



Department of Defense

# Congressionally Directed Medical Research Programs

## Military Relevant Research Programs

Promoting a Healthy and Fit Force



**CDMRP Vision:** Find and fund the best research to eradicate diseases and support the warfighter for the benefit of the American public.

**CDMRP Mission:** Provide hope by promoting innovative research, recognizing untapped opportunities, creating partnerships, and guarding the public trust.

*U.S. Army Medical Research  
and Materiel Command*





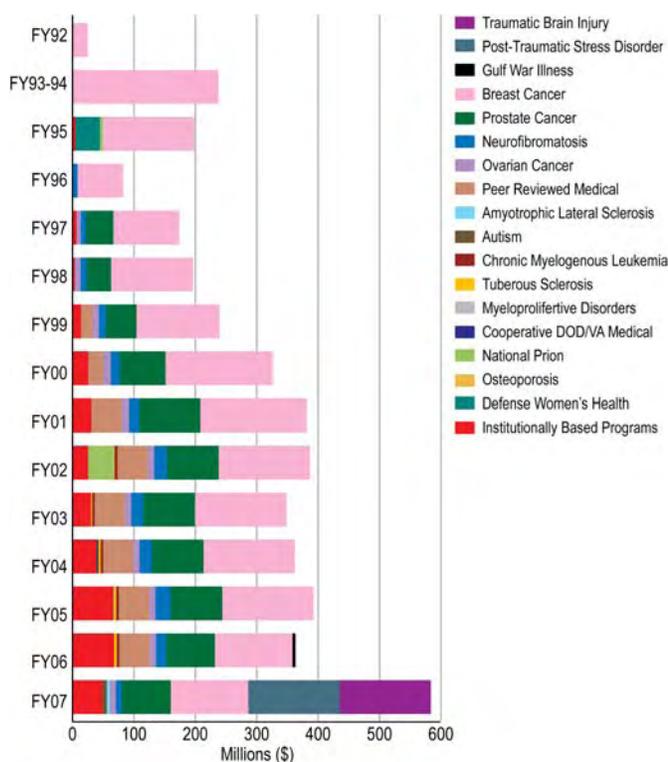
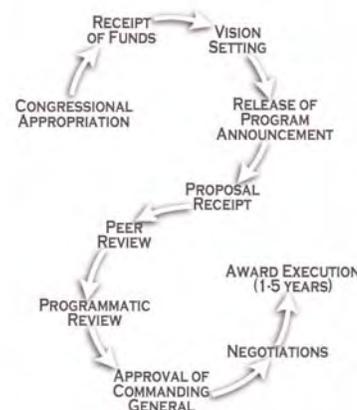
# Congressionally Directed Medical Research Programs Military Research Programs

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## Congressionally Directed Medical Research Programs

**History:** The Congressionally Directed Medical Research Programs (CDMRP) was born from a powerful grassroots effort led by the breast cancer advocacy community that convinced Congress to appropriate funds for breast cancer research. This enabled a unique partnership among the public, Congress, and the military. The CDMRP has grown to encompass multiple targeted programs and has received over \$4 billion (B) in appropriations from its inception in fiscal year 1993 (FY93) through FY07. Funds for the CDMRP are added by Congress to the Department of Defense (DOD) budget to provide support for multiple targeted research programs, including those focused on the warfighter such as the Post-Traumatic Stress Disorder/Traumatic Brain Injury (PTSD/TBI) Research Program, Peer Reviewed Medical Research Program (PRMRP), Gulf War Veterans' Illnesses



Research Program (GWVIRP), National Prion Research Program (NPRP) and the Amyotrophic Lateral Sclerosis Research Program (ALSRLP). The CDMRP program management model shown at the right includes a two-tier review process for proposal evaluation recommended by the Institute of Medicine. The first tier of evaluation is a scientific peer review of proposals against established criteria for determining scientific merit. The second tier is a programmatic review of proposals that is conducted by an integration panel that compares submissions to each other and recommends proposals for funding based on scientific merit and program goals and priorities.

Since FY92, the CDMRP has managed approximately \$4.4B in congressional appropriations for peer-reviewed research designed to prevent, control, and cure disease. Through FY06, approximately 7,500 awards have been made to advance health care solutions via extramural grants, contracts, and cooperative agreements.

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## Military Relevant Research Programs

### A. Post-Traumatic Stress Disorder and Traumatic Brain Injury Research Program

The CDMRP began managing the DOD PTSD/TBI Research Program in response to U.S. Troop Readiness; Veterans' Care; Katrina Recovery; and Iraq Accountability Appropriations Act, Public Law 110-28, which provided \$150 million (M) for research on PTSD and \$150M for research on TBI. A key priority of the PTSD/TBI Research Program is to complement ongoing DOD efforts to ensure the health and readiness of our military forces. The overall goal of the PTSD/TBI Research Program is prevent, mitigate, and treat the effects of traumatic stress and traumatic brain injury on function, wellness, and overall quality of life for service members as well as their caregivers and



families. The PTSD/TBI Research Program promotes research that will advance the prevention, detection, diagnosis, and treatment of military-relevant PTSD and TBI. The FY07 PTSD/TBI Research Program Joint Program Integration Panel (JPIP), composed of leading experts from the four military services, the Office of the Assistant Secretary of Defense (Health Affairs), the Department of Veterans Affairs, and Department of Health and Human Services, was responsible for developing the program's vision, investment strategy, and funding time line. Based on the investment strategy developed by the

JPIP, the program offers a variety of funding mechanisms including: Concept, New Investigator, Investigator-Initiated Research (intramural and extramural), Advanced Technology-Therapeutic Development (intramural and extramural), Multidisciplinary Research Consortium, and Clinical Consortium Awards. Program announcements for 12 extramural and 4 intramural (DOD and Veterans Affairs) award mechanisms were released in July 2007. The deadline for proposal submission for these award mechanisms began in August and will continue through November 2007. Award negotiations for funded projects will be completed by September 30, 2008.

### CDMRP-Funded PTSD and TBI Projects

Although no awards have been made for the PTSD/TBI Research Program, the CDMRP has funded PTSD and TBI research through the PRMRP. These projects include:

- A Phase III evaluation 30 years post-injury to examine delayed effects of head injury on health and nervous system function.
- Identification of agents that have a preventive effect on post-traumatic epilepsy.
- Investigation of the use of propranolol following combat memory reactivation to weaken traumatic combat memories.
- Determination of whether alterations of diurnal cortisol concentrations and specific risk genes can predict the development of PTSD.
- Development of animal models to characterize the role of progressive atrophy after TBI as well as evaluate potential therapeutic strategies.



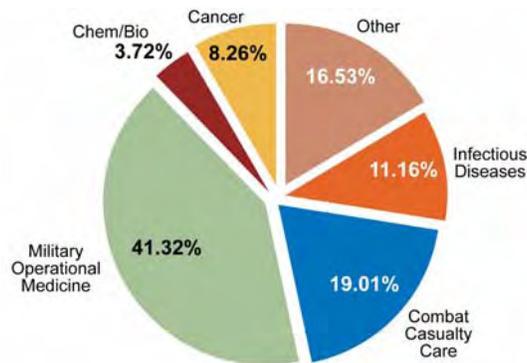
### B. Peer Reviewed Medical Research Program

The PRMRP was established in FY99 by a congressional appropriation that provided \$19.5M to the DOD to establish a medical research program that focused specifically on issues pertinent to U.S. military forces. The U.S. Army Medical Research and Materiel Command (USAMRMC) became the Executive Agent for this program. Programmatic oversight is provided by representatives from the four military services, the Assistant Secretary of Defense for Health Affairs, and the Departments of Veterans Affairs and Health and Human Services. From FY99 through FY06, Congress appropriated a total of \$344.5M through the PRMRP to fund scientifically meritorious peer-reviewed research focused on military health issues



in multiple topic areas. Since the inception of the PRMRP, the key funding award mechanism has been the Investigator-Initiated Research Award, covering basic to clinical research. Other funding award mechanisms have been added to promote collaborative research including new and existing program projects. Additionally, PRMRP investigators have made significant contributions in the area of advanced technology and applied research through the Advanced Technology mechanism. A total of 248 awards have been made using various funding mechanisms through FY06. The PRMRP portfolio can be divided into several research categories that align with the Army's Research Area Directorates. Many of these categories also align with the priorities of the Armed Services Biomedical Research Evaluation and Management Committee's Joint Technology Coordinating Groups.

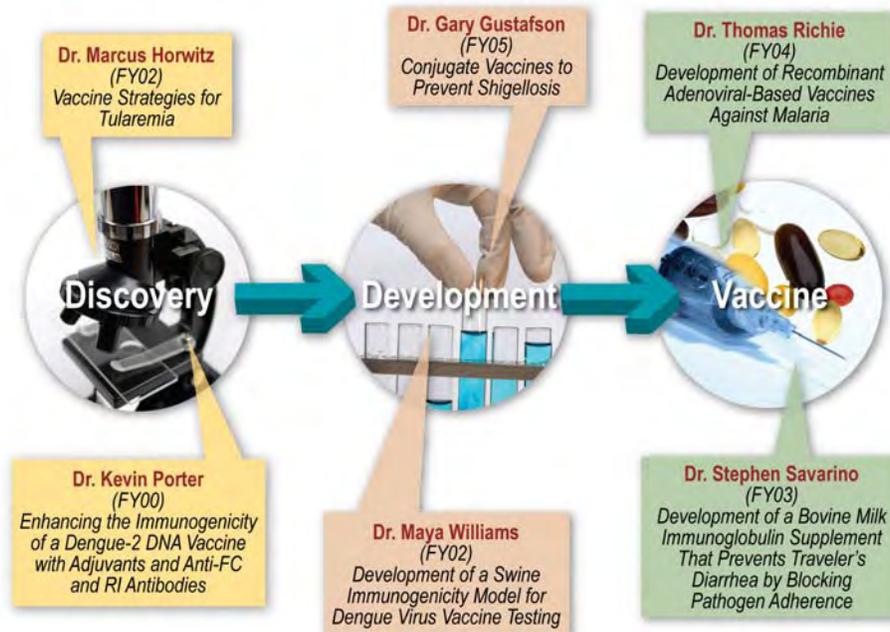
## Portfolio FY99–FY06



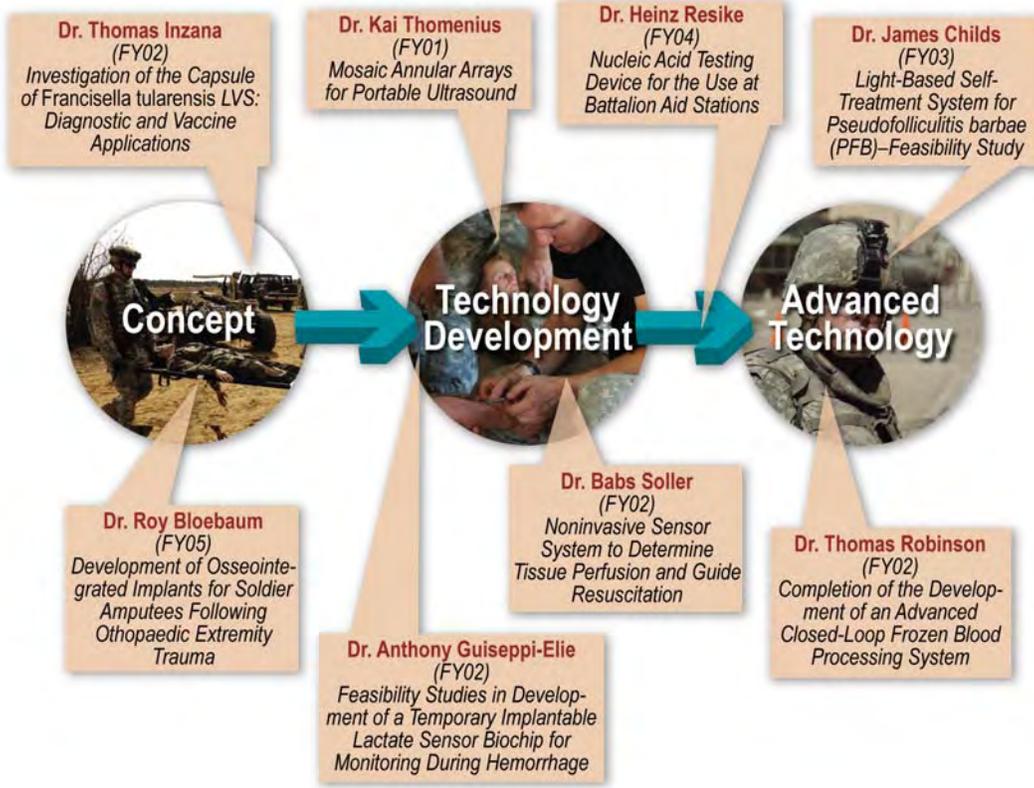
## Product Development

The PRMRP is advancing military health-related research by funding innovative research in both preclinical and clinical stages, for vaccines, drug therapies, and Internet-based technologies as well as devices to prevent, detect, and treat disease.

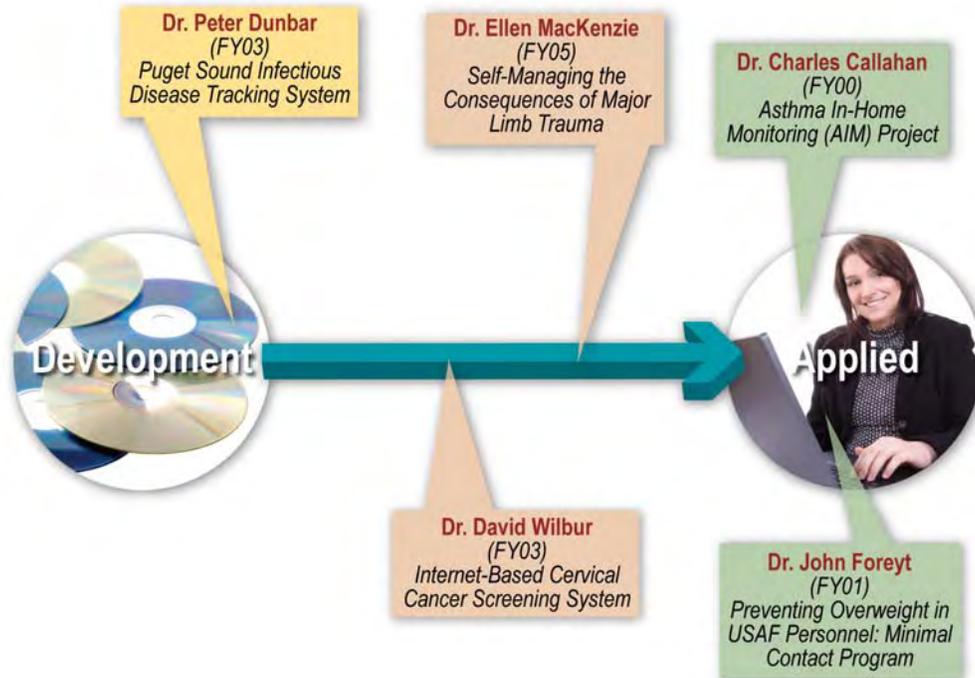
### Vaccine Development

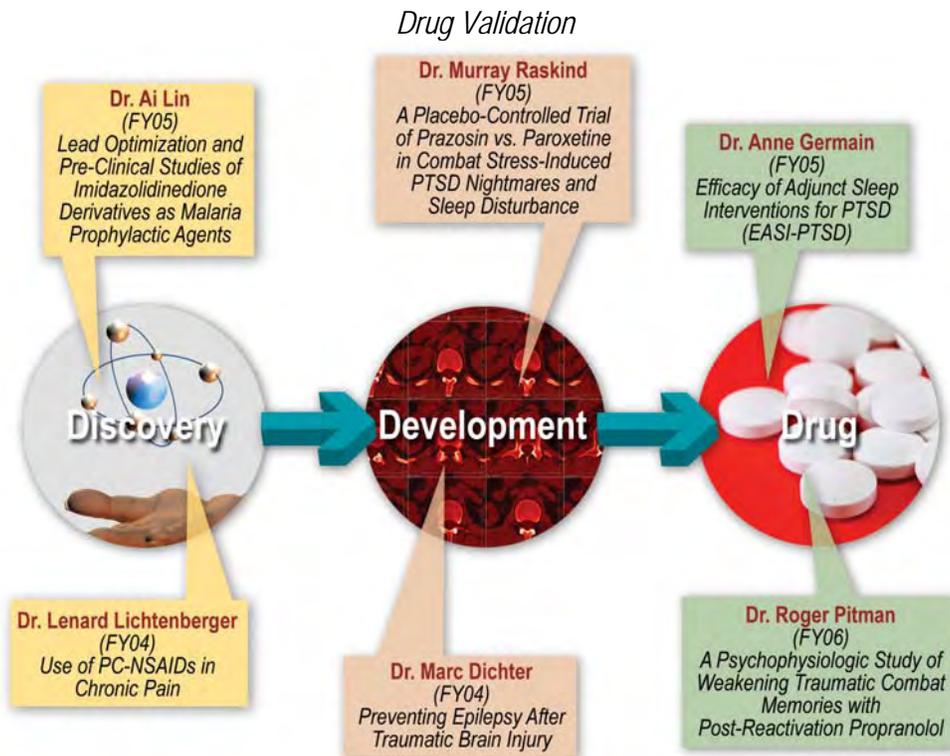


*Technology Development*



*Internet-Based Technology*





### C. Gulf War Veterans' Illnesses Research Program

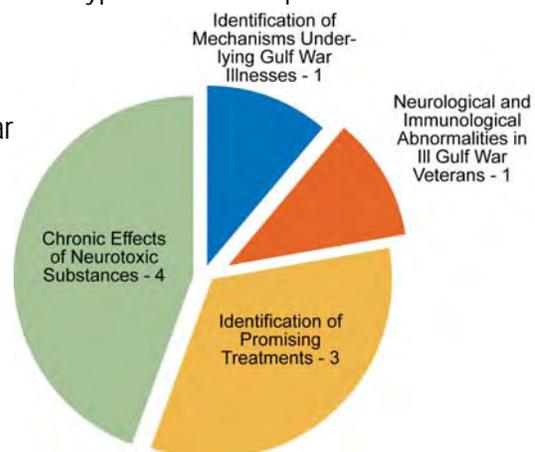


The GWVIRP was established in FY94 to study the health effects of warfighters deployed in the 1991 Persian Gulf War. From FY94 to FY05, the GWVIRP was managed by the USAMRMC Military Operational Medicine Research Program (MOMRP). In FY02, under direction from the Assistant Secretary of Defense (Health Affairs), the GWVIRP shifted its focus from retrospective



assessment of Gulf War Veterans' illnesses to prospective protection of current and future service members put into operational environments similar to those of the 1991 Persian Gulf deployment. The CDMRP assumed management responsibility for the GWVIRP in FY06. The two key priority areas for the FY06 GWVIRP were "Identification and evaluation of currently available treatments" and "Identification of objective indicators of pathology that distinguish ill from healthy veterans." Proposals were requested through two award mechanisms: Investigator-Initiated Research and Exploration-Hypothesis Development Awards. Nine proposals were funded in the following research areas:

- Identification of mechanisms underlying Gulf War illnesses
- Neurological and immunological abnormalities in ill Gulf War veterans
- Identification of promising treatments
- Chronic effects of neurotoxic substances



Additionally, research pertaining to Gulf War illnesses has also been funded through the PRMRP. The FY00 and FY01 PRMRP appropriation language included Gulf War illnesses in the congressionally mandated research topic areas supported by the PRMRP. The PRMRP has also funded studies addressing Gulf War illnesses through the Military-Relevant Disease Management topic area. Significant findings from these studies include:

- Compared chronic medical conditions, psychological conditions, general health perceptions, and functional status between Gulf War veterans and other (non-Gulf War) veterans in a longitudinal study and determined an increase in negative life experiences among Gulf War veterans
- Determined that metallothionein-1 and metallothionein-2 play a protective role in the response to exposure to depleted uranium
- Determined that exposure to a class of insecticides called organophosphates, may contribute to the increased incidence of pulmonary dysfunction and asthma in Gulf War veterans
- Demonstrated that high pesticide exposure significantly reduced mean reaction times, executive functioning, and visual memory differences in Gulf War veterans

### D. National Prion Research Program

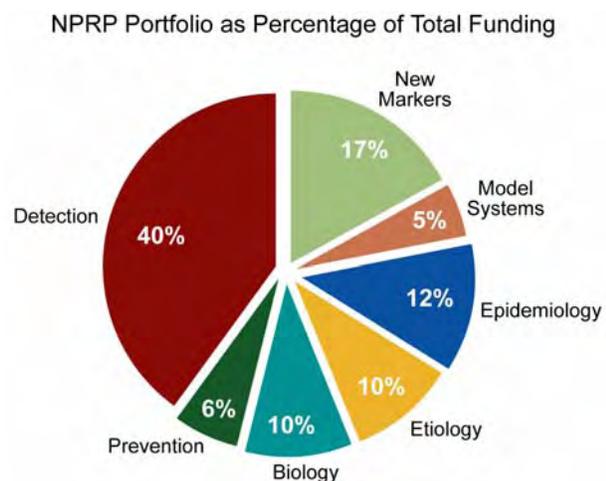
Health threats posed by prion disease appear to involve the food and blood supplies and put military beneficiaries in affected areas overseas at risk. Such areas include any location in which cattle have been diagnosed with prion disease and anywhere beef may have been shipped from these areas for human consumption. People who have ingested contaminated beef may unknowingly transmit prions via blood donations. Concerns over potential contamination the food and blood supply prompted Congress to provide the largest single appropriation history for prion-related research—\$42.5M—to establish the NPRP in FY02. The primary goal of the FY02 NPRP was to develop a rapid, sensitive, and reproducible test for the detection of misfolded prions suitable for use as an antemortem diagnostic test as well as a screening assay. In support of this goal, proposals also were solicited to better understand the prevention, transmission, and pathogenesis of prion disease to include chronic wasting disease, as there is concern that chronic wasting disease of free-ranging deer and elk could be a source of human prion disease. Proposals with military relevance were specifically sought. Award recipients began research in mid-2003 with performance periods ranging from 3 to 5 years. Congress has not provided any follow-up appropriations for the NPRP.



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### The NPRP Portfolio

The 38 proposals funded by the NPRP represent an exceptionally broad range of projects that bring new methodologies and additional expertise to the detection, prevention, and treatment of prion diseases.



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## NPRP Research Highlights

### Individual Success Stories

- Significant progress toward the development of a sensitive and specific diagnostic test for prion disease by clarifying the biology of disease progression, elucidating chemical conditions for precipitation of pathogenic prion protein PrP<sup>Sc</sup>, and establishing and validating new diagnostic protocols.
- Development of improved immunochemical methods for antemortem detection of PrP<sup>Sc</sup>.
- Identification of promising prophylactic and therapeutic compounds for prion diseases, including pentosan polysulfate and porphyrins.
- Identification of gene expression patterns caused by Creutzfeldt-Jakob disease infection.

### E. Amyotrophic Lateral Sclerosis Research Program

Amyotrophic Lateral Sclerosis (ALS) also known as "Lou Gehrig's disease," is an incurable, degenerative neurological disorder. For reasons that are not understood, the nerve cells of the brain and spinal cord that control voluntary muscle movement gradually deteriorate. Average life expectancy after diagnosis ranges from 2 to 5 years. There are no known therapies to effectively stop the progression of ALS. In FY05 and FY07, Congress appropriated funds for ALS Therapy Development for the Gulf War Research Program. This program was administered by MOMRP in FY05 but was transferred to the CDMRP with the FY07 \$5M appropriation. Men and women who have served in the U.S. military are 60 percent more likely to develop a fatal muscle-wasting disease such as ALS than civilians. The overall goal of the ALS Research Program is to fund scientifically meritorious research that will lead to better treatments for ALS. The benefits of the research from this program will extend to warfighters and their family members as well as retirees and other beneficiaries of the Military Health System.

