

**US ARMY MEDICAL RESEARCH AND MATERIEL COMMAND (USAMRMC)  
OFFICE OF THE  
CONGRESSIONALLY DIRECTED MEDICAL RESEARCH PROGRAMS (CDMRP)  
FISCAL YEAR 2008 (FY08)  
GULF WAR ILLNESS RESEARCH PROGRAM (GWIRP)**

**INFORMATION PAPER**

**Program History and Background**

The GWIRP was established by the Department of Defense in fiscal year 1994 (FY94) to study the health effects of warfighters deployed in the 1991 Persian Gulf War. From FY94 to FY05, the GWIRP was managed by the USAMRMC Military Operational Medicine Research Program. In FY06, this program was transferred for management to the CDMRP. Appropriations for the GWIRP from FY94 through FY06 totaled \$217.2 million (M). The GWIRP was not funded by Congress in FY07. The FY08 appropriation is \$10.0M.

Gulf War Illness (GWI) refers to the complex of chronic symptoms that affect veterans of the 1990-1991 Gulf War at excess rates. The illness is characterized by persistent symptoms such as chronic headache, widespread pain, cognitive difficulties, unexplained fatigue, gastrointestinal problems, respiratory symptoms, and other abnormalities that are not explained by familiar medical or psychiatric diagnoses. Research studies have consistently indicated that GWI is not explained by psychological stress, and that the large majority of ill veterans have no diagnosable psychiatric illness. Scientific evidence most clearly links GWI to neurotoxic exposures in theater.

Epidemiologic studies indicate that GWI affects 25-30 percent of veterans who served in the 1990-1991 Gulf War. Similar unexplained symptom complexes have not been associated with military service in Bosnia or current deployments to Iraq or Afghanistan. Longitudinal studies indicate that the majority of Gulf War veterans developed this condition during, or soon after deployment and that very few have recovered or significantly improved in the 17 years since the war. A variety of studies have identified biological measures that distinguish ill Gulf War veterans from healthy controls, but there are currently no diagnostic tests. Treatments that provide substantial improvements in the health of veterans with GWI have not been identified.

**FY08 Program Objectives**

The primary objectives of the GWIRP are to identify effective treatments for the complex of symptoms known as GWI, improve its diagnosis, and better understand its pathobiology.

The GWIRP challenges the scientific community to design innovative research that will improve the health and lives of veterans who have GWI. The GWIRP focuses its funding on innovative projects that have the potential to make a significant impact on GWI.

## **FY08 Research Areas of Interest**

**1. Research that contributes to identification of effective treatments for GWI:** The FY08 GWIRP is interested in a wide range of studies that address this critical need in the GWI community. Such projects are envisioned to include observational studies related to treatment outcomes that assist in identifying treatments suitable for further evaluation in clinical trials. Projects that include retrospective or prospective outcomes research are hoped to include a focus on global changes in health status, as well as changes in particular symptom domains (e.g., pain, cognitive function, gastrointestinal problems, sleep abnormalities, fatigue, skin lesions, and respiratory function). Other potential projects of interest may include laboratory studies that assess effects of treatments on delayed or persistent effects of Gulf War-related neurotoxic exposures in animal models.

**2. Improved diagnostic testing for GWI:** The GWIRP is interested in projects designed to identify objective measures of pathology that distinguish veterans with GWI from healthy controls, or characterize clinically meaningful subgroups of veterans with GWI. Particular biological measures of interest include evaluation of neurological structure and function, indicators of inflammation and immune alterations in the central nervous system and periphery, neurotransmitter systems, autonomic function, processes associated with neurotoxin neutralization and metabolism, endocrine parameters, genetic indicators, genomic and proteomic research, hematological parameters, and indicators of persistent infection, as well as the overlap of alterations in different systems and processes. Of particular interest are projects that will investigate measures potentially useful as discreet biomarkers of GWI.

**3. Improved understanding of the pathobiology of GWI:** The GWIRP recognizes the need for greater understanding of the basic mechanisms involved in GWI. For this reason, the program is interested in projects that will characterize specific mechanisms associated with biological alterations in veterans with GWI or distinguishable subgroups, as described above. Projects that characterize delayed or persistent effects of neurotoxic exposures in animal models, at dosages comparable to those encountered during the Gulf War, would also be of interest if they have direct application to measures of pathophysiology in veterans with GWI.

**Note:** The GWIRP recognizes that GWI is a somatic disorder not derived from psychological stress, its sequelae, or other psychiatric origins. Thus, the program is not interested in projects that focus on these areas.