

DOD Congressionally Directed Medical Research Programs



Congressionally Directed Medical Research Programs (CDMRP)

Overview of the Gulf War Illness Research Program (GWIRP)

Presented to
Research Advisory Committee on Gulf War Veterans' Illnesses
Department of Veterans Affairs

E. Melissa Kaime, MD, FACP
Captain, Medical Corps, USN
Director, CDMRP

29 June 2010


US Army Medical Research and Materiel Command



1



DOD Congressionally Directed Medical Research Programs




Introduction


- ◆ Overview of the CDMRP
- ◆ GWIRP Funding History
- ◆ FY06-FY10 CDMRP Management Summary

US Army Medical Research and Materiel Command

3 *The views expressed in this presentation are those of the author and do not reflect the official policy of the Department of the Army, Department of Defense, or U.S. Government.*





DOD Congressionally Directed Medical Research Programs



Partnerships

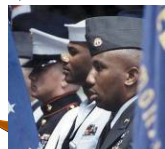

Advocates

- ◆ Demonstrate need
- ◆ Participate at all levels
- ◆ Passion and perspective
- ◆ GWIRP Consumers are ill Gulf War veterans
- ◆ In touch with a network of other GW veterans



Congress

- ◆ Add funds to budget
- ◆ Targeted guidance
- ◆ Opportunity to leverage



Researchers

- ◆ Innovation and gaps
- ◆ Risk/Benefit
- ◆ Product-oriented


DOD

- ◆ Program management
- ◆ Regulatory and budget requirements
- ◆ Institute of Medicine (IOM) model


IMPROVE HEALTH (CURE)

US Army Medical Research and Materiel Command

4




DOD Congressionally Directed Medical Research Programs




CDMRP Unique Features


- ◆ Funds added to the Department of Defense budget by Congress – not part of the POM*
- ◆ Two-tier formal review of proposals – IOM model
- ◆ Consumer advocates involved throughout process
- ◆ Vision is adapted yearly: Facilitates rapid change to address research gaps, develop new award mechanisms, and devise investment strategy
- ◆ Fund highly innovative research
- ◆ Funding flexibility
 - ▼ No “pay line”
 - ▼ Second level review based on impact, relevance, and portfolio balance
 - ▼ No out-year budget commitments



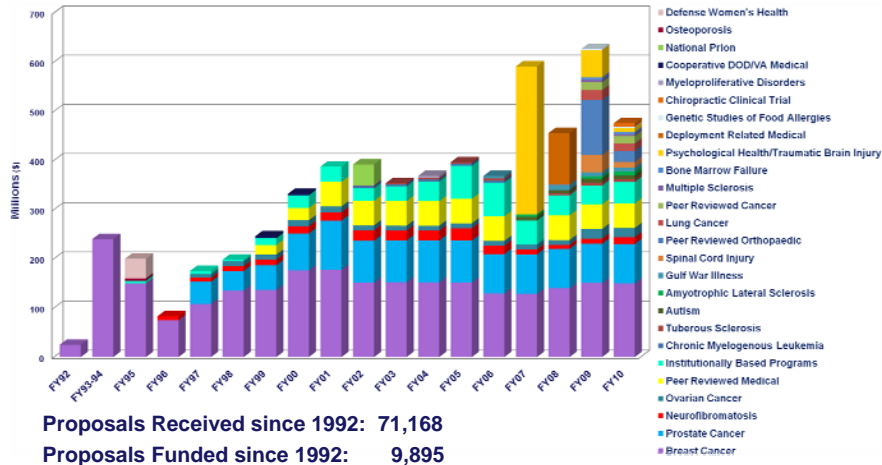
*Program Objectives Memorandum US Army Medical Research and Materiel Command

5 

DOD Congressionally Directed Medical Research Programs




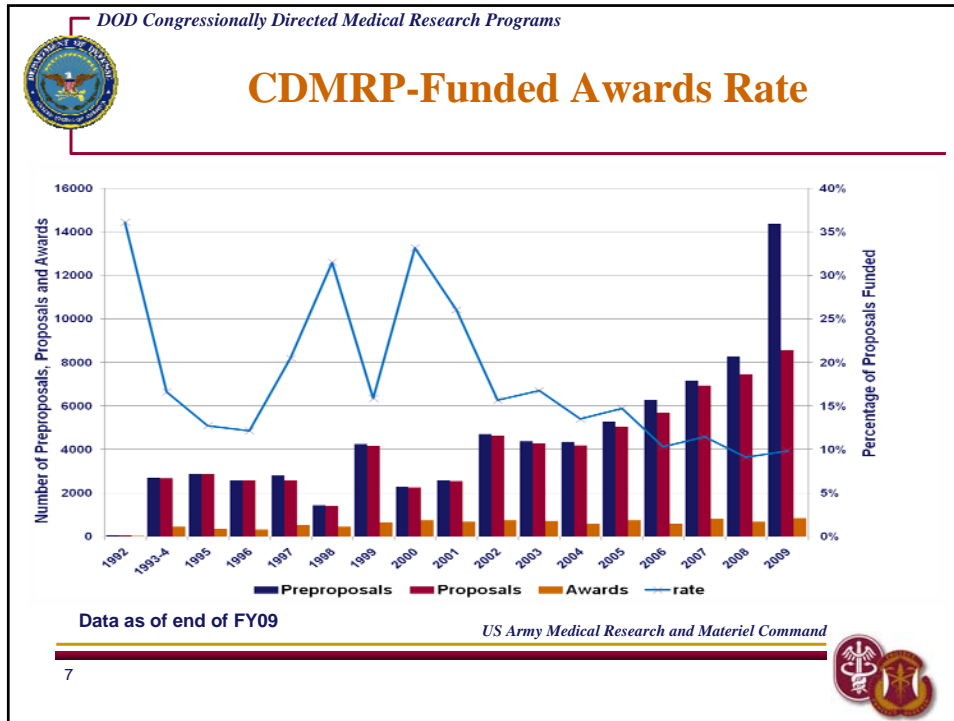
Scope of CDMRP Funds and Awards



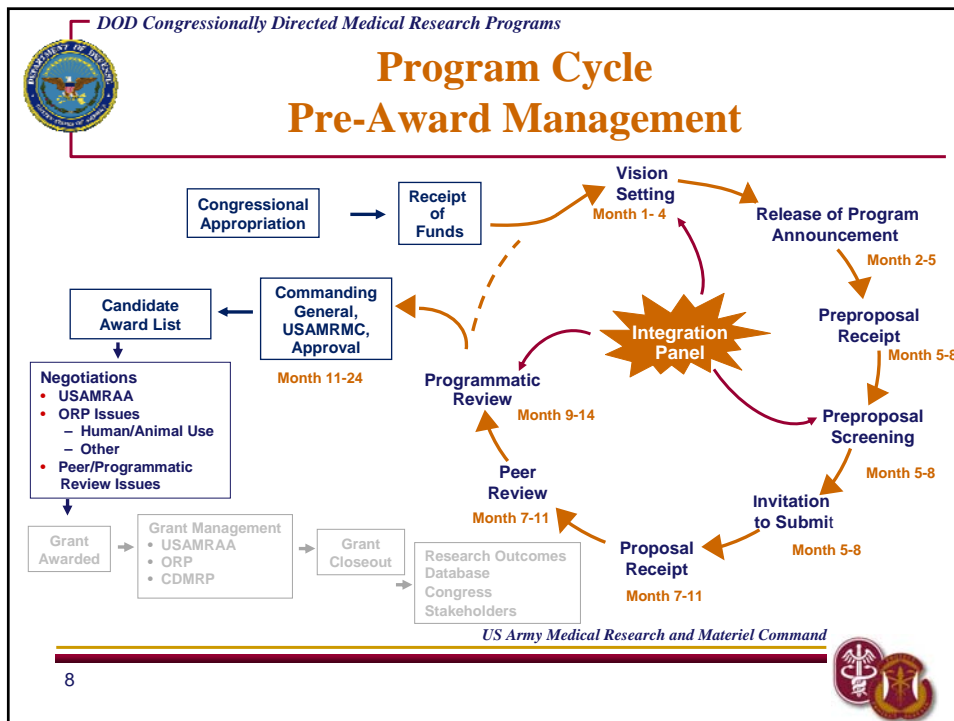
Proposals Received since 1992: 71,168
Proposals Funded since 1992: 9,895

US Army Medical Research and Materiel Command

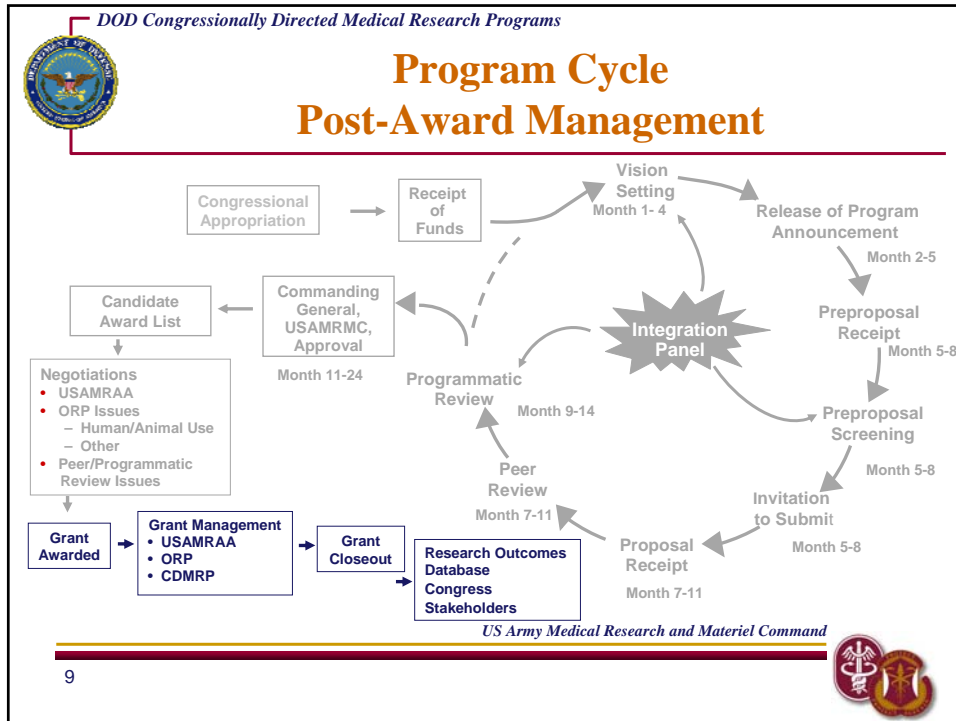
6 

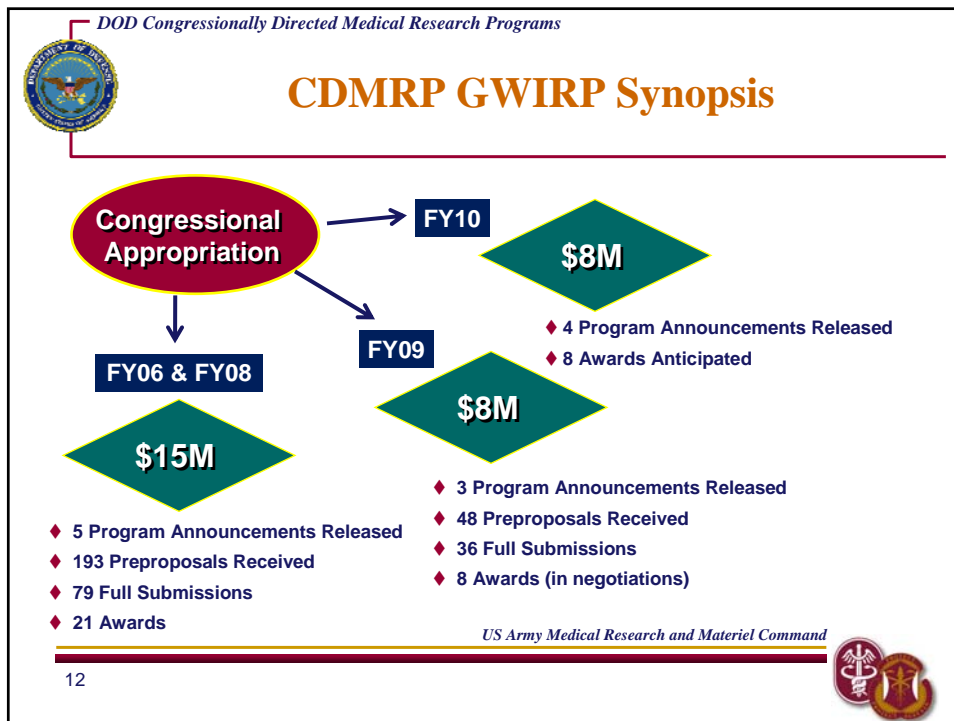
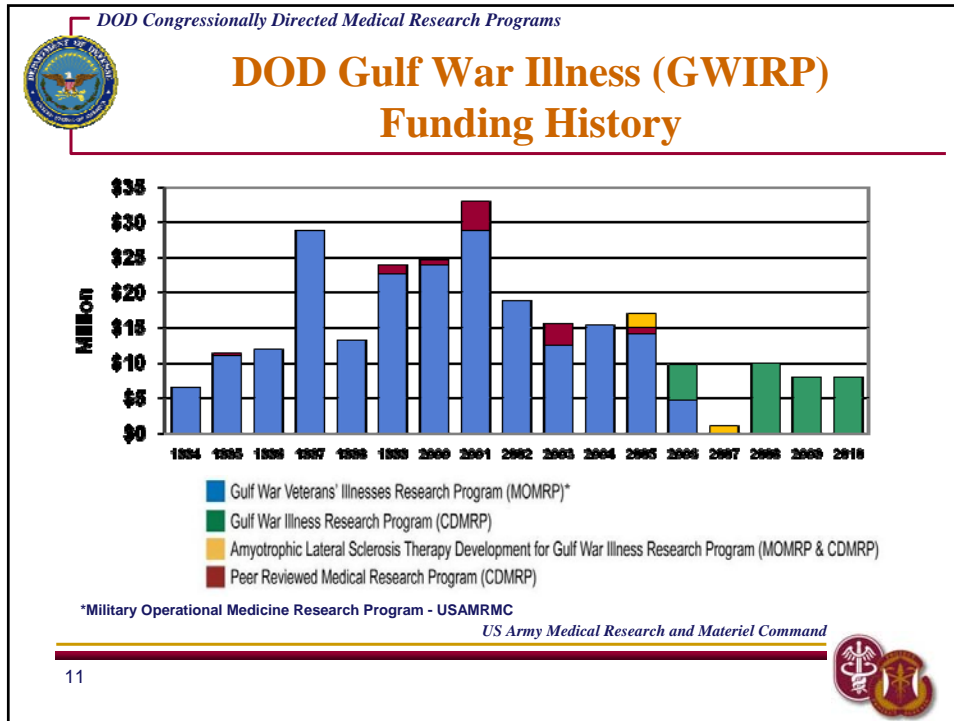


7




8





DOD Congressionally Directed Medical Research Programs




FY08 National Defense Authorization Act

HR 1585 Conferees directed the Secretary of the Army to utilize the authorized funding... to undertake research on Gulf War Illnesses. Conferees also directed that activities under the Gulf War Illnesses program include:


- ◆ **Studies of treatments for the complex of symptoms known as “Gulf War Illness”**
- ◆ **No studies based on psychiatric illness and psychological stress as the central cause**
- ◆ **Competitive selection and peer review to identify research with the highest technical merit and military value**

US Army Medical Research and Materiel Command

13



DOD Congressionally Directed Medical Research Programs




FY06 GWIRP Awards Highlights

Structural MRI and Cognitive Correlates in Pest-Control Personnel from Gulf War I
Dr. Kimberly Sullivan, Boston University School of Medicine


- ◆ **Examined brain volumetrics and cognitive functioning of high- and low-exposed pesticide control personnel from the Gulf War**
- ◆ **Results suggest decreased white matter volumes are significantly correlated with increased health symptom reports and decreased executive domain functioning**
- ◆ **Results suggest that DEET and pyridostigmine bromide (PB) exposures are associated with significantly lower hippocampal volumes and lower performance on visual memory testing**

US Army Medical Research and Materiel Command

14



DOD Congressionally Directed Medical Research Programs



FY06 GWIRP Awards Highlights (cont.)


Coenzyme Q10 for Gulf War Veterans with Chronic Symptoms

Dr. Beatrice Golomb, University of California, San Diego


- ◆ Dr. Golomb is conducting a clinical trial of the efficacy of coenzyme Q10 (Q10) to improve chronic GWI symptoms such as muscle pain and fatigue, as well as overall quality of life for ill Gulf War veterans
- ◆ Q10 has anti-oxidant properties, boosts cell energy, and protects against apoptotic cell death
- ◆ Dr. Golomb's study has enrolled 46 Gulf War veterans to participate in this cross-over, multi-dose study. Participants are in various stages of progress through the study, with 33 having completed the dosing regimen
- ◆ Outcome measures will include responses to quality-of-life surveys by the participants

US Army Medical Research and Materiel Command

15



DOD Congressionally Directed Medical Research Programs



FY06 GWIRP Awards Highlights (cont.)


CNDP1 Polymorphisms and Carnosine Therapy in GWI


Dr. James Baraniuk, Georgetown University

- ◆ This study uses a two-pronged approach of investigating CNDP1 status as a biomarker for GWI and testing carnosine as a potential treatment
- ◆ 100 GWI and healthy veterans will be evaluated for CNDP1 status (cheek swab) as well as pain sensitivity and muscle strength to further identify GWI parameters
- ◆ Pharmacologically replacing depleted carnosine in the brain of GWI veterans could improve sleep problems, pain, and other symptoms; functional MRI will be used to measure the impact of carnosine treatment
- ◆ Enrollment in the study is progressing; Dr. Baraniuk also reports finding a high rate of migraine headaches in GWI participants and proposes to investigate the finding further in future grant applications

US Army Medical Research and Materiel Command

16





 *DOD Congressionally Directed Medical Research Programs*

Other FY06 GWIRP Awards

- ◆ Investigating a new use for **mifepristone** in a clinical trial to determine if its properties can improve the health of Gulf War veterans with chronic multi-symptom illness
- ◆ Using an animal model of **sarin**-induced GWI to examine heart rate variability and autonomic nervous system activity to identify potential **biomarkers** for Gulf War Illness
- ◆ A study of the pathophysiology underlying **depleted uranium (DU)** toxicity that examines glutamate concentration; this project will also examine the effectiveness of **memantine** and riluzole in an animal model

US Army Medical Research and Materiel Command


17 

 *DOD Congressionally Directed Medical Research Programs*


FY08 GWIRP Awards Highlights

- ◆ A cross-over clinical trial of **Naltrexone** and **Dextromethorphan** in ill Gulf War veterans to treat neuroinflammation and relieve GWI symptoms
- ◆ Investigating reduced blood flow and **coagulation** as an underlying cause of GWI and an avenue for therapeutic development
- ◆ Investigating **small intestinal bacterial overgrowth (SIBO)** as an underlying cause of GWI
- ◆ Extensive **molecular profiling** of GWI patients' gene expression and cytokine concentration before and after an exercise challenge to inform potential therapeutic options
- ◆ A clinical trial investigating the effectiveness of **acupuncture** in the treatment of GWI
- ◆ An investigation of the antioxidant analgesic drug **Flupirtine** in an animal model of GWI exposures

US Army Medical Research and Materiel Command

18 

DOD Congressionally Directed Medical Research Programs




GWIRP FY09 Awards


Award Mechanism	Preproposals Received	Proposals Received	Recommended for Funding	Funds Allocated
Clinical Trial Award	4	2	0	--
Innovative Treatment Evaluation Award (ITEA)	4	3	2	\$1.1M
Investigator-Initiated Research Award (IIRA)	40	31	6	\$5.2M
Totals	48	36	8	\$6.3M

US Army Medical Research and Materiel Command

19



DOD Congressionally Directed Medical Research Programs



FY09 GWIRP Awardees

Dr. David Carpenter (ITEA)
State University of New York, Albany
Gulf War Illness: Evaluation of an Innovative Detoxification Program


Dr. Ashok Tuteja (ITEA)
Western Institute for Biomedical Research
Probiotic (*Bifidobacterium infantis*) for Gulf War Illness

Dr. Henry Heng (IIRA)
Wayne State University
Genome Instability: A Common Link in Gulf War Illness Patients


Dr. Anne Louise Oaklander (IIRA)
Massachusetts General Hospital
Undiagnosed Small Fiber Polyneuropathy: Is It a Component of Gulf War Illness?

US Army Medical Research and Materiel Command

20



DOD Congressionally Directed Medical Research Programs



FY09 GWIRP Awardees (cont.)

Dr. Mohan Sopori (IIRA)
Lovelace Biomedical & Environmental Research Institute
Neuroimmune Interactions, Low-Dose Sarin Inhalation, and Gulf War Syndrome


Dr. Gordon Broderick (IIRA)
University of Alberta
Theory-Driven Models for Correcting "Fight or Flight" Imbalance in Gulf War Illness

Dr. John Repine (IIRA)
University of Colorado, Denver
Exhaled Gas Frequency Comb Spectroscopy Distinguishing Biomarkers in Gulf War Illness Syndrome


Dr. Timothy Juergens (IIRA)
University of Wisconsin, Madison
Homeostatic and Circadian Abnormalities in Sleep and Arousal in Gulf War Syndrome

US Army Medical Research and Materiel Command

21




DOD Congressionally Directed Medical Research Programs




GWIRP FY10 Priority Areas

- ◆ Identification of effective treatments for GWI
- ◆ Improved diagnostic testing for GWI
- ◆ Improved understanding of GWI pathobiology
- ◆ Incorporation of case definitions for GWI




US Army Medical Research and Materiel Command

22




DOD Congressionally Directed Medical Research Programs




FY10 GWIRP Investment Strategy (Proposed)

Award Mechanism	Award Value (Direct Costs)	Award Duration	Anticipated Number of Awards
Clinical Trial Award	\$1,500,000	4 years	1
Innovative Treatment Evaluation Award	\$450,000	3 years	2
Investigator-Initiated Research Award	\$600,000	3 years	3
Consortium Development Award	\$200,000	1 year	2

US Army Medical Research and Materiel Command

23


DOD Congressionally Directed Medical Research Programs



FY10 GWIRP Clinical Trial Award

Intent:
 Supports Phase II or III clinical trials focusing on treatments for GWI


Key Features:

- ◆ Preliminary/preclinical data are required
- ◆ Open to investigators at all academic levels
- ◆ Maximum period of performance is **4 years**
- ◆ Maximum allowable funding for the entire period of performance is **\$1.5M** in direct costs


Submission Deadlines:

- ◆ Preproposals due May 2010; 1 of 3 invited for full proposal
- ◆ Applications due 4 August 2010, by invitation only

US Army Medical Research and Materiel Command

24


DOD Congressionally Directed Medical Research Programs



FY10 GWIRP Innovative Treatment Evaluation Award

Intent:
Supports exploratory or small-scale studies evaluating treatments not previously studied in GWI

Key Features:


- ◆ Preliminary data are not required
- ◆ Pilot Phase II or Phase I/II trial combinations are permitted
- ◆ Open to investigators at all academic levels
- ◆ Maximum period of performance is **3 years**
- ◆ Maximum allowable funding for the entire period of performance is **\$450K** in direct costs

Submission Deadlines:


- ◆ Preproposals due May 2010; 8 of 13 invited for full proposals
- ◆ Applications due 4 August 2010, by invitation only

US Army Medical Research and Materiel Command

25



DOD Congressionally Directed Medical Research Programs



FY10 GWIRP Investigator-Initiated Research Award

Intent:
Supports new ideas in basic and clinical developmental research

Key Features:


- ◆ Preliminary data are not required
- ◆ Clinical trials are not allowed
- ◆ Open to investigators at all academic levels
- ◆ Maximum period of performance is **3 years**
- ◆ Maximum allowable funding for the entire period of performance is **\$600K** in direct costs

Submission Deadlines:


- ◆ Preproposals due May 2010; 32 of 68 invited for full proposals
- ◆ Applications due 4 August 2010, by invitation only

US Army Medical Research and Materiel Command

26



DOD Congressionally Directed Medical Research Programs



FY10 GWIRP Consortium Development Award

Intent:
Supports initial development of infrastructure and collaborations for a multi-institutional consortium for GWI research


Key Features:

- ◆ Awardees expected to apply for FY11 Consortium Award
- ◆ Award funds consortium development, not research costs
- ◆ Open to investigators at all academic levels
- ◆ Maximum period of performance is **1 year**
- ◆ Maximum allowable funding for the entire period of performance is **\$200K** in direct costs


Submission Deadlines:

- ◆ Letter of Intent due May 2010; 5 letters received
- ◆ Applications due 4 August 2010

US Army Medical Research and Materiel Command

27 


DOD Congressionally Directed Medical Research Programs



FY10 GWIRP Integration Panel Members

Roberta F. White, Ph.D. (Chair) Boston University	Gudrun Lange, Ph.D. VA New Jersey Health Care System
CAPT Braden Hale, M.D. Naval Health Research Center	COL Cornelius Maher, M.D., Ph.D. US Army Medical Command
Anthony Hardie Veterans of Modern Warfare	Maj David Watson, Ph.D. David Grant USAF Medical Center
Chris Kornkven National Gulf War Resource Center	

US Army Medical Research and Materiel Command

28 

DOD Congressionally Directed Medical Research Programs

<http://cdmrp.army.mil>

Department of Defense

CDMRP
Department of Defense

Finding and Funding the Best Research

RESEARCH PROGRAMS | FUNDING OPPORTUNITIES | CONSUMER INVOLVEMENT | SEARCH AWARDS | MEDIA CENTER | ABOUT US

About Us
Funding History | Funding Process |
Our Team | Contact Us |
Job Opportunities | More...

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

Mission
We provide hope by promoting innovative
research, recognizing untapped opportunities,
creating partnerships, and guarding
the public trust.

Media Center

- IN THE NEWS
- RESEARCH HIGHLIGHTS
- CONSUMER PROFILES
- PROGRAM BOOKLETS
- ANNUAL REPORTS

US Army Medical Research and Materiel Command

29