



# VA Research Currents

## RR&D sets \$11.1 million for new centers

**T**hree newly established VA rehabilitation research centers, with a total budget of more than \$11.1 million over five years, will spearhead the development of artificial retinas to restore sight to blind veterans, and the testing of new therapies for veterans with spinal cord injury.

The **Center for Innovative Visual Rehabilitation**, at the Jamaica Plains VA Medical Center, part of the VA Boston Health Care System, will focus on the development of a retinal prosthesis to restore vision in cases of retinitis pigmentosa, the leading cause of inherited blindness; and age-related macular degeneration (ARMD), the leading cause of blindness among veterans and the general population. Scientists at the center, led by Joseph F. Rizzo III, MD, will also team up with clinicians in caring for and educating veteran patients, especially those with ARMD. Collaborating with VA investigators on the project will be researchers at the Massachusetts Eye and Ear Infirmary, Harvard Medical School, and the Massachusetts Institute of Technology.

The **Center for Anabolic Therapies in Spinal Cord Injury**, at the Bronx (New York) VA Medical Center, will explore the use of anabolic steroids and other pharmaceutical agents to treat the secondary disabilities of spinal cord

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## Auditory REAP funded

VA's Rehabilitation Research and Development Service has committed more than \$1.3 million over five years to expand auditory and vestibular research at the James H. Quillen VA Medical Center in Mountain Home, Tenn. The funding comes from VA's Research Enhancement Awards Program (REAP), intended to create cores of investigative activity in key research areas.

The Auditory and Vestibular Function REAP, directed by Richard H. Wilson, PhD, will study hearing loss and balance disorders, especially in older veterans. For example, one VA-funded study already under way is examining whether "habituation"

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Update from the Cooperative Studies Program ...

## New clinical trials to probe PTSD, prostate cancer, other conditions

By John R. Feussner, MD, MPH, *Chief R&D Officer and CSP Director*; and Joe Gough, MA, *CSP Program Manager*

**T**he Cooperative Studies Program (CSP) will initiate several new studies in fiscal year 2002. These studies seek to increase our understanding of the causes of and treatments for diseases such as prostate cancer, post-traumatic stress disorder (PTSD), arteriosclerosis, vascular disease and Parkinson's disease.

The first study, "Selenium and Vitamin E Prostate Cancer Prevention Trial," or "SELECT," will assess the rates of prostate cancer among 32,400 healthy volunteer patients from VA and non-VA medical centers. Patients will be assigned to one of four treatment groups and receive: selenium alone, vitamin E, selenium plus vitamin E, or placebo. VA is collaborating with the National Cancer Institute on this 12-year study.

CSP will also conduct a parallel, epidemiologic cohort study within the main SELECT trial. The cohort study will examine racial differences for common chronic conditions—for example, prostate cancer, stroke and hypertension—and for health outcomes and resource use among 16,000 veterans. The study will also ascertain possible explanatory risk factors (medical, dietary, lifestyle, genetic, or other) for these differences and for the development of specific illnesses.

In fall 2001, with assistance from the Department of Defense, CSP will initiate a trial titled "Cognitive Behavioral Treatment for PTSD in Women Veterans." The study

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## Recent publications and presentations

“Comparison of Outcomes of Coronary Stenting Versus Conventional Coronary Angioplasty in the Department of Veterans Affairs Medical Centers.” Charles Maynard, PhD; Steven M. Wright, PhD; Nathan R. Every, MD; James L. Ritchie, MD. **Brockton (SMW), Seattle (CM, NRE, JLR).** *American Journal of Cardiology*, June 2001.

“Effectiveness of Various Methods for Accomplishing Mandatory Annual Reviews.” Linda Laxson, RN, BSN, CIC; Douglas Blankenship, RN, MSN; Jan Kemp, RN, MSN. **Denver.** 25th Annual Educational Conference and Meeting of the Association of Professionals in Infection Control and Epidemiology, June 2001.

“Homocysteine-Induced Alterations in Fibrinogen Function and Fibrin Clot Structure in Vivo.” Maureane Hoffman, MD, PhD. **Durham.** Second Annual Conference on Arteriosclerosis, Thrombosis and Vascular Biology of the American Heart Association, May 2001.

“Obesity” (book chapter). Polly Hitchcock Noel, PhD. **San Antonio.** *Clinical Evidence: A Compendium of the Best Available Evidence for Effective Health Care*, June 2001. (Publication of the *British Medical Journal*.)

“Psychiatric Care Management For Chronic Addictive Disorders: Conceptual Framework.” Mark L. Willenbring, MD. **Minneapolis.** *American Journal of Addictions*, June 2001.

“Reduction in Stroke with Gemfibrozil in Men with Coronary Heart Disease and Low HDL Cholesterol.” Hanna Bloomfield Rubins, MD, MPH; Viken Babikian, MD; Lawrence M. Brass, MD; Dorothea Collins, ScD;

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injury (SCI). SCI, which affects some 40,000 veterans, often involves problems with breathing, digestion, bowel movements, and cardiovascular function. According to center director William A. Bauman, MD, anabolic therapies offer new hope for easing many of the adverse medical side effects of SCI. One proposed project, for example, will combine the anabolic steroid *oxandrolone* with standard physical therapy to restore function in chronic SCI patients who have lost muscle tone and function due to an acute illness. Serving as associate director of the Bronx center will be physiologist Ann M. Spungen, EdD.

The **Center of Excellence in Functional Recovery in Chronic Spinal Cord Injury**, at the Miami VA Medical Center, will study issues relating to spasticity, pain management, recovery of motor and sensory function, and other areas of critical importance to SCI patients seeking to regain their independence. The center will be affiliated with the Miami Project to Cure Paralysis at the University of Miami School of Medicine, a leading SCI research center; and with the Tampa VA Medical Center.

Director Marca L. Sipski, MD, and associate director Craig J. Alexander, PhD, are noted for their studies of the effects of SCI on sexual response. They produced the video *Sexuality Reborn*, funded by the Paralyzed Veterans of America, which is used widely as an educational tool for SCI patients and their partners.

According to Dr. Sipski, the Miami center will serve as an important resource within the VA health system for SCI research, care and education. “One of our goals will be to strengthen the existing network of VA investigators working on spinal cord injury,” said Dr. Sipski, “and to cultivate a community of clinician-scientists dedicated to helping spinal-cord-injured patients and their families.” ■

Laura Wexler, MD; Stephen Wagner, MD; Vassilios Papademetriou, MD; Gale Rutan, MD (for the **VA-HIT Study Group**, based at several centers). *Circulation*, June 12, 2001.

“The Reliability and Validity of the Global Fatigue Index.” Jill E. Bormann, PhD, RN, CS; Martha J. Shively, PhD, RN; Allen L. Gifford, MD. **San Diego.** *Journal of the Association of Nurses in AIDS Care*, May – June 2001.

“Secondary Typing of Mycobacterium Tuberculosis Isolates with Matching IS6110 Fingerprints from Different Geographic Regions of the United States.” Kathleen D. Eisenbach, PhD; Mac D. Cave, PhD. **Little Rock.** *Journal of Clinical Microbiology*, May 2001.

“Stress Hormone Dysregulation at Rest and After Serotonergic Stimulation Among Alcohol-Dependent Men with Extended Abstinence and Controls.” Robert M. Anthenelli, MD; Thomas D. Geraciotti Jr., MD; Richard L. Hauger, MD. **Cincinnati (RMA, TDG), San Diego (RLH).**

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# VA/NIH roundtable explores future of prosthetics

**W**e have the technology to think out of the box,” said biomedical engineer Gerald E. Loeb, MD, as part of a talk on “bionic neurons” at a June 25 conference on prosthetics research in Rockville, Md. The event, sponsored by VA’s Rehabilitation Research and Development Service and the National Center for Medical Rehabilitation Research (NCMRR), part of the National Institutes of Health (NIH), brought together 22 scientists, clinicians and amputee advocates from VA, NIH, universities, and high-tech firms to discuss potentially fruitful areas for prosthetics research.

Mindy Aisen, MD, director of VA’s Rehabilitation Research and Development Service, expressed VA’s desire to enhance its own prosthetics research program and, more importantly, advance the field in general.

“That’s why we called this roundtable,” said Dr. Aisen. “We have a healthcare system with 172 hospitals, central procurement, a technology transfer program, and a strong commitment to [bringing technology from] ‘bench to bedside.’” She said VA is ready to sponsor large clinical trials and otherwise advance prosthetics research for America’s veterans and for the international community of amputees. “We’re not after the glory of one particular agency—the idea is simply to do the right thing.”

Participants engaged in a lively roundtable discussion and heard a series of 10-minute presentations on topics ranging from robotic limbs, tissue engineering and computerized design and manufacture to service-delivery models and the measurement of functional outcomes for prosthesis wearers.

Participating VA investigators included Joseph M. Czerniecki, MD, and Bruce Sangeorzan, MD, of the VA Puget Sound Healthcare System; Dudley Childress, PhD, of the VA Chicago Healthcare System; and Robert R. Myers, PhD, of the VA San Diego Healthcare System.

Dr. Myers discussed osseointegration, a phenomenon whereby bone

“When there is no communication between clinicians and scientists, you end up with a beautiful device that no one wants to wear.”

integrates with titanium and does not reject the metal over time as it does other “biocompatible” materials. He described how artificial legs can be threaded onto specially designed titanium bolts carefully implanted in the stump through special drilling procedures, and cited success stories of European patients with the devices who are active and “leading very normal lives.” The technology, pioneered in Sweden, is used widely for dental implants but not yet for artificial limbs.

Mark Pitkin, PhD, of Tufts University School of Medicine, showed slides of Russian children injured by land mines, before and after being fitted with prostheses through a Tufts-Russia partnership that he touted as a model of international partnership.

NCMRR director Michael Weinrich, MD, also focused attention on the

needs of land mine survivors, calling for a national consortium of prosthetics experts to provide technical assistance in foreign countries. “We have fantastic numbers of individuals, often children, with horrific limb injuries. The surgical and prosthetic treatment of these people is often not of a quality we would like.”

Hugh Herr, PhD, of the “Leg Lab,” part of the Artificial Intelligence Lab at the Massachusetts Institute of Technology (MIT), emphasized the need for better computer models that simulate human walking, and better communication between scientists and clinicians.

“When there is no communication between clinicians in the field and scientists in the lab, you end up with a beautiful device that no one wants to wear,” he said.

Frederick Downs Jr., who lost an arm in Vietnam and today serves as VA’s chief consultant for Prosthetic and Sensory Aids, stressed the need for research to develop “new designs for upper-extremity prostheses that operate more like a hand and look less like a hook.”

Other ideas raised for future investigation included: conducting basic research on pain; looking at gender differences and other diversity issues among amputees; exploring ways to improve the “machine-body” interface between the prosthesis socket and the residual limb; evaluating various components using computer modeling; developing new ways to control prostheses, both through the internal neuromuscular impulses of the user and externally generated electronic signals; and testing how supplying external power to artificial limbs affects the body’s metabolism. ■

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exercises can help older patients who experience dizziness when they move. Another line of research focuses on factors affecting word and speech recognition. Study results may help audiologists select and fit hearing aids for their patients.

According to Dr. Wilson, the Quillen VAMC is an ideal setting for the audiology REAP, as it already employs five full-time, VA-salaried doctorate-level research audiologists and is recruiting for a sixth. Each June, the site hosts one of the nation's premier audiology conferences, the Appalachian Spring Conference.

"One unique aspect of our staff is the range of expertise within the field of audiology," said Dr. Wilson. "In addition to clinical responsibilities, each co-investigator on the REAP has secured funding through different programs within VA, such as the Medical Research Service and the Seattle Epidemiology Research Information Center." Serving as associate director of the REAP will be geriatrician Ronald C. Hamdy, MD. ■

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will compare Prolonged Exposure (PE) therapy with Present Centered (PC) therapy in 384 women veterans with PTSD who were exposed to traumatic events during military service. PE therapy includes education and exposure to memories of the trauma, while PC therapy focuses on providing emotional support. Both treatments are designed to improve patients' mental health and functioning.

In late 2001, CSP will initiate three surgical trials. The first trial, "Outcomes Following Myocardial Revascularization: On and Off Cardiopulmonary Bypass," will compare outcomes from two types of coronary bypass surgery: "on-pump," where surgery is performed with the heart stopped and blood kept circulating by a cardiopulmonary pump; and "off-pump," where surgery is performed on a beating heart.

The second surgical trial, "Open Versus Endovascular Repair (OVER) Trial for Abdominal Aortic Aneurysms (AAA)," will compare the current,

standard open surgical technique for AAA with a newer, less invasive endovascular surgical repair. Mortality, morbidity, quality of life, health care utilization, and other outcomes will be compared between the treatment groups.

Finally, in 2001, "A Comparison of Staged Subthalamic Nucleus to a Staged Pallidal Procedure for Patients with Refractory Parkinson's Disease" will assess the effectiveness of deep-brain stimulation of two separate regions of the brain that play a role in Parkinson's disease. This will be the largest trial ever conducted of surgical treatments for the disease.

Questions on any of these trials may be directed to Dan Bruneau, Research and Development Communications, at (410) 962-1800, ext. 289, or [dan.bruneau@hq.med.va.gov](mailto:dan.bruneau@hq.med.va.gov). ■

**Next VA R&D**

**Hotline Conference Call:**  
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