THE HONORABLE JONATHAN B. PERLIN, MD, PhD, MSHA, FACP, UNDER SECRETARY FOR HEALTH

STATEMENT OF

THE HONORABLE JONATHAN B. PERLIN, MD, PhD, MSHA, FACP

UNDER SECRETARY FOR HEALTH

DEPARTMENT OF VETERANS AFFAIRS

ON THE VA MEDICAL AND PROSTHETIC RESEARCH PROGRAM

BEFORE THE

SENATE COMMITTEE ON VETERANS' AFFAIRS

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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 1940's 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 longstanding 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 1960's, 70's, and 80's 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 Federal 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 on-going 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 planning 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 FY 2006 for a 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% 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% 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% 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% 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 one 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% 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% 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% 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 FY 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.