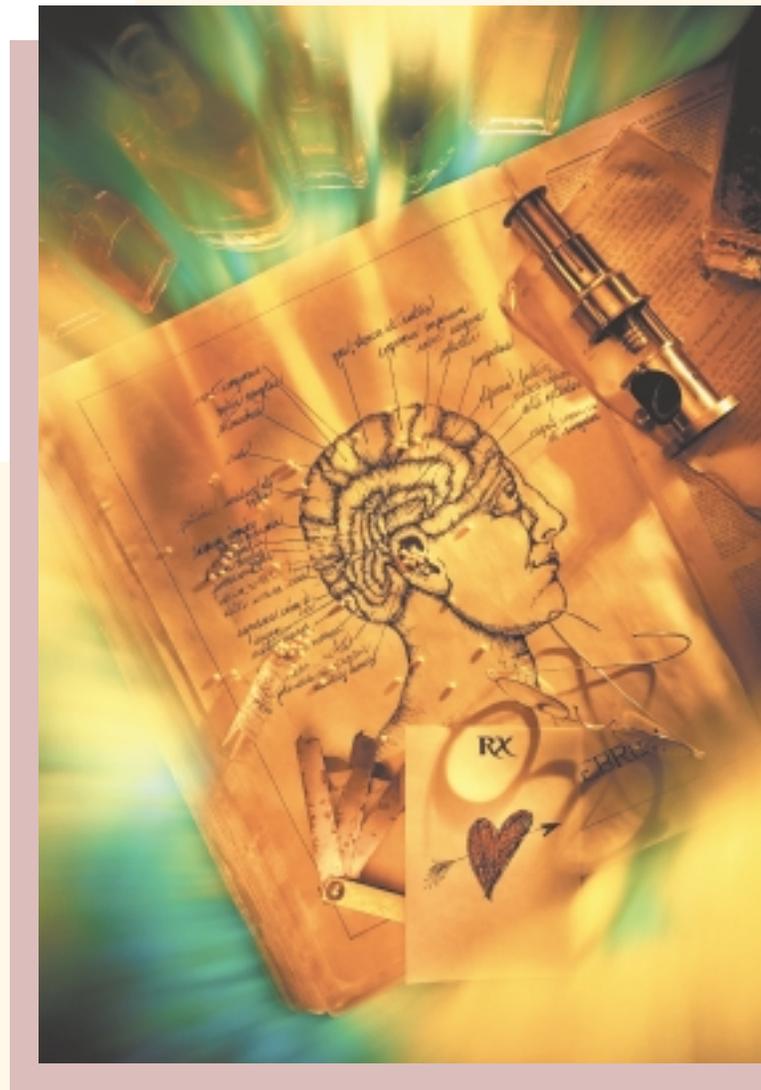


New Knowledge Advancing Health Care for Veterans

1999
Annual Report

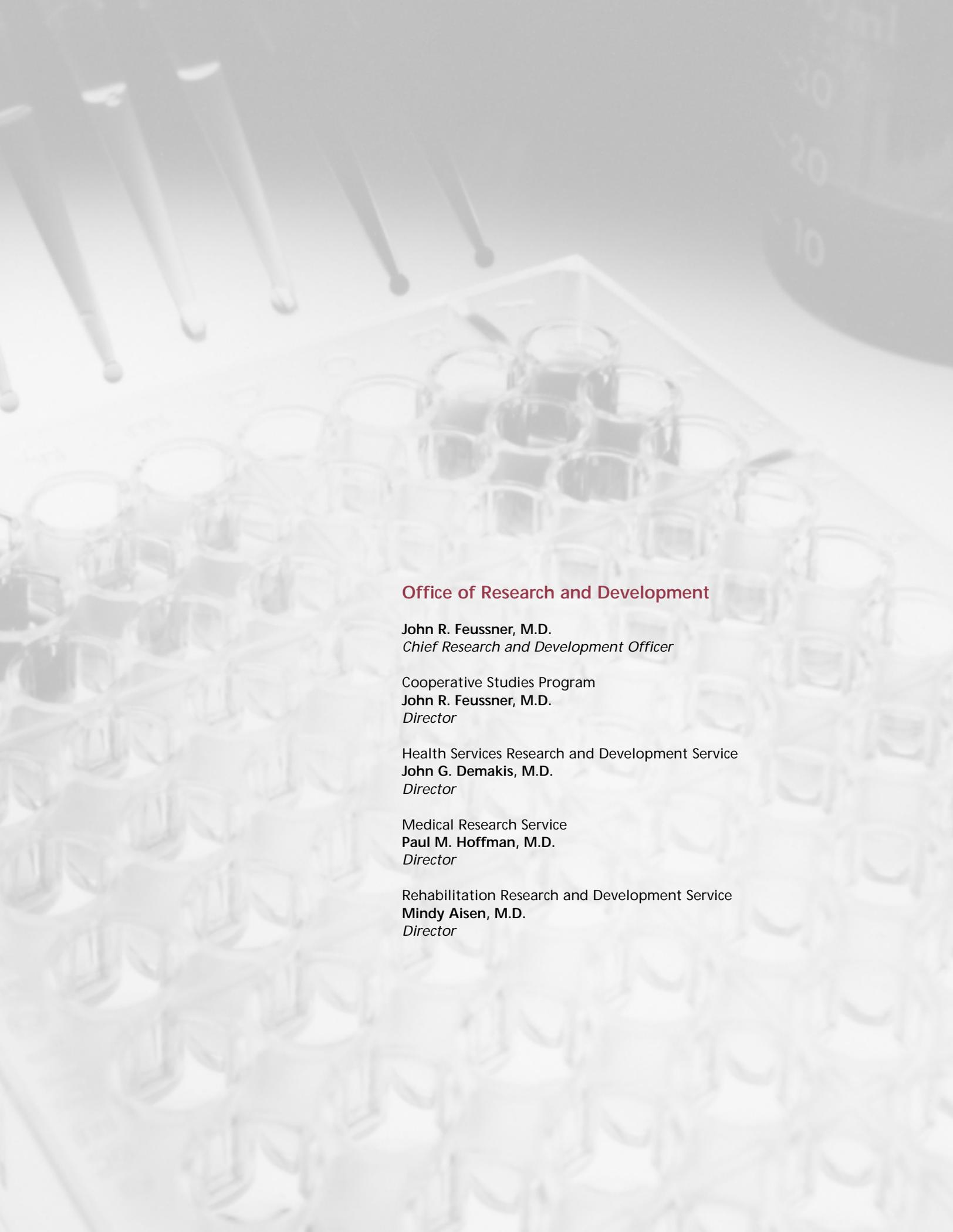
**Office of Research & Development
Veterans Health Administration
Department of Veterans Affairs**



*New Knowledge Advancing
Health Care for Veterans*

1999 Annual Report

**Office of Research & Development
Veterans Health Administration
Department of Veterans Affairs**



Office of Research and Development

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Table of Contents

Preface	1
Overview:	
<i>New Knowledge Advancing Health Care for Veterans</i>	3
Research Across the Nation and Around the World:	
<i>The Cooperative Studies Program</i>	7
Improving the Quality and Efficiency of Health Care:	
<i>The Health Services Research and Development Service</i>	9
Expanding Knowledge of Disease Processes:	
<i>Medical Research Service</i>	11
Removing the Barriers to Independence:	
<i>Rehabilitation Research and Development Service</i>	13
Preparing Research Leaders of Tomorrow:	
<i>Career Development</i>	15
Expanding Knowledge through Collaboration	16
Supporting Discovery: <i>Research Funding</i>	18
Building for the Future	19
Career Development Awardees	20
Summary of 1999 R&D Projects	23

*The Veterans Health
Administration provides the
nation with an extraordinarily
diverse and dynamic environment
for health care research.*



Preface

As the largest integrated health care system in the United States, the Veterans Health Administration provides the nation with an extraordinarily diverse and dynamic environment for health care research. VA's medical centers and clinics form a network of clinicians, researchers, administrators and managers, who are dedicated to finding and implementing the most effective and efficient ways to deliver the best quality of care to our veterans and the nation.

A central element of this endeavor is the Office of Research and Development, which administers a program covering the spectrum of research from discovery to application. Led by John R. Feussner, M.D., Chief Research and Development Officer, this research enterprise includes basic biomedicine, clinical trials, rehabilitation, and health services research. All aspects of the program focus on health care issues that are prevalent among veterans and also produce groundbreaking research results that benefit the entire country.

In the last year, the Office of Research and Development intensified its determination to rapidly translate research results into practice. More than ever, its priority is the connection between research and patient outcomes. Our research achieves its maximum value when we share our findings with those who can apply them in the daily care of patients.

VA is proud of its position as one of the world's premier academic health systems. We take great pride in the research that helps keep VA at the forefront of modern medicine and health care. This annual report serves, perhaps most importantly, as a mark of progress. While it highlights some of the research achievements and enhancements in our programs, it also represents our pledge to diligently sustain our search for new knowledge that promotes the health of veterans and the nation.



Thomas L. Garthwaite, M.D.
Acting Under Secretary for Health



How to check your Blood Glucose Level.

1. Wash hands or sanitize.
2. Prepare Reading: Wash hands with soap and water.
3. Prick finger on test strip.
4. Dip strip in blood.
5. Insert strip in meter.
6. Read result.
7. When the meter says "READY" or "END", remove the strip.

You can check anytime... especially BEFORE MEALS to be sure you are in "C"

New Knowledge Advancing Health Care for Veterans

Research findings create new knowledge. Without research, there can be no new cures, no new medications that relieve the symptoms of chronic illnesses, and no innovative new technologies that improve the daily living of those with disabilities. The Veterans Health Administration's Office of Research and Development (R&D) conducts research that brings hope to millions and real progress in the fight against an array of diseases and conditions, affecting veterans and non-veterans alike.

Through its scope and diversity, the Veterans Health Administration (VHA) offers clinicians and researchers an educational and research environment that is unmatched. Serving nearly 3.5 million veterans each year – at more than 1,100 care delivery sites across 50 states, the District of Columbia, Puerto Rico, U.S. Virgin Islands, Guam, and the Philippines – VA provides unique research opportunities that directly benefit patients. VA R&D's research portfolio includes basic laboratory research that identifies the causes, treatments and cures for diseases, disorders and disabilities, as well as clinical research on patient care management. The four research services that make up VA's Office of Research and Development, the Cooperative Studies Program, Health Services Research and Development Service, Medical Research Service, and Rehabilitation Research and Development Service, complement each other ensuring comprehensive study of today's complex health care issues.

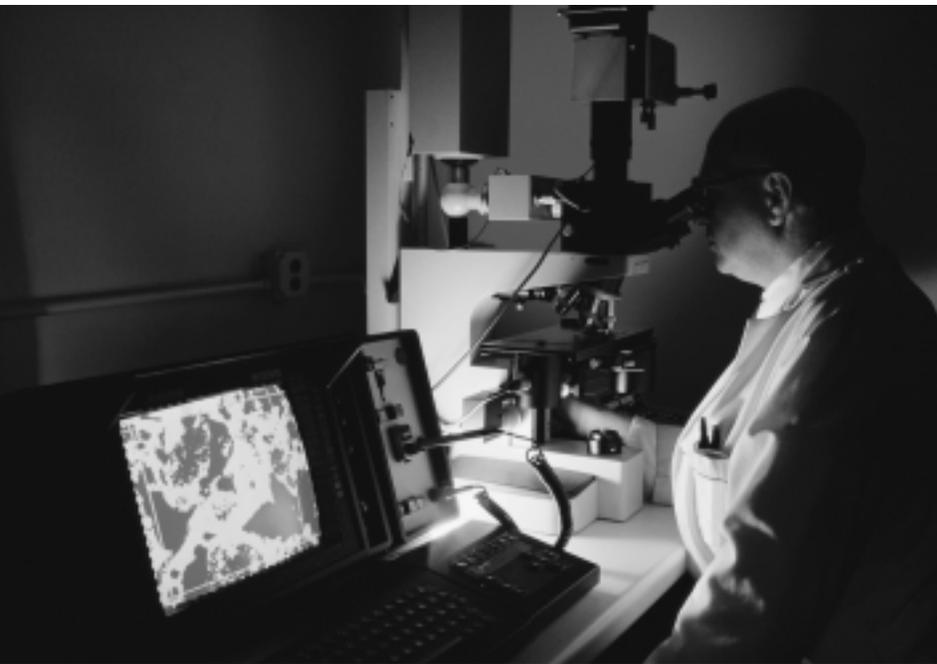
The Cooperative Studies Program (CSP) conducts multicenter clinical trials to determine the effectiveness of promising new therapies. As one of the most important large-scale clinical trial programs in the world, the CSP has achieved international recognition for its accomplishments in many areas – including ischemic heart disease, chronic lung disease, benign prostate disease, chronic renal failure,

and schizophrenia – that are prevalent among our veterans as well as the general population. In addition, CSP investigators conduct population-based research focusing on critical health care issues, such as the epidemiology of hepatitis C, the occurrence of amyotrophic lateral sclerosis (Lou Gehrig's disease) in Gulf War veterans, and the progression of prostate cancer and rates of illness among deployed veterans.

The Cooperative Studies Program has four Coordinating Centers, a Clinical Research Pharmacy, and three Epidemiological Research and Information Centers. Clinical trial results obtained through the CSP inform VA's health care policy makers so that they can make the appropriate changes in clinical practice that result in improved patient care for veterans and the nation.



John R. Feussner, M.D.
Chief Research and Development Officer



The Veterans Health Administration's Office of Research and Development (R&D) conducts research that brings hope to millions and real progress in the fight against an array of diseases and conditions, affecting veterans and non-veterans alike.

The Health Services Research and Development Service (HSR&D) strives to improve the quality and accessibility of health care services for veterans while evaluating the cost effectiveness of services and therapies. The work of HSR&D reaches across the continuum of health care research and focuses on identifying effective, efficient strategies for the organization and delivery of health care to improve patient and system-level outcomes. Chronic diseases, mental illness (such as post-traumatic stress disorder, substance abuse and addictive disorders), and health issues related to aging are among the topics being investigated from an HSR&D point of view. HSR&D conducts this ambitious research program through an extensive portfolio of peer reviewed research and its key centers which include eleven Centers of Excellence, the Management Decision and Research Center, the VA Information Resource Center, and the Health Economics Resource Center.

Since translating research results into changes in policy and practice that improve patient care has

always been a priority for HSR&D, it is natural for HSR&D to be leading the Quality Enhancement Research Initiative (QUERI) which addresses this challenge. In its second year, QUERI targets eight conditions that are highly prevalent among veterans – chronic heart failure, diabetes, HIV/AIDS, ischemic heart disease, mental health, spinal cord injury, stroke, and substance abuse – and is already producing valuable results.

The Medical Research Service (MRS) studies the basic biological processes of disease and expands our understanding of its origin, pathology, diagnosis and treatment. The biomedical arm of VA Research & Development, MRS clinicians and non-clinician scientists target a wide variety of diseases and disorders affecting veterans, such as cardiovas-

cular disease, cancer, diabetes, AIDS, neurological disorders, mental illness, and spinal cord injury, among others. A few of the recent MRS advances include the identification of genes linked to Alzheimer's disease and schizophrenia, and potential genetic therapy for heart disease.

MRS accomplishes this important research through numerous programs and initiatives, most notably through its Merit Review Program, which comprises the majority of research funded by MRS. Its new Research Enhancement Award Program (REAP) supports multidisciplinary research, pilot studies, and research training for young investigators. MRS also has numerous designated research centers for basic science and clinical studies, including four AIDS Centers, three Research Centers for Schizophrenia, two Research Centers for Basic Science and Clinical Studies on Alcoholism, four centers that focus on environmental hazards, and three Diabetes Research Centers – a collaboration with the Juvenile Diabetes Foundation. MRS continues working to train the best investigators and to provide them with optimal research environments.

The Rehabilitation Research and Development Service (RR&D) encourages innovative research designed to restore lost function or minimize the impact of disability. Progress made by clinician researchers makes it possible to realize great strides in functional recovery thus optimizing independence for patients. For example, RR&D investigators are studying the use of pharmacologic agents in ameliorating fatigue as a consequence of multiple sclerosis. Through the dedication and hard work of

VA R&D's research portfolio includes basic laboratory research that identifies the causes, treatments and cures for diseases, disorders and disabilities, as well as clinical research on patient care management.

RR&D clinician researchers, exciting rehabilitation possibilities are becoming realities. An increasing arsenal of rehabilitative therapies that focus not only on adaptation but restoration is now a reasonable expectation.

At nine Centers of Excellence, investigators concentrate on areas such as amputation prevention and joint replacement, optimal wheelchair propulsion, orientation techniques for people who are blind, and early detection of hearing loss. In addition, three new centers established in 1999 concentrate specifically on wheelchair and related technology, brain rehabilitation, and the restoration of function for those with spinal cord injury or multiple sclerosis. VA researchers at these Centers are breaking research boundaries every day to improve the quality of life for disabled veterans.



Research Across the Nation and Around the World: *The Cooperative Studies Program*

The Cooperative Studies Program (CSP) utilizes rigorous scientific clinical trial methodology to conduct research that will have a direct impact on veterans' clinical care. Sixteen new projects are currently underway, four large study initiatives have been launched, and nine major projects have been completed.

CSP studies focus on major health concerns of veterans, and several important findings from recent studies are in areas such as diabetes, heart disease, kidney disease, lung disease, prostate disease, infectious disease, and substance abuse. For example, groundbreaking VA research demonstrated the effectiveness of the drug gemfibrozil in reducing coronary heart disease (CHD) among certain patients that have low HDL-cholesterol in the absence of high-risk LDL-cholesterol. This seven-year study showed that daily use of gemfibrozil reduced CHD risk by 22% in this patient group by raising HDL, lowering triglycerides, and maintaining LDL cholesterol levels. This can result in significant reductions in CHD deaths, heart attacks, strokes, and transient ischemic attacks. Another landmark CSP study compared medications for benign prostate disease. Results showed that the drug terazosin effectively relieved symptoms, while the drug finasteride did not. Enlarged prostate is a common problem in older men, and findings from this study provide an effective alternative to surgery.

A recent CSP study linked smoking to abdominal aortic aneurysms, which cause 150,000 deaths every year. This study, conducted at 15 VA medical centers, showed that smokers are more than five times as likely as non-smokers to develop abdominal aortic aneurysms. Because many people with aneurysms have no symptoms, it is critical to identify risk factors for developing this extremely dan-

gerous condition. Another CSP study helped determine treatment changes for patients with HIV. VA researchers analyzed a method for measuring viral load in relation to changes in HIV development and found that changes in patients' blood values can predict illness. With this new knowledge, physicians can determine an appropriate treatment course more efficiently and effectively.

Exciting CSP research continues and is being enhanced by some remarkable collaborations. Internationally, CSP has joined with the national Medical Research Councils of Canada and the United Kingdom as part of an effort to establish a formal tri-national clinical trials collaboration that will target clinical trials important to the health care concerns of all three countries. Clinical trials conducted as part of this international collaboration will define optimal treatments and inform clinical care policy in VHA and health care systems throughout the world. In addition, VA and the Canadian government's Medical Research Council



will jointly fund a major new clinical research initiative to compare the effectiveness of angioplasty with drug therapy for patients with coronary heart disease. This study may pave the way for a new paradigm to manage heart disease for the millions of patients who are afflicted with myocardial ischemia in the U.S. and Canada.

CSP is working with a number of other organizations on the national level. CSP has joined forces with the National Parkinson Foundation, Inc. to improve treatments and seek a cure for Parkinson's disease. CSP researchers have also formed a research alliance with the National Cancer Institute and the Southwest Oncology Group to study the effects of vitamin E and selenium on the prevention of prostate cancer. In addition, CSP is working with the National Institute on Allergy and Infectious Diseases to assess a possible vaccination for shingles,

In regard to informed consent, VA will make certain that patients are fully aware of what their participation in research entails and that their participation is voluntary.

and with the Juvenile Diabetes Foundation to identify primary research areas for Phase III clinical trials on macrovascular complications of adult-onset diabetes. Other CSP efforts include alliances with the National Institute on Aging (NIA) to address clinical questions important to VA and non-VA aging populations. CSP is currently collaborating with NIA to develop a study to evaluate the effectiveness of testosterone in reducing the occurrence of bone fractures among the elderly. In addition, CSP is working with the National Institute on Drug Abuse to support the development and approval of new drug treatments for addictive and certain psychiatric disorders.

VA investigators will soon be able to take advantage of exciting advances in human genetics through the DNA Bank Demonstration Project. This "DNA bank" is a program-wide genetic tissue data-bank that will ensure protection of individual patient rights, while providing VA investigators with the opportunity to study human genetics. This is an area that promises dramatic progress in medical research and will serve a wide range of studies in several disease areas. Another new CSP program-wide project – Enhancing the Quality of Informed Consent (EQUIC) – will systematically improve the standards of informed consent by testing and measuring the results of innovative approaches to providing informed consent to research patients. In taking steps to systematize high standards in regard to informed consent, VA will make certain that patients are fully aware of what their participation in research entails and that their participation is voluntary.

CSP continues to seek answers for Gulf War veterans who returned from the conflict with unexplained symptoms and illnesses. Three new studies explore symptoms and illnesses such as chronic fatigue syndrome, neurological abnormalities, and generalized body pain of unknown origin. One trial will determine if antibiotic treatment directed against *Mycoplasma* bacteria will improve function and relieve symptoms, such as fatigue, muscle and joint pain, or memory and thinking problems. Another trial focuses on whether aerobic exercise and cognitive behavioral therapy can significantly improve physical function, and whether the combination of both will be more beneficial than either therapy alone. In a third study, a random sample of 1,000 Gulf War veterans, their spouses, and their children will undergo clinical examinations. Findings from this study will help determine if health problems are more prevalent among Gulf War veterans and their families compared to non-deployed veterans.

Improving the Quality and Efficiency of Health Care: *The Health Services Research and Development Service*

The Health Services Research and Development Service (HSR&D) works to identify, advance and promote effective, efficient strategies and methods that improve the organization and delivery of health care, while optimizing patient and system-level outcomes. HSR&D programs and initiatives include research on a range of health care issues, in addition to the examination of the effects of organization, cost and management on the outcomes of health care. HSR&D also focuses on the dissemination of research results and the application of research findings to clinical, managerial and policy decisions that affect change in clinical practice, research and, ultimately, improve patient care.

Examples of current issues under investigation by HSR&D researchers include telemedicine, pain management, quality improvements in ambulatory care and surgical care, outcomes measurement in mental health, cost-effective treatment for patients with substance abuse disorders, and the design and implementation of clinical service lines. For example, in one recent HSR&D study, researchers compared dermatologists' diagnoses and treatment recommendations for traditional clinic-based consultations with those performed via remote consultation using digital imaging technology. The researchers found that teledermatology consultations using digital imaging technology result in reliable and accurate diagnostic outcomes. While telemedicine has great potential to improve both access to care and quality of care, many questions remain about the effectiveness of telemedicine applications. VA is expanding efforts to determine

what works and why, and how VA can best use telemedicine to improve the quality of care for veterans.

Recent findings from HSR&D research also include information that will help patients with type II diabetes (non-insulin dependent) achieve the appropriate level of glycemic control and determine whether or not to begin insulin therapy. This is particularly important to VA and the nation because diabetes affects 10-16 million people in the United States and is one of the leading causes of morbidity, mortality and health care costs in VA. Another focus for research is HSR&D's Service Line Evaluation Project. Thus far, this project has clarified the various purposes and organizational designs of service lines, and has produced a detailed analysis that compares service line development in VA with that in the private sector. Another project product is the development of VA's national service line guide-



lines. HSR&D researchers also had a regional and national impact on how disorder-specific performance is measured in VA in regard to the care of patients with schizophrenia. These researchers are collaborating with VHA's Mental Health Strategic Health Care Group and the Office of the Chief Information Officer to develop national indicators for the quality of medication management for schizophrenia.

Essential to HSR&D's success are its 11 Centers of Excellence that are located throughout the United States and are linked to VA medical centers. Each Center of Excellence has a particular focus and research agenda that addresses important health care issues such as chronic disease, mental health, substance abuse, geriatrics, evidence-based medicine, rehabilitation, practice management, primary care, provider behavior, management systems, and organizational research.

In addition, HSR&D has three specialized resource centers. The Management Decision and Research Center conducts, coordinates and disseminates research that informs policy makers and managers about organizational and managerial practices affecting the quality, cost, and accessibility of patient care. The VA Information Resource Center provides information about the content, availability, reliability and accessibility of VA's extensive databases. And the newest addition – the Health Economics Resource Center – is a national center dedicated to improving VA's capacity to conduct high-quality health economics research and cost-effectiveness studies. Research from this Center will help VA make better-informed decisions about whether new health care interventions are sufficiently cost-effective for use throughout the VA system.

During the past few years, VA has launched numerous initiatives, perhaps none as ambitious as the Quality Enhancement Research Initiative (QUERI). Designed to translate research discoveries and innovations into better patient care and sys-

tems improvements, QUERI has made significant progress since its inception in 1998. Targeting diseases and conditions that are highly prevalent and difficult for veterans – chronic heart failure, diabetes, HIV/AIDS, ischemic heart disease, mental health, spinal cord injury, stroke, and substance abuse – QUERI is quickly becoming a national model for translating evidence-based research into practice.

For example, Stroke-QUERI has produced an Acute Stroke Toolbox to assist facilities in developing local strategies to promote best practices in caring for veterans with stroke. QUERI IHD, which focuses on the care of veterans with ischemic heart disease, recently completed a report that, in part, highlights processes and outcomes of care for veterans with acute myocardial infarction (AMI). This report showed that veterans with AMI receive comparable or superior quality of care in VA facilities compared to the private sector.

QUERI is also establishing a dissemination network dedicated to communicating the results of the initiative to VA clinicians, researchers, policy makers, and managers system-wide to improve health-care practice and patient outcomes.

Other HSR&D research initiatives target priority areas such as: access to care, managed care, implementation of clinical practice guidelines, women veterans' health care, and the role of ethnicity and culture in VA health care. Additional solicitations address key issues for the veteran population and the nation as a whole, including patient safety and the prevention of adverse outcomes. Through the VISN (Veterans Integrated Service Network) Collaborative Research Initiative, HSR&D works to enhance capacity and expertise for addressing important health services research issues of broad interest to the VA and to the networks.

Through its dedicated researchers, clinicians, managers and administrators, HSR&D will continue to make valuable contributions to VA's comprehensive health care system.

Expanding Knowledge of Disease Processes: *Medical Research Service*



VA's Medical Research Service (MRS) contributes to improved health care for veterans and the nation through the study of the cause, development, diagnosis and treatment of a wide variety of diseases and disorders. In conducting vital biomedical research, MRS investigators have contributed to such landmark medical advances as the first successful treatment for tuberculosis, the first successful liver and kidney transplants, and the development of the cardiac pacemaker.

Exciting health care advances that lay the groundwork for improved patient care continue. Studies by Ferid Murad, M.D., Ph.D., proved instrumental in illuminating the role of nitric oxide in body functions, including the relaxing of blood vessels and regulation of blood pressure. For this work, conducted in part while at the Palo Alto VA Medical Center, Dr. Murad shared the 1998 Nobel Prize in Medicine. (Dr. Murad is now at the University of Texas Medical School in Houston.) The 1998 William S. Middleton Award, one of VA's highest scientific honors, went to Robert McCarley, M.D., Deputy Chief of Staff for Mental Health Services at the Brockton/West Roxbury VA Medical Center. Recognized as an authority on REM (rapid eye movement) sleep, Dr. McCarley has made enormous contributions to our understanding of sleep and dreaming. His work has helped set the stage for new approaches to treating sleep abnormalities. He also directs one of three MRS designated centers for schizophrenia research.

During the past year, MRS researchers reported advances against many health problems affecting veterans. For example, an MRS team studied gene therapy that may offer new hope to millions of diabetics who need daily insulin injections. When

inserted into rat liver cells, a gene developed by these researchers prompted the cells to produce insulin, the hormone needed to use the simple sugar that serves as the body's fuel. Just as important, the gene turned off insulin production before blood sugar fell too low.

Another MRS team identified a part of the brain that is involved in the thinking process—the motor cortex, an area scientists previously believed was limited to controlling voluntary movements. This work is an important step in the quest to understand the brain's higher functions and perhaps ultimately identify new approaches to brain disorders.

MRS investigators and their colleagues also developed a laboratory technique to grow mouse stem cells, the bone marrow “mother” cells that evolve into all the different types of mouse blood cells. If human stem cells can be similarly grown, this VA finding could have a major impact on gene

therapy for blood cell disorders and bone marrow transplantation for cancer and other diseases.

Investigators supported by the Medical Research Service accomplish this vital research through a number of initiatives, most notably through the Merit Review Program. Funded at over \$100 million annually, the Merit Review Program is the mainstay of MRS programs, supporting approximately 75 percent of all MRS-funded research.

In 1998 the Medical Research Service created the Research Enhancement Award Program (REAP) to promote and support groups of VA investigators. REAP funds programs of exceptional quality that address specific medical problems of the veteran

These achievements and initiatives lay the groundwork for ongoing studies that advance the frontiers of knowledge in medical science.

population. The program also provides training for junior level investigators and enhances ongoing research efforts of independent investigators. REAP awards support research in gene therapy and disease areas such as Alzheimer's disease, heart failure, spinal cord injury, kidney disease, multiple sclerosis, cancer, lung disease, hepatitis C, and Parkinson's disease. MRS recently expanded the REAP, announcing five new awards in addition to the 20 already funded under the program. Beginning in fiscal 2000, new REAP awards will provide up to \$1.35 million each, over five years, to VA medical centers in several locations: Seattle for studies on Alzheimer's disease; Brooklyn for heart attack research; Palo Alto for studies on hepatitis; Iowa City for prostate cancer research; and Detroit for the study of the genetics of diabetes.

In addition to the REAP, the Medical Research Service continues initiatives in a number of research arenas, such as prostate disease (in collaboration with the Department of Defense), Parkinson's disease, and the epidemiology of chronic diseases and other disorders of particular importance to veterans. In 1999, MRS announced two Centers for basic science and clinical studies in the battle against one of the leading health problems for veterans and the nation – alcoholism. The West Haven and Omaha VA Medical Centers will each receive a \$1.6 million award over five years for research to advance the understanding and treatment of alcoholism. Furthermore, proposals are being considered for new or renewed VA centers that would focus their research on environmental hazards and schizophrenia.

Underscoring VA's commitment to training new clinician and non-clinician investigators, the recently established Merit Review Entry Program increases opportunities for beginning researchers to obtain funding. As part of VA's continuing efforts to recruit new investigators, especially from historically underrepresented minority groups, MRS is expanding the Research Training Initiative for Historically Black Colleges and Universities (HBCU) and Hispanic Serving Institutions (HSI) to include the Research Experience Program. The purpose of this program is to encourage students and scientists from minority academic institutions to participate in the research enterprises of VA, acquainting them with future employment possibilities and advancing the research efforts of the participating programs.

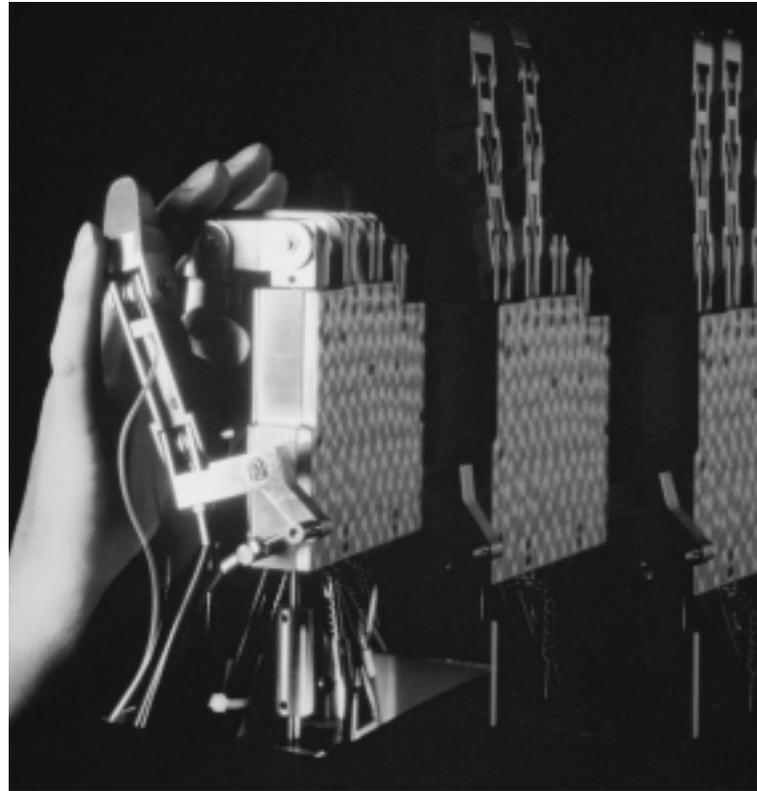
These achievements and initiatives lay the groundwork for ongoing studies that advance the frontiers of knowledge in medical science. As VA enters the new millennium, these and other VA Medical Research Service programs will continue devoting their efforts to health problems facing our nation.

Removing the Barriers to Independence: *Rehabilitation Research and Development Service*

The Rehabilitation Research and Development Service (RR&D) strives to advance the state-of-the-art in rehabilitative health care for veterans. More than 200 investigators work to develop compensatory therapies, help veterans both restore function and maximize remaining function, mitigate secondary conditions, employ cutting-edge technologies, and cultivate better ways to live with disability.

Nine Rehabilitation R&D Centers located at VA facilities across the nation attract the best and brightest minds from clinical practice and foster productive relationships with academia and industry. These Centers target particular areas of rehabilitation, such as functional loss and restoration associated with aging, healthy aging with a disability, improvement of mobility in persons with neurologic or orthopedic impairments, electrical stimulation to aid those with spinal cord injury or paralysis, early detection of hearing loss, amputation prevention, and lower-limb prosthetic improvement.

Building on its commitment to addressing rehabilitation issues of concern to veterans, RR&D established three new special centers in 1999. Researchers at the Center for Wheelchair and Related Technology in Pittsburgh focus on developments that improve the design, selection, prescription and configuration of wheelchairs and related technology. At the Brain Rehabilitation Center in Gainesville, FL, investigators work on functional rehabilitation for veterans with mental and motor impairments due to traumatic brain injury, cerebral vascular diseases, and degenerative diseases. In addition, researchers at the Center for Restoration of Function in Spinal Cord Injury and Multiple Sclero-



sis in West Haven, CT work toward translating research at the molecular and cellular levels into restorative therapies that can be used to help patients in the clinical domain.

Approximately 70% of all RR&D funding supports investigator initiated studies developed in clinical settings and for many aspects of disability. For instance, through innovative transplantation techniques, coupled with pharmacological interventions and a strategy known as constraint-induced therapy, RR&D researchers can be optimistic about the possibility of genuine functional recovery for those patients affected by spinal injury and stroke. The use of robotics to supplement clinical therapies also has promised successful preliminary findings in VA facilities across the country. In Atlanta, researchers have found that cognitive interventions

are as critical to reducing fall risk in elderly patients as traditional methods. Also in Atlanta, researchers are working with VA Blind Rehabilitation Services throughout the country to develop new functional assessment and training tools for patients with low vision. In San Diego, researchers are studying the anatomical basis for direct skeletal anchoring of prostheses in order to facilitate improved feedback control and, therefore, function. RR&D investigators also work to improve mobility aids that will allow people access to places that have been inaccessible. For example, investigators at the Pittsburgh VA are coupling wheelchair mobility with virtual reality to help people learn how to navigate their wheelchairs more safely. Training in such cutting edge technology will be especially helpful for people who also have visual impairments.

Clinicians have concentrated on moving beyond creating prototypes of rehabilitation aids, such as wheelchairs and prosthetics, to putting them into practical use.

In 1999, Rehabilitation Research and Development awarded Career Enhancement Awards to two established investigators, one working in the area of aphasia and the other working in cortical reorganization. Dr. Patrick Doyle is working with researchers at the World Health Organization to develop outcome measures in keeping with international classification systems for disability. Dr. Peter Gorman is working with investigators at the National Institute for Neurological Disorders (NINDS) to use functional brain imaging techniques to better understand how the nervous system reorganizes after stroke.

RR&D also made significant strides with several groundbreaking initiatives in 1999. Building upon

an initiative begun in 1997, the Service continued to translate rehabilitation research findings from anecdotal reports to well-documented and quantified outcomes. This new approach will make research findings more universally applicable and will help ensure that veterans receive optimal therapies for their conditions.

Significant progress in this area occurred in RR&D's Technology Transfer Program. In 1999, RR&D focused on finding new opportunities for transferring research findings into immediate practice. Clinicians have concentrated on moving beyond creating prototypes of rehabilitation aids, such as wheelchairs and prosthetics, to putting them into practical use. Expanded efforts enhance these activities, truly bringing new discoveries into clinical practice. Investigators are assisted with patenting and necessary partnering with industry. The goal of this effort is commercial production of such devices so they may benefit the greatest number of people. Researchers are also enhancing the capacity for conducting clinical trials with newly devised technologies.

In keeping with VA's efforts to disseminate research findings, RR&D emphasizes publication of its findings. The Service publishes its own peer-reviewed scientific periodical, the *Journal of Rehabilitation Research and Development*, and this year will expand its scope, increase the frequency of publication, and provide clinical commentary on scientific abstracts.

Specific research goals for 2000 include increasing research in upper extremity prosthetics, developing priority areas for research in neurorehabilitation, and launching an initiative addressing necessary follow-up care, vocational rehabilitation, and long-term outcomes. As in the past, RR&D will remain committed to improving the quality of life for veterans and will lead rehabilitation research into the future.

Preparing Research Leaders of Tomorrow: *Career Development*



The future quality of R&D's research depends on its success in recruiting, educating and training some of this country's most talented young investigators. This demands a substantial investment in the careers of the next generation of VA scientists. The Career Development Program was established by R&D to nurture and retain talented investigators committed to the health care of veterans.

R&D now devotes nearly 10 percent of its appropriation to Career Development. Each of the four research services offer various levels of research career development awards. These awards provide salary support to clinician investigators, allowing them to devote 75% of their time to pursuing research and education under the guidance of experienced mentors. The Cooperative Studies Program recently established a sabbatical clinical research program for senior clinical investigators, and soon will offer a Clinical Research Career Development program for junior researchers and non-clinical researchers. HSR&D's career development efforts financially and intellectually support highly-qualified clinician and non-clinician doctoral trained investigators. Rehabilitation Research and Development's Research Career Development Program provides mentoring to doctoral-level rehabilitation clinical professionals. Mentoring and other resources for young investigators are provided through Centers of Excellence in both RR&D and in HSR&D. The Medical Research Service offers a Research Enhancement Award Program (REAP), which supports collaborations by groups of investigators through special funding, including a training element and the Merit Review Entry Program that

increases opportunities for beginning investigators to enter the VA Medical Research Program. All of these R&D efforts are focused on building future research capacity.

R&D's dedication to education and training is underscored by the collaboration between the VA health care system and leading medical schools throughout the country. Nearly all VA investigators hold faculty positions at affiliated medical schools that include many of the nation's most prestigious institutions.

Graduates of VA's career development and training programs have become nationally and internationally recognized leaders in their chosen areas of interest. Most of these Career Development graduates contribute further to VA by mentoring junior VA investigators.

Expanding Knowledge Through Collaboration

Stimulating creativity through collaboration, the Office of Research and Development enhances its mission by forging alliances with other government and non-government organizations, as well as private industry. By combining the experience and expertise of researchers, clinicians, managers and administrators from various organizations, both the science and the patients benefit. Here are some examples of these valuable collaborations.

VA and the Department of Defense (DoD) work together in research areas important to veterans, such as traumatic brain injury, prostate diseases including cancer, stress-related illnesses (e.g., PTSD), and Gulf War veterans' illnesses. Two major nationwide efforts recently began to study possible treatments for symptoms of undiagnosed illnesses in Gulf War veterans. In addition, VA will lead a study of the occurrence of amyotrophic lateral sclerosis, also known as Lou Gehrig's disease, among Gulf War veterans. This study is a collaboration with the DoD, Department of Health and Human Services, and the Centers for Disease Control.

In collaboration with the National Institutes of Health, National Institute of Allergy and Infectious Disease, VA is conducting a large nationwide study to determine whether an experimental vaccine can prevent shingles, a painful skin and nerve infection that is most common in the elderly.

VA recently dedicated the new Northwest Veterans Affairs Cancer Research Center in Portland, Oregon. With 66 labs focusing on the genetic basis and biological pathways of cancer, the Center will house joint research projects of the Portland VA Medical Center and the Oregon Health Sciences University.



The Juvenile Diabetes Foundation (JDF) and VA's Medical Research Service have formed a partnership in the battle against diabetes through the establishment of centers devoted to diabetes research. Diabetes is one of the leading causes of morbidity and mortality among veterans. The Cooperative Studies Program is also collaborating with JDF to identify primary research areas for clinical trials on macrovascular complications of type II diabetes mellitus.

By combining the experience and expertise of researchers, clinicians, managers and administrators from various organizations, both the science and the patients benefit.

VA and the National Parkinson's Foundation, Inc. have joined forces to strengthen both organizations' efforts to improve treatment and find a cure for Parkinson's disease, a progressive degenerative neurological disease that is a major health problem in veterans and the general population.

The American College of Cardiology, the Robert Wood Johnson Foundation, the American Heart Association, and VA's Health Services Research and Development Service are working together to improve the quality of care for heart disease and stroke.

VA has collaborated or formed partnerships with approximately fifty pharmaceutical companies that provide study medications, devices or other support for numerous clinical trials (see box below).

As part of an effort to expand international collaborative research, VA joined with the national research establishments of Canada and the United Kingdom to issue the first tri-national clinical trials research solicitation. Research topics are being considered in areas that are particularly appropriate for large, multi-center clinical trials that will determine the effectiveness of promising new therapies. These possible research topics include chronic disease, brain disorders, and emerging surgical procedures.

The Cochrane Collaboration is an international effort by health care professionals to collect and disseminate high quality research evidence about the effects of health care practices. VA supports a Cochrane Center within VA's Veterans Evidence-based Implementation and Dissemination Center in San Antonio, TX, an HSR&D Center of Excellence. VA also supports a Cochrane Review Group on Urologic Diseases through the HSR&D Center for Chronic Disease Outcomes Research in Minneapolis, MN. This scientific alliance promotes evidence-based medicine.

With support from VA's Office of Policy and Planning, HSR&D is developing a framework for the merger of VA and Health Care Financing Administration data that will allow both organizations to examine issues surrounding health care utilization.

Pharmaceutical Companies

VA's Cooperative Studies Program has collaborated or formed partnerships with the following pharmaceutical companies, that provide study medications, devices or other support for some of the ongoing cooperative studies:

Astra Merck	Glaxo Wellcome	Ortho Dermatologies
AstraZeneca	Hoechst-Marion-Roussel	Parke-Davis
Aviron	Hybritech, Inc.	Pfizer
Berlex Laboratories	Integrated Therapeutics	Reckitt & Colman
Bristol-Myers-Squibb	Intercardia	Rhone-Poulenc Rorer
Chiron	Interpore Corporation	Sanofi Pharmaceuticals
Core-Vent	Key Pharmaceuticals	Schein Pharmaceuticals
Datascope	KOS Pharmaceuticals	SmithKline Beecham Pharmaceuticals
Du Pont Pharmaceuticals	Merck	Solvay Pharmaceuticals
Eli Lilly and Company	Noblepharm	Somerset Pharmaceuticals, Inc.
Evans	Novartis	Wyeth-Ayerst
Fujisawa Healthcare	Nycomed Amersham	

Supporting Discovery: Research Funding

	1997	1998	(est.) 1999	(est.) 2000
Appropriation	\$262.0	\$272.0	\$316.0	\$321.0
Medical Care	\$319.8	\$310.7	\$353.9	\$342.7
Non-VA Sources	\$396.8	\$430.0	\$474.6	\$482.7
Total	\$978.6	\$1,012.7	\$1,144.5	\$1,146.4

Figure 1. VA Research Funding History (millions)

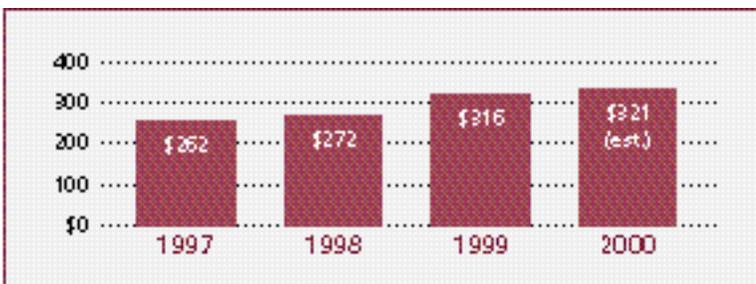


Figure 2. Budget Appropriation (millions)

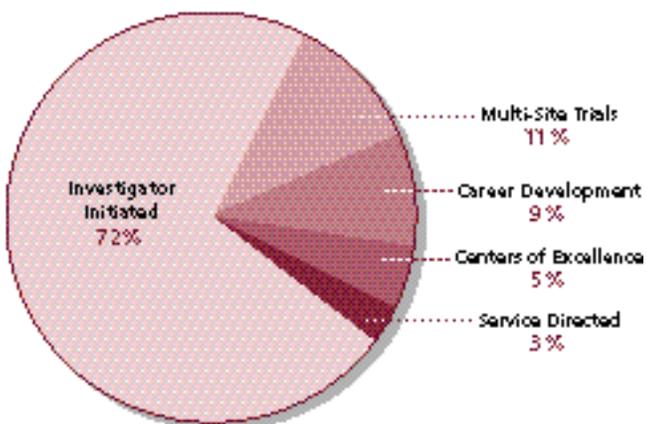


Figure 3. Functional Research Portfolio

The success of VA's research program depends to a large extent on the financial support that makes research possible. The Office of Research and Development administers VA appropriations for research, with the total number of funded projects contingent upon the level of appropriated resources and the average cost per project. During fiscal year 1999, VA Research funds supported studies conducted by more than 3800 VA researchers in 110 VA facilities. These projects were initiated by investigators in their areas of interest or in response to solicitations from the Office of Research and Development.

Figure 1 shows recent growth in the Research and Development budget appropriation to support costs of this work. VHA also allocates Medical Care dollars to support the research infrastructure or indirect costs such as laboratory facilities and physician salaries.

The outstanding quality of the research program has helped VA investigators augment their efforts through partnering with other federal agencies, private foundations and industry. Figure 2 summarizes all budgetary resources for the past three years and gives a projection for fiscal 2000.

Figure 3 shows how Research and Development funds are distributed across service directed research, investigator-initiated research, Centers of Excellence, career development, and clinical trials.

Building for the Future

As we enter the new millennium, we will need to solve the complex medical mysteries that no doubt await us, as well as deal with those that already affect our veterans. How health care is provided will undergo even more changes as we continue to adapt to economic challenges while trying to maintain the highest standards of health care. Fortunately, VA has always had a cadre of dedicated, talented and committed clinicians and researchers who see change as an opportunity for innovation, and who welcome challenge as an opportunity for discovery.

The future of VA research depends on its clinicians and scientists conducting health care research to advance health care technology, providing innovations in rehabilitation, and discoveries leading to cures, or a better quality of life for those affected by disease. As you have read throughout this publication, many of these advances are well underway, while several areas of exciting research are just beginning to show their potential. Over the next few decades we expect important advancements: genetic mapping and the identification of genes that cause disease may lead to treatments for a host of inherited or acquired conditions; the evolving use of vaccines to target tumors, in addition to combating viruses; and new and improved medical technologies. VA's Office of Research and Development joins the broader health care community of this nation and others in embracing all the opportunities of the 21st century so that we can continue to provide the best possible health care for veterans and the nation as a whole.



The future of VA research depends on its clinicians and scientists conducting health care research to advance health care technology...

Research and Development Career Development Awardees 1999

The VA Office of Research and Development is committed to supporting and strengthening the development of its investigators in the early, mid and advanced stages of their careers in order to attract and retain the best and the brightest. Career development awards within the Health Services, Medical and Rehabilitation Research Services provide salary support for investigators. Qualified Career Development candidates may receive salary support through the Career Development Program, so that they can devote their

full time and attention to developing careers as independent investigators specializing in medical research, rehabilitation research, and health services research. In addition to salary support and protected research time, Career Development awardees receive the guidance of experienced VA investigators who serve as their mentors. Following is a list of investigators who received Career Development Awards during the 1999 Fiscal Year.

Health Services Research & Development (HSR&D) Career Awardees

David A. Asch, M.D., M.B.A. Philadelphia, PA	Howard S. Gordon, M.D. Houston, TX	Rudolf H. Moos, Ph.D. Palo Alto, CA
Steven M. Asch, M.D., M.P.H. West Los Angeles, CA	Michael K. Gould, M.D., M.Sc. Palo Alto, CA	Richard R. Owen, M.D. Little Rock, AK
John D. Birkmeyer, M.D. White River Junction, VT	Ian M. Gralnek, M.D., M.S.H.S. West Los Angeles, CA	Douglas K. Owens, M.D., M.Sc. Palo Alto, CA
Steven J. Borowsky, M.D., M.P.H. Minneapolis, MN	Susan C. Hedrick, Ph.D. Seattle, WA	John W. Peabody, M.D., Ph.D. West Los Angeles, CA
Samuel A. Bozzette, M.D., Ph.D. San Diego, CA	Paul A. Heidenreich, M.D., M.P.H., M.S. Palo Alto, CA	Laura A. Petersen, M.D., M.P.H. Houston, TX
John P. Concato, M.D., M.S., M.P.H. West Haven, CT	Timothy P. Hofer, M.D., M.S.C. Ann Arbor, MI	Dawn Provenzale, M.D., M.S. Durham, NC
Joseph Conigliaro, M.D., M.P.H. Pittsburgh, PA	Susan L. Hughes, D.S.W. Hines, IL	Jeffrey M. Pyne, M.D. Little Rock, AK
Kendon J. Conrad, Ph.D. Hines, IL	Judith Jones, D.D.S., M.P.H. Bedford, MA	Linda Rabeneck, M.D., M.P.H. Houston, TX
David Edelman, M.D. Durham, NC	T. Michael Kashner, Ph.D., J.D., M.P.H. Dallas, TX	Jaya K. Rao, M.D., M.H.S. Durham, NC
Nathan R. Every, M.D., M.P.H. Seattle, WA	Lewis E. Kazis, Sc.D. Bedford, MA	Gayle E. Reiber, M.P.H., Ph.D. Seattle, WA
Liana Fraenkel, M.D., M.P.H., FRCPC West Haven, CT	Eve A. Kerr, M.D., M.P.H. Ann Arbor, MI	M. Carrington Reid, M.D., Ph.D. West Haven, CT
Susan Frayne, M.D., M.P.H. Boston, MA	JoAnn Kirchner, M.D. Little Rock, AK	Kenneth E. Rosenfeld, M.D., M.P.H. West Los Angeles, CA
Vincent Freeman, M.D., M.P.H. Hines, IL	Sara J. Knight, Ph.D. Chicago, IL	John S. Rumsfeld, M.D. Denver, CO
Terri R. Fried, M.D. West Haven, CT	Mark E. Kunik, M.D. Houston, TX	Lisa M. Schwartz, M.D., M.S. White River Junction, VT
Raul I. Garcia, D.M.D, M.Med.Sc. Boston, MA	Richard A. Marottoli, M.D., M.P.H. West Haven, CT	Alfredo J. Selim, M.D., M.P.H. Boston, MA
Mary K. Goldstein, M.D., M.S. Palo Alto, CA	Joshua Metlay, M.D., Ph.D. Philadelphia, PA	Paul G. Shekelle, M.D., Ph.D. West Los Angeles, CA

Research and Development Career Development Awardees 1999

HSR&D Career Awardees (continued)

James A. Tulskey, M.D. Durham, NC	John D. Whited, M.D., M.H.S. Durham, NC	Steven Woloshin, M.D., M.S. White River Junction, VT
Peter A. Ubel, M.D. Philadelphia, PA	Mary A. Whooley, M.D. San Francisco, CA	Bevan Yueh, M.D. Seattle, WA
Marcia A. Valenstein, M.D. Ann Arbor, MI	John W. Williams, Jr., M.D., M.H.S. San Antonio, TX	
Morris Weinberger, Ph.D. Indianapolis, IN	Linda S. Williams, M.D. Indianapolis, IN	

Medical Research Service Career Development Awardees

Sherry L. Abboud, M.D. San Antonio, TX	Melissa P. Clark, M.D. Nashville, TN	Daniel J. Gottlieb, M.D. Boston, MA
Bradley L. Allen, M.D., Ph.D. Iowa City, IA	Robert J. Coffey, Jr., M.D. Nashville, TN	Mary O. Gray, M.D. San Francisco, CA
Richard Aranda, M.D. West Los Angeles, CA	Andrea J. Cohen, M.D. Denver, CO	Carla Greenbaum, M.D. Seattle, WA
David B. Arciniegas, M.D. Denver, CO	Errol D. Crook, M.D. Jackson, MS	John B. Harley, M.D., Ph.D. Oklahoma City, OK
Carlos L. Arteaga, M.D. Nashville, TN	David I. Daikh, M.D., Ph.D. San Francisco, CA	Edward A. Hirschowitz, M.D. Lexington, KY
Daniel F. Balkovetz, M.D. Birmingham, AL	Mark E. Dibner-Dunlap, M.D. Cleveland, OH	Jeffrey W. Hott, M.D. Indianapolis, IN
Juan C. Bandres, M.D. New York, NY	Ngozi E. Erondu, MBBS, Ph.D. Iowa City, IA	Arif Hussain, M.D. Baltimore, MD
Raj Batra, M.D. West Los Angeles, CA	Bahaa M. Fadel, M.D. Palo Alto, CA	Frank Isik, M.D. Seattle, WA
Peter Bloom, M.D. Decatur, GA	Sidney M. Finegold, M.D. West Los Angeles, CA	Randy H. Kardon, M.D., Ph.D. Iowa City, IA
Carol A. Bogdan, M.D. New York, NY	Robert Frederick, M.D., Ph.D. Lexington, KY	Gwendolyn Kartje, M.D., Ph.D. Hines, IL
James D. Bremner, M.D. West Haven, CT	Juan P. Frias, M.D. San Diego, CA	Carolyn J. Kelly, M.D. San Diego, CA
Matthew D. Breyer, M.D. Nashville, TN	Lois J. Geist, M.D. Iowa City, IA	William J. Kovacs, M.D. Nashville, TN
Michael R. Bubb, M.D. Gainesville, FL	Sarah L. George, M.D. Iowa City, IA	Michael Kozal, M.D. Iowa City, IA
Blase A. Carabello, M.D. Charleston, SC	J. Christian Gillin, M.D. San Diego, CA	Arthur M. Krieg, M.D. Iowa City, IA
Helen K. Chew, M.D. San Antonio, TX	Scott D. Gitlin, M.D. Ann Arbor, MI	Dennis F. Kucik, M.D. Birmingham, AL
Mary E. Choi, M.D. West Haven, CT	Martin Gluck, M.D. Bronx, NY	David J. Kusner, M.D., Ph.D. Iowa City, IA
Paul J. Christensen, M.D. Ann Arbor, MI	Francisco J. Gomez, M.D. Cincinnati, OH	Christopher C. La Ganke, M.D. Birmingham, AL

Research and Development Career Development Awardees 1999

Medical Research Service Career Development Awardees (continued)

H. Jeffrey Lawrence, M.D. San Francisco, CA	David Naylor, M.D., Ph.D. Sepulveda, CA	George H. Rudkin, M.D. West Los Angeles, CA
Steven R. Lentz, M.D., Ph.D. Iowa City, IA	James C. Oates, M.D. Charleston, SC	Karl A. Sanders, M.D. Salt Lake City, UT
Daniel E. MacDonald, D.M.D., Sc.D. Bronx, NY	Terrence X. O'Brien, M.D. Charleston, SC	Barbara E. Scanley, M.D., Ph.D. West Haven, CT
Richard Macko, M.D. Baltimore, MD	Anna Olincy, M.D., Ph.D. Denver, CO	Jay W. Schneider, M.D., Ph.D. Brockton, MA
Joseph F. Maher, M.D. Jackson, MS	Mohammed B. Omary, M.D., Ph.D. Palo Alto, CA	Richard V. Sims, M.D. Birmingham, AL
Mark G. Mainwaring, M.D., Ph.D. Gainesville, FL	Dan Oren, M.D. West Haven, CT	Catherine Stehman-Breen, M.D., M.S. Seattle, WA
Rama K. Mallampalli, M.D. Iowa City, IA	John H. Peters, M.D. West Los Angeles, CA	Martin J. Stevens, M.D. Ann Arbor, MI
Peter J. Mannon, M.D. Durham, NC	Joseph R. Piseigna, M.D. West Los Angeles, CA	Richard T. Stravitz, M.D. Richmond, VA
Alan E. Mast, M.D., Ph.D. Memphis, TN	Joseph F. Quinn, M.D. Portland, OR	Chris C. Streeter, M.D. Boston, MA
Stephen E. McGowan, M.D. Iowa City, IA	Javier Quintana, M.D., Ph.D. West Los Angeles, CA	John R. Teerlink M.D. San Francisco, CA
Barbara E. Menzies, M.D. Nashville, TN	Barbara A. Ramlo-Halstead, M.D. San Diego, CA	Hoang M. Thai, M.D. Tucson, AZ
Patrice W. Miller, M.D. West Los Angeles, CA	Robert F. Reilly, M.D. West Haven, CT	Douglas E. Vaughan, M.D. Nashville, TN
Joseph M. Moates, M.D. Nashville, TN	Matthew B. Rettig, M.D. West Los Angeles, CA	Anna K. Vinnikova, M.D. Richmond, VA
Bruce A. Molitoris, M.D. Indianapolis, IN	Jane E. B. Reusch, M.D. Denver, CO	Jeffrey A. Wesson, M.D., Ph.D. Milwaukee, WI
Wendy C. Moore, M.D. Baltimore, MD	Mary-Claire Roghmann, M.D. Baltimore, MD	Margaret E. Wierman, M.D. Denver, CO
John P. Mulhall, M.D. Hines, IL	Randal G. Ross, M.D. Denver, CO	Joseph K Wong, M.D. San Diego, CA
Mary C. Nakamura, M.D. San Francisco, CA	David M. Roth, M.D., Ph.D. San Diego, CA	

Rehabilitation Research and Development Service Career Awardees

Linda L. Auther, Ph.D. Nashville, TN	Steven A. Gard, Ph.D. Chicago, IL (Lakeside)	Karen L. Perell, Ph.D. West Los Angeles, CA
Anne Strouse Carter, Ph.D. Mountain Home, TN	Peter H. Gorman, M.D. Baltimore, MD	Lisa Riolo, Ph.D. Decatur, GA
Eileen G. Collins, Ph.D., RN Hines, IL	Margot S. Damaser, Ph.D. Hines, IL	Richard F. Weir, Ph.D. Chicago, IL (Lakeside)
Graham H. Creasey, M.D. Cleveland, OH	Margaret A. Nield, Ph.D., RN West Los Angeles, CA	
Patrick J. Doyle, Ph.D. Pittsburgh, PA (HD)	Carolyn Patten, Ph.D. Palo Alto, CA	

Summary of 1999 Research and Development Projects

Following is a summary of all VA Research and Development funded studies during Fiscal Year 1999. Studies are organized by research service (Cooperative Studies Program, Health Services

Research and Development Service, Medical Research Service, and Rehabilitation Research and Development Service), and then alphabetically by investigator.

Cooperative Studies Program Project List

<p><i>Reducing the Efficacy-Effectiveness Gap in Bipolar Disorder</i> Bauer, Mark S., M.D. \$1,017,744</p>	<p><i>Group Treatment of PTSD for Vietnam Theater Veterans (TOP)</i> Friedman, Matthew J., M.D. Schnurr, Paula P., Ph.D. \$1,318,255</p>	<p><i>Effect of Polyunsaturated Lecithin on Liver Fibrosis</i> Lieber, Charles S., M.D. \$1,455,993</p>
<p><i>VA Non-Q-Wave Infarction Strategies In-Hospital (VANQWISH)</i> Boden, William E., M.D. \$66,000</p>	<p><i>Registry to Obtain Long Term Patency Data on Saphenous Vein and Internal Mammary Artery Grafts</i> Goldman, Steve, M.D. Copeland, Jack, M.D. \$70,893</p>	<p><i>Prospective Evaluation of Risk Factors for Large (>1 cm) Colonic Adenomas in Asymptomatic Subjects</i> Lieberman, David, M.D. \$358,913</p>
<p><i>Clinical Outcomes Utilizing Revascularization and Aggressive Drug Evaluation (COURAGE) Trial</i> Boden, William E., M.D. O'Rourke, Robert, M.D. \$895,751</p>	<p><i>RCT to Assess the Efficiency of Prevention from Natural Influenza Virus of Live Attenuated and Inactivated Influenza Virus Vaccines in Patients with Chronic Obstructive Pulmonary Disease</i> Gorse, Geoffrey J., M.D. \$2,709,712</p>	<p><i>Warfarin and Antiplatelet Therapy Study in Heart Failure</i> Massie, Barry, M.D. \$454,695</p>
<p><i>Evaluation of GEM Units and Geriatric Follow-up</i> Cohen, Harvey J., M.D. Feussner, John R., M.D. \$942,052</p>	<p><i>A Multi-Site Randomized Trial of Team Managed Hospital Based Home Care</i> Hughes, Susan, D.S.W. Weaver, Fran, Ph.D. Cummings, Joan, M.D. \$123,771</p>	<p><i>The Coronary Artery Revascularization Prophylaxis Trial</i> McFalls, Edward O., M.D., Ph.D. Ward, Herbert B., M.D. \$835,155</p>
<p><i>Persian Gulf – Antibiotic Treatment Trial</i> Donta, Samuel, M.D. \$947,742</p>	<p><i>Anti-Thrombotic Agents in the Prevention of Hemodialysis Access Thrombosis</i> Kaufman, James S., M.D. \$1,086,293</p>	<p><i>Colchicine in the Treatment of Alcoholic Cirrhosis of the Liver</i> Morgan, Timothy R., M.D. \$1,098,513</p>
<p><i>Persian Gulf CFS/Fibromyalgia Treatment Trial</i> Donta, Samuel, M.D. Clauw, Daniel, M.D. Engle, Charles, M.D., M.P.H. \$1,787,658</p>	<p><i>Naltrexone in the Treatment of Alcoholism</i> Krystal, John, M.D. Rosenheck, Robert, M.D. \$972,595</p>	<p><i>Urgent Revascularization in Unstable Angina (AWESOME)</i> Morrison, Douglass A., M.D. Scott, Stewart M., M.D. Sethi, Gulshan, M.D. \$865,039</p>
<p><i>Beta-Blocker Evaluation of Survival Trial (BEST)</i> Eichorn, Eric J., M.D. Domanski, Michael J., M.D. \$536,913</p>	<p><i>Natural History of Large Abdominal Aortic Aneurysms</i> Lederle, Frank A., M.D. \$44,773</p>	<p><i>Randomized Clinical Trial of Surgical Hernia Repair</i> Neumayer, Leigh A., M.D., F.A.C.S. \$840,631</p>
<p><i>National Health Survey of Persian Gulf Veterans and Their Families</i> Eisen, Seth, M.D. Kang, Han, Sc.D. Murphy, Frances, M.D., M.P.H. \$3,571,932</p>	<p><i>Prophylaxis of Medical Patients for Thromboembolism Study</i> Lederle, Frank A., M.D. \$333,914</p>	<p><i>Trial of Vancella Vaccine for the Prevention of Herpes Zoster and its Complications</i> Oxman, Michael N., M.D. \$1,789,231</p>
<p><i>F-Fluorodeoxyglucose (FTP) Positron Emission Tomography (PET) Imaging in the Management of Patients with Solitary Pulmonary Nodules</i> Fletcher, James W., M.D. \$501,814</p>	<p><i>Aneurysm Detection and Management (ADAM)</i> Lederle, Frank A., M.D. Wilson, Samuel E., M.D. \$700,487</p>	<p><i>Vitamin E Treatment of Tardive Dyskinesia</i> Retrosen, John, M.D. Adler Lenard, M.D. \$44,773</p>
		<p><i>The Clinical and Economic Impact of Clozapine Treatment on Refractory Schizophrenia</i> Rosenheck, Robert, M.D. \$948,911</p>

Summary of 1999 Research and Development Projects

Cooperative Studies Program Project List (continued)

Treatment of Seizures in the Elderly Population

Rowan, James, M.D.
Ramsay, Eugene, M.D.
\$1,270,125

The Effects of Antiarrhythmic Therapy in Maintaining Stability of Sinus Rhythm in Atrial Fibrillation

Singh, Bramah N., M.D., Ph.D.
Singh, Steven N., M.D.
\$1,078,794

Follow-up Study of the Medical and Surgical Therapies for Gastroesophageal Reflux Disease

Spechler, Stuart, M.D.
\$165,707

VA Topical Tretinoin Chemoprevention Trial

Weinstock, Martin A., M.D., Ph.D.
\$360,535

Normative Evaluation of a Computer-Assisted Neuropsychological Battery Pilot

White, Roberta F., Ph.D., A.B.P.P.
\$486,204

Prostate Cancer Intervention Versus Observation Trial (PIVOT)

Wilt, Timothy J., M.D., M.P.H.
Brawer, Michael, M.D.
\$1,108,009

The Iron (Fe) and Atherosclerosis Study (FeAST)

Zacharski, Leo R., M.D.
\$261,400

Health Services Research & Development (HSR&D) Projects

Developmental Projects Program at Decatur, GA: Quality, Cost, Performance Measures

Aguayo, Samuel, M.D.
\$159,904

Adherence of HIV+ Patients to Highly Active Antiretroviral Treatment

Ampel, Neil M., M.D.
\$102,000

An Illustrative Patient Satisfaction Evaluation Tool for Ambulatory Populations

Asch, David, M.D., M.B.A.
\$100,800

Changes in Mortality, Utilization, and Quality of Care FY95-FY99

Ashton, Carol, M.D.
\$218,558

Preventing Progression to Chronic Back Pain

Atkinson, Joseph, M.D.
\$52,433

Rehabilitation Issues of Concern for Women with Spinal Cord Injuries

Bach, Carol Ann, Ph.D.
\$19,539

Health Economics Resource Center

Barnett, Paul, Ph.D.
\$28,468

Developmental Projects Program at Providence, RI: Ambulatory Care, Mental Health

Bauer, Mark S., M.D.
\$100,000

Complimentary Medical Treatment Among Veterans Receiving VA Primary Care

Bell, Iris, M.D., Ph.D.
\$168,500

Quality of Life and Patient Utility for Veterans with Prostate Cancer

Bennett, Charles, M.D., Ph.D.
\$64,452

Treatment Decision Intervention for Veterans with Prostate Cancer

Bennett, Charles, M.D., Ph.D.
\$57,597

Developing and Implementing a Quality Measure for Glycemic Control

Berlowitz, Dan R., M.D., M.P.H.
\$46,459

Pressure Ulcer Care in Nursing Homes: Effect of Clinical Guidelines

Berlowitz, Dan R., M.D., M.P.H.
\$265,700

Developmental Projects Program at Baltimore, MD: Outcomes, Geriatrics

Bradham, Douglas D., Dr.PH.
\$140,922

Veteran Women's Alcohol Problems: Prevalence, Screening and Self Help

Bradley, Katherine, M.D., M.P.H.
\$122,616

Pain Management and Behavioral Outcomes in Patients with Dementia

Buffum, Martha, D.NSc.
\$70,600

Validity of New and Original ASI Summary Indices

Cacciola, John, Ph.D.
\$52,790

Psychophysiology of PTSD in Female Nurse Vietnam Veterans

Carson, Margaret, RN, Ph.D.
\$150,000

The Effect of Managed Care on VA Hospital Costs

Cary, Kathleen, Ph.D.
\$124,300

Reducing Lower Back Injuries in VAMC Nursing Personnel

Caska, Barbara, Ph.D.
\$83,155

Comprehensive Outcomes of Nonmelanoma Skin Cancer

Chren, Mary-Margaret, M.D.
\$147,100

Prostate Cancer Outcome Measures: Age and Race Effects

Clark, Jack, Ph.D.
\$280,680

Informal Caregivers of Veterans with Dementia: Cost, QOL, Service Use

Clipp, Elizabeth, Ph.D.
\$141,702

Outcomes Assessment for Dementia Care: Development of a Module

Cody, Marisue, Ph.D., RN
\$190,893

Exercise Effect on Aerobic Capacity and QOL in Heart Failure

Collins, Eileen, Ph.D., RN
\$120,200

Summary of 1999 Research and Development Projects

HSR&D Projects (continued)

<p><i>Effectiveness of Screening for Prostatic Cancer: A Cohort Study</i> Concato, John, M.D. \$121,075</p>	<p><i>Effectiveness of a Health Education Program in a Primary Care Setting</i> Engelhardt, Joseph, Ph.D. \$208,000</p>	<p><i>Utility of PTF Data in Monitoring Outcomes of Surgical Care</i> Geraci, Jane, M.D., M.P.H. \$42,504</p>
<p><i>Risk Mortality in Prostate Cancer</i> Concato, John, M.D. \$133,670</p>	<p><i>Evaluation of Subacute Rehabilitation Care</i> Evans, Ron, M.S.W. \$89,300</p>	<p><i>Health Seeking and Treatment Selection in Patients with Coronary Disease</i> Gordon, Howard, M.D. \$37,800</p>
<p><i>Educational Efforts to Reduce Cultural & Ethnic Variation in Cardiac Procedure Use</i> Conigliero, Joseph, M.D., M.P.H. \$128,849</p>	<p><i>An Evaluation of the Organization of Subspecialty Cardiac Care within VA</i> Every, Nathan, M.D. \$267,757</p>	<p><i>Costs, Quality of Life & Functional Outcomes in Veterans Treated for MS with Beta-Interferon 1-B</i> Guarnaccia, Joseph, M.D. \$102,260</p>
<p><i>Development of a Flexilevel Scale of Shoulder Functioning</i> Cook, Karon, Ph.D. \$54,100</p>	<p><i>Determination of Utilization Rates of Cardio Procedures and "Standards of Care Pharmacological Therapy" in Patients Admitted to VA Hospital 92-98</i> Ezekowitz, Michael, M.D., Ph.D. \$34,050</p>	<p><i>Using Pain Resource Nurses to Improve Cancer Patient Pain Outcomes</i> Hagan, Susan, M.S. \$67,800</p>
<p><i>Home Walking Exercise Training in Advanced Heart Failure</i> Corvera, Teresita, RN, M.N. \$190,600</p>	<p><i>Ambulatory Care Quality Improvement Project: ACQUIP</i> Fihn, Stephan D., M.D., M.P.H. \$676,026</p>	<p><i>Ethnicity & Veteran Identity as Determinants of VA Ambulatory Care Use</i> Harada, Nancy, Ph.D. \$322,200</p>
<p><i>Ethnic/Cultural Variations in the Care of Veterans with Osteoarthritis</i> Covinsky, Kenneth, M.D., M.P.H. \$302,200</p>	<p><i>Schizophrenia Outcomes Module: Enhancement and Field Testing</i> Fischer, Ellen, Ph.D. \$14,710</p>	<p><i>Effectiveness of Team Treatment of Depression in Primary Care</i> Hedrick, Susan, Ph.D. \$144,983</p>
<p><i>Familial Patterns in Prostate Cancer</i> Cunningham, Glen, M.D. \$0 (no cost extension)</p>	<p><i>Shared Goals and the Process of Care in Schizophrenia – A Pilot Study</i> Fischer, Ellen, Ph.D. \$109,308</p>	<p><i>Evaluating HEDIS 3.0 for VHA</i> Hendricks, Ann, Ph.D. \$98,700</p>
<p><i>SAFE-GRIP Fall/Injuries Interventions: A Randomized Trial</i> Devito, Carolee, Ph.D., M.P.H. \$229,766</p>	<p><i>Improving Service Delivery Through Access Points</i> Fortney, John, Ph.D. \$75,758</p>	<p><i>Evaluating Quality of Care Screens from Laboratory Databases</i> Hofer, Timothy, M.D. \$53,300</p>
<p><i>Validation of Spanish Translation of Folstein Mini Mental Exam</i> Devito, Carolee, Ph.D., M.P.H. \$53,250</p>	<p><i>Decision Making for Depression in Women Vets: Patient & Physician Factors</i> Frayne, Susan, M.D., M.P.H. \$113,500</p>	<p><i>Guidelines for Drug Therapy of Hypertension: Closing the Loop</i> Hoffman, Brian, M.D. \$166,725</p>
<p><i>Determining of Clinical Implementation Effectiveness</i> Doebbeling, Bradley, M.D., M.S. \$64,925</p>	<p><i>Communication Alternatives and Preferences in End of Life Care</i> Fried, Terri, M.D. \$121,425</p>	<p><i>Cost-Effectiveness of Lung Volume Reduction Surgery</i> Huizenga, Hugh, M.D., M.P.H. \$51,850</p>
<p><i>Nurse Counseling for Physical Activity in Primary Care Patients</i> Dubbart, Patricia, Ph.D. \$106,300</p>	<p><i>Gait & Balance Training in Reducing Occurrence & Fear of Falls in Elderly</i> Galindo-Ciocon, Daisy, Ph.D. \$70,050</p>	<p><i>Protocols to Manage Resistance to Care in Veterans with Alzheimer's Disease</i> Hurley, Ann, RN, D.N.Sc. \$31,793</p>
<p><i>Processes, Structure, and Outcomes of Post-Stroke Rehabilitation Care</i> Duncan, Pamela, Ph.D. \$402,900</p>	<p><i>Practice Patterns and Variations in Care of VA Patients with Acute MI</i> Gaziano, Michael, M.D. \$263,500</p>	<p><i>Development of a Cancer Pain Prognostic Scale</i> Hwang, Shirley, RN, M.S. \$23,575</p>
<p><i>Treatment of Depression in Patients with PTSD</i> Dunn, Nancy Jo, Ph.D. \$186,249</p>		<p><i>Database Resource Center</i> Hynes, Denise, Ph.D. \$349,680</p>

Summary of 1999 Research and Development Projects

HSR&D Projects (continued)

<i>A Randomized Trial to Implement the AHCPR Smoking Cessation Guideline</i> Joseph, Anne, M.D., M.P.H. \$266,710	<i>Developmental Projects Program at Augusta, GA: Technical Assessment (Telemedicine)</i> Middleton, III, Henry M., M.D. \$122,590	<i>Are Clinical Vignettes Better than Chart Abstraction to Measure Quality?</i> Peabody, John, M.D., Ph.D. \$62,359
<i>Developing Risk Adjustment Models in Veterans Health Status</i> Kazis, Lewis W., Sc.D. \$89,150	<i>Determinants of VA and Non-VA Health Care Use Among Elderly Veterans</i> Morgan, Robert, Ph.D. \$48,525	<i>Risk Factors for Femorodistal Bypass Surgery and Amputation</i> Pearce, William, M.D. \$63,500
<i>Health Related Quality of Life in Veterans: A Pilot Study</i> Kazis, Lewis W., Sc.D. \$122,454	<i>Antecedents and Consequences of Sexual Harassment in the Military</i> Murdoch, Maureen, M.D., M.P.H. \$151,950	<i>Evaluation of a Comprehensive Advance Care Planning Intervention</i> Pearlman, Robert, M.D. \$63,689
<i>Toward Gender-Aware VA Health Care: Staff Ideology, Sensitivity, & Knowledge</i> King, Lynda, Ph.D. \$80,900	<i>Gender Differences in Compensation and Pension Claims Approval for PTSD</i> Murdoch, Maureen, M.D., M.P.H. \$79,400	<i>A Novel Clinical Anatomic Staging System for Prostate Cancer</i> Penson, David, M.D. \$7,000
<i>Proactive Diabetes Case Management</i> Krein, Sarah, Ph.D., RN \$191,720	<i>Developmental Projects Program at Tampa, FL: Labor Management Issues, Outcomes, Rehabilitation</i> Nelson, Audrey, RN, Ph.D. \$74,198	<i>Proposal to Present Data on Variation in Care for Acute Myocardial Infarction to Practicing Cardiologists</i> Petersen, Laura A., M.D., M.P.H. \$53,400
<i>Racial Variations in Cardiac Procedures: Do Health Beliefs Matter?</i> Kressin, Nancy, Ph.D. \$420,032	<i>Redesigning Patient Handling Tasks to Prevent Nursing Back Injuries</i> Nelson, Audrey, RN, Ph.D. \$143,900	<i>Automated Calls with Nurse Follow-up to Improve Diabetes Ambulatory Care</i> Piette, John, Ph.D. \$97,075
<i>Mental Health Outcomes Associated with Bosnia Peacekeeping Mission</i> Litz, Brett, Ph.D. \$35,643	<i>Evaluating Cost for Veteran's Health Care (Medicare Cost)</i> Nugent, Gary, M.H.A. \$1,274,714	<i>Improving Diabetes Care Via Telephone Assessment and Patient Education</i> Piette, John, Ph.D. \$87,789
<i>Pressure Ulcer Assessment Via Telemedicine</i> Lowery, Julie, Ph.D. \$148,153	<i>Race, Patient Preference and Stroke Risk Reduction</i> Oddone, Eugene, M.D., M.H.Sc. \$351,356	<i>Developmental Projects Program at Columbia, SC: Labor Management Issues, Managed Care</i> Pillinger, Carol L., M.D. \$54,938
<i>Nurse Managed Clinic for Dementia Patients and Family Caregivers</i> Maddox, Melitta, M.S.N., RNCS \$96,775	<i>Cost-Effectiveness of Guideline-Concordant Care for Schizophrenia</i> Owen, Richard R., M.D. \$16,883	<i>Adherence to Antiviral Therapy in HIV Infected Adults</i> Powell-Cope, Gail, Ph.D. \$45,700
<i>Impact of Provider Substance Abuse Education on Guideline Implementation</i> McCormick, Richard, Ph.D. \$220,100	<i>Documentation of Major Depressive Disorder and Schizophrenia Related Performance</i> Owen, Richard R., M.D. \$68,598	<i>Developmental Projects Program at Cincinnati, OH: Outcome Measurement, Cost, Quality, Access, Satisfaction</i> Render, Marta L., M.D. \$48,282
<i>Development of Individual-Patient Physical Health Profiles with IRT</i> McHorney, Colleen, Ph.D. \$47,489	<i>A Multi-site Study of Strategies for Implementing Schizophrenia Guidelines</i> Owen, Richard R., M.D. \$449,612	<i>Effect of Activity on Sleep of Cognitively-Impaired Veterans</i> Richards, Kathleen, RN, Ph.D. \$159,925
<i>Area Variation in Length of Stay, Pre and Post-hospital Care and Survival</i> Menke, Terri, Ph.D. \$114,182	<i>The Quality of Medication Management for Schizophrenia</i> Owen, Richard R., M.D. \$118,161	

Summary of 1999 Research and Development Projects

HSR&D Projects (continued)

<p><i>Ambulatory Case Mix Measures: Implications for VA Managed Care</i> Rosen, Amy, Ph.D. \$186,800</p>	<p><i>Documenting Barriers to Patient Centered Care in an Academic Clinic</i> Smith, Curtis S., M.D. \$36,900</p>	<p><i>Mental Health Providers Perceptions of Quality Indicators</i> Valenstein, Marcia, M.D. \$56,612</p>
<p><i>Decline in Functional Status as a Quality Indicator for Long-Term Care</i> Rosen, Amy, Ph.D. \$161,725</p>	<p><i>Effectiveness and Cost Impact of Telecommunications System in COPD</i> Sparrow, David, D.Sc. \$185,766</p>	<p><i>Patient Preferences and the Care of Diabetes</i> Vijan, Sandeep, M.D. \$116,929</p>
<p><i>Practice Patterns in Care of Chronically Mentally Ill and Homeless Veterans</i> Rosenheck, Robert, M.D. \$119,394</p>	<p><i>Randomized Control Trial of Exercise Training in Patients with COPD</i> Sparrow, David, D.Sc. \$119,184</p>	<p><i>Developmental Projects Program at Iowa City, IA: Technical Assessment (Telemedicine)</i> Wakefield, Bonnie J., RN, Ph.D. \$96,750</p>
<p><i>Impact of Outsourcing VA Cardiac Surgery on the Cost and Quality of Care</i> Rosenthal, Gary, M.D. \$201,000</p>	<p><i>Developmental Projects Program at Buffalo, NY: Outcomes, Chronic Diseases</i> Spaulding, Steven, M.D. \$79,178</p>	<p><i>Surgical Risks and Outcomes of Women Treated in VA Hospitals</i> Weaver, Frances, Ph.D. \$120,500</p>
<p><i>The Use of Computer Telephony for the Administration of SF-36V – SF-12V</i> Rothendler, James, M.D. \$166,500</p>	<p><i>PTSD Among VA Ambulatory Care Patients</i> Spiro, Ill, Avron, Ph.D. \$127,900</p>	<p><i>An Integrated Model of Primary Care in Mental Health</i> Weinberger, Morris, Ph.D. \$193,885</p>
<p><i>A Casefinding and Referral System for Older Veterans Within Primary Care</i> Rubenstein, Laurence, M.D., M.P.H. \$194,000</p>	<p><i>Developmental Projects Program at Omaha, NE: Customer Satisfaction, Cost, Chronic Diseases, Special Populations</i> Spurzem, John, M.D. \$99,842</p>	<p><i>Delivery of Mental Health Services to American Indians and Hispanic Americans in New Mexico and Minnesota</i> Westermeyer, Joseph, M.D., M.P.H., Ph.D. \$408,310</p>
<p><i>Efficacy of Telepsychiatry in the Treatment of Depression</i> Ruskin, Paul, M.D. \$111,870</p>	<p><i>Objective Measurement of Daily Activity in COPD</i> Steele, Bonnie, Ph.D. \$31,476</p>	<p><i>Teledermatology: Diagnosing Dermatologic Lesions by Digital Imaging</i> Whited, John, M.D. \$29,250</p>
<p><i>Lipid Measurement and Management System</i> Sales, Anne E., RN, Ph.D. \$37,519</p>	<p><i>Computerized Guidelines Enhanced by Symptoms & History: Clinical Effects</i> Tierney, William, M.D. \$318,550</p>	<p><i>Cultural Barriers to Access to VA Blind Rehabilitation Services</i> Williams, Marjory, RN \$3,925</p>
<p><i>Implementing Smoking Cessation Guidelines: ...Evidence Based Quality Improvement</i> Sherman, Scott, M.D. \$201,277</p>	<p><i>Matching Outcomes and Costs in Substance Abuse/Psychiatric Treatment</i> Timko, Christine, Ph.D. \$146,900</p>	<p><i>An Objective Indicator of Risk of Developing a Pressure Ulcer</i> Wilson, Paulette, Ph.D. \$38,439</p>
<p><i>Effect of Behavioral Management on Quality of Life in Heart Failure</i> Shively, Martha, Ph.D. \$111,592</p>	<p><i>Defining the Attributes of the Quality of Dying</i> Tulsky, James A., M.D. \$102,412</p>	<p><i>Patient Preferences in End Stage Prostate Cancer</i> Wray, Nelda, M.D. \$111,768</p>
<p><i>QUERI Proposal to Expand Data Collection and Reports to Evaluate VA Cardiac Surgery Program Performance</i> Shroyer, Anne, Ph.D. \$94,650</p>	<p><i>Negotiating Patient Expectations and Requests in a Managed Care Environment</i> Tulsky, James A., M.D. \$234,607</p>	<p><i>Managed Care Performance of VHA Primary Care Delivery Systems</i> Yano, Elizabeth, Ph.D. \$157,660</p>

Summary of 1999 Research and Development Projects

Medical Research Service Projects

Medical Research Service funded approximately 1100 projects in FY99. The following listing represents only those projects approved for funding

in the spring 1998 and fall 1998 merit review cycles and began in fiscal year 1999.

Immunopathology of Hepatitis C Virus Infection

Agnello, Vincent, M.D.
\$91,550

Interaction of Helicobacter pylori with Neutrophils

Allen, Lee-Ann H., Ph.D.
\$64,950

Locomotor Training and Motor Function after Spinal Cord Injury

Anderson, Douglas K., Ph.D.
\$108,600

Induction of Macrophage Apoptosis by Myobacterium Avium

Arbeit, Robert D., M.D.
\$69,200

Vitamin D Metabolism – Effect of Age and Longevity

Armbrecht, Harvey J., Ph.D.
\$62,100

Use of GM-CSF in the Treatment of Ocular Malignant Melanoma

Armstrong, Cheryl, M.D.
\$81,100

Urinary Acidification

Arruda, Jose A.L., M.D.
\$93,000

Mechanisms of ErbB-2-targeted Antitumor Interventions in Human Breast Carcinoma

Arteaga, Carlos L., M.D.
\$27,375

Efficacy of Antidepressants in Chronic Back Pain

Atkinson, Joseph H., M.D.
\$73,350

Studies of Myeloperoxidase Gene Expression in Normal and Leukemic Cells

Austin, Garth E., M.D., Ph.D.
\$128,000

Post-Receptor Cytokine Signal Transduction

Ballou, Leslie R., Ph.D.
\$215,000

Blood-Brain Barrier Transport of Met-Enk in Alcoholism

Banks, William A., M.D.
\$61,650

Mechanisms of the Anticarcinogenic Actions of Ellagic Acid

Barch, David H, M.D.
\$40,950

Quantitating Immunosuppression by Cyclosporine and FK-506 in Patients

Batiuk, Thomas D., M.D., Ph.D.
\$55,000

Combination Osteogenic Therapy in Established Osteoporosis

Baylink, David J., M.D.
\$165,700

The Renal Na⁺/HCO₃-Cotransporter: Regulation by NHE-RF

Bernardo, Angelito A., M.D.
\$39,100

Serotonin and the Upper Airway in Obstructive Sleep Apnea

Berry, Richard B., M.D.
\$41,900

The Cellular and Biochemical Basis of MBP Degradation

Bever, Christopher T., M.D.
\$98,500

Role of Neurotrophins and Oxidative Stress in Parkinson's Disease

Bickford, Paula C., Ph.D.
\$194,580

The Calcium Sensing Mechanisms of Keratinocytes

Bikle, Daniel D., M.D., Ph.D.
\$122,200

Genetic Studies of Neurologic and Dementing Disorders

Bird, Thomas, M.D.
\$131,700

Pathogenesis of Streptococcal Skin and Soft Tissue Infections

Bisno, Alan L., M.D.
\$137,300

Retrieval and Analysis of Orthopedic Implants

Bloebaum, Roy D., Ph.D.
\$108,100

Regulation of the cAMP-specific Phosphodiesterases

Bolger, Graeme B., M.D.
\$38,350

Erythropoietin Action on Homogeneous Erythroid Progenitors

Bondurant, Maurice C., Ph.D.
\$96,000

Efficacy of Threshold vs. Subthreshold TMS in the Treatment of Depression

Boutros, Nashaat, M.D.
\$113,800

Evaluation of a Novel Lipopolysaccharide Binding Intervention for Sepsis

Brackett, Daniel J., A.S.
\$64,800

Memory and the Hippocampus in Vietnamese Twins with PTSD

Bremner, James D., M.D.
\$29,000

Cyclic Nucleotide-Dependent Vasorelaxation

Brophy, Colleen M., M.D.
\$102,300

Mechanisms of the HPV 11 E1-E4 Protein in the Virus Life Cycle

Brown, Darron R., M.D.
\$62,200

Phenotypic Characterization and Genetic Analysis of an Attenuated Mycobacterium Abscessus Mutant

Byrd, Thomas F., M.D.
\$55,000

Biomechanics of Total Hip Dislocation

Callaghan, John J., M.D.
\$57,700

The Role of MARCKS and StAR Protein in Priming of Aldosterone Secretion

Calle, Roberto A., M.D.
\$31,550

Altered Receptor-Mediated Endocytosis: Its Role in Alcoholic Apoptosis

Casey, Carol A., Ph.D.
\$152,900

Forebrain Mechanisms of Chronic Neuropathic Pain

Casey, Kenneth L., M.D.
\$85,800

Summary of 1999 Research and Development Projects

Medical Research Service Projects (continued)

<p><i>Neuropsychology of Information Processing and Memory</i> Cermak, Laird S., Ph.D. \$92,000</p>	<p><i>Alternative Pre-mRNA Splicing in Diabetes and Insulin Resistance</i> Cooper, Denise R., Ph.D. \$197,900</p>	<p><i>T and PSMA: Targets for Novel Prostate Cancer Therapies</i> Deutscher, Susan L., Ph.D. \$121,900</p>
<p><i>Androgen Action and Receptor Inactivation</i> Chatterjee, Bandana, Ph.D. \$100,500</p>	<p><i>Insulin, Neurogenetics and Memory in AD: A Novel Therapeutic Approach</i> Craft, Suzanne, Ph.D. \$121,900</p>	<p><i>Differentiated Sympathetic Neural Control of the Kidney</i> Di Bona, Gerald F., M.D. \$91,700</p>
<p><i>Surgical Peritonitis: Local Peritoneal and Remote Organ Responses</i> Cheadle, William G., M.D. \$132,800</p>	<p><i>Ultraviolet Radiation and HIV Infection</i> Cruz, Ponciano D., M.D. \$68,900</p>	<p><i>Characterization of Pemphigus Antibodies</i> Diaz, Luis A., M.D. \$75,100</p>
<p><i>Regions of the Cardiac Sodium Channel Involved in Permeation and Gating</i> Chiamvimonvat, Nipavan, M.D. \$125,000</p>	<p><i>Mechanisms and Prevention of Anthracycline Cardiotoxicity and Aging</i> Cusack, Barry J., M.D. \$59,750</p>	<p><i>A Simple Test to Identify Clinically Relevant Central Auditory Asymmetry</i> Divenyi, Pierre L., Ph.D. \$151,779</p>
<p><i>Regulation of Neutrophilic Lung Inflammation</i> Christman, John W., M.D. \$131,050</p>	<p><i>Evaluation of Regimens for Treatment of MDRTB</i> Cynamon, Michael H., M.D. \$41,200</p>	<p><i>Proteolysis and Ethanol-Induced Oxidative Stress in Cultured Hepatoma Cells</i> Donohue, Terrence M., Ph.D. \$52,400</p>
<p><i>Melatonin and Myocardial Protection</i> Chua, Balvin H. L., Ph.D. \$98,800</p>	<p><i>Benzodiazepine Regulation of Human GABA Receptors</i> Davidoff, Robert A., M.D. \$105,900</p>	<p><i>Regulation of Corticotropin Releasing Hormone Gene Expression</i> Dorin, Richard I., M.D. \$119,000</p>
<p><i>Biology of IGF-1 in Bone</i> Clemens, Thomas L., Ph.D. \$158,100</p>	<p><i>Growth Factors and Gene Therapy in Diabetic Wounds</i> Davidson, Jeffrey M., Ph.D. \$102,000</p>	<p><i>Ethambutol Mediated Visual Loss is Due to Excitotoxic Neuronal Damage</i> Dreyer, Evan B., M.D., Ph.D. \$89,500</p>
<p><i>Diverse Effects of Thromboxane A2 in Kidney Transplantation</i> Coffman, Thomas M., M.D. \$58,750</p>	<p><i>Structural Prerequisites for Amyloid Fibrillogenesis</i> de Beer, Frederick C., M.D. \$88,800</p>	<p><i>Regulatory Activity of Vitamin D and IGF-Binding Proteins in Prostate Tumor Cells</i> Drivdahl, Rolf H., Ph.D. \$150,300</p>
<p><i>Genetic Factors Causing Pancreatitis</i> Cohn, Jonathan A., M.D. \$115,800</p>	<p><i>Receptor Mediated DNA Uptake and Inflammation in the Lung</i> Deffebach, Mark E., M.D. \$74,200</p>	<p><i>Mechanisms of NaCl Absorption in the Human Colon</i> Dudeja, Pradeep K., Ph.D. \$122,300</p>
<p><i>Mechanisms of Plaque Pathogenesis in Alzheimer's Disease</i> Cole, Gregory M., Ph.D. \$106,150</p>	<p><i>Neurophysiology and Pathophysiology of Eye Movements</i> Dell'osso, Louis F., Ph.D. \$242,800</p>	<p><i>Cholinergic Mechanisms in Heart Failure: Role of Ganglionic Transmission</i> Dunlap, Mark E., M.D. \$113,350</p>
<p><i>Regulator of 15-Lipoxygenase by its 3'-Flanking Sequence</i> Conrad, Douglas J., M.D. \$68,700</p>	<p><i>Insulin Action: Role of Skeletal Muscle and Insulin-Mediated Blood Flow</i> Dengel, Donald R., Ph.D. \$103,800</p>	<p><i>Epileptogenic Focus Localization by EEG Source Modeling</i> Ebersole, John S., M.D. \$80,100</p>
<p><i>Role of APP and Presenilins in Neuronal Intracellular A-beta Metabolism</i> Cook, David G., Ph.D. \$88,700</p>	<p><i>Cytokine-Dependent Regulation of the Polymeric Ig Receptor in Intestinal Epithelial Cells</i> Denning, Gerene M., Ph.D. \$98,582</p>	<p><i>Home Studies of Insomnia and Normal Sleep in Three Age Groups</i> Edinger, Jack D., Ph.D. \$54,150</p>
<p><i>Genetic Analysis of Hereditary Prostate Cancer Families</i> Cooney, Kathleen, M.D. \$34,350</p>		

Summary of 1999 Research and Development Projects

Medical Research Service Projects (continued)

<p><i>Common Factors Regulate CYBB and NCF2 Transcription in Myeloid Cells</i> Eklund, Elizabeth, M.D. \$108,650</p>	<p><i>Nervous System Delivery Vectors from Clostridial Neurotoxins</i> Fishman, Paul S., M.D., Ph.D. \$138,700</p>	<p><i>Adrenal Corticosteroids and Hypertension</i> Gomez-Sanchez, Celso E., M.D. \$149,300</p>
<p><i>Cellular and Molecular Mechanisms by Which Insulin Regulates Apolipoprotein B</i> Elam, Marshall B., M.D., Ph.D. \$56,950</p>	<p><i>Structural Changes in Idiopathic and Experimental Parkinsonism</i> Forno, Lysia K. S., M.D. \$77,200</p>	<p><i>Gonococcal Opas: Role in Invasion of Human Fallopian Tube Epithelium</i> Gorby, Gary L., M.D. \$105,200</p>
<p><i>Regulation of Insulin-like Growth Factor Binding Protein-3 (IGFBP-3)</i> Erondu, Ngozi E., M.B.B.S., Ph.D. \$59,700</p>	<p><i>Growth Hormone Receptor Proteolysis and Shedding</i> Frank, Stuart J., M.D. \$153,000</p>	<p><i>Experimental Studies of Dyesthetic Central Pain Following Spinal Cord Injury</i> Gorecki, John P., M.D. \$59,000</p>
<p><i>Actin Filament Dynamics: Role of Actin Binding Proteins</i> Estes, James E., Ph.D. \$98,900</p>	<p><i>Models of Beta-Amyloid Deposition, Neurotoxicity and Neuroprotection in Aging Rodents</i> Frautschy, Sally A., Ph.D., M.S. \$59,650</p>	<p><i>The Role of Inducible Cyclooxygenase in Delayed Neuronal Death</i> Graham, Steven H., M.D., Ph.D. \$129,200</p>
<p><i>Mechanisms of Pathogenesis of Helicobacter pylori</i> Evans, Doyle J., Ph.D. \$53,900</p>	<p><i>Role of Cytokines in Postischemic Myocardium</i> Freedman, Gregory L., M.D. \$85,200</p>	<p><i>Alcohol Abuse and Neuropsychological Impairment</i> Grant, Igor, M.D. \$125,000</p>
<p><i>Skeletal Alkaline Phosphatase: Function, Degradation, and Release to Circulation</i> Farley, John R., Ph.D. \$110,888</p>	<p><i>Neurophysiological Deficits in Schizophrenia</i> Freedman, Robert, M.D. \$140,800</p>	<p><i>Prognostic Factors in Patients with Non-Small Cell Lung Cancer</i> Graziano, Stephen, M.D. \$37,300</p>
<p><i>Sleep Enhancing Properties of Glutamate Antagonists</i> Feinberg, Irwin, M.D. \$117,500</p>	<p><i>In Vivo Mechanisms of Status-Epilepticus-Induced Neuronal Death</i> Fujikawa, Denson G., M.D. \$159,300</p>	<p><i>Heptocellular Transport in Health and Disease</i> Green, Richard M., M.D. \$133,800</p>
<p><i>Role of Oxysterols and LXR in Epidermal Differentiation</i> Feingold, Kenneth R., M.D. \$78,250</p>	<p><i>Control of Arterial Remodeling</i> Gaballa, Mohamed, Ph.D. \$127,200</p>	<p><i>The Uroguanylin Peptide Family: Cellular Mechanisms and Regulation</i> Greenberg, Richard N., M.D. \$66,400</p>
<p><i>Cellular Basis of Osmotically Induced Changes in Taste</i> Feldman, George M., M.D. \$160,500</p>	<p><i>Macrophage Function in the Pathogenesis of CMV Infection</i> Geist, Lois J., M.D. \$28,000</p>	<p><i>Adenosine's Role in Sleep and Arousal</i> Greene, Robert W., M.D., Ph.D. \$133,850</p>
<p><i>Low Dose Intermittent Oral Aspirin: Effects on Platelets and the Upper GI Tract</i> Feldman, Mark, M.D. \$67,300</p>	<p><i>Axonal Injury Response and Calcium Homeostasis</i> George, Edwin B., M.D., Ph.D. \$55,050</p>	<p><i>Effects of Ethanol on Lung Glutathione and Susceptibility to Injury</i> Guidot, David M., M.D. \$92,400</p>
<p><i>Neural Control of Acetylcholinesterase Molecular Forms in Adult Muscles</i> Fernandez, Hugo L., Ph.D. \$167,200</p>	<p><i>Gastrointestinal Pathophysiology of Diarrheal Disorders</i> Giannella, Ralph A., M.D. \$205,400</p>	<p><i>Flow Mediated Vasodilation in the Human Coronary Microcirculation</i> Gutterman, David D., M.D. \$69,580</p>
<p><i>Hereditary Spastic Paraplegia</i> Fink, John K., M.D. \$146,400</p>	<p><i>Genetics, Metabolism and Weight Loss in Older, Obese Veterans</i> Goldberg, Andrew P., M.D. Niklas, Barbara J., Ph.D. \$89,500</p>	<p><i>Parathyroid Gland Function and Aging</i> Halloran, Bernard P., Ph.D. \$79,900</p>
	<p><i>Cocaine-Induced Seizures: A Quantitative Trait Loci Genetic Study</i> Golden, Gregory, T., Ph.D. \$97,500</p>	

Summary of 1999 Research and Development Projects

Medical Research Service Projects (continued)

<i>Insulin-Sensitive Peroxisomal Enzyme Function in NIDDM</i> Hamel, Frederick G., Ph.D. \$71,000	<i>Regulation of mRNA Stability during Erythroleukemic Differentiation</i> Hensold, Jack O., M.D. \$88,150	<i>Aging and Immunologic Defenses Regulated by Signal Transducing Lipids</i> Jurivich, Donald A., D.O. \$165,100
<i>Sodium Transport in the Collecting Duct</i> Hamm, L. Lee, M.D. \$125,000	<i>Human Immune Response to U1-70kD snRNP Autoantigen</i> Hoffman, Robert W., D.O. \$117,300	<i>Neuronal Transplants in Repair of Stroke Lesions in the Aged</i> Kartje, Gwendolyn L., M.D., Ph.D. \$38,500
<i>Neuroimaging in PTSD: Functional Imaging of the Anterior Cingulate Cortex During Procaine Challenge</i> Hamner, Mark B., M.D. \$112,700	<i>Studies on the Transport of Foliates and Antifoliates in Prostate</i> Horne, Donald W., Ph.D. \$127,145	<i>Cellular and Matrix Glomerular Barrier Function in Early Diabetic Nephropathy</i> Katz, Murray A., M.D. \$152,000
<i>Glutamatergic Dysfunction and Dementia in Elderly Schizophrenic Patients</i> Haroutunian, Vahram, Ph.D. \$65,950	<i>Neuronal Loss and Plasticity in Epilepsy (V)</i> Houser, Carolyn R., Ph.D. \$132,350	<i>Regulation of Plasma Protein Composition in Nephrosis</i> Kaysen, George, M.D., Ph.D. \$134,200
<i>Serum Markers in Non-Small Cell Lung Cancer</i> Harpole, David H., M.D. \$53,500	<i>A cAMP-Dependent Trans-Activator that Governs Mitochondrial Gene Expression</i> Hudson, Alan P., Ph.D. \$124,900	<i>M. tuberculosis Survival Within Macrophages</i> Kernodle, Douglas S., M.D. \$92,700
<i>Neural Correlates of Action Representations</i> Harrington, Deborah L., Ph.D. Haaland, Kathleen Y., Ph.D. \$183,754	<i>Fibroblast Growth Factors (FGFs) and FGF Receptors in Prostate Cancer</i> Ittman, Michael M., M.D., Ph.D. \$57,950	<i>Promoting Self-Management of Chronic Pain in Primary Care</i> Kerns, Robert D., Ph.D. \$60,500
<i>Signal Transduction in Myeloid Differentiation</i> Harris, Kevin W., M.D., Ph.D. \$94,500	<i>Hypoxic Regulation of Superoxide Dismutases in Acute Lung Injuries</i> Jackson, Robert M., M.D. \$105,600	<i>Impact of Defective Prohormone Trafficking in Thyroidal ER Storage Disease</i> Kim, Paul S., M.D. \$80,000
<i>Nitric Oxide Regulates Pulmonary Endothelial Barrier Dysfunction</i> Hart, C. Michael, M.D. \$126,300	<i>Fungal Ferric Reductants and Leukocytic Oxidants</i> Jacobson, Eric S., M.D., Ph.D. \$127,300	<i>Strain-specific Immunity to Plasmodium vivax in Humans</i> King, Christopher L., M.D., Ph.D. \$73,250
<i>Viral Gene Expression and Replication in Papillomavirus-Associated Neoplasia</i> Haugen, Thomas H., M.D., Ph.D. \$155,500	<i>Colon Cancer Susceptibility Genes</i> Jacoby, Russell F., M.D. \$130,300	<i>Alcohol Liver Disease: Immune Responses to Aldehyde Modified Proteins</i> Klassen, Lynell W., M.D. Thiele, Geoffrey M., Ph.D. \$51,200
<i>Depression and Stress Models: GRK Underexpression and CRF Receptors</i> Hauger, Richard L., M.D. \$114,200	<i>Developing a Malignant Glioma Vaccination Strategy Using Membrane M-CSF</i> Jadus, Martin R., Ph.D. \$188,750	<i>Cytokine Control of Neutrophils: Role of Apoptosis Rescue Proteins</i> Klein, Jon B., M.D., Ph.D. \$143,500
<i>Mechanisms of Antibiotic Resistance Transfer in Bacteroides fragilis</i> Hecht, David W., M.D. \$61,650	<i>Tyrosine Augmentation of Clozapine-Induced Dopamine Release in the Prefrontal Cortex</i> Jaskiw, George E., M.D. \$127,000	<i>Interaction of Candida albicans Adhesin Protein, ALA1 with Fibronectin</i> Klotz, Stephen A., M.D. \$98,550
<i>Mechanisms of Graft Rejection after Indirect Recognition</i> Heeger, Peter S., M.D. \$102,750	<i>Platelet Stimulus Response Coupling</i> Johnson, Gerhard J., M.D. \$147,100	<i>HSP60, Apoptosis, and Myocardial Injury</i> Knowlton, Anne A., M.D. \$54,150

Summary of 1999 Research and Development Projects

Medical Research Service Projects (continued)

*Soluble Adhesion Molecules
as Inflammatory Angiogenic
Mediators*

Koch, Alisa E., M.D.
\$134,500

*The Role of CpG DNA in Breaking
Tolerance to DNA in Lupus*

Krieg, Arthur M., M.D.
\$97,800

*Role of Transforming Growth
Factor beta in Progressive Ankylosis*

Krug, Hollis E., M.D.
\$48,350

*Neurotoxic Amphetamines,
Protooncogenes, and Apoptosis*

Kuhn, Donald M., Ph.D.
\$147,700

*A Neuronal Degeneration
Mechanism Associated with
Cognitive Decline*

Kuljis, Rodrigo O., M.D.
\$132,600

*Regulation of Phagocytosis
by Phospholipase D*

Kusner, David J., M.D., Ph.D.
\$105,500

Remote Masking in Human Vision

Kuyk, Thomas K., Ph.D.
\$54,000

*MR - Regulation of
Glomerulonephritis by
T-Cell Cytokines*

Lakkis, Fadi G., M.D.
\$154,000

*Component Mechanisms of
Visual Perception and Attention*

Lamb, Marvin R., Ph.D.
\$69,161

*Neural and Cognitive Bases of
Diencephalic Amnesia*

Langlais, Philip J., Ph.D.
\$148,300

*Molecular Genetics of
Male Hypertension*

Lau, Yun-Fai Chris, Ph.D.
\$125,000

Gallbladder Mucosal Function

Lee, Sum P., M.D., Ph.D.
\$116,000

*Role of Angiotensin II in Mesangial
Matrix Degradation in Diabetes*

Leehey, David J., M.D.
\$72,500

*The Effect of Obesity on the
Regulation of Leptin Secretion*

Levy, James R., M.D.
\$102,450

*IL-6, Apoptosis and
Multiple Myeloma (V)*

Lichtenstein, Alan K., M.D.
\$112,450

*Regulation of
Cholecystokinin Secretion*

Liddle, Rodger A., M.D.
\$105,250

*Novel Activation Mechanism of
LDL Receptor Transcription*

Liu, Jingwen, M.D., Ph.D.
\$148,800

*Alzheimer's Therapy:
Modulation of Neurotrophin
Actions by LAR Receptors*

Longo, Frank M., M.D., Ph.D.
\$106,500

*Intracellular Mediators of
HPS Hantavirus Pathogenesis*

Mackow, Erich R., Ph.D.
\$208,800

*Mechanisms of Age-Impaired
Vasorelaxation*

Mader, Scott L., M.D.
\$55,400

*Colorectal Adenoma:
Chemoprevention with Folic Acid*

Majumdar, Adhip N., Ph.D., D.Sc.
Jaszewski, Richard, M.D.

\$121,100

*Crystal Retention in Kidney
Stone Disease*

Mandel, Neil S., Ph.D.
\$57,650

*Immunoisolation and
Characterization of
CFTR-Expressing Vesicles*

Marino, Christopher R., M.D.
\$77,400

*Epidemiology of Genetic and
Acquired Risk Factors for
Venous Thrombosis*

Marlar, Richard A., Ph.D.
Welsh, Carolyn Helen, M.D.

\$66,500

*Regulation of Chemokine
Function in the Lungs*

Martin, Thomas R., M.D.
\$138,650

*Aging and
Neuroendocrine Regulation*

Matsumoto, Alvin M., M.D.
\$95,850

*Kallikrein-Kinin System in
Renal Function and Disease*

Mayfield, Ronald K., M.D.
\$121,900

*Mechanism and Use of
Alpha 2 Adrenergic Agonists for
Anesthetic Action*

Maze, Mervyn, M.B., Ch.B.
\$153,500

MRI Anatomy of Schizophrenia

McCarley, Robert W., M.D.
\$151,500

*Proximal Mechanisms of Neuronal
Injury in HIV-1 Infection*

McCarthy, Micheline B., M.D., Ph.D.
\$100,650

*Dysregulated TNF/FAS Signaling
in Alcoholic Liver Disease*

McClain, Craig J., M.D.
\$122,500

*Eosinophil-mediated Formation of
Reactive Tyrosine Species*

McCormick, Michael L., Ph.D.
\$92,750

*Role of Mitochondrial
Metabolism in Histoplasma
Capsulatum Virulence*

McEwen, Joan E., Ph.D.
\$71,100

*Automatic Decomposition of
the Electromyogram*

McGill, Kevin C., Ph.D.
\$62,100

*The Role of Proteases in
Parasite Invasion*

McKerrow, James H., M.D., Ph.D.
\$70,900

*Axonal Protein Interactions
during Axonal Regeneration*

McQuarrie, Irvine G., M.D., Ph.D.
\$62,950

*Synapse Changes in an Animal
Model of Parkinson's Disease*

Meshul, Charles K., Ph.D.
\$236,516

*Role of Novel Gene Expression in
Metastatic Prostate Cancer*

Meyer-Siegler, Katherine, M.S., Ph.D.
\$157,500

Summary of 1999 Research and Development Projects

Medical Research Service Projects (continued)

<p><i>Lymphocyte/Endothelial Adhesion Cascades in Inflamed Extranodal Sites</i> Michie, Sara A., M.D. \$50,000</p>	<p><i>Molecular Manipulation to Enhance Anti-Myeloma Response</i> Munshi, Nikhil C., M.D. \$136,100</p>	<p><i>Fibronectin Alternate Splice Isoforms in Osteoarthritis</i> Peters, John H., M.D. \$58,700</p>
<p><i>Living-Related Donor Bone Marrow Immunoregulation in Kidney Transplants</i> Miller, Joshua, M.D. \$234,250</p>	<p><i>Neural Control of Mammalian Visceral Function</i> Nadelhaft, Irving, Ph.D. \$167,300</p>	<p><i>Signaling Pathways Involved in Activation and Adhesion of the Leukocyte Integrin LFA-1</i> Petruzzelli, Lilli M., M.D., Ph.D. \$50,800</p>
<p><i>Alcohol and Growth Factors in the Adult Brain</i> Miller, Michael W., Ph.D. \$49,150</p>	<p><i>Application of Medicinal Chemistry to Alcoholic Liver Disease</i> Nagasawa, Herbert T., Ph.D. \$72,900</p>	<p><i>Genetic Determinants of Drug Effects</i> Phillips, Tamara J., Ph.D. \$88,834</p>
<p><i>Biology of Membranous Bone Regeneration: Effects of Age</i> Miller, Timothy A., M.D. \$118,500</p>	<p><i>Molecular Mechanisms of Purinergic and FGF Signaling in Astrocytes</i> Neary, Joseph T., Ph.D. \$179,645</p>	<p><i>Respiration in Sepsis</i> Piantadosi, Claude A., M.D. \$69,600</p>
<p><i>Function of Alveolar Epithelial TIA</i> Miller, York E., M.D. \$103,800</p>	<p><i>Glutamate Transport in MPTP Neurotoxicity, Role in Parkinson's Disease</i> Norenberg, Michael D., M.D. \$232,300</p>	<p><i>Clinical Biomechanics of Cervical Spondylotic Degeneration</i> Pintar, Frank A., Ph.D. \$88,600</p>
<p><i>Inhibition of NF-kB Enhances Apoptosis in Lung Cancer Cells</i> Milligan, Shawn A., M.D. \$96,400</p>	<p><i>The Role of Apoptosis During Acute Pancreatitis</i> Norman, James G., M.D. \$140,900</p>	<p><i>Mechanisms of Anti-DNA Production in Autoimmune Mice</i> Pisetsky, David S., M.D., Ph.D. \$62,550</p>
<p><i>Mechanisms of Altered Autonomic Reflexes after Myocardial Infarction</i> Minisi, Anthony J., M.D. \$115,700</p>	<p><i>Mechanism and Potentiation of a Th1 Cell-Directed Antitumor Response</i> Norton, Jeffrey A., M.D. \$152,000</p>	<p><i>Role of PPAR-alpha on Proximal Tubule Ischemic Cell Injury</i> Portilla, Didier, M.D. \$126,600</p>
<p><i>Dopamine and Renal NaCl Balance</i> Moe, Orson W., M.D. \$47,350</p>	<p><i>Acquisition of a Peptide Phenotype by Neuroendocrine Cells In Vivo</i> O'Connor, Daniel T., Jr., M.D. \$169,600</p>	<p><i>ACE Inhibition, Calcium Handling, and Remodeling in Heart Failure</i> Prabhu, Sumanth D., M.D. \$87,800</p>
<p><i>Complement Regulation in Fetomaternal Tolerance</i> Molina-Vicenty, Hector D., M.D. \$94,100</p>	<p><i>Beta-Adrenergic Blockade of Increased Conditionability in PTSD</i> Orr, Scott P., Ph.D. \$136,838</p>	<p><i>Sodium Resorptive Mechanisms and Blood Pressure Regulation</i> Pratt, John H., M.D. \$90,600</p>
<p><i>Suicide Genes for Controlled T Cell Ablation in Leukemia</i> Moolten, Frederick L., M.D. \$121,100</p>	<p><i>Regulation of Cholic Acid Formation: Its Role in Cholesterol Homeostasis</i> Pandak, William M., M.D. \$136,700</p>	<p><i>Prognostic Factors in Renal Cell Carcinoma</i> Presti, Joseph C., M.D. \$108,550</p>
<p><i>Enhancement of Tumor Uptake of Ga-67 by Photodegraded Nifedipine</i> Morton, Kathryn A., M.D. \$50,500</p>	<p><i>Molecular Mechanisms of Experimental Pancreatitis</i> Pandol, Stephen J., M.D. \$128,500</p>	<p><i>Membrane Transport Mechanisms in the Human Small Intestine</i> Ramaswamy, Krishnamurthy, Ph.D. \$113,350</p>
<p><i>Hepatic Membrane Transport in Health and Disease</i> Moseley, Richard H., M.D. \$51,350</p>	<p><i>The Effect of Alcohol Intake on Mineral Metabolism</i> Perry, Horace M., III, M.D. \$91,000</p>	<p><i>Molecular and Cellular Mechanisms of Muscle Atrophy</i> Rando, Thomas A., M.D., Ph.D. \$86,300</p>
<p><i>Cyclin-A Mediated Transcriptional Regulation</i> Mudryj, Maria, Ph.D. \$104,452</p>		<p><i>Interaction of Bile Acids with Gastrointestinal Cholinergic Receptors</i> Raufman, Jean-Pierre, M.D. \$68,300</p>

Summary of 1999 Research and Development Projects

Medical Research Service Projects (continued)

<p><i>Role of Chloride Channels in Oxidant-Induced Renal Cell Injury</i> Reeves, W. Brian, M.D. \$130,800</p>	<p><i>Organization and Lateralization of Affective Prosody in Brain</i> Ross, Elliott D., M.D. \$105,700</p>	<p><i>Mechanism of Action of Antiviral Drugs</i> Schinazi, Raymond F., Ph.D. \$125,000</p>
<p><i>Optical Mapping of Repolarization Patterns in the Long QT Syndrome</i> Restivo, Mark, Ph.D. \$133,469</p>	<p><i>RNA Editing of the T-cell Receptor in Peripheral Lymphocytes</i> Rubin, Donald H., M.D. \$114,100</p>	<p><i>Basis for the Age-Related Decline in the Gut Mucosal Immune Response</i> Schmucker, Douglas L., Ph.D. \$89,900</p>
<p><i>Chromosomal Gene Exchange and Resistance Transfer in Enterococci</i> Rice, Louis B., M.D. \$107,200</p>	<p><i>Role of MCSF in Glucocorticoid-Induced Osteoporosis</i> Rubin, Janet E., M.D. \$111,300</p>	<p><i>Mitotic Proteins in Myocardial Cells</i> Schneider, Jay W., M.D., Ph.D. \$90,600</p>
<p><i>Biomagnetic Activity of Ischemic Alimentary Tract Smooth Muscle</i> Richards, William O., M.D. \$166,388</p>	<p><i>IGF-I Induced Myelination of Sensory Axons</i> Russell, James W., M.D. \$56,550</p>	<p><i>Importance of Hormone Sensitive Lipase in Foam Cells in Atherosclerosis</i> Schotz, Michael C., Ph.D. \$129,700</p>
<p><i>Modulation of VEGF mRNA Turnover and Translation</i> Rigby, William F. C., M.D. \$105,200</p>	<p><i>Disturbance of Motoneuron Regulation in Spinal Injury</i> Rymer, William Z., M.D., Ph.D. \$110,763</p>	<p><i>Thyroid Hormone: A Potential Modulator of Aqueous Outflow in the Eye</i> Schwartz, Daniel M., M.D. \$124,500</p>
<p><i>Nitric Oxide in Airway Disease</i> Robbins, Richard A., M.D. \$66,400</p>	<p><i>Morphologic and Compositional Characterization of Carotid Artery Plaque</i> Saloner, David, Ph.D. \$124,800</p>	<p><i>The Biology of BCG Tumor Cell Interaction: Role of Interleukin-6</i> See, William A., M.D. \$120,650</p>
<p><i>Autocrin Regulation of Mesangial Cell Hexokinase Activity</i> Robey, Robert B., M.D. \$100,000</p>	<p><i>Induction and Effect of Intraprostatic Immunity to HER2/NEU and HER3</i> Salup, Raoul R., M.D. \$48,950</p>	<p><i>Neural Development, Plasticity and Regeneration</i> Seil, Fredrick J., M.D. \$62,500</p>
<p><i>Fibronectins Modulate Epithelial and Inflammatory Cell Interactions</i> Romberger, Debra J., M.D. \$29,150</p>	<p><i>Stem Cells as a Source of Dopaminergic Neurons for Brain Repair (Parkinson's Disease)</i> Sanchez-Ramos, Juan R., M.D., Ph.D. \$170,400</p>	<p><i>Allosteric Regulation of Intrinsic Tenase: A Novel Antithrombotic Target</i> Sheehan, John P., M.D. \$27,600</p>
<p><i>Hepatocyte Growth Factor & Vitamin D Therapy in Advanced Prostate Cancer</i> Roos, Bernard A., M.D. \$136,600</p>	<p><i>Effects of Mechanical Ventilation on Diaphragm Contractile Properties</i> Sassoon, Catherine S. H., M.D. \$115,850</p>	<p><i>Sodium-calcium Exchange and Transverse Tubules in Cardiac Hypertrophy</i> Shepherd, R. Neal, Ph.D. \$143,272</p>
<p><i>Improving Compliance with Metformin</i> Rosen, Marc I., M.D. \$33,650</p>	<p><i>The Role of Thyrotropin-Releasing Hormone (TRH) in Antidepressant Treatment</i> Sattin, Albert, M.D. Pekary, Albert Eugene, Ph.D. \$125,000</p>	<p><i>Regeneration and Neural Transplant Integration in Lesioned Hippocampus During Aging</i> Shetty, Ashok K., Ph.D. \$125,150</p>
<p><i>Cellular Heterogeneity, Alternans, and Structure Form Arrhythmia Substrate</i> Rosenbaum, David S., M.D. \$98,600</p>	<p><i>Vascular Cell Metabolism in Hemostasis</i> Schafer, Andrew I., M.D. \$48,600</p>	<p><i>Structural Neuroimaging in Kraepelinian and Non-Kraepelinian Schizophrenia</i> Shihabuddin, Lina, M.D. \$98,900</p>
<p><i>Age-Related Changes in Cartilage Matrix Promote CPPD Arthritis</i> Rosenthal, Ann K., M.D. \$51,200</p>	<p><i>The Role of Gap Junctions in the Anabolic Skeletal Actions of PTH</i> Schiller, Paul C., Ph.D. \$145,100</p>	<p><i>Gender Dependent Regulation of Hepatic Alcohol Dehydrogenase</i> Simon, Francis R., M.D. \$144,200</p>
<p><i>T-Cell Regulation in Autoimmune Arthritis</i> Rosloniec, Edward F., Ph.D. \$170,700</p>		

Summary of 1999 Research and Development Projects

Medical Research Service Projects (continued)

<p><i>Mechanism of Porphyria Caused by TCDD and Other Compounds</i> Sinclair, Peter, Ph.D. \$131,000</p>	<p><i>Mechanisms of Synaptic Integration in Central Neurons</i> Spain, William J., M.D. \$131,600</p>	<p><i>Mechanical Stretch of Vascular Cells</i> Sumpio, Bauer E., M.D., Ph.D. \$123,700</p>
<p><i>Osteopontin Expression in Heart and its Role in Myocardial Remodeling</i> Singh, Krishna, Ph.D. \$142,200</p>	<p><i>Isolation of Cervical Cancer Tumor Suppressor Gene</i> Srivatsan, Eri S, M.S., Ph.D. \$84,300</p>	<p><i>Hypothalamic and Basal Forebrain Regulation of Sleep and Arousal</i> Szymusiak, Ronald S., Ph.D. \$136,200</p>
<p><i>Muscle Metaboreceptor Desensitization in Heart Failure</i> Sinoway, Lawrence, M.D. \$114,500</p>	<p><i>Focal Sources of Atrial Fibrillation in Experimental Heart Failure</i> Stambler, Bruce S., M.D. \$112,600</p>	<p><i>The Cytokine Environment Determines Immune Proliferation and Apoptosis</i> Thompson, John S., M.D. \$75,100</p>
<p><i>Mechanisms of Ischemia-Induced Corporal Venous Occlusive Dysfunction</i> Siroky, Mike B., M.D. \$124,500</p>	<p><i>Evaluation of the Mechanism of Antibody Negative Hepatitis C Infection</i> Stapleton, Jack T., M.D. \$140,900</p>	<p><i>Homeostatic Efficiency of Tubuloglomerular Feedback</i> Thomson, Scott C., M.D. \$61,300</p>
<p><i>Sleep-disordered Breathing: Causes and Cardiovascular Consequences</i> Skatrud, James B., M.D. \$143,500</p>	<p><i>Preclinical Trials of Gene Transfer in the Treatment of Endstage Limb Ischemia</i> Stedman, Hansell H., M.D. \$135,700</p>	<p><i>Pulmonary Defenses to Opportunistic Infections in the Compromised Host</i> Toews, Galen B., M.D. \$148,600</p>
<p><i>Is the Human Fibroblast a Significant Mediator of Thyroid Disease?</i> Smith, Terry J., M.D. \$70,500</p>	<p><i>Streptococcal Toxic Shock Syndrome: Mechanisms of Vascular Dysfunction</i> Stevens, Dennis L., M.D., Ph.D. \$119,300</p>	<p><i>Gene Therapy in Spinal Cord Injury</i> Tuszynski, Mark H, M.D., Ph.D. \$137,000</p>
<p><i>Signal Transduction in Pneumocystis carinii</i> Smulian, A. George, M.B., B.Ch. \$130,200</p>	<p><i>Aging and Cardiac Sympathetic Nervous System Function</i> Stratton, John R., M.D. \$21,431</p>	<p><i>Control of CNS Progenitor Cell Development for Functional Restoration</i> U, Hoi Sang, M.D. \$113,600</p>
<p><i>Dysregulated Apoptosis and Resistance of Prostate Cancer to Chemotherapy</i> Smyth, Miriam J., Ph.D. \$3,600</p>	<p><i>Adenosine and the Basal Forebrain in the Control of Behavioral State</i> Strecker, Robert E., Ph.D. \$118,150</p>	<p><i>Molecular Mechanisms of Anesthesia: Antagonists of Volatile Anesthetics</i> Ueda, Issaku, M.D., Ph.D. Kamaya, Hiroshi, M.D., Ph.D. \$45,800</p>
<p><i>Antimicrobial Activity of Calprotectin</i> Sohnle, Peter G., M.D. \$35,200</p>	<p><i>Connective Tissue Degradation in Skin Cancers</i> Stricklin, George P., M.D., Ph.D. \$58,100</p>	<p><i>Regulation of Carbohydrate Metabolism</i> Uyeda, Kosaku, Ph.D. \$136,800</p>
<p><i>Pathogenesis of Diabetes Mellitus: Studies of Insulin Action and Calmodulin</i> Solomon, Solomon S., M.D. \$61,100</p>	<p><i>Neurotoxic Metabolite of Dopamine in Neuropathology of Parkinson's Disease</i> Strong, Randy, Ph.D. \$175,000</p>	<p><i>Senescent Fibroblasts: A Missing Link to Understanding Wound Chronicity</i> Vande Berg, Jerry S., Ph.D. \$86,662</p>
<p><i>Alcohol and Hepatocyte-Extracellular Matrix Interactions</i> Sorrell, Michael F., M.D. Tuma, Dean J., Ph.D. \$125,000</p>	<p><i>Reactivated Neurologic Herpetic Disease</i> Stroop, William G., Ph.D. \$142,600</p>	<p><i>Immunoregulation of Myelin-Specific T Lymphocytes</i> Vandenbark, Arthur A., Ph.D. \$175,000</p>
<p><i>Intestinal Microvascular Control During the Trauma of Hemorrhagic Shock</i> Spain, David A., M.D. \$84,800</p>	<p><i>Physiologic Effects of PRMST & Testosterone in the Debilitated Elderly</i> Sullivan, Dennis H., M.D. \$133,100</p>	<p><i>Follow-up of Psychological and Neurocognitive Gulf War Outcome: Relation to Stress</i> Vasterling, Jennifer J., Ph.D. \$81,750</p>

Summary of 1999 Research and Development Projects

Medical Research Service Projects (continued)

<p><i>Neurochemical Interactions Between Vitamin E and Apolipoprotein E</i> Vatassery, Govind T., Ph.D. \$149,900</p> <p><i>Regulation of Renal Distal Tubule Salt Transport Mechanisms</i> Velazquez, Heino, Ph.D. \$201,700</p> <p><i>Biochemical Pharmacology and Toxicology of Carboxylic Acid Conjugation</i> Vessey, Donald A., Ph.D. \$124,900</p> <p><i>Pharmacology and Molecular Modeling of Cytochrome P450 1A1 Inhibition</i> Vestal, Robert E., M.D. \$37,400</p> <p><i>Co-Distribution of Risk Factors in Families of Schizophrenics</i> Waldo, Merilyne C., Ph.D. \$102,564</p> <p><i>Regulation of Vascular Diacylglycerol Kinase</i> Walsh, James, M.D., Ph.D. \$96,200</p> <p><i>Inhibitory Mediators of Gastric Acid Secretion</i> Walsh, John H., M.D. \$123,500</p> <p><i>Neurochemistry of Post-Traumatic Epilepsy</i> Wasterlain, Claude, M.D. \$153,500</p>	<p><i>Alternative Splicing of the IR Gene</i> Webster, Nicholas J. G., Ph.D. \$165,100</p> <p><i>Effects of Glucocorticoids on Bone Cell Development and Remodeling</i> Weinstein, Robert S., M.D. \$78,250</p> <p><i>Mechanisms of Drug Induced Pulmonary Hypertension</i> Weir, Edward K., M.D. \$127,300</p> <p><i>Non-B Lactamase Mediated Antimicrobial Resistance in Bacteroides fragilis Group Organisms (V)</i> Wexler, Hannah M., Ph.D. \$74,950</p> <p><i>Immunopathogenesis of Histoplasmosis</i> Wheat, L. Joseph, M.D. \$120,100</p> <p><i>Recombinant Commensals for the Study of Mucosal Immunity and Immunologic Tolerance</i> Wilson, Kenneth H, M.D. \$102,600</p> <p><i>Matrix Metalloproteases in Prostate Cancer Progression</i> Wilson, Michael J., Ph.D. \$156,407</p> <p><i>Seizures and Neuroplasticity: Physiology and Biochemistry</i> Wilson, Wilkie A., Ph.D. \$106,450</p> <p><i>Ion Transport in the Collecting Duct</i> Wingo, Charles, M.D. \$133,500</p>	<p><i>Molecular Mechanisms of Androgen Regulation of Osteoblast Function</i> Wiren, Kristine M., Ph.D. \$175,400</p> <p><i>Murine Models of Immunodeficiency-Related CMV Auditory System Infections</i> Woolf, Nigel K., Sc.D. \$141,400</p> <p><i>Molecular and Genetic Studies of Bladder Tumorigenesis</i> Wu, Xue-Ru, M.D. \$124,300</p> <p><i>Glycolipid Function in Normal and Defective Macrophages</i> Yohe, Herbert C., Ph.D. \$135,278</p> <p><i>The Role of 5-HT2 Receptors in Atypical Antipsychotic Action</i> Young, Keith A., Ph.D. \$69,250</p> <p><i>Pigment Epithelium Removal and Transplantation</i> Zarbin, Marco A., M.D., Ph.D. \$122,200</p> <p><i>Protective Aspects of Antibodies Against HIV</i> Zolla-Pazner, Susan, Ph.D. \$67,650</p> <p><i>Role of Endothelin-1 in Hypocapnic-Induced Cerebral Vasoconstriction</i> Zuccarello, Mario, M.D. Rapaport, Robert M., Ph.D. \$73,600</p>
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Rehabilitation Research and Development Projects

<p><i>A Measurement of the Efficacy of an Adult Aural Rehabilitation Program</i> Abrams, Harvey, Ph.D. \$70,220</p> <p><i>Factors Contributing to Older Adult Disability in Rising from a Bed and from the Floor</i> Alexander, Neil, M.D. \$124,046</p> <p><i>Career Development Project</i> Auther, Linda, Ph.D. \$92,528</p>	<p><i>Prevention of Bone Loss in Acute and Chronic Spinal Cord Injury</i> Bauman, William, M.D. \$57,170</p> <p><i>Effects of Work Activity and Cognitive Rehabilitation on Schizophrenia: A Matching Study</i> Bell, Morris, Ph.D. \$190,800</p> <p><i>Evaluation of Robotic Upper Extremity Neuro-Rehabilitation</i> Bever, Jr., Christopher, M.D. \$100,000</p>	<p><i>Feasibility of a Cross Trained Rehabilitation Therapy Assistant on an Inpatient Rehabilitation Team:</i> Blake, Donna Jo, M.D. \$12,500</p> <p><i>The Effect of Hydrostatic Pressure on Intervertebral Disc Metabolism</i> Boden, Scott, M.D. \$54,443</p> <p><i>Synergy of Osteoinductive Protein and Electric Stimuli for Spinal Fusion</i> Boden, Scott, M.D. \$140,000</p>
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Summary of 1999 Research and Development Projects

Rehabilitation Research and Development Projects (continued)

<p><i>Electrical Control of Bowel and Bladder in Spinal Cord Injury Patients</i> Bodner, Donald, M.D. \$267,000</p>	<p><i>Finite Element and Gait Analysis: Tools for Prosthesis Design</i> Childress, Dudley, Ph.D. \$198,400</p>	<p><i>Electrical Control of Bowel and Bladder in Spinal Cord Injury Patients</i> Creasey, Graham, M.D. \$73,767</p>
<p><i>Investigation of Dynamic Prosthetic Function: Flexibility</i> Boone, David, CP. \$86,502</p>	<p><i>Generalized EPP Position Controller for Electric-Powered Upper-Limb Prostheses</i> Childress, Dudley, Ph.D. \$158,400</p>	<p><i>Home Bladder Monitoring: Biomechanics and Clinical Applications</i> Damaser, Margot, Ph.D. \$134,912</p>
<p><i>A Prospective Study of Plantar Foot Pressure and Diabetic Foot Ulcer Risk</i> Boyko, Edward, M.D., M.P.H. \$189,431</p>	<p><i>Technology Transfer of a Computer Aided Socket Fabrication Technique</i> Childress, Dudley, Ph.D. \$110,979</p>	<p><i>The Neural Basis of Stress Urinary Incontinence</i> Damaser, Margot, Ph.D. \$18,750</p>
<p><i>Long-Term Strength Training and Functional Status in Older Adults</i> Brandon, L. Jerome, Ph.D. \$105,800</p>	<p><i>Validation and Field Testing of a National Pain Treatment Outcome System</i> Clark, Michael, Ph.D. \$63,050</p>	<p><i>UTI Prophylaxis Using Bacterial Interference Following SCI</i> Darouiche, Rabih O., M.D. \$116,709</p>
<p><i>Graded Weight-Bearing Exercise for Improving Leg Movement After Stroke</i> Brown, David A., Ph.D. \$127,407</p>	<p><i>Assessing Outcomes of Pulmonary Rehabilitation</i> Collins, Eileen, Ph.D., \$43,421</p>	<p><i>Outcome Assessment of the Rehabilitation of the Visually Impaired</i> De l'Aune, William R., Ph.D. \$151,750</p>
<p><i>Improving Stepping-Over Responses in the Elderly Using Simulated Objects</i> Brown, David, Ph.D. \$93,700</p>	<p><i>Characterizing Postural Stability in Relation to Age and Susceptibility to Falling</i> Collins, James, Ph.D. \$169,038</p>	<p><i>Outcomes of the Outpatient Rehabilitation of the Visually Impaired</i> De l'Aune, William R., Ph.D. \$81,750</p>
<p><i>Differential Pressure Walking Assistance</i> Burgar, Charles G., M.D. \$91,700</p>	<p><i>Behavioral and Functional Problems in Dementia Patients with Sensory Loss</i> Connell, Bettye Rose, Ph.D. \$76,182</p>	<p><i>Effects of Stimulus Variability on Speech Recognition</i> Dirks, Donald, Ph.D. \$99,016</p>
<p><i>Mechanically Assisted Upper Limb Movement for Assessment and Therapy</i> Burgar, Charles G., M.D. \$108,671</p>	<p><i>Center of Excellence for Wheelchair and Related Technology-WART</i> Cooper, Rory A., Ph.D. \$263,500</p>	<p><i>Gait Mechanics of the Partial Foot Amputee</i> Dorostkar, Mohammad G., M.D. \$74,483</p>
<p><i>Dichotic Listening and Audiologic Rehabilitation in Elderly Patients</i> Carter, Anne, Ph.D. \$88,933</p>	<p><i>Effects of Cushion and Back Support on Wheelchair Ride Comfort</i> Cooper, Rory A., Ph.D. \$157,300</p>	<p><i>Quantifying Spoken Language Handicap in Aphasia</i> Doyle, Patrick, Ph.D. \$64,600</p>
<p><i>Prediction and Early Detection of Damage Accumulation in Human Tendons</i> Carter, Dennis, Ph.D. \$118,200</p>	<p><i>Improvement of Control for Electric Powered Wheelchair</i> Cooper, Rory A., Ph.D. \$6,250</p>	<p><i>Characterizing Measures of Stroke Rehabilitation Outcomes</i> Duncan, Pamela W., Ph.D. \$63,500</p>
<p><i>Mechanical Regulation of Peri-Prosthetic Tissue Differentiation</i> Carter, Dennis, Ph.D. \$139,685</p>	<p><i>Manual Wheelchair User Upper Extremity Pain</i> Cooper, Rory A., Ph.D. \$66,767</p>	<p><i>Effects of Aging Motor Unit Firing Behavior-Continuation</i> Erim, Zeynep, Ph.D. \$161,317</p>
<p><i>Stimulation of Bone Healing Using Bone-Matrix Related Biomaterials</i> Chakkalakal, Dennis, Ph.D. \$120,000</p>	<p><i>Restoration of Proximal Arm Function by FES</i> Crago, Patrick, Ph.D. \$256,400</p>	<p><i>Biochemical Analysis of Synovial Activation in Joint Dysfunction</i> Evans, Christopher, Ph.D. \$149,752</p>

Summary of 1999 Research and Development Projects

Rehabilitation Research and Development Projects (continued)

<p><i>Development of an Automated Technique for the Clinical Evaluation of Tinnitus</i> Fausti, Stephen A., Ph.D. \$68,000</p>	<p><i>VA RR&D Brain Rehabilitation Center</i> Gonzalez-Rothi, Leslie J., Ph.D. \$261,212</p>	<p><i>Cause of Male Infertility After Spinal Cord Injury and its Prevention</i> Huang, Hosea, Ph.D. \$192,671</p>
<p><i>Investigation of Individualized High-Frequency Regions for Early Detection of Ototoxicity</i> Fausti, Stephen A., Ph.D. \$253,600</p>	<p><i>Development of Improved Middle Ear Prostheses</i> Goode, Richard, M.D. \$59,300</p>	<p><i>The Effect of Compressive Force on the Disc In Vivo</i> Hutton, William, D.Sc. \$79,150</p>
<p><i>Veterans Affairs Center for Rehab Auditory Research</i> Fausti, Stephen A., Ph.D. \$688,000</p>	<p><i>Cortical Sensorimotor Reorganization in Spinal Cord Injury</i> Green, Joseph, M.D. \$104,000</p>	<p><i>Gonadal Steroids as Rehabilitative Agents After Partial Spinal Cord Injury</i> Jones, Kathryn, Ph.D. \$116,200</p>
<p><i>Improved Bone-Formation Through VEGF</i> Fava, Roy, Ph.D. \$25,000</p>	<p><i>Functional Restoration of Grasp in Quadriplegia</i> Hentz, Vincent R., M.D. \$214,194</p>	<p><i>Promotion of Functional Recovery Following Spinal Cord Injury</i> Jones, Kathryn, Ph.D. \$250,150</p>
<p><i>A Computer-Controlled Power Wheelchair Navigation System</i> Fehr, Linda, M.S. \$30,250</p>	<p><i>Effects of Chronic Pain and Dynamic Exercise on Pain Patients</i> Hoffman, Martin, M.D. \$28,650</p>	<p><i>Frequency Selectivity Assessment: Implications for Auditory Rehabilitation</i> Kane, James, Ph.D. \$24,650</p>
<p><i>A Computerized Device for Fabricating Sockets with Variable Stiffness</i> Gard, Steven, Ph.D. \$103,760</p>	<p><i>Impact of Occupational Therapy on the Health Status of Elderly Veterans</i> Holleman, Jr., Donald, M.D. \$128,000</p>	<p><i>Electric Field Effects on Slow Axonal Transport Components in SCI</i> Khan, Talat, Ph.D. \$141,942</p>
<p><i>Investigation of the Functional Biomechanics of Normal and Lower-Limb Amputee Gait</i> Gard, Steven, Ph.D. \$85,515</p>	<p><i>Prevention of Recurrent Pressure Ulcers After Myocutaneous Flap</i> Holmes, Sally, M.D. \$99,300</p>	<p><i>Fracture Occurrence and Healing in Spinal Cord Injured Patients</i> Kiratli, Beatrice Jenny, Ph.D. \$64,425</p>
<p><i>A Study to Determine the Biomechanical Effects of Shock-Absorbing Pylons</i> Gard, Steven, Ph.D. \$103,998</p>	<p><i>Changes in Auditory Abilities with Hearing Aid Use</i> Holte, Lenore, Ph.D. \$49,450</p>	<p><i>Static Versus Dynamic FES Exercise and Heart Disease Risk Factors in SCI</i> Kiratli, Beatrice Jenny, Ph.D. \$112,700</p>
<p><i>FDG-PET Imaging in the Management of the Painful Total Hip Prosthesis</i> Garino, Jonathan, M.D. \$88,025</p>	<p><i>Clinical Testing of the Enhanced VA-Cyberware BK Prosthetics Optical Digitizer</i> Houston, Vern, Ph.D. \$95,179</p>	<p><i>The Effects of Spinal Instrumentation</i> Kirkpatrick, John, M.D. \$55,225</p>
<p><i>In Vivo Tissue Response to In Vitro Synthesized Bone</i> Garino, Jonathan, M.D. \$108,500</p>	<p><i>Evaluation of Prosthetics Hand Held Digitization & Virtual Casting Systems</i> Houston, Vern, Ph.D. \$47,800</p>	<p><i>The Impact of Blind Rehabilitation on Quality of Life in Visually Impaired Veterans</i> Kuyk, Thomas, Ph.D. \$49,950</p>
<p><i>New Strategy for Improved Outcome in Occult Periprosthetic Musculoskeletal Infections</i> Garvin, Kevin, M.D. \$88,900</p>	<p><i>Orthopedic Footwear CAD/CAM and Diabetic Risk of Pedal Ulceration</i> Houston, Vern, Ph.D. \$263,254</p>	<p><i>Polestriding Exercise and Vitamin E for Management of Claudication Pain</i> Langbein, W. Edwin, Ph.D. \$78,810</p>
<p><i>Effects of Common Drugs on Recovery After Stroke</i> Goldstein, Larry, M.D. \$54,800</p>	<p><i>Disuse Induced Articular Cartilage Atrophy, Over-Exercise and Arthritis</i> Howell, David, M.D. \$44,750</p>	<p><i>Quantitative Study and Augmentation of Cough in Persons with Spinal Cord Injury</i> Langbein, W. Edwin, Ph.D. \$72,100</p>

Summary of 1999 Research and Development Projects

Rehabilitation Research and Development Projects (continued)

<p><i>Comparing Off-Loading Modalities to Heal Diabetic Foot Wounds</i> Lavery, Lawrence, DPM \$92,000</p>	<p><i>Design of New Toilet Inserts for Disabled and Elderly Veterans</i> Malassigne, Pascal, M.D. \$76,800</p>	<p><i>Sweat Response in MS Patients During Exercise - A Pilot Study</i> Mulcare, Janet, Ph.D. \$21,300</p>
<p><i>The Effect of Exercise Training on Hemoglobin A1c's of Type II Diabetics in a Controlled Randomized</i> Leach, Carol, MHA \$48,600</p>	<p><i>Design of a New Collapsible Bowel Care-Shower Chair for SCI Veterans</i> Malassigne, Pascal, M.D. \$100,207</p>	<p><i>Anatomical Basis of Osseoperception</i> Myers, Robert, Ph.D. \$105,000</p>
<p><i>Physical Exercise Strength Training to Improve the Health of Dialysis Patients</i> Leaf, David, M.D. \$75,250</p>	<p><i>Redesign & Evaluation of a Device for Rehabilitation of People with Visual Field Loss</i> Mancil, Rickilyn, M.A. \$49,900</p>	<p><i>Quantifying Auditory Perceptual Learning Following Hearing Aid Fitting</i> Nelson, Charles, M.S. \$99,300</p>
<p><i>Biomechanics of the Glenohumeral Joint in Spinal Cord Injury Patients</i> Lee, Thay, M.S. \$120,300</p>	<p><i>Use of Tretinoin to Prevent Pressure Ulcers in Spinal Cord Injury Patients</i> Markowski, Janusz, M.D. \$12,175</p>	<p><i>A Minimal Test Effort for Patients in Pain Using the Back Analysis System</i> Oddsson, Lars \$185,420</p>
<p><i>Biomechanics of the Patellofemoral Joint</i> Lee, Thay, M.S. \$54,900</p>	<p><i>Problem Solving Strategies of Brain Injured and Normal Subjects</i> Marshall, Robert C., Ph.D. \$62,000</p>	<p><i>Preventing Slips & Falls in the Elderly - Effects of Simple Biomechanical Interventions</i> Oddsson, Lars \$190,250</p>
<p><i>Mechanical Basis for Surgical Transfer of Forearm Muscles</i> Lieber, Richard, Ph.D. \$256,600</p>	<p><i>Clinical Evaluation of a Dermofluorometer in Diabetic Patients</i> Marshall, William, M.D. \$11,575</p>	<p><i>Fracture Prediction for Femurs with Wear Particle-Induced Osteolytic Lesions Associated with Joint Replacement Prostheses</i> Orr, Tracy, Ph.D. \$100,233</p>
<p><i>Functional Magnetic Cough in Patients with Spinal Cord Injury</i> Lin, Vernon, M.D. \$115,600</p>	<p><i>Long-Term Evaluation of Maxillary Sinus Bone Grafts with Dental Implants</i> McAnear, Jon Tom, D.D.S. \$24,120</p>	<p><i>Effects of Functional Incidental Training (FIT) in VA NHCU Residents</i> Ouslander, Joseph, M.D. \$159,384</p>
<p><i>Functional Magnetic Micturition in Patients with Spinal Cord Injury</i> Lin, Vernon, M.D. \$55,900</p>	<p><i>An In-Vivo Model for Cartilage Regeneration</i> McGuire, Jr., Hunter, M.D. \$218,900</p>	<p><i>Prorgam Analysis and Review Section Administration</i> Ouslander, Joseph, M.D. \$164,127</p>
<p><i>Prevention of Bladder Stones Following Spinal Cord Injury</i> Linsenmeyer, Todd, M.D. \$100,900</p>	<p><i>Development of Quality of Life Measures for Use in Dysphagia</i> McHorney, Colleen, Ph.D. \$83,300</p>	<p><i>Physical Conditioning in Management of Chronic Venous Insufficiency</i> Padberg, Jr., Frank, M.D. \$70,500</p>
<p><i>Eustachian Tube and Middle-ear Prosthesis Implants: Chronic Ear Disease</i> Linstrom, Christopher, M.D. \$69,057</p>	<p><i>Electrophysiology Indices: Auditory Discrimination and Cognitive Processes</i> Moenter, Darlene, Ph.D. \$72,000</p>	<p><i>Motor-Unit Firing Patterns in Hemiplegia</i> Patten, Carolyn, Ph.D. \$95,712</p>
<p><i>A Biodegradable Device for Peripheral Nerve Repair</i> Madison, Roger, Ph.D. \$109,451</p>	<p><i>Electrical Activation of the Diaphragm for Ventilatory Assist</i> Mortimer, J. Thomas, Ph.D. \$234,000</p>	<p><i>Effect of Spinal Implants on the Response of the Lumbar Spine Under In Vivo Compressive Loads</i> Patwardhan, Avinash, Ph.D. \$101,100</p>
<p><i>Development of the Scanning Laser Ophthalmoscope for Low Vision Rehabilitation - Phase 2</i> Maino, Joseph, O.D. \$207,900</p>	<p><i>Physical Activity in Persons with Multiple Sclerosis</i> Mulcare, Janet, Ph.D. \$170,700</p>	

Summary of 1999 Research and Development Projects

Rehabilitation Research and Development Projects (continued)

<p><i>Effect of the Type of Annular Incision on the Postoperative Stability of a Herniated Lumbar Disc</i> Patwardhan, Avinash, Ph.D. \$40,432</p> <p><i>Microphotodiode Tiles as Prostheses for the Restoration of Visual Function</i> Peachey, Neal, Ph.D. \$127,645</p> <p><i>FES Control of the Upper Extremity in SCI</i> Peckham, P. Hunter, Ph.D. \$411,750</p> <p><i>Functional Electrical Stimulation Center of Excellence</i> Peckham, P. Hunter, Ph.D. \$878,400</p> <p><i>Bicycle Exercise Feedback as an Intervention for those with Gait Deficits</i> Perell, Karen, Ph.D. \$85,101</p> <p><i>Prostate Compliance of Patients with Spinal Cord Injuries</i> Perkash, Inder, M.D. \$72,600</p> <p><i>Improvements in a New Technique for Increasing Movement after Stroke</i> Pidikiti, Rama D., M.D. \$93,075</p> <p><i>Outcome of Lower Extremity Constraint-Induced Therapy After Stroke</i> Pidikiti, Rama D., M.D. \$195,800</p> <p><i>Effects of Medications on Spasticity in Spinal Cord Injury: A Quantitative Study</i> Priebe, Michael, M.D. \$123,200</p> <p><i>Clinical Trial of Footwear in Patients with Diabetes</i> Reiber, Gayle, Ph.D. \$147,399</p> <p><i>Colonic Rehabilitation with Microstimulators After Spinal Cord Injury</i> Riedy, Lisa, Ph.D. \$89,300</p>	<p><i>Effects of Acute Spinal Cord Injury on Colonic Motility and Tone</i> Riedy, Lisa, Ph.D. \$49,200</p> <p><i>Effects of VA BRC Mobility Training on Gait, Posture and Balance</i> Riolo, Lisa, PhD \$49,975</p> <p><i>Restricted Useful Field of View as a Risk Factor for Falls in Older Adults</i> Riolo, Lisa, Ph.D. \$79,950</p> <p><i>Role of Attention Status in Fall Risk in Older Adults</i> Riolo, Lisa, Ph.D. \$70,352</p> <p><i>Motion and Velocity Encoder for Monitoring Essential or Neurological Tremor (Movement)</i> Robinson, Charles, D.Sc. \$61,275</p> <p><i>Physical Performance Measures for Young, Middle-Aged and Elderly Manual Wheelchair Users</i> Rodgers, Mary, Ph.D. \$124,500</p> <p><i>Employment of Infra-Red Beacons as Guides for People with Visual Disability</i> Ross, David, M.S.E.E \$37,485</p> <p><i>Back Exercise Prescription and Implementation by Surface Electromyographic Procedures</i> Roy, Serge H., Sc.D. \$50,167</p> <p><i>Functional Neuromuscular Stimulation (FNS) for Chronic Stroke Patients</i> Ruff, Robert, M.D., Ph.D. \$12,500</p> <p><i>Restoration of Gait for Acute Stroke Patients Using FES</i> Ruff, Robert, M.D., Ph.D. \$169,200</p> <p><i>Advanced Accelerometric Motion Analysis System (Design/Development)</i> Sabelman, Eric, Ph.D. \$97,600</p> <p><i>Clinical Trial of Artificial Peripheral Nerve Graft</i> Sabelman, Eric, Ph.D. \$211,652</p>	<p><i>Reliability and Validity of Accelerometric Gait and Balance Diagnosis</i> Sabelman, Eric, Ph.D. \$193,107</p> <p><i>Biomechanics of Foot Deformities and Alternatives for Surgical Correction</i> Sangeorzan, Bruce, M.D. \$100,075</p> <p><i>RR&D Center for Amputation, Prosthetics, Limb Loss Prevention</i> Sangeorzan, Bruce, M.D. \$740,642</p> <p><i>Neurotrophin Secreting Schwann Cells for Treatment of Spinal Cord Injury</i> Sayers, Scott, Ph.D. \$37,500</p> <p><i>Fatigue Strength of Composite Femoral Components for Hip Arthroplasty</i> Schutte, Jr., H. Del., M.D. \$48,740</p> <p><i>FES on Spinal Cord Injured Patients: Effects on Muscle Blood Flow and Metabolism</i> Scremin, A.M. Erika, M.D. \$60,500</p> <p><i>Evaluation of Limb Blood Flow Measurements with H2150 PET to Determine Level of Amputation</i> Scremin, Oscar, M.D., Ph.D. \$37,500</p> <p><i>Acclimitization in Monaurally Fitted Adults</i> Silman, Shlomo, Ph.D. \$87,977</p> <p><i>Effects of Aerobic Exercise on Gait and Functional Performance in Hemiparetic Stroke</i> Silver, Kenneth, M.D. \$110,200</p> <p><i>Mechanical Loading Effects on Cartilage Repair and Regeneration</i> Smith, Robert Lane, Ph.D. \$53,800</p> <p><i>Mechanical Loading Effects on Cartilage Repair and Regeneration</i> Smith, Robert Lane, Ph.D. \$65,884</p> <p><i>Home-Based Pulmonary Rehabilitation via a Telecommunications System</i> Sparrow, David, D.Sc. \$98,161</p>
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Summary of 1999 Research and Development Projects

Rehabilitation Research and Development Projects (continued)

Randomized Controlled Trial of Upper-Extremity Exercise Training in Patients with COPD
Sparrow, David, D.Sc.
\$62,500

Effectiveness of a Home-Based Pulmonary Rehabilitation Program
Spurzem, John, M.D.
\$73,562

Team Characteristics and Patient Outcomes on VA Rehab Services
Strasser, Dale, M.D.
\$137,600

Cortical Contributions to the Recovery of Motor Function
Strick, Peter, Ph.D.
\$194,425

Visual Rehabilitation with Retinal Prosthetic Microtiles
Stubbs, Jr., Evan, Ph.D.
\$36,375

Orthostatic Manipulation of Blood Flow and Cognitive Functions in the Elderly
Swamy, Lalitha, M.D.
\$26,750

Assessment of Reading Capabilities of the Parafoveal Retina and Evaluation of Techniques to
Szlyk, Janet P., Ph.D.
\$337,175

Evaluation of Central and Peripheral Vision Enhancement Devices for Driving
Szlyk, Janet P., Ph.D.
\$86,400

Predictors of Driving Performance & Successful Mobility Rehab in Patients with Medical Eye Conditions
Szlyk, Janet P., Ph.D.
\$119,600

Exercise, Standing and Ambulation with Implanted FES Systems
Triolo, Ronald, Ph.D.
\$290,925

Development of an Assistive Robot for Effective Health Care Delivery
Van Der Loos, Hendrik, Ph.D.
\$162,279

Driver's Simulation Environment for Arm Therapy: A Pilot Study
Van Der Loos, Hendrik, Ph.D.
\$37,275

Noninvasive Recording of Bladder Pressure in Elderly Males
Walter, James, Ph.D.
\$15,150

Treatment of Urinary Incontinence in Women: Use of an Information System
Walter, James, Ph.D.
\$12,250

Evaluation of Deficit-Oriented Treatments for Aphasic Naming Disorders
Wambaugh, Julie, Ph.D.
\$167,600

Impact of Low Vision and Rehabilitation on Elder Literacy
Watson, Gale, M.A., Ed.D.
\$119,040

Rehab R&D Center for Restoration of Function in SCI & Multiple Sclerosis
Waxman, Stephen, M.D., Ph.D.
\$239,179

Fading-in of Right Hemispatial Information in the Treatment of Unilateral Neglect
Webster, Jeffrey, Ph.D.
\$95,800

Development of an Externally Powered Prosthetic Hand for Persons with Partial Hand Amputations
Weir, Richard, Ph.D.
\$106,659

Cultural Influence on Aphasia in African Americans
Wertz, Robert, Ph.D.
\$83,335

Sensitivity and Specificity of a Clinical Examination of Swallowing
Wertz, Robert, Ph.D.
\$112,556

Predicting Real-World Visual Problems in the Elderly from Vision Tests
White, Janis, Ph.D.
\$85,000

Evaluation of Word-Recognition Performance with Sentence Materials
Wilson, Richard, Ph.D.
\$119,000

Biological Responses in the Pathogenesis of Aseptic Loosening
Wooley, Paul, Ph.D.
\$174,900



Note of Appreciation

We are deeply grateful to all veterans who have participated in VA research studies. Without the cooperation of thousands of veteran patients, high quality health care research would not be possible.

Veterans' partnership with VA investigators allows us to conduct research that contributes to the health of veterans and all Americans.

Copies of this annual report and other VA Research and Development information are available on the World Wide Web at:

<http://www.va.gov/resdev> or on the intranet at *<http://vaww.va.gov/resdev>*

Look under “What’s New?” to see recent additions to the R&D web page.

For additional information on VA Research and Development activities, contact:

Office of Research and Development (12)

Veterans Health Administration

Department of Veterans Affairs

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