research brings about improvements from a $34 billion health system.

As you know, this year's budget proposed a $13 million reduction in VA research funding. With servicemembers returning from Iraq and Afghanistan with traumatic injuries and in need of innovative medical care, now is not a time to cut research funding. I would like to thank the Members of our Committee for joining both with me and Senator Akaka, I believe some additional Members joined, in writing a letter to the appropriators urging them to overturn

this reduction. We proposed that VA research be funded at $432 million, a modest increase over last year's budget, to keep pace with inflation and ensure that critical initiatives involving traumatic brain injury, spinal cord injury and prostheses are able to move forward.

Beyond addressing this year's budget, we must look ahead to the future of VA research. Many of the research facilities are in great need of repair and modernization. Researchers carry out their day-to-day activities while under serious space constraints and in outdated buildings, many of which are approaching a 100-year-old mark. For example, in one site that is not fully equipped with modern air conditioning and ventilation systems, researchers opt to work at night so that extreme temperatures will not interfere with their results. There are limits to how long we can rely on early 20th century research facilities to yield cutting-edge 21st century research discoveries.

However, there are also limits to the amount of funds the Congress can provide. As part of our focus on the infrastructure needs, it is important that we look for innovative ways for VA to enhance its existing relationships with universities. I am especially interested in exploring VA-university collaboration in the form of jointly operating research space. Modern facilities are not just about attractive work space for academics.

One of the myriad ways that research benefits the VA health care system is through recruitment of physician researchers. We will hear from our witnesses here today about how the shortage of modern research is hindering recruitment of new physicians.

I want to be clear that this hearing is not about pointing out our shortcomings or our failures. It is about assessing our challenges for the future. In fact, I commend VA for its remarkable record of research accomplishments in spite of some serious obstacles. This exciting work will be highlighted during VA Research Week which will be held the second week of May. As one of the outcomes of this hearing, I hope that Members of this Committee will make a point of touring the research bases when making visits to their local VA facilities.

We are joined today with VA Under Secretary of Health, Dr. Jonathan Perlin, who happens to be an academically trained researcher. He is accompanied by Dr. Joel Kupersmith, VA's Chief Research and Development Officer, and Richard Weir, who is a researcher at VA's Prosthetic Research Laboratory in Chicago.

Following their testimony, we will hear from four distinguished witnesses who are involved in VA research throughout the country. Dr. Fred Wright comes to us from the West Haven, Connecticut VA, and Dr. Dennis Stevens is from the Boise, Idaho VA. We will also hear from Dr. Feussner, who is a former head of VA Research and currently chairs the Department of Medicine at the Medical University in South Carolina, and Dr. John Kennedy, from the University of Alabama, in Birmingham's School of Medicine, who will testify on behalf of the Alliance for Academic Internal Medicine. So we have some very distinguished and talented people before us.

Before we go further, let me turn to my colleague and Ranking Member, Senator Akaka, for any opening comments he may have.

Danny.

STATEMENT OF HON. DANIEL K. AKAKA, RANKING MEMBER, U.S. SENATOR FROM HAWAII

Senator AKAKA. Mr. Chairman, thank you so much. As always, Mr. Chairman, I appreciate the work of Chairman Craig in crystallizing the most pressing issues before the Committee, and as always, I enjoy working with him and with the Committee as well.

Today we will assess the tremendous value of VA's research program, and I want to associate myself with the comments that were made by the Chairman. I welcome our witnesses to the hearing, including Dr. Perlin, good to see you again, and to the other witnesses that were already introduced by the Chairman.

I thank you all for being here today. We are all without question immensely proud of VA research. The traditional research model, which stems from the peer-review process, has yielded an impressive list of accomplishments for the VA. VA's research strengths have spanned large clinical trials and more narrow looks into the fundamental parts of biology, what some call bench research. However, the value of VA's research enterprises do not lie solely in its results. The VA Medical Research has been instrumental in allowing recruitment and retention of physicians in the VA Health Care System. Adequately funding VA research helps to ensure that VA remains an attractive option to our best and brightest in medicine.

VA cannot compete with the nongovernmental health care sector to attract highly paid physicians. But if VA can continue to attract some of our Nation's best doctors, veterans will receive the care they deserve, and I give some of this credit to Dr. Perlin and what you are doing here. Some of VA's researchers' greatest achievements have not been in the arena of new treatments for war wounds or for service-connected disabilities per se, but for illnesses affecting the populace. It is my view that young or old, combat veteran or peacekeeper, all of our Nation's veterans can and should be the recipients of a vibrant VA research program.

Funding for the research program is obviously quite critical as well. I am extremely grateful that we all came together and agreed on the importance of fully funding VA research. The $399 million proposed by the VA and the Administration is simply not sufficient. I am confident that we will more appropriately fund the research program and that we will protect peer review research.

With that, Mr. Chairman, I look forward to this hearing. Thank you very much for having it. Thank you very much.

Chairman CRAIG. Senator Akaka, thank you very much. Before I turn to the rest of our colleagues on the Committee for any opening statements, we do have a markup, that is when we get a quorum of eight here.

We now have that magic number in front of us.

[Whereupon, at 10:10 a.m., the Committee proceeded to a markup nominations hearing.]

[Whereupon, at 10:12 a.m., the Committee reconvened.]

Chairman CRAIG. Now let me move on to anyone who would wish to make a comment before we move to our panelists. Senator Isakson, you are here next in order.

Senator ISAKSON. I will yield to Senator Thune.

Chairman CRAIG. And that is the appropriate yield, because that is the order involved.

John.

STATEMENT OF HON. JOHN THUNE, U.S. SENATOR FROM SOUTH DAKOTA

Senator THUNE. Thank you, Mr. Chairman. I want to thank you for holding this important hearing to examine the VA's Medical and Prosthetic Research Program. I also would like to extend a warm welcome to our panelists today. I am pleased to see Dr. Perlin again testifying before the Committee.

The VA's researchers have the noble task of finding ways to more effectively address the unique medical problems that our veterans tend to suffer due to their service to our country. I applaud the efforts of the researchers testifying today who have dedicated their lives to improving the health conditions of our veterans. You and the 3,000 VA researchers across the country who work every day on behalf of our veterans are truly great Americans, and I would like to thank you all for your service to our country.

Mr. Chairman, I was pleased to join with you and with Ranking Member Akaka, as well as with many other Members of the Senate, to send a letter to the Appropriations Committee this year expressing support for increased funding for the VA's medical research programs. While the Administration's fiscal year 2007 proposal for VA funding overall was quite generous, medical research funding required some improvement. I am glad to see that we are working in a bipartisan way to provide that improvement by increasing funding for medical research by $20 million over last year's level.

As we continue with the process of developing the VA's budget for fiscal year 2007, I am confident that we will continue as well to find ways to improve funding for the VA while not spending beyond our means. So, Mr. Chairman, I applaud your efforts to increase funding for VA medical research. I appreciate the opportunity to join you in that effort, and again want to thank you for holding this hearing, and thank our panelists for sharing their testimony. Thank you, Mr. Chairman.

Chairman CRAIG. Senator Thune, thank you very much. Senator Burr, do you have any opening comments you wish to add?

STATEMENT OF HON. RICHARD BURR, U.S. SENATOR FROM NORTH CAROLINA

Senator BURR. I can ditto to what Senator Thune said, thank you to you and the Ranking Member. More importantly, I cannot think of a more important hearing for this Committee to have at this what I think is a very pivotal time where the signal that we send about the investment that we make and the tools that the VA has should be very clear. I think this is a statement, and I thank the Chair.

Chairman CRAIG. Senator Burr, thank you. Senator Salazar.

STATEMENT OF HON. KEN SALAZAR, U.S. SENATOR FROM COLORADO

Senator SALAZAR. Thank you very much, Chairman Craig and Senator Akaka, for your leadership on this Committee and on veterans' issues, and thank you, Dr. Perlin, as well for your leadership of the VA.

We all know how important the Veterans' Health Administration is to all of our veterans in our country, but something that I think we often overlook is how important VHA is to our Nation's health care system as a whole. Our veterans' health care system is often on the cutting edge of critical advances in prevention, diagnosis and treatment, and VA's medical research programs are a driving force behind its ability to serve this important capacity for our veterans and for our Nation. Because the core mission of the VHA is to address the prevention and treatment needs of our Nation's veterans, the services it provides and the research it conducts are patient-oriented. Six out of every ten VA researchers treat veterans. As a result, VA researchers do not operate in a vacuum. They deal with the very real and very serious health problems resulting from combat and from the sacrifices of our men and women in uniform. For the 5 million veterans enrolled in the VA health care system, they also have unique access to a clinical setting in which to put the results of their research into practice every day. For these reasons, VA medial research has been responsible for significant breakthroughs in the fields of prosthetics, diabetes, spinal cord injury, substance abuse, mental illness, heart disease, and cancer, all of which are prevalent among America's veteran population.

I understand today's hearing will focus on some of the infrastructure challenges that VA's medical research programs currently face. Challenges ranging from extremely old facilities, to poor heating and ventilation, to outdated equipment. There is no question we need to work to address these needs if VA's research programs are to continue to be a leader in health care innovations, and I look forward to the testimony of today's panelists. However, we must be careful not to overlook the need to provide adequate resources to the many important research initiatives that are currently underway in VA facilities across the Nation.

Despite the progress that research programs across the country have made, this year's budget request proposed cutting funding for research by $13 million. If anything, we should be increasing funding for these important programs so that the VA can continue to be a leader in innovation. I am proud to have joined my colleagues including Senator Craig and Senator Akaka in urging $432 million in funding for VA medical research.

Thank you again, Chairman Craig and Senator Akaka, for holding today's hearing, and I look forward to hearing from the witnesses.

Chairman CRAIG. Thank you very much, Senator Salazar.

Senator Jeffords.

STATEMENT OF HON. JAMES M. JEFFORDS, U.S. SENATOR FROM VERMONT

Senator JEFFORDS. Mr. Chairman, thank you for holding this hearing on the VA research funding. I think we all agree that the cutting-edge research being conducted by the VA is one of the most important functions of the Veterans Administration. The VA is responsible for significant advances in medical treatment, specialty care, prosthetics, and development in outcomes research. The VA's research activities are one of the big attractions for top-quality doctors who want to explore advancements in medicine as they treat patients. I am concerned by the proposal in the President's budget to cut $13 million from the VA research budget. I joined many of my colleagues here in signing a letter to the Appropriations Committee urging the VA Subcommittee to increase the funding for VA research by $33 million. I look forward to hearing from you, Dr. Perlin, on this important topic.

Chairman CRAIG. Jim, thank you very much. Now we turn to our panel. I have introduced them, but Dr. Perlin, once again let me introduce you, the Under Secretary for Health, United States Veterans Administration. So we welcome you and those who you have brought with you not only to tell us what you are doing, but to show us some of what you are doing. Welcome before the Committee.

STATEMENT OF JONATHAN B. PERLIN, M.D., PH.D., UNDER SECRETARY FOR HEALTH, DEPARTMENT OF VETERANS AFFAIRS; ACCOMPANIED BY RICHARD F. WEIR, PH.D., RESEARCH SCIENTIST, PROSTHETICS RESEARCH LABORATORY, JESSE BROWN VA MEDICAL CENTER, CHICAGO, ILLINOIS, DEPARTMENT OF VETERANS AFFAIRS, AND JOEL KUPERSMITH, M.D., CHIEF RESEARCH AND DEVELOPMENT OFFICER (CRADO), DEPARTMENT OF VETERANS AFFAIRS

Dr. PERLIN. Thank you very much, Chairman Craig, Ranking Member Akaka, Members of the Committee, good morning. It is a delight to be here with you, and we thank you for your support of VA research and the recognition that VA research is indeed a crown jewel among the Veterans Health Administration's resources to serve our Nation's heroes. I am pleased to have the opportunity to discuss our Medical and Prosthetics Research Program with you today.

As mentioned, Dr. Joel Kupersmith is the Chief Research and Development Officer, and I am also honored to be joined by Dr. Richard Weir, a research scientist from the VA Chicago Health Care System who, indeed, will demonstrate a cutting-edge prosthetic device.

Mr. Chairman, our research program has a proud history of accomplishments that have resulted in marked improvements in the health not only of veterans, but of all Americans. VA researchers developed the first effective therapies for tuberculosis, the implantable cardiac pacemaker, the Seattle Foot, and other prosthetic devices. Researchers made incredible contributions to such things as the development of the CT scan and the MRI, and just last year we announced the results of a clinical trial finding that will make a new shingles prevention vaccine the standard of care.

Today, VA researchers are developing artificial retinas, biohybrid limbs and other futuristic prosthetic devices, including those designed for high-performance athletes who ski, play basketball, and other competitive sports.

We are also evaluating and improving the care that VA now provides to veterans suffering from multiple injuries, or polytrauma, and those who use prosthetic devices. This year we are beginning a series of research projects on traumatic brain injury and spinal cord injuries. These projects will directly benefit veterans from Operations Enduring Freedom and Iraqi Freedom, as well as all veterans of other eras.

Last week, Mr. Chairman, we established new collaboration with the University of Texas Southwestern Medical Center to launch a Center of Excellence for the research of Gulf War illnesses. This collaboration will help expand our research programs to help Gulf War veterans who continue to suffer from unexplained illnesses.

We are collaborating with the Department of Defense and the National Institute of Mental Health to look at the incidence of PTSD among veterans of the Global War on Terror, and we will also be looking at our ability to improve treatment of burn injuries, long-term care issues involved with recovery from traumatic brain injury as well.

Improving our ability to treat veterans is at the very core of VA research. VA clinicians who treat veterans are also the researchers who investigate the questions that they form at the bedside. No other health system can match VA's strong connection between clinical care and research, especially coupled with our exceptional electronic health record.

Our unique position also enhances our ability to provide long-term care and to use genomic medicines as a means to move from preventive medicine to predictive medicine. In fact, we recently established a Genomic Medicine Advisory Committee composed of renowned scientists who will advise us on policy and process, and their first meeting will be later this year.

For us to continue to build on the successes of both the past and the present, there are four things that we need to do. First, we need to continue our support to recruitment, retention, and training programs for clinical investigators; Career development awards bring tomorrow's stars to the care of today's veterans. In particular, we must continue to nurture our affiliations with medical schools which, as General Omar Bradley recognized 60 years ago, were vital to providing veterans with top-notch care.

Second, we must maintain a modern, safe, and appropriate research infrastructure. This year we have already funded approximately $2 million to provide new or replacement research equipment and facility environment upgrades. We are currently surveying facilities, identifying deficiencies and ensuring our highly specialized needs are met. We will report the results of the survey to Congress early next year.

Third, we must continue to lead the nationwide effort to improve protection for human research subjects. VA is a recognized leader in accrediting research facilities and training staff. We are working with other Federal agencies, medical school affiliates, and others to develop new institutional review board structures. These structures

will allow us to maintain strict standards for subject protection, yet provide flexibility to expedite the review process, especially useful for smaller research facilities.

We are in the process of developing a Central Institutional Review Board to facilitate consistent expertise and greater efficiency, and this will particularly enfranchise and help our smaller and rural research programs, allowing rural veterans greater access to research protocols that may offer new treatments for infections, heart disease, cancer, or other illnesses under investigation.

Finally, we must support VA research. Appropriated funds are VA researchers' core funding. We can leverage these funds with money from industry, nonprofits and other Federal agencies, as well as continue our partnerships and collaborations, use our research programs to recruit and retain investigators and clinicians who in fact treat patients and help to find new solutions, treatments, devices, and discoveries to benefit both veterans and our Nation.

Mr. Chairman, I thank you and all of the Senators who have asked for additional funding for VA research. We are grateful for your confidence in our program and in the work of our researchers, in our basic science research to advance the understanding of life and disease, who in our clinical research and cooperative studies help to bring new medications, devices, and treatments to the care of veterans and all Americans, who in our rehabilitation research help make injured veterans whole, and who in our Health Services Research Program in the words of Dr. Jonathan Lomas in the British Medical Journal, "Focus the light of health services research on our health care delivery, helping make VA one of the leading health care systems in the world." This concludes my statement, sir. Thank you.

[The prepared statement of Dr. Perlin follows:]

PREPARED STATEMENT OF JONATHAN B. PERLIN, M.D., PH.D., UNDER SECRETARY FOR HEALTH, DEPARTMENT OF VETERANS AFFAIRS

Mr. Chairman and Members of the Committee,

Thank you for the opportunity to appear before you today to discuss the Department of Veterans Affairs (VA) medical and prosthetic research program. I am pleased to have Dr. Joel Kupersmith, Chief, Research and Development Officer (CRADO), accompany me today.

Also, Dr. Richard Weir, a VA Research Scientist from the VA Chicago Healthcare System working in the Prosthetic Research Laboratory, is here to describe the work he is doing. Dr. Weir will explain the efforts to develop a new hand/wrist prosthetic. I am proud to say that over three thousand researchers have the same commitment to their work as Dr. Weir does.

INTRODUCTION

The original design for the Veterans Health Administration (VHA) Office of Research and Development (ORD) was clear: VA shall carry out a program of medical research to provide health care more effectively and contribute to the Nation's knowledge about disease and disability with emphasis on injuries and illnesses particularly related to service. We hold to that same purpose today.

A year ago in my confirmation hearing before you, I highlighted several accomplishments of VA's research program. Today, I would like to reiterate these and describe their importance to veterans and the Nation as a whole.

- VA pioneered the first effective therapies for tuberculosis in the 1940s; veterans returning from the Pacific theater and POW camps in World War II were some of the first to receive these treatments.
- From the 1940s to the present, VA researchers have led the development of better fitting, lighter, more functional artificial limbs. In the late 1970s and early 1980s

the Veterans Administration, as it was called then, supported research that led to the Seattle Foot, a prosthetic device for lower limb amputees. This revolutionary device has allowed thousands of amputees from the Vietnam War to return to an active life and participate in activities like basketball, skiing, or running, all of which were impossible with traditional artificial limbs. By 1991, more than 70,000 Seattle feet were in use in the United States. Later, I will describe the exciting work VA research is doing today in the area of robotics and other cutting edge prosthetics.

• VA was instrumental in the invention and use of the first implantable cardiac pacemaker. William C. Chardack, chief of surgery at Buffalo's Veterans Administration Hospital, collaborated with Wilson Greatbatch in a partnership to develop the device and surgical techniques that have helped millions of Americans, including our aging veterans.

• VA research contributed significantly to the development of the CT scanner and MRI machine. VA's basic science research in 1960 and 1961 contributed to the development of the computerized axial tomography (CAT scan) in the early 1970s and modern radioimmunoassay diagnostic techniques in the mid-1980s. This illustrates that the progress of discovery is not an overnight task. Sometimes, scientists must work for decades to find solutions to complex problems. Today, veterans and all of us benefit from the basics discovered by VA investigators.

• Smoking and military service have coincided for many years, so VA has a long-standing history of investigating treatments for nicotine dependence. VA's investigator, Jed Rose at the Durham VA Medical Center (VAMC), worked with others to invent the nicotine patch. Today, VA continues to support a strong portfolio of research about the effects of nicotine and its relationship with substance abuse, a major concern for many veterans.

But, the history of VA research extends well beyond what we discussed last year:

• In the 1950s and 1960s, the VA cooperative studies program developed the essentials of the multi-site randomized controlled clinical trial that is the standard for testing the safety and efficacy of new treatments today. VA cooperative studies in the 1960s, 70s, and 80s proved the value of such widely used therapies as coronary artery bypass, the use of lithium in bipolar disorders, and aspirin's ability to ward off heart attacks. More recent VA clinical trials have led to non-surgical treatments for gastro-esophageal reflux disease and prostate enlargement, demonstrated the value of advanced cochlear implants in veterans with profound hearing loss, and established effective treatments for post-traumatic stress disorder (PTSD). Such results have extended life and improved the quality of life for veterans and non-veterans alike.

• In the 1960s, the VA invented the radioimmunoassay, a procedure that is now a mainstay of clinical laboratory testing through the world for detecting biological markers associated with health and disease such as prostate-specific antigen (PSA).

• More recently in 2005, VA showed that an experimental vaccine for shingles cuts its incidence in half and dramatically reduces severity and complications in those that develop the disease.

• Also, researchers from VHA, Stanford University, and Duke University reported in the October 2005 New England Journal of Medicine that the implantable cardioverter defibrillator, although a costly device, is a relatively cost effective way to help prevent sudden cardiac deaths for some high risk patients. This is a good example of collaboration involving our academic partners with funding from another Federal agency (the Agency for Healthcare Research and Quality) as well as industry (Blue Cross Blue Shield Technology Evaluation Center).

But, past success is not enough. Research must be future oriented. We must look at how we practice health care today and ask: how can we do better? Our research program builds on its past by identifying and confronting the important questions and challenges of today and then doing the hard work to find solutions for the future.

VA RESEARCH AS A UNIQUE LABORATORY

A special advantage of the VA research program is that it is nested within a health care system that serves more than 5 million veterans. This creates a unique national laboratory for the discovery and application of new medical knowledge. Translating research into clinical practice is talked about throughout the medical community, but VA is one place where we apply research every day. VA research has made direct contributions to current clinical practices for hypertension, PTSD, diabetes, and other chronic diseases. VA clinicians who have responsibility for providing care for patients and for training future health care providers are the same scientists who initiate our research projects; nurture the proposal through VA's rigorous scientific merit review; identify and secure additional funding from other Fed-

eral agencies, non-Federal sources, and industry; conduct the research; publish the results in prestigious medical journals; and then complete the circle back to the bedside. VA research truly brings scientific discovery from bedside to bench and then back to the bedside.

In fact, the chance to conduct research has been a strong tool for VA to recruit and retain high quality physicians and other clinicians. Other health care systems rarely provide physicians and other clinicians with the opportunity to research questions that are most relevant to patient care. VA's healthcare system allows that we promote the idea of research within our unique research setting with tools such as the computerized patient record system and protected time for research. Allowing researchers to identify or "protect" time within their work week is part of VA's strong Career Development Program that allows investigators to nurture a research career in the VA system.

The opportunity to conduct research has been one of our most effective tools to improve the quality of our care, as well as to recruit and retain top-notch clinicians. It also creates a culture of continuous learning and innovation that helps us maintain our position of leadership among health systems. Studies by the Institute of Medicine, RAND, and others have highlighted the delays that occur from the time of scientific discovery to the time an evidence-based practice becomes routine—in US healthcare, on average, the likelihood of receiving a treatment based on credible scientific evidence is only about 50 percent. VA far exceeds that level of performance on virtually every evidence-based indicator. Furthermore, VA has established a unique program, the Quality Enhancement Research Initiative (QUERI), whose mission is to bring researchers into partnership with health system leaders and managers in order to ensure the care we provide to veterans is based on the most current scientific evidence.

EMERGING PRIORITIES OF VA RESEARCH

Although in any given year the bulk of VA's research budget is committed to ongoing investigation, each year we re-evaluate our priorities based on the changing needs of the veterans we serve, and attempt to fund high quality science that meets those priorities. I would like to highlight our current areas of focus for VA research.

Operation Iraqi Freedom and Enduring Freedom (OIF/OEF). In order to better serve military personnel injured during OIF/OEF, VA has implemented a new research agenda which brings all parts of ORD together to develop new treatments and tools for clinicians to use to ease the physical and psychological pain of the men and women returning from conflicts, to improve access to VHA services, and to accelerate discoveries and applications, especially for PTSD diagnosis and treatment, state-of-the art amputation and prosthetics methods, and polytrauma.

Neurotrauma (including traumatic brain injury and spinal cord injury). Traumatic Brain Injury (TBI) and Spinal Cord Injury (SCI) account for almost 25 percent of combat casualties suffered in OIF/OEF by US Forces. In November 2005, VA issued a program announcement to stimulate research in the area of combat casualty neurotrauma. This research initiative seeks to advance treatment and rehabilitation for veterans who suffer multiple traumas from improvised explosive devices and other blasts. Eighty-five letters of intent to submit a research proposal were received, indicating a high level of interest among our investigators, and we hope to fund as many high quality projects from this initiative as our budget will allow.

Polytrauma and Blast-Related Injuries. Improvements in body armor and battlefield medicine have resulted in higher survival among wounded soldiers but also new combinations of critical injuries, including head injuries, vision and hearing loss, nerve damage, infections, emotional problems, and in some cases amputation or severed spinal cords. This is a new challenge for VA, and we need to develop the knowledge base to manage these conditions over the remaining lifetime of the veteran. VA has devoted its newest QUERI center to polytrauma and blast-related injuries with a focus on using the results of research to promote the successful rehabilitation, psychological adjustment, and community reintegration of these veterans. Other VA scientific studies are currently underway to characterize these injuries and delineate their outcomes and costs, and to identify geographic areas where the need for rehabilitation is greatest. Such information is critically important in helping VA redesign its care delivery system to meet the needs of these veterans.

Amputation and Prosthetic Research. VHA ORD currently supports a broad research portfolio pertaining to amputation and prosthetics, and more research in this area is planned. Areas of interest include:

• Nanofabrication, microelectronics and robotics to create lighter, more functional prostheses. ORD is funding two new Prosthetics Rehabilitation Engineering and

Platform Technology Centers that are national resources to develop computerized state-of-the art prosthetic limbs with the goal of using the latest advances in orthopedic surgery, tissue engineering, nanotechnology, and microelectronics to create prosthetics that look, feel, and act more like one's own limb.

• The Providence VA Medical Center, in collaboration with Brown University and the Massachusetts Institute of Technology, is working to develop a "biohybrid" limb that will use regenerated tissue, lengthened bone, internal and external implants and sensors to allow amputees to use brain signals and residual limb musculature to have better control of their limbs and reduce the discomfort and secondary complications associated with current prostheses. These researchers are already publishing and presenting about their work.

• The Advanced Platform Technology (APT) Center at the Cleveland VA Medical Center focuses on sensory and implanted control of prosthetic limbs, accelerated wound healing, and biological sensors for the detection of health and function to accelerate the use of new materials and innovative micro-mechanical or nanotechnologies to provide more independence to veterans with disabilities.

• ORD is starting a study to gather information about how prosthetic devices are used, costs, amputee satisfaction, comparisons selected prosthetic devices, and various prosthetic procurement alternatives to help VA match technology to the needs of an individual veteran.

• ORD is partnering with the Department of Defense (DoD), Walter Reed Army Medical Center, the Defense Advanced Research Projects Agency and Brooks Army Medical Center to compare prosthetic designs; define standards of function; evaluate psychological issues faced by returning service personnel; determine psychosocial issues that challenge successful reintegration; and initiate longitudinal studies to study veterans care over time.

• VA investigators are examining rehabilitation for the visually impaired including artificial retinas, especially for polytrauma victims; new treatments for burn victims; restoration of hearing and maximizing function for those with hearing loss, especially for polytrauma victims; and natural mechanisms of neural regeneration to return function to paralyzed veterans and those with brain injuries. VA investigators also plan to study advanced tissue engineering and the manufacturing of artificial skin to accelerate wound healing.

Mental Health and PTSD Research. Studies about PTSD and other mental health issues are an important part of the VHA ORD research portfolio, and special attention is being paid to the circumstances of the returning OIF/OEF veteran.

Interagency Collaboration regarding OIF/OEF Mental Health. VA, the National Institutes of Health (NIH) and DoD jointly issued a Request for Applications (RFA) in late 2005, to enhance and accelerate research on the identification, prevention and treatment of combat related post-traumatic psychopathology and similar adjustment problems. The goal is to encourage studies involving active-duty or recently separated National Guard and Reserve troops involved in current and recent military operations (e.g., Iraq and Afghanistan). This RFA specifically encouraged participation of clinicians and researchers who screen, assess or provide direct care to at-risk, combat exposed troops, and emphasized interventions focusing on building resilience for veterans suffering from mental health problems, including PTSD, and developing new modes of treatment that can be sustained in community-based settings. Among the approaches being considered are novel pharmacological, psychosocial and combination treatments as well as the use of new technologies (e.g., World Wide Web, DVD, Virtual Reality, Tele-health) to extend the reach of VA's health care delivery system. Fifty-five proposals were received earlier this year in response to this RFA, and those proposals deemed to have scientific merit and relevance to veterans will start October 1, 2006.

Women and PTSD. Because of women's new roles in the military and subsequent combat experiences, VA and DoD are studying the use of psychotherapy for treatment of PTSD in female veterans and active duty personnel. A randomized clinical trial, part of VA's Cooperative Studies Program, has recently been completed and results are currently being analyzed, with a report expected in 2007. Those results will inform additional research and implementation activities across VHA.

Depression. Several approaches have been developed and tested by VA investigators to improve the assessment and treatment of mental health disorders. For example, implementation of an evidence-based collaborative care model for depression called "TIDES" (or Translating Initiatives in Depression into Effective Solutions) has demonstrated significant improvements in depression symptomatology among patients referred by their primary care providers. This study plus two companion evaluations of the processes, outcomes, and costs of implementation (called WAVES or Well-Being among Veterans Enhancement Study and COVES or Cost and Value of Evidence-based Solutions for Depression) are part of national VA strategic plan-

ning and rollout for improving the quality of depression care. Future research projects are planned to develop and test collaborative care models for PTSD and other anxiety disorders.

Other projects. ORD is currently conducting and planning projects that address the long-term care needs of veterans with TBI, and assess (in collaboration with DoD) the long-term changes in health status resulting from combat deployment. We are studying the role of smoking and nicotine dependence among veterans with PTSD, and will begin this fall a multi-site clinical trial to study the effects of risiperidone on PTSD. ORD will continue to support other studies that test the effectiveness of virtual reality therapy and other new treatments for PTSD. It is important to note that this research will also have direct applications for all veterans and not simply those involved in OIF/OEF.

Genomic Medicine Program. VHA, as a large healthcare system with an integrated research network and an unrivaled electronic medical record system, is uniquely positioned to develop a national Genomic Research Program. The goal of this program is to expand VA's ongoing genomic medicine effort. Research efforts will be developed to: understand the role of genetics in the prevention and cause of disease; use genetic information to improve how clinicians prescribe medications and to prevent adverse reactions; develop computer systems to manage genetic data and identify genetic predispositions; develop laboratory capability to do genetic and pharmacogenomic profiling within VA; and learn how to use genetic information effectively in everyday practice. The ultimate goal of these efforts is to predict and prevent disease and to treat more effectively and at lower costs through the customization of clinical interventions.

In the March 22, 2006 Federal Register, VA announced the establishment of the Genomic Medicine Program Advisory Board. The Committee is composed of nationally renowned medical experts in genomic research, bioethics, and disease management. The purpose of the Committee is to provide advice to the Secretary of Veterans Affairs on the scientific and ethical issues related to the establishment, development, and operation of a genomic medicine program. Specifically, the Committee will assess the potential impact of a VA genomic medicine program on existing VA patient care services; recommend policies and procedures for tissue collection, storage and analysis; and develop a research agenda and approaches to incorporate research results into routine medical care.

Gulf War Veterans' Illnesses. VA research places a high priority on scientific research aimed at improving the quality of life for veterans of the 1990–1991 Gulf War affected by chronic multisymptom illnesses commonly referred to as Gulf War Veterans' Illnesses (GWVI). Some veterans who participated in Operations Desert Shield and Desert Storm have reported conditions and chronic symptoms such as fatigue, weakness, gastrointestinal difficulties, cognitive dysfunction, sleep disturbances, persistent headaches, skin rashes, respiratory problems, and mood changes at rates that significantly exceed those reported by comparison groups. VA research continues to expand its efforts to understand and treat GWVI. The core objective is to improve the health of ill Gulf War veterans. It is important to note that Gulf War veterans with chronic unexplained symptoms are eligible for disability benefits even when the cause of their illness cannot be determined.

VA has committed $15 Million in fiscal year 2006 for collaboration with the University of Texas Southwestern Medical Center and has also funded VHA ORD investigators for on-going projects. These ongoing studies address areas of interest that include: chronic multisymptom illnesses (CMI) affecting GW veterans; conditions and/or symptoms frequently reported by GW veterans; long-term health effects of potentially hazardous substances, alone and in combination, to which GW veterans may have been exposed during deployment; and any of the 21 Research Topics forming the framework for the Annual Report to Congress of federally Sponsored Research on GWVI.

Chronic Disease. According to a study of 1999 VA health care expenditures, VA health care users have more chronic diseases than the general population. This study also indicated that 72 percent of VA patients had at least 1 of 29 chronic diseases such as diabetes, Parkinson's disease, HIV/AIDS, Alzheimer's disease and substance abuse, and the care for these veterans accounted for 96 percent of health care expenditures provided at VA facilities. The following are examples of efforts by VA researchers to discover how to prevent and treat chronic disease.

Diabetes. According to the National Institute of Diabetes and Digestive and Kidney Diseases at the National Institutes of Health, 20.8 million people—7 percent of the population—have diabetes. An estimated 4.6 million people are diagnosed and 6.2 million people are undiagnosed. In 2005, 1.5 million new cases of diabetes were diagnosed in people aged 20 years or older. Diabetes affects nearly 20 percent of veterans receiving health care from VA: 1 million veteran users. An estimated 2 million

veterans without diabetes have metabolic syndrome, which places them at high risk for diabetes. The cost is tremendous: 30 percent of VA health care costs (in- and out-patient and pharmacy) are attributable to patients with diabetes. This includes 1.7 million days of hospital care. VA investigators have completed the first study to compare the quality of diabetes care among patients in VA and commercial managed care organizations. Quality of care measures were compared for seven diabetes processes of care, three diabetes intermediate outcomes, and four dimensions of satisfaction. Results from this study showed that VA patients had better scores than commercially managed care patients on all assessed quality of care measures. VA patients also had better low-density lipoprotein control and were slightly more satisfied with the overall quality of diabetes care at VA.

Identifying the most effective treatment methods is crucial to reducing the incidence of diabetes among veterans. Although more patients are accessing medical information on the Internet, few studies have examined the effects of web-based interventions that incorporate an interactive component requiring feedback from patients. A VA study tested diabetes care management using a web-based system for veterans with poorly controlled diabetes. Results showed that web-based care management improves poorly controlled diabetes in veterans. Veterans participating in the web-based management program had significant improvements in HbA1c over 1 year compared to usual care, and persistent website users had even greater improvements compared to intermittent users.

ORD has also initiated the VA Diabetes Trial to determine whether intensive control of blood sugar, compared to standard methods, can reduce other blood vessel damage and other complications. Smaller trials to determine the value of the interventions will come first, with more research to follow.

Obesity. Results from the 2003–2004 National Health and Nutrition Examination Survey (NHANES) indicate that an estimated 66 percent of U.S. adults are either overweight or obese. The problem is similar or worse among VA's patient population, with 73 percent of veteran patients overweight or obese. Obesity contributes to increased heart disease, diabetes, and sleep apnea, and an estimated 300,000 Americans die annually from illnesses related to overweight and obesity.

Findings from VA studies to assess the efficacy and safety of weight loss medications, as well as the effectiveness and adverse events associated with the surgical treatment of obesity, demonstrated that surgical treatment is more effective than non-surgical treatment for weight loss in severely obese patients; weight loss was maintained for up to 10 years and longer and was accompanied by significant improvements in several comorbid conditions.

Other examples of VA research include studies on traditional and new approaches to prevent and treat obesity, such as a comparison of lower extremity functional electrical stimulation on obesity and associated co-morbidities in comparison to upper extremity aerobic exercise for persons with paraplegia; an assessment of the impact of walking aides on quality of life and physical activity in overweight and obese veterans with osteoarthritis; and explorations of drug therapies.

Alzheimer's Disease. Alzheimer's Disease (AD) and related dementias affect 7.3 percent of veterans over age 65. VA research is helping to discover new facts about AD and other diseases and conditions that affect older veterans. For instance, researchers at the Bronx VA medical center have reported that diet-induced insulin resistance, a cause of type II diabetes, promoted beta-amyloid production concurrent with decreased insulin-degrading enzyme (IDE) activity in an animal model of AD. Beta-amyloid is the major component of amyloid plaques, the hallmark of AD pathology. IDE has been proposed to be responsible for the degradation and clearance of beta-amyloid in the brain. Such research is needed to form the basis of future interventions to prevent or reverse this devastating condition.

Influenza. VA health services researchers have been instrumental in improving vaccination rates for veterans with chronic diseases that place them at high risk for complications from influenza, as well as enhancing vaccination among health care workers and veteran groups that historically have had low vaccination rates, such as minorities, smokers, and those with spinal cord injuries and disorders.

Pandemic influenza infection has the potential for causing significant morbidity and mortality in the United States and elsewhere. ORD is responding, along with other Federal agencies, to this unprecedented public health threat by initiating studies that examine optimal dosing strategies for the antiviral agent oseltamivir (Tamiflu) in the event of an emerging pandemic of human infection with an avian or other influenza strain for which an effective vaccine is lacking.

HIV/AIDS. AIDS (acquired immunodeficiency syndrome) is caused by HIV (human immunodeficiency virus). The virus kills or damages the body's immune system, which lowers the body's ability to fight infections and certain cancers. According to the Centers for Disease Control, at the end of 2003, an estimated one million

persons in the United States were living with HIV/AIDS, with 24–27 percent undiagnosed and unaware of their HIV infection. VHA is the largest single provider of HIV care in the US, with nearly 20,000 patients seen annually with the disorder. Accordingly, ORD funds a full range of studies from bench research aimed at elucidating the underlying mechanisms of HIV to implementation projects that improve VHA's effectiveness in caring for this population.

Researchers at the VA South Texas Health Care System and the University of Texas Health Science Center recently showed that people who have a below-average number of copies of a particular immune-response gene have a greater likelihood of acquiring HIV and, once infected, of progressing to full-blown AIDS. These findings, cited as one of the top articles published in the eminent journal Science, have important implications for the treatment and prevention strategies for HIV/AIDS and possibly other infectious diseases as well.

Women's Health. According to information from the VA's Center for Women Veterans, in 1973, women in the active duty military accounted for 2.5 percent of the armed forces. By fiscal year 2001, however, the number of women significantly increased making up 15 percent of the armed forces and those numbers are expected to increase. To respond to this demographic change and develop a more comprehensive VA women's health research agenda, a VA Women's Health Research Planning Group recently identified the needs of women veterans and a corresponding research agenda. VA researchers currently are investigating optimal strategies for conducting preventive health and disease screening activities among women veterans (e.g., cervical cancer screening) and developing and evaluating computerized, interactive educational programs to enhance VA staff awareness of women veterans and their health-care needs.

INFRASTRUCTURE

It is crucial that VA investigators have the equipment and facilities necessary to conduct cutting-edge research in the twenty-first century. To identify where improvements may be needed, ORD has initiated a comprehensive review of VA's research facilities to identify deficiencies and corrective actions. The objectives of the Research Infrastructure Evaluation and Improvement Project are to review the overall adequacy and utilization of research space and infrastructure (including animal research facilities); to develop a plan to update and maintain facilities; to ensure compliance with biosafety and research laboratory security requirements; to enhance collaborations between the local VA Medical Center and its academic affiliate; and to ensure that the needs for highly specialized research programs (e.g., Rehabilitation Research and Development (RR&D) and Health Services R&D (HSR&D) Centers of Excellence) are met.

Survey teams including VA research administrators and scientists, as well as other VA employees and engineering contractors, will review documentation and visit facilities to evaluate the physical infrastructure (including the animal facility, research laboratories and common equipment rooms); operational infrastructure (capability to conduct research while meeting requirements for compliance with safety, animal welfare, and human subjects protection regulations); and equipment (major items of equipment used for the conduct of research) of VA facilities with active research programs. The data collected from the surveys will be used to develop financial needs and an asset management plan. We expect to have a report to Congress early in fiscal year 2007.

In addition, ORD recently funded proposals as part of the Shared Equipment Evaluation Program that is managed by the Biomedical Laboratory and Clinical Science Research and Development Services. The purpose of this program is to fund new or replacement research and animal facility equipment. The program requires that facilities identify dollar-for-dollar matches in order to leverage the VA contributions. As a result of a December 2005 request for applications, a total of $2,086,173 for facility projects and research equipment has been funded for the following sites: Decatur, GA; Chicago, IL; Cleveland, OH; Miami, FL; Loma Linda, CA; Memphis, TN; Nashville, TN; New Orleans, LA; Omaha, NE; Palo Alto, CA; Philadelphia, PA; Portland, OR; Richmond, VA; San Francisco, CA; Seattle, WA; San Diego, CA; San Antonio, TX; and Los Angeles, CA.

Other proposals for research equipment are pending funding with decisions expected later this fiscal year. This program was suspended for a number of years, but plans are to begin funding proposals on an annual basis after a review to determine merit and priorities.

CONCLUSION

As an academically trained researcher, I understand the complexities of the research process, and I am fascinated by the results. I fully support this program and advocate to you that its value, both to veterans as well as the Nation, far exceeds the costs. The history of VA research is impressive, and the future promises even more important advances. Can we prevent infections that hamper the use of biohybrid limbs? Can we develop artificial retinas so that wounded OIF/OEF soldiers and our aging veterans can regain their sight? Can we use our computerized medical record system and genetic samples to individualize drug and clinical treatments, or identify those veterans who may have a predisposition for a particular disease and prevent the onset of, rather than treat, the symptoms? Can we continue to examine ourselves to find out how to deliver patient care more effectively? The answers to these questions must be "yes", as no other health system is better positioned than VHA to make these discoveries, and no other group of patients is as deserving as America's veterans to receive the benefit of such innovation.

Chairman CRAIG. Thank you very much, Dr. Perlin. You have been accompanied by Dr. Joel Kupersmith, Chief Research and Development Officer for the VA, and Dr. Richard Weir, VA Prosthetics Research Laboratory, in Chicago. Before we get into dialog and questions, obviously Dr. Weir has brought a unique device along, and I think it is time our Committee Members see it. I had the privilege of trying it on, fellow Senators, before you arrived and before we convened the Committee, and so I think it is important that we see some of this cutting-edge technology firsthand, may I say? Dr. Weir, if you would, please.

Dr. PERLIN. Mr. Chairman, if I might introduce Dr. Weir as he gets assembled there.

Chairman CRAIG. Please do.

Dr. PERLIN. It is my privilege to introduce Dr. Richard F. Weir, in fact, a former Career Development Awardee, and now a research scientist, with the VA Prosthetics Research Laboratory, at the Jesse Brown VA Medical Center in Chicago. As with many, the Career Development Program nurtures the work of young investigators so that they can mature in their career and bring exciting new technology to the care of America's veterans. Dr. Weir will demonstrate the work that the VA and their partners are doing on hand and wrist prostheses. Too many servicemembers who have served in the Global War on Terror or in military careers experience trauma resulting in loss of their hands, and Dr. Weir and his fellow scientists are doing vital work that will significantly help these heroes. It is my pleasure to introduce Dr. Weir, and one of the most futuristic devices for restoring function to injured veterans.

Mr. WEIR. Good morning, and thank you, Mr. Chairman. It is an honor to be here today to have a chance to present on some of the work that I have been doing for the VA.

We have been working on a new prosthetic for people who have lost all fingers and the thumb.

Chairman CRAIG. Dr. Weir, we haven't made you sweat yet, so as to your connection with your sensors, I'm sorry. Go ahead. You need that moisture connection there.

Mr. WEIR. I need some more moisture. It dried out in the interval here.

This is a new prosthetic device for a particular level of amputation that had not actually been addressed in the past, and it was for those individuals who had lost all fingers and thumb but still

had a wrist. The wrist is a very important joint to maintain if you want to give somebody some function if you have lost all your fingers and thumb. So the challenge from our perspective in this project was actually to be able to develop a mechanism and a fitting technique that would allow any residual motion in the wrist to be maintained, and to allow an individual to regain as much function as possible.

From an engineering design point of view, the challenge is where to put everything if you have only got the volume of the fingers, because someone who has a wrist still has this portion of their hand left, and then so the challenge is to get everything into just the fingers and the thumb.

This was the little device that we came up with as an armature. Then we have little sensors that sit in the prosthetic socket it is called, or prosthetic interface, and this pushes onto the residual limb and these sensors sit over the residual muscles in the hand. The person will then think about closing their hand to close the hand like this, and then opening the hand to open the hand.

The other thing is to develop a prosthetic socket, though, that keeps that motion going, and so this is the device we have come up with. We are in the process of fitting this to some patients at the moment, and we are in the process of developing this prosthetic interface so that it can be freely suspended without restricting wrist motion. Ironically enough or unfortunately, this project was started before Operation Iraqi Freedom just because the VA has a long-term view on prosthetics and the development of orphaned products, and the problem is that we are seeing injuries now coming from Operation Iraqi Freedom where soldiers are incurring burns and some of these burn injuries are resulting in amputation or loss of all digits and thumb. So now this little mechanism has particular relevance to fitting that level of amputation. That is pretty much all I have to say.

Chairman CRAIG. Thank you very much, Dr. Weir, for that demonstration. I think it is a phenomenal example of the kind of work that is going on. Dr. Perlin, as you said, while the work is going on at VA and collaboratively with university settings, NIH and others, it is not exclusively for veterans. Once this is done, it goes to the market, and that is what becomes increasingly exciting, that the research going on for veterans really gets spread across the world scene ultimately, and that makes it all the more meaningful.

In your testimony you stated that VA has begun a comprehensive review of its research infrastructure, and I am glad to hear that. We look forward to that report, as you are projecting its completion early next fiscal year?

Dr. PERLIN. Yes, sir.

Chairman CRAIG. Meanwhile, can you elaborate, or possibly Dr. Kupersmith could, on the kind of information you expect to find from this report?

Dr. PERLIN. Thank you, first, Mr. Chairman, Ranking Member and Committee Members for your support of VA research. I think what you have seen today is truly extraordinary.

Mr. Chairman, in particular you have really focused in on an area that helps not only veterans, but all Americans, and you have worked with us in grappling with serving veteran in an infrastruc-

ture that is aging. Nationally, the CARES process reviews some of the infrastructure, and the mean age of our buildings is about 58 years. The research facilities are equally aged. Let me ask Dr. Joel Kupersmith to describe some of the findings that suggest that we need to invest to improve and bring veterans and all Americans the sort of cutting-edge research that you saw this morning.

Dr. Kupersmith.

Dr. KUPERSMITH. Thank you very much. I want to also echo my thanks for your comments earlier. Much of the research space is inadequate for very simple reasons, there is not enough space, the ventilation in some places is not quite what it should be, and the basic structure of the space is also not necessarily easily adaptable to modern equipment. So I think those rather simple factors are why it becomes difficult to work in some of these areas.

Chairman CRAIG. I presume that a substantial portion of the fiscal year 2007 research budget will be going toward projects VA has already committed to fund. If Congress were to provide additional funds for research above the President's request, can you give Members of this Committee an idea of where the additional funds would be allocated? And without asking you to commit on any level of research funding for a particular area, can you please explain if it would include research directly related to OIF or OEF veterans at this time?

Dr. PERLIN. Mr. Chairman, thank you for that question. Of course, we have an obligation to do the sort of research that helps assist our servicemembers in any injuries or illnesses that they might experience, especially in combat, as that is increasingly a focus, and the President's budget itself increases the funding these areas of acute trauma, spinal cord injury, brain injury, mental illness.

Of course, any additional funds that were to be provided would be greatly appreciated and would be focused not only on the issues of America's combat veterans, but the issue of America's veterans broadly which, as you described, include not only those things that occur as a result of service, but those things that are part of the challenges of life, of aging, ranging from heart disease to cancer, especially diabetes, a challenge in our environment, and mental-illness research. Let me ask Dr. Kupersmith to speak more, perhaps, on some of the areas of strategic investment such as the Career Development Awards that also bring new investigators, new clinician/researchers, top-notch individuals, to the care of veterans.

Dr. KUPERSMITH. Yes, certainly I think Dr. Weir exemplifies this because he is the product of a Research Career Development Award as are many of the people who work in rehabilitation medicine.

I think some of the programs that we are specifically doing in regard to veterans of the Afghani and Iraqi Wars have to do with neurotrauma, cervical spine injury, traumatic brain injury which is very common, and looking at this at all levels, both at the laboratory level as well as the clinical level, and how to approach long-term care in a younger patient. So many of our efforts in the past have been long-term care in the older individual and there are different needs, obviously, as there are different needs in prosthetics in younger and older individuals. In addition, in the wide range of

prosthetics research, we are developing artificial retinas and some others.

But I think we do make an investment in people, and we have an extensive Research Career Development Award program. That is, I think, one of the best there is to create investigators for the future. We like to keep all of these investigators, but we do not. They go on to other things, and they go on to help the country as a whole. Most of them stay with us and work in these areas, and that is a very important investment we make.

The other important investment we make, as was mentioned, is collaboration with the universities. Again, Dr. Weir's work is an example of extensive collaboration on a number of prostheses between Northwestern and the Research Institute of Chicago and us. So these are the kinds of things we are doing.

Chairman CRAIG. Gentlemen, thank you. Let me turn to Senator Akaka.

Danny.

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

Dr. Perlin, in the fiscal year 2007 budget, I read funding cuts are slated for research projects focusing on cancer, on diabetes, and heart disease. We all understand the pressing need and desire for the state of prosthetics and new treatments for service-connected disabilities, but these projects should not come, I believe, at the expense of peer-reviewed projects which address all kinds of health care needs. Can you please explain the rationale behind reducing funding for disease-related research? Is there not enough room for all kinds of research?

Dr. PERLIN. Thank you, Senator Akaka, and thank you for the support you have expressed for VA research in your introductory comments and with the recognition that all of the areas of research conducted are of significant value.

In the current environment with our troops deployed, we felt the commitment to increase the focus on areas that are related to injury or illness to which troops may be exposed, so we did prioritize in that direction. We always do hope to leverage and have had tremendous success in leveraging the investment that you make in the direct appropriation through recruiting additional grants in areas such as cancer or other illnesses from other funding entities such as the National Institutes of Health. In fact, the current support from the National Institutes of Health and other Federal Agencies is about $662 million, and so your investment in VA research is significantly amplified. But you are correct that when we focus on one area, it does push on project capacity in other areas which is why we are particularly appreciative of the support that you have endorsed.

Senator AKAKA. As I am pointing out here, somehow we need to continue the tradition of research that VA has in all of these areas.

Dr. Perlin, the fiscal year 2008 construction list includes a $7 million project for a research facility located at Tripler Army Medical Center in Honolulu. This facility would be, as I understand it, the first of its kind, a joint center of cooperation and collaboration between VA and DOD. Do you see this concept of joint research facilities as a future avenue for success and innovation?

Dr. PERLIN. Senator Akaka, let me endorse the general concept of collaboration with our partners in the Department of Defense. In fact, throughout the country there are over 450 separate sharing arrangements ranging from clinical activities, to shared infrastructure, to shared capital equipment. So there is no reason that should not extend to shared support of the research environment. I would note that the sharing of a physical space may have some unique aspects, and that is certainly a part of the culture sharing in terms of research activity.

In terms of mental-health care, mentioned in my opening comments, there is collaboration with the Department of Defense on mental health and PTSD which also includes a third partner, the National Institute of Mental Health. We have collaborated on physical illnesses research as well, and look forward to, where we have the capacity to, be synergistic in sharing physical infrastructure as well.

Senator AKAKA. Dr. Perlin, I would like to ask you how much VHA spends on the indirect costs for conducting NIH grants. I ask that because NIH has refused to reimburse VA for the indirect costs of conducting research grants, and, therefore, those costs come out of health care dollars. Are you working with NIH on this?

Dr. PERLIN. Thank you, Senator. This has been an area of ongoing discussion with the National Institutes of Health. When NIH funds come directly to a VA medical center, they do not pay an indirect research cost as would occur were those funds to be conferred to any other institution. When funds come through a university, the university actually receives the indirects, and if there are space costs, some of those supports come through. Certainly, when NIH funds through our not-for-profit research corporations, the dollars come through. I would ask Dr. Joel Kupersmith to elaborate on the actual dollar amounts or provide for the record the complete figure.

Dr. KUPERSMITH. Our estimate in the budget submission for 2006 was $353 million coming from VERA dollars. The NIH issue has been a subject of ongoing discussion for several years and is pretty much in the same area. As Dr. Perlin mentioned, the essential way that the overhead dollars can be recovered is through the nonprofits. We have not been able to recover them in other ways. And may I add only in certain places have they been recovered. This is not uniform nationally by any means.

Senator AKAKA. Thank you. Mr. Chairman, my time has expired.

Chairman CRAIG. Danny, thank you very much. Senator Burr, any questions of the panel?

Senator BURR. Thank you, Mr. Chairman. Again let me reiterate my thanks to you and Senator Akaka for your persistence on this.

Dr. Perlin, let me ask you, Durham, North Carolina, does a sizable amount of research for the VA, and it is unique in its location to Duke University, and the relationship that Duke University has with the VA is an incredible one. Are you able to work with academic institutions and with the private sector often enough on the research directions to make sure that there is little to no duplication in what our efforts are?

Dr. PERLIN. Senator, first, thank you very much for your question. Indeed, the relationship with Duke University and the Dur-

ham VA is a terrific one that has produced very important and cutting-edge research as, frankly, have many of the relationships with other universities in the State of North Carolina.

That said, nationally I would say whether it be VA or elsewhere, there is not a program to effectively assure that research activities are not reduplicated. I do know that sometimes the advances are made in areas where there is competition, as in industry as well, but in VA at least we try to coordinate our portfolio to assure that we get the most product for the investment. I don't know, Dr. Kupersmith, if you would like to elaborate.

Dr. KUPERSMITH. There is no national strategic plan among universities or for our collaboration with universities. I would point out that there is a certain amount of duplication that is appropriate because it is scientifically checking what happens, and so a certain amount of that is appropriate.

I think that our collaborations, generally when grants are applied for, one has to give the uniqueness of the grant whether it is for us or NIH, and that guards against duplication in many ways.

Senator BURR. The VA is faced with an increasing population as is the rest of the country of type 2 diabetes. I think by any historical standard, one might call this an epidemic, and that I am not sure that we as a Nation yet have accepted like we should. In North Carolina we are working on building a public-private partnership that is a research institution specifically focused on health science nutrition. You are aware of this and we have talked. It is extremely close to the Salisbury VA facility. It would probably be an ideal partnership for ongoing research that the VA is currently conducting in the area of diabetes.

Dr. Perlin, what do you see as the VA's role not only in the North Carolina entity that we have talked about, but in replicating something like that elsewhere in the country? I just truly believe that public-private partnerships offer us an opportunity to leverage Federal dollars in a way that produce much more from the standpoint of the research bench and that means the Government and the private sector have to find these common points.

Dr. PERLIN. Senator Burr, thank you for both parts of your question, first, the public-private partnerships, and, second, the epidemic of obesity, overweight, and diabetes.

I join the Secretary in being a fan of public-private partnerships. In fact, this terrific demonstration that we saw today has spawned a patent, and as Chairman Craig indicated, will not only benefit the immediate and obvious needs for veterans, but will benefit our country. It also will go into the marketplace and help to provide an economic engine for America's leadership in advanced biotechnology.

The areas of diabetes is, sadly, not only an American epidemic, it is a worldwide epidemic. Our Secretary has championed a program called HealthierUS Veterans. The toll of overweight, obesity, and diabetes is affecting not only our military personnel, a large population, but especially our VA population, and this is one of the areas where if we can partner strategically with the private sector to improve exercise. In our HealthierUS Veterans program, you actually get a prescription for health, a "prescription for life," arming

veterans with pedometers now and new treatments. We offer care for something that is, in the words of Surgeon General Carmona, the number one threat to public health in the country, the complications of obesity and diabetes, and that in the VA population approaches nearly 1 in 4 veterans under our care.

Senator BURR. Thank you. Thank you, Mr. Chairman.

Chairman CRAIG. Senator Burr, thank you. Senator Jeffords, questions?

Senator JEFFORDS. Dr. Perlin, the VA Medical Center at White River Junction, Vermont, together with Dartmouth Medical Center is doing a significant amount of cutting-edge research. It is one of the programs that draws talented medical professionals to our VA. A critical component of the medical research is infrastructure and facilities, laboratories, and access to patients. You mentioned that a study of the VA's infrastructure needs is underway. Shouldn't we be funding some of the needs that have already been identified?

Dr. PERLIN. Thank you, Senator Jeffords, for your comments. Indeed, the relationship of White River Junction and Dartmouth is a terrific example of the academic affiliation. It produces not only the basic science research that you have indicated, but leading health services research, improving the quality of health service delivery in many areas including to rural Americans.

It is absolutely a necessity that we invest in our research infrastructure. There has been a phased approach thus far. There have been some issues related to improving the hardening and security of research areas that was one of the first areas of concentration and funding, and I would ask Dr. Kupersmith to elaborate on some of the areas for infrastructural improvement now and in the future, particularly as guided by the report that will be forthcoming to Congress.

Dr. KUPERSMITH. As I said, I think the space issue is very important, and in many areas there is a need for space. I think some of these scientific appurtenances that older space have do not come up to what the newer spaces have, so these are the kinds of things that we are going to be interested in. This survey is beginning, will be complete by the end of the fiscal year and will be reported at the beginning of next year. We will have very detailed information on each site and what it needs, and I think it will incorporate all of these things.

Senator JEFFORDS. I am pleased to hear that. Your demonstration of the hand was fascinating. Thank you for bringing it, Dr. Weir. I note that you said that you began your research work on this hand before the Iraq War. Dr. Perlin, has the Iraq War demanded more from the VA? And how is the VA redirecting its future research as a result of the war injuries coming to the VA?

Dr. PERLIN. Thank you, Senator Jeffords for the comment. About 505,000 Americans have separated after having served in combat, and in sheer numbers, the number of individuals who have experienced amputation to date is about 424. But whatever the number, our goal, our mission, is to restore function, and this is in part the very central reason for VA. The promise of doing what we can to make veterans whole, particularly, if they have experienced a loss in service to our country is so core to our mission that this really reminds us to refocus on the rehabilitation. So both preceding the

war, but certainly in the context of combat, we are increasing our commitment to not only prosthetic advances, but advances in brain injury, spinal cord trauma such as occurs with the Improvised Explosive Devices, in areas of amputation, of course, blindness, hearing loss, and of course, the mental-health concerns that are important not only in their own right, but also would accompany the physical loss of function.

Dr. Kupersmith has put together a very exciting and important portfolio for improving the care of injured veterans ranging from combat casualty, neurotrauma, blast injury, a program research on quality enhancement in care delivery, to the long-term care management of complex injury, limb loss, performance and an advanced platform technology development program at Cleveland that produced such things as the Functional Electrical Stimulator which actually gave Christopher Reeve, Superman, the ability to breathe without a ventilator, and artificial retina research. I believe in your package you will find a picture of a device that can be implanted in the back of the eye and work with a camera on a pair of eyeglasses. In the same way that we now take for granted that we can restore hearing with the cochlear implant, we have the ability now and in the future to begin to restore vision to veterans with physical injury, of trauma perhaps, or macular degeneration, retinitis pigmentosa, or diabetes, through these cutting-edge advances. Program projects with the Department of Defense, NIH, and longitudinal studies just as some examples.

Dr. Kupersmith.

Dr. KUPERSMITH. I just want to add that last study is a deployment health study in which we are examining soldiers and other military before they go to these wars, and then we will be examining them after. It is the first study to look at the genesis of PTSD and other mental difficulties in this way. I think this will add a tremendous amount to our information in gaining data on who is more likely to get PTSD and how it happens.

Chairman CRAIG. Interesting.

Senator JEFFORDS. I have another question.

Chairman CRAIG. Please proceed.

Senator JEFFORDS. The aging of our veteran population presents special challenges to the VA in treatment of veterans. Can you discuss in more detail the specific research the VA is doing to assist the Nation in understanding how to provide better care to the elderly and better understand the unique challenges of the diseases that disproportionately affect the elderly?

Dr. PERLIN. Again, Senator, a great question and a great area. In VA's portfolio, there is work directed specifically at improving the quality of life for aging veterans. Of course, this will provide insight for the aging of all Americans.

In a sense, much of the disease-focused research that we undertake has implications for aging. Cancer or heart disease, stroke, as examples, are all areas where there are components specifically directed at the disease of interest, but there is another element of that that is focused on the complexity of that disease in an aging population such as much of the veteran population.

VA has been making particular focus on improving quality of life at end of life as in palliative care. I recently came across a statistic

yesterday: Asking about pain at each visit actually exceeds recording of any other vital sign, which is really quite a testament. The usual four vital signs are pulse, respiration, temperature, and blood pressure, and VA has a program to record pain as the fifth vital sign, and it is now the number one vital sign in VA. Improving the quality of palliative care is particularly important not only in illness in general, but at end of living in improving end-of-life care, and hospice programs have been an area of focus and leadership as well. Understanding the basis of dementia and Alzheimer's is one example, but also vascular dementias that are caused by the same sort of plaque buildup that lead to heart attacks is another. These are not only of interest in terms of treatment, but with our genomic medicine, it is very exciting, not only about getting to good prevention, controlling the cholesterol and the blood pressure, but getting to an era where we can actually predict who is at risk, and even before the cholesterol gets high, develop treatments and start treatments that prevent things from deteriorating even before they would be obvious to the clinician, and that is the promise of some of the genomic medicine, the genetics-based therapy, that we hope and the Secretary commits, to bring as the state-of-the-art care for veterans. Dr. Kupersmith?

Dr. KUPERSMITH. I think the main point is that so much of our research is relevant to the aging individual, and kidney disease, lung disease, and particularly cancer, because as our population ages, the incidence of cancer will rise. But the other point is that many of our programs are related to implementation of research and actually translation of research to the beside have to do with aging individuals, and our so-called QUERI program has a number of topics that are very directly related to aging individuals so that we actually assure that the care that the research is informing is provided to the veteran.

Senator JEFFORDS. Thank you very much.

Chairman CRAIG. Jim, thank you. We could spend all day with you, but we do not have all day, and neither do you. Thank you, gentlemen, very much. Dr. Perlin, Dr. Kupersmith, Dr. Weir, the work you are doing is going to make some people a good deal more capable than they otherwise might be in the future because of their injuries, and thank you for that work. Gentlemen, thank you for your testimony.

Chairman CRAIG. We have a second panel, and we would like you to come forward, please. If we could get our panelists seated, we will proceed. Thank you. I guess the expression of the next panel is where the rubber hits the road or where the funding dollars make it to the bench or to the laboratory facility. We are pleased to have with us Dr. Fred Wright, Associate Chief of Staff, Research and Development, West Haven, Connecticut, VA Medical Center; Dr. Dennis Stevens, Associate Chief of Staff for Research Development, Boise, Idaho Medical Center; Dr. John Feussner, Chairman, Department of Medicine, Medical University of South Carolina. and Dr. John Kennedy, Professor, Department of Medicine, University of Alabama, in Birmingham, Alabama, VA Medical Center, representing the Alliance for Academic Internal Medicine. Dr. Wright, we will start with you.

STATEMENT OF FRED S. WRIGHT, M.D., ASSOCIATE CHIEF OF STAFF FOR RESEARCH, VA CONNECTICUT HEALTHCARE SYSTEM, DEPARTMENT OF VETERANS AFFAIRS

Dr. WRIGHT. Mr. Chairman and Ranking Member, thank you for the opportunity to discuss the importance of the VA research program in general, and the research program and the facility infrastructure at the VA Connecticut Healthcare System.

Our program has more than 350 active projects led by more than 100 principal investigators. The majority of our investigators are clinicians who also provide patient care in internal medicine, surgery, mental health, or neurology. The topics of VA Connecticut research include basic science (including molecular biology, cell biology, and genetics) and clinical research (clinical trials, health services, epidemiology and rehabilitation). Approximately two-thirds of the projects are clinical research studies involving human subjects. Of the remainder, about half are investigations using animal subjects, and the other half involve data analysis or cell lines. Last year, the competitively awarded funding for these projects exceeded $40 million. Most of this research activity is concentrated at our West Haven campus.

The program centers on research to improve the health of and the health care for veterans, including our newest returning veterans. For example, our investigators at the National Center for PTSD seek ways to improve treatment for combat-related posttraumatic stress disorder and the associated depression. A current project in that program, in collaboration with the Department of Defense, is studying PTSD in soldiers returning from Iraq to correlate specific genetic information with response to a newly developed treatment.

Another group of investigators in our Neuroscience Research Center is combining efforts in basic molecular biology, clinical trials, and clinical rehabilitation to treat spinal cord injury. Current work in that program is using tissue transplant procedures to insert healthy myelin-producing cells into damaged spinal cords in order to restore function.

Attracting, hiring, and retaining outstanding clinician investigators is crucial to our ability to deliver high-quality primary and specialty care to veterans. These clinicians are individuals who are committed to academic medicine and are attracted to work in VA by the combination of providing care to veterans, teaching trainees, and conducting research in an environment enhanced by the resources of the nearby medical school. Without a robust research program, we would not be able to recruit the nationally recognized clinician investigators who also serve as attending physicians, clinical leaders, and specialist consultants to whom our primary care physicians refer patients.

Our affiliations with Connecticut's two medical schools are also important to the success of VA Connecticut research. Nearly all members of our medical staff have dual appointments, as both VA physicians and medical school faculty members. Our ability to recruit physicians to VA Connecticut medical staff is greatly enhanced by the associated appointment to the Yale facility, the opportunity to serve as a teacher for Yale medical students and resi-

dents, and the expectation to carry independent research in an environment enriched by the proximity of the medical school.

Funding: Approximately one-third of the direct-cost funding for VA Connecticut research comes from the VA research appropriation, while nearly one-half of our funding is provided by grants from the National Institutes of Health. VA research funds provide the necessary core support for veteran-centric research. However, we are able to supplement this funding by competing successfully for funds from NIH and other non-VA sources. This allows us to leverage what we are doing to increase VA research.

Facilities: In the non-VA research world of public and private universities and medical schools, facilities for research, whether laboratories, offices, or patient care settings, are maintained, replaced, or expanded by a combination of funds from State governments, private philanthropy, and Federal Agencies such as NIH. These sources of funds are not generally available to VA medical centers, and in my experience, have not been available at VA Connecticut to support our needs for major infrastructure improvements. To ensure that VA investigators are able to conduct cutting-edge research in the 21st century, we will need appropriate facilities and proper research infrastructure that will enable us to attract clinician investigators to our medical staff. Thank you again for this opportunity to describe our research program at VA Connecticut.

[The prepared statement of Dr. Wright follows:]

PREPARED STATEMENT OF FRED WRIGHT, M.D., ASSOCIATE CHIEF OF STAFF FOR RESEARCH, VA CONNECTICUT HEALTHCARE SYSTEM, DEPARTMENT OF VETERANS AFFAIRS

Thank you for the opportunity to discuss the importance of the VA research program in general, the research program at VA Connecticut Healthcare System (VACHS), and the facility infrastructure. Our program has more than 350 active projects led by more than 100 principal investigators. The majority of our investigators are clinicians who also provide patient care in Internal Medicine, Surgery, Mental Health, or Neurology. The topics of VACHS research include basic science (including molecular biology, cell biology, and genetics) and clinical research (clinical trials, health services, epidemiology, and rehabilitation). Approximately two thirds of the projects are clinical research studies involving human subjects. Of the remainder, about half are investigations using animal subjects, and half involve data analysis or cell lines. Last year the competitively awarded funding for these projects exceeded $40 million. Most of this research activity is concentrated at the West Haven campus.

The program centers on research to improve the health of and healthcare for veterans, including our newest returning veterans from Operation Iraqi Freedom and Operation Enduring Freedom (OIF/OEF). For example, our investigators in the National Center for PTSD seek ways to improve treatment for post-traumatic stress disorder and associated depression. A current project, in collaboration with Department of Defense, is studying PTSD in soldiers returning from Iraq to correlate specific genetic information with response to a newly developed treatment. Another group of investigators, in our Neuroscience Research Center, are combining efforts in basic molecular biology, clinical trials and clinical rehabilitation to treat spinal cord injury. Current work is using tissue transplant procedures to insert healthy myelin producing cells into damaged spinal cords in order to restore function.

Attracting, hiring, and retaining high quality clinical researchers are crucial to advance the research agenda. These are individuals, who are committed to academic medicine, and are attracted to work in VA by the combination of providing care for veterans, teaching trainees, and conducting research in an environment enhanced by the resources of the nearby medical school. Without a robust research program, we would not be able to recruit the nationally recognized clinician investigators who also serve as attending physicians, clinical leaders, and specialist-consultants to whom our primary care physicians refer patients.

Our affiliations with Connecticut's two medical schools—the Newington campus with the University of Connecticut Health Center and the West Haven campus with the Yale University School of Medicine—are also important to the success of VACHS research. Nearly all members of the VACHS medical staff have dual appointments as both VA physicians and medical school faculty members. In addition to their VA patient care activities, VACHS physicians have responsibilities in teaching and research. For example, the VA's West Haven campus is an important site for clinical rotations by Yale medical students, residents, and fellows in specialty training programs. They contribute to the care of VA patients and are taught by Yale faculty who are based at the VA medical center. VA's ability to recruit physicians to the VACHS medical staff is greatly enhanced by the associated appointment to the Yale faculty, the opportunity to serve as a teacher for Yale medical students and residents, and the chance to carry out independent research in an environment enriched by the proximity of the medical school.

Approximately one third of the direct cost funding for VACHS research comes from the VA Research appropriation while nearly one-half of our funding is provided by grants from the National Institutes of Health (NIH). VA research funds provide the necessary core support for veteran-centric research. However, we are able to supplement this funding by competing successfully for funds from NIH and other non-VA sources. This allows us to leverage what we are doing to increase VA research.

In the non-VA research world of public and private universities and medical schools, facilities for research (whether in laboratories, offices, or patient care settings) are maintained, replaced or expanded by a combination of funds from state governments, private philanthropy, and Federal agencies such as the NIH. These sources of funds are not generally available to VA medical centers.

To ensure that VA investigators have the equipment and facilities necessary to conduct cutting-edge research in the twenty-first century, the Office of Research and Development has initiated a review of VA's research facilities. We believe that maintaining the proper research infrastructure is necessary in facilitating cutting edge research, and will enable us to attract outstanding clinician-investigators to our medical staff.

Thank you again for the chance to describe our research program at VACHS. I am ready to respond to any questions that you may have.

Chairman CRAIG. Doctor, not only did you do well, but your timing was amazing.

Dr. WRIGHT. Thank you.

Chairman CRAIG. Now we turn to Dr. Dennis Stevens.

Dr. Stevens.

STATEMENT OF DENNIS L. STEVENS, M.D., PH.D., ASSOCIATE CHIEF OF STAFF FOR RESEARCH, VETERANS AFFAIRS MEDICAL CENTER, BOISE, IDAHO, DEPARTMENT OF VETERANS AFFAIRS

Dr. STEVENS. Senator Craig, Members of the Senate Veterans' Affairs Committee, and colleagues from the Department of Veterans Affairs, it is with great pride that I come before you as a veteran myself, and as Associate Chief of Staff for Research at a small VA medical center in Boise, Idaho. As a current member of the VA Career Development Review Board, and as a science investigator who has enjoyed 26 years of funding through the Department of Veterans Affairs Merit Review Program, I want to say that at all VA medical centers of all size, the important of research cannot be separated from the quality of care that we provide for veterans.

Most VAs with research programs are affiliated with medical schools. Having none in Idaho, we have had to be very creative in establishing affiliations, both academic and research. Specifically, we have a strong academic affiliation with the University of Washington as part of the WAMI Program and have a residency training

program in collaboration with the University of Washington in Boise.

While those relationships are very strong and have been very productive in generating high-quality education, they really have not improved the research capabilities of the Boise VA. The topic that we have today is the infrastructure mechanisms and costs, and clearly, building is one of those. The space that we have I am not going to into in great detail, but it is essentially one large room with two or three small laboratories. We have a very excellent animal care facility, and we have a very small clinical research unit.

At the local level of VA operations, most investigators in small places wear many hats. We have about 30 percent of our time, if we do have a merit review grant, to conduct research. The rest of the time we are seeing patients, we are taking care of Committees and various other things. So I think we have special problems at small VAs just because of a lack of depth.

There are many things that we should talk about in terms of VA infrastructure, but I think, clearly, buildings is one, renovation projects is another. Equipment, and not only equipment, but service contracts. Probably the VA's central office could play a major role in addressing ways that we could creatively reduce the cost of service contracts in dealing with large corporations that make such equipment.

One of the major problems we have had at our small VA is recruitment of new physician investigators, and that is currently at an all-time low. I think the reasons for this are multiple, but, first, the population of Boise has grown and therefore the number of patients that we care for has increased. For example, in 1995, we had 10,000 veterans that we took care of, in 10 years this increased to 19,000. We have conscientiously hired clinically oriented physicians to take care of these patients to reduce the waiting list, but we really have not actively recruited physician investigators, and that is currently a high priority.

Lacking a medical school, it is also necessary to develop a critical mass of researchers at the Boise VA, and that has required very innovative relationships with the other universities throughout the State. Specifically, I have been able to develop collaborations with Boise State University, Idaho State University, and the University of Idaho. I have met with the research and development heads of all those universities, and we have a plan together to develop a critical mass of researchers at the Boise VA, and they are committed to provide graduate student stipends, postdoctoral stipends, as well as salaries for several faculty members, and I think this is really going to help us. We have also coordinated these efforts with the State legislature and the Governor's office and so on.

The only thing that we really require is building space to accomplish these goals, and we plan this fall to submit a small research proposal for minor construction of a building for research and education on the grounds of the Boise VA.

Thank you.

[The prepared statement of Dr. Stevens follows:]

PREPARED STATEMENT OF DENNIS L. STEVENS, M.D., PH.D., ASSOCIATE CHIEF OF STAFF FOR RESEARCH, VETERANS AFFAIRS MEDICAL CENTER, BOISE, IDAHO, DEPARTMENT OF VETERANS AFFAIRS

Senator Craig, Members of the Senate Veterans Affairs Committee, and Colleagues from the Department of Veterans Affairs.

It is with great pride that I come before you as a veteran, as Associate Chief of Staff (ACOS) for Research at a VA Medical Center (VAMC), a current member of the VA Career Development Review Board, and as a basic science research investigator who has enjoyed 26 years of continuous funding through the Department of Veterans Affairs (VA) Merit Review Research Program.

Clinical investigators have successfully conducted basic science research for more than 25 years at the VAMC in the areas of cardiology, oncology, pharmacology, immunology and infectious diseases. Patient related research has been conducted through outcomes research projects involving clinical pharmacology, pulmonary medicine and the modern mechanisms of clinical teaching. Investigators have also participated or served as Principal Investigators in clinical trials involving treatment of hepatitis C, HIV, pneumonia, bronchitis, skin and soft tissue infections, septic shock, exacerbations of asthma and urinary tract infections. These clinical studies have been in FDA phase II and III clinical studies using novel new antibiotics and anti-viral agents. All have been on the cutting edge of new clinical treatments. Boise VAMC is currently participating in a clinical trial to compare treatments for clinically localized prostate cancer. Prostate cancer therapy is a topic of considerable discussion in the medical community, and this study could provide significant value to that discussion.

At all VAMCs, the importance of research cannot be separated from quality medical care for veterans. The VA's model of patient care, teaching and research attracts the best, brightest and most hard working of physicians. While translational research defined as "from the bench to the bedside" has been newly discovered by other healthcare systems, this is exactly what the VA Merit Review Program at Boise VAMC and elsewhere has been doing for over 25 years. Historically, within the VA system, we have learned to make clinical observations, ask research questions, design experiments to answer these questions and then move our results to clinical trials to improve the care of veterans. As a consequence of the VA model for research, there is currently a remarkable cadre of "clinical investigators" who enjoy national and international acclaim. The title of this hearing, "VA Research: Investing Today to Guide Tomorrow's Treatment" is in keeping with the historical theme of the VA Office of Research and Development.

For example, a Boise researcher is currently studying how the heart reacts when anthracyclines are used to treat cancer or infections. Another researcher is working on what may be causing the increasing number of streptococcal infections.

At small VA research operations, we must continuously identify opportunities to improve our program, while balancing the responsibilities and work loads of investigators and administrative staff. As we develop plans to improve our program, it is also crucial that we continue to identify funding sources to support our facility infrastructure needs. Our goal is to improve patient care by finding solutions through research projects that meet the needs of veterans in Idaho as well as the Nation as a whole. Your support and interest in our needs is appreciated.

Chairman CRAIG. Dr. Stevens, thank you very much. Now we turn to John Feussner.

Dr. Feussner.

STATEMENT OF JOHN R. FEUSSNER, M.D., M.P.H., PROFESSOR AND CHAIRMAN, DEPARTMENT OF MEDICINE, MEDICAL UNIVERSITY OF SOUTH CAROLINA, CHARLESTON, SOUTH CAROLINA

Dr. FEUSSNER. Mr. Chairman and Senator Akaka, good morning. After listening to your opening statements, it appears to me that the best my testimony can do is merely reinforce what you already seem to know. Nonetheless, I appreciate the opportunity to share my perspective on the importance and value of the Veterans Affairs research program as it relates to academic affiliations between VA and academic medical centers. In addition to my role as professor and chairman of the Department of Medicine at the Medical Uni-

versity in Charleston, South Carolina, I also serve as a volunteer staff physician at the Ralph H. Johnson VA Medical Center.

You already know about the extensive collaboration that exists between the VA and the large majority of schools of medicine and their academic centers. The affiliated VA Medical Centers share key features in common with their academic affiliates. The shared academic missions include superior patient care, innovative and path-breaking medical research, and broad-based medical education efforts. As a physician researcher who has worked within university and VA medical centers throughout my career, I provide a personal testimonial to the importance and value of that affiliation, not just to our Department of Medicine in Charleston, but for similar affiliated Departments of Medicine throughout the country.

Clearly, the VA research program is superb in its own right. You already know that. The presence of VA's research activities coupled with excellent collaboration with academic medical centers creates a culture of inquiry and innovation that has the additional effect of attracting the best practicing physicians. To be sure, the presence of the VA Research Program raises the standard of medical care and improves the quality of care delivered to our veteran patients.

Mr. Chairman, one of the key features of the growth and success enjoyed by our two affiliated medical centers in Charleston was the joint construction in 1996 of a new state-of-the-art laboratory research facility named the Strom Thurmond and Peter Gazes Biomedical Research Center. This excellent research facility, now operating in its tenth year, provides nearly 120,000 square feet of state-of-the-art research space. The initial cost of this research building in 1996 was $31 million.

In addition, and historically, the VA has focused efforts on training future physician researchers, and in this regard it serves its clinical research and education missions simultaneously. The VA's research career development program provides excellent and stable support for new physician researchers during the most vulnerable period of their careers, the initial startup phase.

Given such a superb track record of achievement, the current Administration budget recommendation is especially disappointing in that it would result in an actual reduction of $13 million in the VA research appropriation. Clearly, this will have a deleterious effect for VA-supported physician researchers and a loss of many new initiatives. And this deleterious funding climate will also do harm to the VA/academic affiliations, as opportunities will be reduced for both. If the budget for research decreases, the competition for grants of necessity will escalate, so meritorious proposals will not be funded. And the newest physician researchers will be especially disadvantaged and could be lost from the research pool permanently.

Mr. Chairman, with regard to this Committee's activities, I was gratified to note in your major views and estimates report to the Budget Committee earlier this year that you recommended VA research be augmented for fiscal year 2007 by an additional $30 million. I believe Senator Akaka made a similar recommendation. This type of bipartisan support by the Senate Veterans' Affairs Com-

mittee for research is deeply appreciated, sir, by those of us who are engaged in these pursuits. I know I speak for the entire academic medical community in thanking you and urging you to persuade the Senate and the House appropriators to follow your lead.

Finally, Mr. Chairman, at some point in time—maybe this point in time—somebody has to make the decision to make an investment in the VA's future by repairing the VA's deteriorating research infrastructure. VA, in conjunction with its academic partners, operates dozens of substantial research laboratories. It saddens me to say that most of them need major renovations and some need complete replacement, as was the case in Charleston nearly a decade ago.

Please remember that an investment in VA's research program, whether in direct funding or infrastructure improvement, preferably for both, counts twice in a way, as it strengthens VA research and simultaneously enhances the half-century of excellent affiliation and partnership between the VA and some of the country's finest academic institutions.

Mr. Chairman, thank you. I am pleased to answer your questions.

[The prepared statement of Dr. Feussner follows:]

PREPARED STATEMENT OF JOHN R. FEUSSNER, M.D., M.P.H., PROFESSOR AND CHAIRMAN, DEPARTMENT OF MEDICINE, MEDICAL UNIVERSITY OF SOUTH CAROLINA, CHARLESTON, SOUTH CAROLINA

Mr. Chairman and Members of the Committee, good morning. I appreciate the opportunity to share my perspective on the importance and value of the Veterans Affairs research program as it relates to academic affiliations between Department of Veterans Affairs Medical Centers and Academic Medical Centers. My name is Jack Feussner, and I am Professor and Chairman of the Department of Medicine at the Medical University of South Carolina in Charleston. I am also a WOC (without compensation, volunteer) staff physician at the Ralph H. Johnson VA Medical Center. I have spent my entire academic career in a University-based Academic Medical Center setting with a strong and effective University and VA affiliation. I first became a funded VA physician researcher in 1982, and I maintained that funding until I moved to VA Central Office nearly 10 years ago to serve as the VA's Chief Research Officer.

I am sure you already know about the extensive collaboration that exists between the VA and the large majority of Schools of Medicine and their Academic Medical Centers who are closely affiliated with the VA. These affiliated Department of Veterans Affairs Medical Centers share key features in common with their academic affiliates. The shared academic missions include superior patient care, innovative and path breaking medical research, and broad based medical education efforts. As a Professor of Medicine, and as a physician researcher who has worked within University and VA medical centers throughout my career, I provide a personal testimonial to the importance and value of that affiliation, not just to our Department of Medicine in Charleston, but for similar affiliated Departments of Medicine throughout the country.

Clearly, the VA research program is superb in its own right. VA research focuses on health issues that are common to or unique among veteran patients. The VA research program is not just focused on medical discoveries, or the generation of new medical knowledge, treatment options, or diagnostic strategies. VA research focuses also on translating this knowledge into improved patient care. The VA Research Program is a potent enabler for VA and Academic Medical Centers in facilitating recruitment of superior physician clinical researchers. The VA Research Program, being completely intramural and available only to VA employed staff, provides a special and incremental source of funding that allows VA investigators additional options for successful funding, especially in the current budgetary milieux, where even non-VA research dollars are somewhat scarce. VA Research, in collaboration with its academic affiliates, generates a halo effect facilitating recruitment of outstanding physicians who themselves do not do research. The presence of VA's superb research activities, and excellent collaboration with Academic Medical Centers, cre-

ates a culture of inquiry and innovation that has the additional effect of attracting the best practicing physicians. With this academic affiliation, VA is able to recruit scarce subspecialties to work in VA Medical Centers, such as physicians who are expert in cardiology, GI and liver disease, and medical oncology. Stability in VA research, and until recently, reasonable annual growth in the VA Research Program have also contributed to the retention of a cadre of superb VA physicians and physician researchers. To be clear, the presence of VA's research program raises the standard of medical care and improves the quality of care delivered to our veteran patients.

In our own community, the Department of Medicine at MUSC and the Charleston VA Medical Center collaboration has produced tremendous success in acquiring NIH research funding, in addition to VA research support, for illnesses important to veterans. Sustained funding in the area of cardiovascular disease, kidney disease, diabetes, and psychiatric illness has helped us address many medical problems that are common in veterans and non-veterans alike. For example, in the area of cardiovascular diseases, heart failure is one of the most frequent causes of hospitalization and premature death among veterans. A VA/MUSC based research program focused on understanding heart muscle dysfunction and heart muscle disease was initially awarded to VA and Medical University based investigators in 1993. This major NIH program project grant has been continuously funded since then and will continue through 2008. The grant is the second longest continuously funded major heart research project funded by the National Heart Lung and Blood Institute, and the principle researchers are faculty and staff at the Medical University and VA, respectively. The research is conducted in a shared VA MUSC state-of-the-art research facility. This research opportunity has permitted the tripling of cardiology physicians, over the grant period of time. While there is a national shortage of highly qualified heart specialists, the Medical University and Charleston VA Medical Center have not experienced such a shortage. The research funding available to these collaborating investigators exceeds $3 million per year, and nearly $18 million in total funding over all years of the current grant cycle. This collaborative research effort between the Medical University and VA has led to significant research success for a major clinical problem. The research has also facilitated the recruitment, retention and stabilization of a group of medical specialists that is currently in short supply nationally. As I said earlier, the collaboration between the VA and the University, and the availability of VA research funding, have permitted both institutions to achieve success out of proportion to what either could have achieved alone. In my opinion, the other key beneficiaries of such a successful affiliation are veteran patients who receive excellent medical care from superb doctors who care for their illnesses, and in addition, these investigators conduct research that promises new therapies in the future.

One of the key features of this growth and success between our two affiliated medical centers was the joint construction in 1996 of new, state-of-the-art clinical and laboratory research facilities, named the Strom Thurmond and Peter Gazes Biomedical Research Center. This excellent research facility, now in its tenth year, provides nearly 120,000 square feet of state-of-the-art research space. The initial cost of this research building was $31 million with subsequent renovations costing $12 million over the past decade. Because of the close and productive affiliation between our state supported medical school and the federally supported Department of Veterans Affairs Medical Center, we were able to create a state and Federal partnership which facilitated the building of modern research facilities, which improved the infrastructure for both partners and greatly facilitated additional high quality faculty recruitment. Unfortunately, few such examples of successful partnering and planning between state and Federal institutions exist, especially now when resources are scarce!

There are other examples of tremendous success within the context of this one academic partnership between the Charleston VA and the Medical University of South Carolina. Kidney disease, infectious diseases, cancer, diabetes, and other medial illnesses benefit greatly from the affiliation between an Academic Medical Center and a VA Medical Center. The affiliation arrangement results in improved faculty recruitment, improved research opportunities and infrastructure, and as mentioned previously, improved retention of excellent physicians and scarce specialists.

In addition, and historically, the VA has focused efforts on training future physician researchers, and in this regard serves its clinical, research and education missions simultaneously. The VA research program offers a strong attractant for recruitment of young physician researchers. The VA's research career development program provides excellent and stable support for new physician researchers during the most vulnerable period of their careers, the initial startup phase. In the mean time, these VA Research Career Development awards winners provide superb med-

ical care to veterans, and often bring the interest and expertise of their Academic/University mentors to an engagement with other VA programs.

Given such a superb track record of achievement, and with all the opportunities created by the affiliation between VA and the Academic Health Centers, the current Administration budget recommendation is especially disappointing in that it would result in an actual reduction of $13 million in the VA research appropriation, from the current level of $412 million to $399 million. This will have a deleterious effect for VA supported physician researchers and a loss of many new initiatives. And this deleterious funding climate will also do harm to the VA/Academic affiliations, as opportunities will be reduced for both! While the research infrastructure in Charleston, which culminates in an excellent partnership between a state supported institution and a Federal entity, is adequate now, such is not the case nationally. Much like the VA's hospital facilities are aging and deteriorating, the same applies for its research infrastructure. Furthermore, the difficulties with the VA research infrastructure extend beyond buildings, laboratories, and the customary bricks and mortar. VA needs resources to update expensive research equipment. The VA also is suffering from a lack of non-facility infrastructure. VA is having increasing difficulty supporting its network of clinical trials centers, and may also have difficulty supporting its outstanding centers in Outcomes (or Health Services) and Rehabilitation Research. With a decrementing budget, the VA will have difficulty sustaining its excellence in translational research, which focuses on the transfer of research knowledge into clinical practice to improve patient care. The current research budget does not permit even secure support of ongoing studies. If the budget for research decreases, the competition for grants will escalate, so meritorious proposals will not be funded, and the newest physician researchers will be especially disadvantaged and could be lost from the research pool permanently. The research training that is so critical to the VA and the academic community would also be diminished as VA loses research resources—VA would lose the ability to fund research career development awards.

The VA is an attractive partner with the academic community because the missions of patient care, medical research and medical education are shared and mutually supported. If VA must choose to retreat from its commitment to excellence in research, decrement its training opportunities, or continue to have its infrastructure deteriorate it will become more problematic to achieve future success together. If VA investment in these critical missions is diminished, another casualty of that diminution in research resources will be the highly successful Academic and VA affiliation.

Other groups such as the Friends of VA Medical Care and Health Research (FOVA) have made recommendations for both research funding and for separate funding for the VA research infrastructure. In the context of the overall budget for the Department of Veterans Affairs, additional funding for research seems like a necessary and valid additional investment given the tremendous downstream returns, and given VA's important role as a partner with Academic Medical Centers. Mr. Chairman, with regard to this Committee's responsibilities, I was gratified to note in your Majority Views and Estimates report to the Budget Committee earlier this year that you recommended VA research be augmented for fiscal year 2007 by an additional $30 million, bringing its total to $429 million. Senator Akaka made a similar recommendation. This bipartisan support by the Veterans' Affairs Committee for VA research is deeply appreciated by those of us who are engaged in these pursuits. I hope I can speak for the entire Academic/VA research community in thanking you and urging you to persuade Senate and House Appropriators to follow your lead.

Mr. Chairman, at some point, someone has to decide to make an investment in the VA's future by repairing VA's deteriorating research infrastructure. VA, in conjunction with its Academic partners, operates dozens of substantial research laboratories. It saddens me to say that most of them need major renovations and some need complete replacement. But year in, year out these laboratories' needs do not draw any significant funds from VA's major or minor construction accounts. Those accounts are exclusively reserved for VA patient care and other projects. To complicate matters further, since 1989 NIH has refused to fund any facility-related costs in its VA-based grants. Some of the VA's research and education foundations have supported the VA research laboratories, but frankly, with very few exceptions, they do not have the depth of funding resources to continue doing this in general. Please remember that an investment in VA's research program, whether in direct funding or infrastructure improvement, counts twice, in a way, as it both strengthens VA research and also enhances the half-century of excellent affiliation and partnership between the VA and some of the country's finest academic institutions. While the dollars are difficult, I am sure, and recognizing there are many competing needs,

this one is an especially good investment that the Congress can make in support of veterans' health for today, and into the future.

Thank you, Mr. Chairman. I would be pleased to answer any questions you or other Committee Members wish to ask.

RESPONSES TO WRITTEN QUESTIONS SUBMITTED BY HON. LARRY E. CRAIG TO JOHN R. FEUSSNER, M.D. M.P.H.

Question. "As past director of the national VA research program, what were the unmet needs in VA's laboratories, how did you try to address them, and what is your assessment of those needs today? Do you have any recommendations for the Committee in dealing with those needs?"

Answer. The intramural research program in the Department of Veterans Affairs is conducted in laboratories in VA Medical Centers nationwide. These laboratories must be equipped and maintained to meet standards for physical and operational infrastructure in order to ensure the efficient operation of laboratories and animal facilities, and to maximize the protection of personnel, experimental animals, the public and the environment. Many VA Medical Centers do not provide sufficient or appropriate space to investigators because of either a shortage of laboratory space or deficiencies in the quality of space. There is a serious risk that an aging and inadequately maintained research infrastructure will become an impediment to recruitment of the "best and brightest" clinician scientists to VA facilities.

In 2001–2002 the VA research program compiled a list of thirty (30) priority sites requiring research infrastructure improvements. These needed improvements ranged from minor construction or renovation of "wet" laboratories, construction of new research structures and other capital improvements. The list of thirty sites is contained in an official VA report filed in the Office of Research and Development. An important observation of this process was that research space in the majority of the minority sites could be adequately renovated as "minor renovation," or for approximately $4 million/site. The VA's medical research appropriation cannot be expended for capital improvements, therefore available support from the research office alone has been limited. VA has no other designated funding stream for improving, renovating, or updating research facilities.

In addition to these construction costs, the second unmet need that VA research has is a sustainable source of funding for equipment purchases or modernization. Again, any funding for research equipment, especially expensive, technologically sophisticated equipment must come from the same funds that support individual research grants.

As there is no current mechanism for supporting research infrastructure needs, I was unable to address the issue of remodeling wet lab facilities or building new facilities. In the summer of 2001, we initiated discussions with the House Veterans Affairs Committee and had reached a mutual agreement that the only strategy for improving VA research infrastructure, and addressing this problem systematically through time, was to create a new line appropriation for research construction similar to the line for construction of medical care facilities in the medical care appropriation. The chairman of the House Committee at the time was Congressman Christopher Smith, but our plans and recommendations were hi-jacked by events occurring on September 11, 2001.

Fundamentally, the VA study that was done and discussed with the House Veterans Affairs Committee was comprehensive and robust. This was done with the intention that Congress might to address these serious shortcomings on an incremental basis over a multi-year period. Our initial request in 2001 was for approximately $40–45 million/year as a new line item appropriation. As I reported in my congressional testimony, "at some point in time somebody has to make a decision to make an investment in the VA's future by repairing the VA's deteriorating research infrastructure." Given that this matter has garnered little attention over the past 5 years, I am sure that the situation has deteriorated further.

I do have several recommendations for the Committee in dealing with these needs. First, the Committee could charge the Office of Research and Development in VA to update the previous VA research report cataloging the unmet needs for research construction and facilities modernization. I would estimate that such an activity should take no more than 90 to 120 days. The Committee could compare the original report and the new report, where VA would again prioritize its facilities needs in terms of minor construction or new facility construction. I would estimate that if the Congress would create a new line item for VA research facilities construction of approximately $40–50 million per year, VA would be able to refurbish and upgrade its thirty (30) most pressing infrastructure problems in as little as 2 years.

In addition, the Committee could direct that any construction funds not allocated for renovation and remodeling of existing facilities should be applied to modernization with replacement of state-of-the-art research equipment.

Finally research facility construction is a separate and serious challenge. And as you recall, the joint facility built in Charleston in 1996 cost $31 million a decade ago. Individual research buildings constructed in multiple locations would probably cost upwards of $50 million per building with 2006 dollars. I would recommend that if the Congress wishes to fund selected new construction, that the VA could request matching monies in a joint venture effort with the affiliated research universities. Several areas in need of serious research construction in 2002 were the Pittsburgh VA (affiliated with the University of Pittsburgh); the Los Angeles VA (affiliated with UCLA); the VA Puget Sound (affiliated with the University of Washington); the Philadelphia VA (affiliated with the University of Pennsylvania); the Iowa City VA (affiliated with the University of Iowa) and the Nashville VA (affiliated with Vanderbilt University) as several examples. New construction is fundamentally more expensive and challenging than renovations, and I would recommend the renovations proceed first.

As you already know Mr. Chairman, the VA research is superb in its own right. The affiliation between Department of Veterans Affairs and research universities benefits VA in ways that are numerous and recognizable to VA leadership. As the VA's research infrastructure continues to deteriorate, the VA will become a less viable and less attractive site for new physician specialists who wish to develop a research career. Any progress that this Committee can make in this critically important area of medical care and biomedical research will greatly benefit current and future generations of veterans. Given the stellar performance of VA research in the past, this investment will inevitably return superior dividends to all Americans. Mr. Chairman, I can not thank you enough for your persistent interest in this important issue and your unflagging support for veterans' needs.

Chairman CRAIG. Doctor, thank you very much.

Now we turn to Dr. John Kennedy. Welcome.

STATEMENT OF JOHN I. KENNEDY, JR., M.D., PROFESSOR, DEPARTMENT OF MEDICINE, UNIVERSITY OF ALABAMA AT BIRMINGHAM, BIRMINGHAM VA MEDICAL CENTER, BIRMINGHAM, ALABAMA; ON BEHALF OF THE ALLIANCE FOR ACADEMIC INTERNAL MEDICINE

Dr. KENNEDY. Good morning, Mr. Chairman and Senator Akaka. I am honored to be here today. As you know, I am a professor of medicine at the University of Alabama at Birmingham. I am proud to tell you that I spend the majority of my professional time at the Birmingham VA where I hold the positions of Associate Chief of Staff for Acute and Subspecialty Care and Chief of the Medical Service there. I am also a funded investigator, and I take care of patients. I am testifying today, however, on behalf of the Alliance for Academic Internal Medicine, so I want to thank you again for providing me the opportunity to testify about VA research.

I am here today to tell you that the VA research program works, but as you know, it also faces important challenges. My examples of its success will come from my local experience in Birmingham, but the Nation is replete with similar stories.

We have many successful research programs in our center. I want to highlight two of the large multi-investigator programs. The first is VA's Birmingham Atlanta Geriatrics Research unit, or GRECC. In their research, 22 GRECC investigators focus on genitourinary disorders, mobility in older patients, and palliative care. Work of these GRECC investigators has led to the development of a new palliative care program with an inpatient unit in Birmingham where veterans nearing the end of life receive compassionate care from specially trained, multidisciplinary teams. The

VA's research support of the GRECC has also leveraged funds from other sources. In fiscal year 2005, two-thirds of the GRECC's total research funding came from sources outside of VA. However, without the VA's initial investment in the GRECC, none of this would have materialized.

The Deep South Center on Effectiveness at the Birmingham VA is another excellent example of VA's research successes. This center's mission is to improve health care for veterans and the Nation through partnerships in effectiveness research. Some highlights of this center's success include a joint effort with UAB to develop programs to educate providers about bioterrorism; examining new approaches for the treatment of PTSD, as you know an important concern both for current and newly returning veterans; and innovative uses of the electronic health record combined with Internet to support providers in community-based outpatient clinics as they care for patients after heart attacks.

Now, despite these successes of the VA research program, AAIM has concerns for its future. The lack of growth in program funding, as you have heard, is particularly troubling to us all. A flat budget sends messages to young clinician-scientists that hard times are ahead and that research may not be the career for them. Over the past 4 years, a time of level funding in our center, the number of funded investigators has decreased by 30 percent and the entry of new investigators has dropped dramatically. Senior researchers with a history of sustained funding have found it increasingly difficult to obtain continued funding in VA. Gaps in support lead to losses of technicians and other key personnel and seriously erode the momentum of the research effort. Faced with these ongoing problems, some physicians from our center have left VA. As a result, our ability to recruit and retain the highly skilled specialists needed to care for our complex patient population is seriously compromised.

AAIM thanks the Committee and its leadership for its ongoing support of the research programs. As a member of FOVA, AAIM supports the $460 million appropriation for the VA research program in fiscal year 2007. I cannot overstate how important growth to the program will be given the likely difficulties in increasing the overall Federal support for research in the coming year, despite your best efforts.

AAIM's second specific concern is VA's research infrastructure. As you have heard, modern scientists need modern facilities in which to conduct their research. I have heard countless stories from all across the country about difficulties in upgrading ventilation and electrical systems. These basic needs are absolutely critical. More investment in core facilities to house essential research tools will be required for VA to move into the future of research where it most deservedly belongs. AAIM encourages you to consider the development of a designated authority for funding VA research infrastructure.

The Alliance's final concern pertains to the distribution of VA's scarce research resources. The successes I have reported to you inherently result from the intramural structure of the research program, which assures that these investigators are also available as clinicians and educators. The other inherent element of the pro-

gram is peer review, the process through which the very best research can be identified and priorities for funding can be determined. AAIM encourages this Committee to lead efforts to retain these valuable aspects of the program and to strengthen VA research as it serves today's and tomorrow's veterans.

Again, thank you for the opportunity to appear today. I look forward to your questions.

[The prepared statement of Dr. Kennedy follows:]

PREPARED STATEMENT OF JOHN I. KENNEDY, JR., M.D., PROFESSOR, DEPARTMENT OF MEDICINE, UNIVERSITY OF ALABAMA AT BIRMINGHAM, BIRMINGHAM VA MEDICAL CENTER, BIRMINGHAM, ALABAMA; ON BEHALF OF THE ALLIANCE FOR ACADEMIC INTERNAL MEDICINE

Good morning Mr. Chairman and Members of the Committee. My name is John Kennedy, and I am a Professor of Internal Medicine and Residency Site Director at the University of Alabama at Birmingham. I spend the majority of my professional time at the Birmingham VA Medical Center where I hold the positions of Associate Chief of Staff for Acute and Subspecialty Care and Chief of the Medical Service. I am testifying today, however, in my role as a leader of the Association of Program Directors in Internal Medicine and on behalf of the Alliance for Academic Internal Medicine.

Thank you for providing me the opportunity to testify about the successes of and challenges to the VA medical and prosthetics research program. Internists represent roughly 50 percent of all VA researchers and conduct bench research, clinical research, and health services research in all the specialties of internal medicine. These specialties range from the primary care field of general internal medicine to rheumatology, gastroenterology, and cardiac electrophysiology—as well as my own field of pulmonary and critical care medicine—to name a few. Internists have also been at the forefront of providing excellent leadership to the VA research program, and I must take this opportunity to thank my fellow internists here today, Drs. Feussner, Perlin, and Kupersmith, for their vision and management of the program.

I am here today to tell you that the VA research program works but faces challenges. My examples of this success will come from my local experience, but the Nation is replete with similar stories.

My first example of the success of the program is VA's Birmingham/Atlanta Geriatrics Research, Education, and Clinical Center, or GRECC. The GRECC employees 22 core VA personnel at the two VA medical centers. In their research, the GRECC investigators focus on genitourinary disorders, mobility, and palliative care, studying such topics ranging from sarcopenia, or loss of muscle, to driving issues among older veterans. Among the results reported by investigators from the GRECC in 2005 were studies showing that daytime exercise and bladder control strategies were more effective than medication in controlling the need to urinate at night and studies documenting the important aspects of team functioning that yielded functional improvements for stroke patients.

Of course, the GRECC investigators are also clinicians and educators in the two facilities. Notable among their clinical accomplishments has been the development of a palliative care program at the facility in Birmingham, well-recognized among the best in the Nation if not the world. Approximately 25 percent of all patients hospitalized at the Birmingham VA Medical Center are seen by palliative care consultants who address their needs for relief of suffering of all types and assist with development and implementation of directives for future care and at the end of life. This work has ultimately led to the opening of a new 10-bed inpatient palliative care unit in our medical center where veterans nearing the end of life can receive compassionate care from a multidisciplinary team trained to address their particular needs and those of their families.

On the education front, GRECC educators have been successful in raising over $2 million in the last year alone to improve the training medical practitioners receive in caring for elderly patients, a critical area for education given America's aging population. The GRECC has also reached out to the community with its VA Teacher Ambassador Training Program, a VISN recognized effort to honor veterans.

In addition to these programmatic accomplishments, VA research support has worked in this case by leveraging funds from other sources. In fiscal year 2005, the GRECC had a total of more than $35 million in research funding. Of this total, $9.9 million came from VA while $25.8 million came from outside funding sources. This group of researchers has proven to be highly productive and able to successfully

compete for funding in every sphere. However, without VA's investment in the GRECC, it is hard to see how any of these results would have materialized.

The Deep South Center on Effectiveness at the Birmingham VA Medical Center is another excellent example of VA's research successes. The Center is funded as a VA Research Enhancement Award Program, or REAP. The Center's mission is to improve healthcare for veterans and the Nation through partnerships in effectiveness research. The Center develops strategies to change provider practice patterns using evidence-based interventions to improve the quality of care for veterans, and it uses VA's extensive data bases to promote improved care by establishing links between direct patient care and population-based analyses. The Center includes 35 investigators and 14 FTE support staff.

One of the reasons this Center is a success for VA research is because it has forged strong liaisons with the University of Alabama at Birmingham. In one linkage, the Center has undertaken a research project to assess the effectiveness of bioterrorism preparedness education among health care practitioners. This project directly ties in with the work of the UAB Center for Biodefense and Emerging Infections. Through the affiliation with UAB, several VA researchers also participate in major national research initiatives such as Coronary Artery Risk Development in Young Adults, or CARDIA. Utilizing the CARDIA data base, these VA researchers recently published their important new findings identifying a link between secondhand smoke exposure and glucose intolerance, a precursor of diabetes. This function of the academic affiliation strengthens both the VA and UAB, improving their research efforts and the care provided to veterans and other patients.

The Center is also a success in that it is a platform for research efforts with possible effects on both the Nation's current veteran population as well as the veterans returning from Afghanistan and Iraq. For instance, the Center is planning a study of atypical antipsychotic medications in post-traumatic stress disorder, while at the same time studying best practices for hernia repair and improving intermediate outcomes in veterans with diabetes.

Finally, the Center is a success in utilizing VA as an excellent laboratory for projects that aim to improve care for veterans. The Center's recently funded VA MI+ study seeks to understand and increase provider adherence to clinical practice guidelines for post-heart attack patients. The study integrates the VA electronic health record system and its community based outpatient clinics, or CBOCs, to achieve this goal. No other health system in the United States could serve as well as VA as a setting for this study.

Despite the successes of the VA research program, AAIM has concerns for its future.

The lack of growth in program funding, particularly the Administration's long standing reluctance to incorporate increases for the program in its budget proposal, is particularly troubling. A flat budget sends messages to young clinician-scientists, as well as established investigators, that hard times are ahead and that research may not be the career for them. Over the past 4 years, during which overall research funding to our VA medical center has remained relatively flat, the number of funded investigators has decreased by 30 percent and the entry of new investigators has dropped dramatically. Mid-level and senior researchers with a prior history of sustained funding, and active funding from NIH and other sources, have found it increasingly difficult to obtain research funding in VA. Several of our physician-investigators have had to resubmit grant proposals up to four times before obtaining funding. During such gaps in support, the momentum of the research effort is seriously eroded. One investigator working in HIV reported that 60 percent of the lab's personnel departed during such a gap. Faced with these ongoing problems, physicians from our medical center in the specialties of nephrology, gastroenterology, and pulmonary diseases have abandoned efforts to obtain future research funding from VA. As a result, our ability to recruit and retain the highly skilled specialists needed to care for our complex patient population is compromised.

AAIM thanks the Committee for its support of the program in your views and estimates letters. The Alliance also thanks Senator Craig and Senator Akaka for their sponsorship of the Dear Colleague letter to appropriators. As a member of the Friends of VA Medical Care and Health Research coalition, or FOVA, AAIM supports a $460 million appropriation for the VA research program in fiscal year 2007. I cannot overstate how important growth to the program will be given the likely difficulties in increasing overall Federal support for research in the coming year, despite your best efforts.

AAIM's second specific concern for the future of the program is VA's research infrastructure. Modern scientists need modern facilities in which to conduct research. I have heard countless stories from AAIM members across the country about difficulties in upgrading ventilation and electrical systems. These basic needs are crit-

ical. The precision equipment required for modern research programs, such as genomics, will require precise control of the laboratory environment. The advanced computer systems and high-tech equipment that will support this work will absolutely demand consistent, uninterrupted supply of electrical power. More investment in core facilities to house essential research tools, such as mass and NMR spectrometers, advanced microscopy, robotics and computer equipment, will be required for VA to move into the future of research where it most deservedly belongs. AAIM encourages you to consider the development of a designated authority for funding VA research infrastructure.

The alliance's final concern pertains to the distribution of VA's scarce research resources. The successes outlined in my statement inherently result from the intramural structure of the research program. In most cases, VA funded investigators must have at least a 5/8ths appointment. This structure assures these same investigators are available as clinicians and educators in the VA, vital roles for caring for the veteran population. The other inherent element of the program is peer review, the process through which the best research can be identified and prioritized for funding. AAIM encourages this Committee to lead efforts to retain these valuable aspects of the program and strengthen VA research as it serves today's and tomorrow's veterans.

Again, thank you for the opportunity to appear today. I look forward to your questions.

Chairman CRAIG. Dr. Kennedy, thank you very much, and to all of our panelists, thank you.

Let me ask a question specific of you, Dr. Stevens, because of the size of the facility in Boise compared with, I think, your peers who are here and are dealing with probably university settings and a larger type of research setting. And then I want to ask a series of questions that I think all of you might want to react to.

Dr. Stevens, I understand that you specialize in the area of infectious diseases. Can you briefly describe the range of research activities that are underway at your facility?

Dr. STEVENS. Yes, sir. We have done basic science research in gram-positive bacteria, such as Group A strep, Staph. aureus, Clostridium perfringens, gas gangrene, and we have investigated how these toxins really cause destruction of limbs, and how they cause shock, in an effort to try to explain why with battlefield injuries, for example, people lose arms and legs in a matter of hours. And so we have defined the important toxins for many of these organisms and have actually, in collaboration with Porton Down in great Britain, developed a vaccine to prevent gas gangrene, at least in animal models.

We also have done clinical studies with hepatitis C, and I am happy to say that for genotype II and III, we have been able to cure 95 percent of veterans that have hepatitis C that are non-genotype I.

We have also done clinical studies with HIV, and we have investigated mechanisms of actions of antibiotics and defined some better ways to treat gram-positive infections that are associated with toxins, like toxic shock syndrome.

Chairman CRAIG. What strategies have been effective in maximizing the research funds for your relatively small-scale type program?

Dr. STEVENS. Well, I think collaborations. You know, we don't have a critical mass of people there to collaborate with, but we have been able to collaborate with people from all over the world that have similar interests. So I think collaboration is one. Partnerships with pharmaceutical companies in terms of clinical trials as well as investigation-initiated research projects are also important.

We have worked with the various universities that I mentioned to try to improve collaboration and to try to develop joint graduate school programs. And I think those are the things that are kind of in their infancy but we are very excited about and moving forward and I think trying to develop a critical mass there in Boise.

Chairman CRAIG. Gentlemen, to all of you, you bring with you a wide range of perspectives from regionally diverse VAs, major medical schools, and from academic clinical experiences. If we are to move forward toward enhancing VA's university collaboration in the area of research, your views would certainly be welcome in all of these discussions.

Can any of you comment, or would you, on the degree of opportunity you see in the joint operation of a VA university research space? Do you foresee certain obstacles that the Committee should be aware of in these kinds of relationships?

Dr. FEUSSNER. Well, Senator, I would be happy to take that question since we currently operate a joint research facility between the VA and the medical university.

I think the obstacle, the operative obstacle is finding the original startup capital to create the facilities. In our case, it was a joint venture not between public and private partners but between Government partners. The Federal Government contributed dollars, the State of South Carolina contributed dollars, and the medical university financed the rest.

We share 120,000 square feet of research space. The investigators experience no barriers. The VA administrative office is actually housed in the research building. If anything, the sharing, in my opinion, facilitates collaboration. It gets the researchers out of their silos and gets them to collaborate with one another. In our case, two major program project grants initially seeded by VA research dollars, funded to our investigators, one in cardiovascular disease, continuously funded now for almost 15 years, and another one in diabetes, a program project funded by the NIH. And both those major grants, the investigators for the most part are both VA and university faculty.

So I think the real barrier, the operative barrier, is getting the initial startup capital to make the investment happen.

Dr. WRIGHT. I could provide a slightly different perspective on that in southern Connecticut. We are very fortunate to be in a community with a large research-oriented medical school. The challenge that we face is that our facility is 4 miles away from Yale, and so it is difficult to co-occupy a single facility. In the efforts that we have made in working with the school we have found that the school, with its view on its own concerns, is most interested in facilities that are immediately on the campus.

As Dr. Kennedy said, that the VA-appropriated funds provide the core support or the initiating support, is either in projects or in capital funding, that then enable the VA to make other funds materialize. In our experience, without adequate appropriated funding support directed at the VA, the VA has great difficulty in attracting the additional funds, which in our case is two-thirds of our funding.

Chairman CRAIG. Dr. Kennedy.

Dr. KENNEDY. Mr. Chairman, I would just agree with my colleague Dr. Feussner that I think the major obstacle is the capital to fund these buildings. But sort of going at a different perspective from Dr. Wright, I think there is a tremendous opportunity in those settings, as in Birmingham, where the VA and the university are in very close proximity, immediately adjacent to one another, and there are other such arrangements where the proximity is not an issue, and these are tremendous opportunities for joint efforts for space and other activities.

So, again, on a positive note, seeking out opportunities, I think this is one.

Chairman CRAIG. Thank you very much.

Senator Akaka.

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

Dr. Stevens, you detailed the success researchers have in areas such as cardiology, oncology, and infectious diseases. However, these are programs that are facing the real funding cuts. Is it not possible for VA researchers to work on service-connected research and concurrently on diseases facing all Americans?

Dr. STEVENS. Well, thank you for that question, Senator Akaka. I agree with you. I think that there are many priorities for research within the veteran population, and I think that there should be basic research and clinical research and outcomes research in the areas of cardiovascular disease, oncology, et cetera. Those things all affect veterans as well. I don't think it should just be limited to war-type injuries, although in my own case we have spent a lot of time trying to solve some of the infectious disease problems from some of those cases.

So I do not want to cutoff my nose to spite my face here, but, on the other hand, I think that it should be a broad base.

Senator AKAKA. You also mentioned in your testimony about the growth of need for services in Idaho, and in 10 years you went from 10,000 to almost double, which is 19,000, and also the problem of recruiting for new positions because of this kind of growth, which make it so important that we got some of these shifts in emphasis.

Dr. Kennedy, your testimony discusses the fact that in some cases, VA research is funded more from outside sources than from Federal funding. For example, the GRECC, or Geriatrics Research, Education Clinical Center, received a total of $35 million last year; only $9.9 million was from VA funds. Outside funding then is vital in the program's success.

You have cited the lack of growth in program funding as a concern. Can you, Dr. Kennedy, describe how continued lack of funding will impact recruitment and retention of new clinician scientists? And would more VA funding for programs such as GRECC perhaps minimize attrition of researchers and continue to encourage outside funding?

Dr. KENNEDY. Thank you, Senator Akaka. That is a wonderful question.

As you point out, this investment that you make in VA research, as all the testimony has alluded to today, is a tremendous bargain and the yield is phenomenal. So I do not know any other investment where you get a two-for-one return on investment in the

short term. And this is in the grand scheme of the Federal budget not a huge amount of money.

That said, I can tell you specific examples in Birmingham where we have lost physicians. We were the only facility in our network to employ a full-time neurosurgeon, who was a basic science investigator, who lost funding and left VA. We have senior faculty, as I have mentioned already, who have become very discouraged. Some have gone through four cycles of repeat submissions in order to gain continued funding after long periods of successful funding. They have become very discouraged, and some have left the VA, gone back solely into the university. This is a major impact for me as the Chair of Medicine trying to staff the wards and the clinics to provide the specialists that we need there.

This research avenue is the critical one to help us recruit such people. Even as the pay bill, we hope, brings the pay up to competitive levels, that alone will not be sufficient, in my opinion, to keep this steady supply of highly trained specialists in VA.

Senator AKAKA. Well, thank you, Mr. Chairman. If I may proceed to another question?

Chairman CRAIG. Please.

Senator AKAKA. Because of the shift of emphasis, I would like to hear what your feelings about this. My question goes to each of you. As experienced researchers, I do not have to tell you about the value of maintaining a vital peer review process. From my vantage point, we have seen an increase in earmarks in the case of sending VA dollars outside of VA to other entities. Now, my question to you is: Is the peer review process as vital as we need it to be?

Dr. STEVENS. Thank you, Senator Akaka. I would to take a shot at that, if I may.

I think the peer review process is absolutely vital to a healthy competitive research program, and I think the VA's central office has just done a marvelous job in the peer review program over the years. And I think it is impartial. I think it gives money to the best grants, the best people. And I think they do a wonderful job in that respect.

I think as you have pointed out, as you have both pointed out, the research money that is allocated is, in my opinion, inadequate and it has been inadequate for a long time. The peer review process is excellent, but when the funding level gets down, it is devastating. And it takes an awfully good researcher to be able to compete with everyone else in the world when the funding level is 10 percent or even 15 percent. That is a destructive level. The funding level of grants' approval rate has got to be higher than that.

You know, you would not want to just allow 20 percent to the VAs throughout the Nation to have research programs. That is what it boils down to.

So I think that the peer review process is excellent. It is necessary. But, believe me, it weeds out very good people when the funding level gets too low.

The other thing that is, I think, related to the question of funding in the VA system is the amount of the award. And 10 or 15 years ago, I think the maximum was $150,000 per year for a merit review. It is now $125,000 a year maximum. And so, you know, within inflation and the cost of equipment and salaries, that is not

a lot of money. I mean, we are very grateful. We are very grateful for it. But everything else in the world has grown. The awards for a merit review have actually decreased in total amount for those people that are successful. And I think at a small VA like I am, I think this is devastating. But I think it is equally devastating for large programs such as in our VISN, the University of Oregon, Portland VA, the Seattle VA. It is devastating for them as well.

Senator AKAKA. Dr. Wright.

Dr. WRIGHT. Senator, if I may, extend that briefly with our experience: I have heard people compare the peer review system to democracy. I think people have said about democracy that it is painful and it can be messy and it is difficult. The peer review system is like that also, but like democracy, we think it is the best way to do it.

I can give an example from our recent experience this year. When the funding level of available funds to divide up by peer review is in this 10- to 15-percent range, that does not necessarily mean that 85 or 90 percent of the applications are not worthwhile. In fact, I was very disappointed this year when one of our new potential recruits, a woman who I taught as a medical student sometime ago, and who has now been through residency and fellowship training and graduate training and is ready to embark on her own research career did not receive VA funding. My understanding is she came in about fifth out of 25 applicants in the last round and will have to reapply for funding. So she will be treading water with us and trying to conduct her research. She wants very much to stay at the VA and be a clinician and an investigator.

Senator AKAKA. Dr. Feussner.

Dr. FEUSSNER. Yes, Senator. I do not think the power of your question can be understated, and if we start by saying what my colleagues have already said, that the start point is a situation where research resources are precious and scarce, the peer review process promotes very strong very rigorous science, very rigorous research methods, and it provides an opportunity for accountability of how the research dollars are spent.

You might say that bypassing that process in a period of scarce resources cheats hard-working scientists who are participating in the research process, who go through this rigorous review with perhaps a front-end opportunity of being succeeded one in five, or 20 percent. So I think activities that bypass this process are—I should not say reprehensible, but are unfortunate. And I would commend the VA. The VA has a rigorous peer review process. It has for decades. It emulates the peer review process of other major biomedical Federal funders like the National Institutes of Health, to a degree the NSF.

Senator AKAKA. Dr. Kennedy.

Dr. KENNEDY. I would just echo those comments from my colleagues and point out that in this time of scarcity, any constraint, any further constraint on funding does indeed discourage particularly young investigators, and that interrupts severely the pipeline as we send those people away from VA and perhaps away from research careers altogether, then we face a gap, a significant gap in time before replacements will be available, people trained and able to begin to initiate new research initiatives.

So that is a key element. This is really a vital investment. This program cannot be sustained without steady and predictable funding.

Senator AKAKA. Thank you, Dr. Kennedy.

Thank you for the time, Mr. Chairman.

Chairman CRAIG. Well, gentlemen, we will end on that note. I think that was an excellent wrap-up, Senator Akaka, that question, and all of your responses to it. I think it demonstrates obviously the value of the research dollar, and we have certainly known over the years, as we brought money into NIH and other areas and bumped those up, the level of research, the types of research programs underway and the findings that are now pouring out as it relates to human health and human health-related problems. And certainly VA has played and will continue to play a role in that, and I think that is why 62 of us joined together to express our concern as to a bump-up in these research dollars and at least sustaining a progressive level of increase instead of cuts. It remains critical, and we will continue to push to assure that happens.

So, gentlemen, again, thank you for coming. Thank you for your time and your insight. As we continue to work on these issues, we will be back to you to question you and to ask for your advice as we move along.

Thank you very much. The Committee will stand adjourned.

[Whereupon, at 11:47 a.m., the Committee was adjourned.]

A P P E N D I X

DEPARTMENT OF VETERANS AFFAIRS' MEDICAL AND RESEARCH PROSTHETICS RESEARCH PROGRAM.

Hon. KAY BAILEY HUTCHISON, *Chairman,*
Hon. DIANNE FEINSTEIN, *Ranking Member,*
Subcommittee on Military Construction and Veterans Affairs Committee on Appropriations,
U.S. Senate,
Washington, DC.

DEAR CHAIRMAN HUTCHISON AND RANKING MEMBER FEINSTEIN: We strongly urge the Appropriations Subcommittee on Military Construction and Veterans Affairs to demonstrate this Nation's commitment to its veterans for the Department of Veterans Affairs' Medical and Prosthetics Research program.

The Administration's proposed fiscal year 2007 budget for the direct costs of VA research is $399 million, a $13 million cut from the current year's level of $412 million. The proposed level of direct funds does not keep pace with inflation and will compel VA to cut numerous projects. Therefore, we support a fiscal year 2007 funding level of $432 million, in order to cover inflation, sustain current VA research and development commitments, and allow critical new research initiatives to move forward.

If enacted, the proposed cuts to the VA research budget will result in the loss of 96 research projects in valuable areas such as diabetes, cancer, aging, heart disease, and 286 full-time. employees (FTE) are projected to lose their jobs. Further, given that participation in VA's top-notch research program is a major factor in recruiting physicians to VA, the research program must be provided the necessary funds to attract and retain quality clinical staff.

Another point to take into account is that the nature of modem warfare and battlefield medicine has resulted in servicemembers coming home with wounds that would have been fatal in previous wars. Many wounded servicemen d women are in need of prosthetic limbs, extensive physical therapy, or have endured traumatic brain injuries. With thousands of military personnel engaged in service overseas, it is vital that Congress invest in research that could have a direct impact on their post-deployment quality of life.

VA research programs have been instrumental in developing innovative and effective methods of treatment since World War II, making landmark contributions to the welfare of veterans and the entirety of the Nation. Past VA research projects have resulted in the first successful liver transplant performed in the U.S., development of the cardiac pacemaker, and pioneering the concepts that led to the CT scan. VA research also has played a vital role in treating tuberculosis, rehabilitating blind veterans, and more recently, in launching the largest-ever clinical trial of psychotherapy to at PTSD. For the last 60 years, VA research has been extremely competitive with its private sector counterparts.

Today, VA's research program continues to remain appropriately focused. In 2004, VA research took on leadership of a $60 million nationwide study- funded by the Nation& Institute on Aging and other partners—to identify brain changes linked with Alzheimer's disease. VA research, in partnership with Brown University and MIT, established a major center of excellence to develop state-of-the-art prosthetics for veteran amputees. In June 2005, US. News & World Report called VA hospital care "the best around." The important role VA research played in this transformation of the VA medical care system cannot go overlooked; its innovations improved the overall quality and delivery of VA health care for years to come.

Keeping this distinguished record of success in mind, we ask you to further support VA research by ensuring that an appropriate level of funding continues for this program. These funds must be at a level that accounts for inflation, new and

daunting challenges, and most importantly, enables VA to remain attractive option to our best and brightest in medicine. Adequately funding VA's Medical and Prosthetics Research Program is vital to maintaining our commitment to veterans.

Signed by,

SENATORS CRAIG, AKAKA, SALAZAR, JOHNSON, ROCKEFELLER, KENNEDY, BURNS, JEFFORDS, SPECTER, LEAHY, MURRAY, LEVIN, LAUTENBURG, BAUCUS, BINGAMAN, OBAMA, ENSIGN, STABENOW, CLINTON, DEWINE, MIKULSKI, ALLEN, CONRAD, INOUYE, DORGAN, BOND, BOXER, SARBANES, PRYOR, DODD, SANTORUM, KOHL, DURBIN, SNOWE, KERRY, ISAKSON, ROBERTS, COLEMAN, NELSON, GRAHAM, MENENDEZ, LOTT, HAGEL, DAYTON, BIDEN JR., TALENT, CANTWELL, LANDRIEU, SCHUMER, CARPER, LIEBERMAN, LINCOLN, FEINGOLD, CRAPO, THUNE, WYDEN, DOLE, BURR, HARKIN, REED, MURKOWSKI, AND NELSON.

PREPARED STATEMENT OF FRIENDS OF VA MEDICAL CARE AND HEALTH RESEARCH

The Friends of VA Medical Care and Health Research (FOVA) member organizations thank both the House and Senate Committees on Veterans Affairs for their views and estimates with regard to fiscal year 2007 funding for the VA Medical and Prosthetic Research program. Their recommended increases, ranging from least $28 million up to $51.5 million over the Administration's budget request for the VA research program, affirm their ongoing support for our Nation's veterans. We also thank the many Senators that co-signed Chairman Larry Craig's and Ranking Member Daniel Akaka's Dear Colleague letter to Senators Kay Bailey Hutchison and Diane Feinstein, the Chair and Ranking Member of the Military Construction and Veterans Affairs Appropriations Subcommittee, urging an fiscal year 2007 appropriation of $432 million for the VA Medical and Prosthetic Research program.

FOVA is a diverse coalition of 86 national academic, medical, and scientific societies; voluntary health and patient advocacy groups; and veterans service organizations, all committed to high quality health care for veterans. We appreciate the opportunity to submit a statement today regarding the role of the VA Medical Research and Prosthetics Research program in attracting and retaining physicians, and we urge your support for an fiscal year 2007 appropriation of $460 million so that this success may continue.

THE ROLE OF VA RESEARCH IN THE RECRUITMENT AND RETENTION OF PHYSICIANS

VA Medical Care

The mission of the Veterans Healthcare System is "to serve the needs of America's veterans by providing primary care, specialized care, and related medical and social support services." The Veterans Health Administration (VHA) operates one of the largest comprehensive, integrated health care delivery systems in the United States. Organized around 21 Veterans Integrated Service Networks (VISNs), VA's health care system includes 154 medical centers and operates more than 1,300 sites of care, including 875 ambulatory care and community-based outpatient clinics, 136 nursing homes, 43 residential rehabilitation treatment programs, 206 Veterans Centers, and 88 comprehensive home-care programs.

More than 5.3 million unique patients received care in VA health care facilities in 2005. That same year, VA inpatient facilities treated 587,000 patients and VA's outpatient clinics registered nearly 57.5 million visits. VHA has experienced unprecedented growth in the medical system workload over the past few years. The number of patients treated increased by 29 percent from 4.1 million in 2001. In fiscal year 2007, VHA estimates it will care for almost 5.5 million veterans.

The VA health care system had 7.7 million veterans enrolled to receive VA health care benefits as of October 2005. To help VA manage health care services within budgetary constraints, enrolled veterans are placed in priority groups or categories. Unfortunately, with limited resources, VA has had to restrict the number of priority 8 veterans—higher-income veterans suffering from conditions not related to their service—who can receive VA care.

Despite limiting access of enrolled veterans, a significant backlog of delayed appointments has resulted from an inadequate supply of clinical physicians. While the VHA has made commendable improvements in quality and efficiency, the Independent Budget veterans service organizations cite excessive waiting times and delays as the primary problem in veterans' health care. Without increases in clinical staff, veterans' demand for health care will continue to outpace the V's ability to supply timely health-care services and will erode the world-renowned quality of VA medical care.

Physician Shortage

The Council on Graduate Medical Education (COGME), a national advisory body that makes policy recommendations regarding the adequacy of the supply and distribution of physicians, predicts that if current trends continue, demand for physicians will significantly outweigh supply by 2020. With the VA already struggling to meet the needs of our Nation's sick and disabled veterans, the looming physician shortage poses a serious threat to VA's ability to competitively recruit and retain the physicians who wi11 be critical to its future success.

VA Medical and Prosthetic Research Program

To accomplish its aforementioned mission, VHA acknowledges that it needs to provide "excellence in research," and must be an organization characterized as an "employer of choice." The VA Medical and Prosthetic Research program is one of the Nation's premier research endeavors and attracts high-caliber clinicians to deliver care and conduct research in VA health care facilities. The VA research program is exclusively intramural; that is, only VA employees holding at least a five-eighths salaried appointment are eligible to receive VA awards. Unlike other Federal research agencies, VA does not make grants to colleges and universities, or to any other non-VA entity. As such, the program offers a dedicated funding source to attract and retain high-quality physicians and clinical investigators to the VA health care system. This in turn ensures that our Nation's veterans receive state-of-the-art health care.

VA currently supports 5,143 researchers, of which nearly 83 percent are practicing physicians who provide direct patient care to veteran patients. As a result, the VHA has a unique ability to translate progress in medical science directly to improvements in clinical care.

Academic Affiliations

The affiliations between VA medical centers and the Nation's medical schools have provided a critical link that brings expert clinicians and researchers to the VA health system. As stated in seminal VA Policy Memorandum No. 2 published in 1946, the affiliations allow VA to provide veterans "a much higher standard of medical care than could be given [them] with a wholly full-time medical service." At present, 130 VA medical centers have such agreements with 107 of the 126 allopathic medical schools. This represents 84 percent of the 154 VA medical centers. These long standing affiliations with the academic health care community are a major factor in ensuring quality care for U.S. veterans and represent a model partnership between the Federal Government and non Federal institutions.

Over six decades, these affiliations have proven to be mutually beneficial by affording each party access to resources that would otherwise be unavailable. It would be difficult for VA to deliver its high quality patient care without the physician faculty and residents that are available through these affiliations. In return, the medical schools gain access to invaluable undergraduate and graduate medical education opportunities through medical student rotations and residency positions at the VA hospitals. Faculty with joint VA appointments are afforded opportunities for research funding that are restricted to individuals designated as VA employees.

These faculty physicians represent the full spectrum of generalists and specialists required to provide high quality medical care to veterans, and, importantly, they include accomplished sub-specialists who would be very difficult and expensive, if not impossible, for the VA to obtain regularly and dependably in the absence of the affiliations. According to a 1996 VA OIG report, about 70 percent of VA physicians hold joint medical school faculty positions. These jointly appointed clinician-investigators are typically attracted to the affiliated VA Medical Center both by the challenges of providing care to the veteran population and by the opportunity to conduct disease-related research under VA auspices.

FISCAL YEAR 2007 APPROPRIATIONS FOR THE VA MEDICAL AND PROSTHETIC RESEARCH

FOVA recommends an fiscal year 2007 direct research appropriation of $460 million for VA medical and prosthetic research and development. Investments in investigator-initiated research projects at VA have led to an explosion of knowledge that is advancing the understanding of disease and unlocking strategies for prevention, treatment, and cures. The complexity of research, combined with biomedical research inflation, has increased the cost of research. Biomedical research inflation alone, estimated at 5.5 percent for fiscal year 2005 and projected at 4.1 percent for fiscal year 2006, has reduced the purchasing power of the VA Research appropriation by $22.7 million and $16.5 million respectively for a total impact of $39.2 million over just 2 years. In the absence of commensurate increases, VA is unable to sustain important research on diabetes, hepatitis C, heart diseases, stroke and sub-

stance abuse while also addressing emerging needs for more research on post traumatic stress disorder and long-term treatment and rehabilitation of veterans with polytraumatic blast injures. Additional funding is needed to take advantage of burgeoning research opportunities within the VA to improve quality of life for our veterans and the Nation as a whole.

Administration's Budget Recommendation

The Administration's fiscal year 2007 budget request includes $399 million for the VA Medical and Prosthetic Research program, a $13 million (3.2 percent) reduction from the final fiscal year 2006 appropriation of $412 million. These VA research funds provide direct support for research projects as well as the salaries of non-clinician investigators.

FOVA members are deeply disappointed with the Administration's budget request and note that if enacted, it will have significant adverse consequences for the VA research program. In its budget summary, the VA anticipates that this $13 million reduction will result in the elimination of 82 investigator-initiated programs, 15 special research initiatives, and 7 multi-site research projects. Furthermore, the department would reduce the number of VA's direct research employees by 286.

In fiscal year 2007, VA expects to increase funding for studies of acute and traumatic injury as well as central nervous system injury and related disorders. However, to fund these new studies with a shrinking budget, VA projects cuts to research in aging, cancer, infectious diseases, kidney diseases, diabetes, lung disorders, and heart diseases, among others. In other words, VA is proposing to rob Peter to pay Paul.

As in prior years, the Administration's fiscal year 2007 budget includes projections for VA research spending from the VA medical services appropriation. This "medical care support" is slated for a $13 million increase, from $353 million in fiscal year 2006 to $366 million in fiscal year 2007. While this increase might seem to offset the proposed cut to direct research funding, the medical care support allocation does not directly support research projects. As the budget submission indicates, this allocation funds "facility costs of heat, light, telephone, and other utilities associated with laboratory space; the administrative cost of human resource support, fiscal service, and supply service attributable to research; research's portion of a medical center's hazardous waste disposal and nuclear medicine licenses; and, most importantly, the time clinicians devote to their research activities."

The VA budget also includes non-VA funding sources among the lines of support for VA research. The budget optimistically projects a $13.24 million increase (from $662 million in FY 2006 to $675 million in fiscal year 2007) in other federally funded research conducted at VA, funds that have primarily come from the National Institutes of Health (NIH).

However, the Administration's fiscal year 2007 budget for the NIH is flat, making it highly unlikely that VA will enjoy significant growth in NIH-funded research grants.

Though the Administration's projections of private contributions for VA research have been inflated in previous years, the VA budget anticipates a reasonable $4 million increase for fiscal year 2007 (from $204 million in fiscal year 2006 to $208 million in fiscal year 2007). This funding comes from industry for support clinical trials as well as foundations and other non-profit entities to support a variety of research projects.

Programmatically, the VA research budget includes plans for two special research projects to begin in fiscal year 2007. The first project focuses on the special needs of service personnel returning from Operation Iraqi Freedom and Operation Enduring Freedom. The project envisions wide ranging research efforts, including posttraumatic stress disorder and other mental health issues; amputation and prosthetics research; and returning personnel reentry and reintegration. A second special project would focus on genomic medicine. The thrust of this project is to link veterans' genetic information with the VA electronic health record. According to the budget submission, "The goal is to develop genetic assessments that will potentially enable 'mass customization' of medical treatment." These new projects necessitate additional funding over FY 2006 levels plus an accommodation for biomedical research inflation if VA is to continue pre-existing endeavors as well implementing these new initiatives.

The coalition wholeheartedly supports the vision to expand the VA research program to encompass the needs of service personnel returning from current conflicts, whether they include polytrauma, massive burn injury, or mental conditions. Such expansion of the program requires new resources so VA's other research areas, which are equally important to the care of large numbers of veterans, do not languish in the meantime.

Earmarks and Designation of VA Research Funds

The members of FOVA oppose earmarking the VA research appropriation because they jeopardize the strengths of the VA Research program. VA has well-established and highly refined policies and procedures for peer review and national management of the entire VA research portfolio. Peer review of proposals ensures that VA's limited resources support the most meritorious research. Additionally, centralized VA administration provides coordination of VA's national research priorities, aids in moving new discoveries into clinical practice, and instills confidence in overall oversight of VA research, including human subject protections, while preventing costly duplication of effort and infrastructure.

VA research encompasses a wide range of types of research. Designated amounts for specific areas of research compromise VA's ability to fund ongoing programs in other areas and force VA to delay or even cancel plans for new initiatives. While Congress certainly should provide direction to assist VA in setting its research priorities, earmarked funding exacerbates resource allocation problems. FOVA urges Congress to preserve the integrity of the VA research program as an intramural program firmly grounded in scientific peer review. These are principles under which it has functioned so successfully and with such positive benefits to veterans and the Nation since its inception.

VA Research Infrastructure

State-of-the-art research requires state-of-the-art technology, equipment, and facilities. Such an environment promotes excellence in teaching and patient care as well as research. It also helps VA recruit and retain the best and brightest clinician scientists. In recent years, funding for the VA medical and prosthetics research program has failed to provide the resources needed to maintain, upgrade, and replace aging research facilities. Many VA facilities have run out of adequate research space, and ventilation, electrical supply, and plumbing appear frequently on lists of needed upgrades along with space reconfiguration. Under the current system, research must compete with other facility needs for basic infrastructure and physical plant improvements which are funded through the minor construction appropriation.

FOVA appreciates the attention the Appropriations Committee gave to this problem in the House Report accompanying the fiscal year 2006 appropriations bill (P.L. 109–114), which expresses concern that equipment and facilities to support the research program may be lacking and that some mechanism is necessary to ensure the Department's research facilities remain competitive. It noted that more resources may be required to ensure that research facilities are properly maintained to support the Department's research mission.

To ensure that funding is adequate to meet both immediate and long term needs, FOVA recommends an annual appropriation of $45 million in the minor construction budget dedicated to renovating existing research facilities and additional major construction funding sufficient to replace at least one outdated facility per year until the backlog is addressed.

Again, FOVA appreciates the opportunity to present our views to the Committee. While research challenges facing our Nation's veterans are significant, if given the resources, we are confident the expertise and commitment of the physician-scientists working in the VA system will meet the challenge.

Administrators of Internal Medicine

Alliance for Academic Internal Medicine Alliance for Aging Research
American Academy of Child and Adolescent Psychiatry
American Academy of Neurology
American Academy of Orthopaedic Surgeons
American Association for the Study of Liver Diseases
American Association of Anatomists
American Association of Colleges of Nursing
American Association of Colleges of Osteopathic Medicine
American Association of Colleges of Pharmacy American
Association of Spinal Cord Injury Nurses
American Association of Spinal Cord Injury Psychologists and Social Workers
American College of Chest Physicians
American College of Clinical Pharmacology
American College of Physicians

American College of Rheumatology
American Dental Education Association
American Federation for Medical Research
American Gastroenterological Association
American Geriatrics Society
American Heart Association
American Hospital Association
American Lung Association
American Military Retirees Association
American Occupational Therapy Association
American Optometric Association
American Osteopathic Association
American Paraplegia Society
American Physiological Society
American Podiatric Medical Association
American Psychiatric Association
American Psychological Association
American Society for Bone and Mineral Research
American Society for Pharmacology and Experimental Therapeutics
American Society of Hematology
American Society of Nephrology
American Thoracic Society
Association for Assessment and Accreditation of Laboratory Animal Care International
Association for Research in Vision and Ophthalmology
Association of Academic Health Centers
Association of American Medical Colleges
Association of Professors of Medicine
Association of Program Directors in Internal Medicine
Association of Schools and Colleges of Optometry
Association of Specialty Professors
Association of VA Chiefs of Medicine
Association of VA Nurse Anesthetists
Blinded Veterans Association
Blue Star Mothers of America
Clerkship Directors in Internal Medicine
Coalition for Heath Services Research
Digestive Disease National Coalition
Federation of American Societies for Experimental Biology
Gerontological Society of America
Gold Star Wives
Hepatitis Foundation International
International Foundation for Functional Gastroenterological Disorders
Juvenile Diabetes Research Foundation International
Legion of Valor of the USA, Inc.
Medical Device Manufacturers Association
Medicine-Pediatrics Program Directors Association
Military Officers Association of America
National Alliance on Mental Illness
National Association for the Advancement of Orthotics and Prosthetics
National Association for Uniformed Services
National Association of VA Dermatologists
National Association of VA Physicians and Dentists
National Association of Veterans' Research and Education Foundations
National Mental Health Association
Nurses Organization of Veterans Affairs
Osteogenesis Imperfecta Foundation
Paralyzed Veterans of America
Paralyzed Veterans of America Spinal Cord Research Foundation
Partnership Foundation for Optometric Education
Society for Investigative Dermatology

Society for Neuroscience
Society for Women's Health Research
Society of General Internal Medicine
Spinal Cord Research Foundation
The Endocrine Society
United Spinal Association
Veterans Affairs Physician Assistant Association
Veterans of the Vietnam War and the Veterans Coalition
Vietnam Veterans of America

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