

Annual Report to Congress – 1998 Appendices

Appendix C: Solicitations for New Research

- [Force Health Protection–Deployment Health](#)
- [Innovative biologically-based toxicological methods and models for assessing mixed chemical exposures with potential neurotoxicological and other health effects](#)
- [Interactions of drugs, biologics and chemicals in Service members in deployment environments](#)
- [Multidisciplinary Studies of Fibromyalgia, Chronic Fatigue Syndrome, and Multiple Chemical Sensitivity](#)
- [Integrated psychosocial and neuroscience research on stress and somatic consequences](#)

Title: Gulf War Illnesses Research: Force Health Protection – Deployment Health

The U.S. Army Medical Research and Materiel Command is soliciting proposals for research to improve medical prevention and intervention strategies to protect Service members against health risks in future deployments. Studies should be consistent with current concepts of Force Health Protection and with research objectives stated in the Presidential Review Directive 5, "Planning for Health Preparedness for and Readjustment of the Military, Veterans, and Their Families after Future Deployments." The force health protection concept includes an array of preventive, surveillance, and clinical measures needed to ensure the health and safety of Service members against the many threats present in the modern military environment. It is a fundamental reorientation of military medical forces away from acute-care services that emphasize post-casualty intervention and toward services that prevent casualties. Studies should represent unique epidemiologically-based research on the effectiveness of health assessments and risk factors in future deployments that may include:

- effectiveness of current health care delivery to deployed forces and associations with related morbidity and mortality
- effects of how specific types of information are made available to deployed Service members on somatic symptom development and reporting
- cohesion and leadership roles in creating protective/vulnerability factors
- effectiveness of current deployment screening methods and clinical examinations on health care requirements or emergencies for deployed Service members
- effectiveness of combat stress prevention programs in minimizing combat and post-combat medical problems, identifying information or training prior to deployment which best prepares military personnel to withstand deployment stressors
- risk factors for major birth defects, including deployment and individual medical history, potentially using data from the DoD Birth Defect Registry
- post-deployment health studies which include outpatient morbidity as a health-related outcome
- impact of pre-service histories, such as information obtained from the DoD Recruit Assessment Program, on military service retention and deployment and post-deployment health
- psychiatric epidemiological investigations of the baseline prevalence and predictors in the general military population for use of health care, specialized care, and psychiatric care, as well as predictors of attrition from the military
- development of effective surveillance tools for early detection of illness and injury outbreaks in military deployments and in remote camps supported only by primary care facilities
- identification of potential risk factors for deployment-related medical and psychological problems, including demographic characteristics and before-deployment symptoms and health
- studies of the relationship between risk behaviors and involvement in accidents during and after deployment

Research proposals responding to this solicitation should address topics relevant to increasing our understanding of issues pertinent to military operational health, and enhancing the protection of Service members from deployment-related health disorders following future military operations. Proposals should represent individual research proposals (NIH "RO1"-type grants). Project

funding will be a maximum of \$500K in total costs for up to three years of support; a total of up to \$4 M per year is available for the portfolio of projects funded through this broad agency announcement. Submissions will be considered from intramural (DoD) and extramural research institutions. Collaborations with DoD medical researchers are strongly encouraged and may include cooperative agreements, co-investigator and federated laboratory arrangements. Current DoD research efforts and interests in this area is principally located at the Walter Reed Army Institute of Research, Washington D.C. and the Naval Health Research Center, San Diego, CA. More information about DoD In-House Research Development Testing and Evaluation programs and contact points can be found at "<http://www.ihreport.com/>". Proposals must be submitted according to general instructions contained in the Broad Agency Announcement 99-1 (see <http://www-usamraa.army.mil>). Full proposals are due by 4:00 pm EST, 14 April 1999. Investigators will be notified about funding recommendations approximately 90 days after the closing date. Send proposals to: Commander, U.S. Army Medical Research and Materiel Command, ATTN: MCMR-AAA (GWI99), 820 Chandler Street, Fort Detrick, MD 21702-5014.

Title: Gulf War Illnesses Research: Innovative biologically-based toxicological methods and models for assessing mixed chemical exposures with potential neurotoxicological and other health effects

The U.S. Army Medical Research and Materiel Command is soliciting proposals for studies on innovative biochemical or behavioral-based toxicological methods and models. These toxicological methods and models will lead to the development of simple and effective methods to assess exposures of deployed military personnel to non-threat agent toxic chemicals and chemical mixtures, including those chemicals and mixtures which were a concern during the Gulf War.

An important aspect of force health protection is the protection of deployed personnel from toxic and hazardous chemicals and complex chemical mixtures. Potential health effects from such exposures exist across the entire range of deployment missions. Deployed personnel may be exposed to toxic chemicals and chemical mixtures from a variety of industrial and agricultural sources. Questions arising from Operation Desert Shield/Storm (ODSS) about the potential health effects (i.e., illnesses among Gulf War veterans) from toxic chemical exposures illustrate the need for effective methods to assess chemical exposures and their health effects in future deployments. Classical toxicological methods are of limited value in assessing chemical exposures of deployed personnel because of difficulties in providing analytical chemical analyses in the deployment environment and the fact that deployed personnel may be exposed to complex chemical mixtures. The intent of this research effort is to develop biologically relevant, reliable, and rapid methods and models that will lead to biologically-based detectors and monitors that can be used in health risk assessment. This approach focuses on the effects of the chemical exposure on the organism rather than the identification of the chemical(s).

This research program should include studies which (1) identify biomarkers and/or behavioral indicators (generic and specific) of exposure, effect, and susceptibility for classes of toxic chemicals which were of concern after ODSS (e.g., neurotoxins, oxidative stressors, reproductive toxins, and immunotoxins); and (2) development of mechanistically-based alternative methods and models for rapid assessment of human exposures to toxic industrial and agricultural chemicals and chemical mixtures. The biomarkers identified through this research will be used for biomonitoring of service members pre-, during and post-deployment and incorporated into epidemiologic surveillance and risk assessment systems. Mechanistically-based alternative methods and models will be incorporated into systems to rapidly identify and assess toxic exposures in environmental media during deployments.

Proposals must provide a clear justification and military relevance for the choice of biomarkers or bioassay approaches selected and should provide preliminary data. Collaboration with DoD medical researchers of the Service toxicology research laboratories at Wright-Patterson AFB and Fort Detrick, Maryland, is encouraged and will be considered in the selection of awards. More information about DoD In-House Research Development Testing and Evaluation programs and contact points can be found at "<http://www.ihreport.com/>". Proposals should represent individual research proposals (NIH "RO1"-type grants) and are expected to average \$200K per year for up

to four years of support; no proposal award will exceed \$1M in total funding. A total of approximately \$4M per year is available for the portfolio of projects to be funded under in topic. Proposals must be submitted according to general instructions contained in the Broad Agency Announcement 99-1 (see <http://www-usamraa.army.mil>). Full proposals are due by 4:00 pm EST, Wednesday, 21 April 1999. Proposals which are not responsive to the solicitation will not be reviewed. Investigators will be notified about funding recommendations approximately 90 days after the closing date. Send proposals to: Commander, U.S. Army Medical Research and Materiel Command, ATTN: MCMR-AAA (GWI99), 820 Chandler Street, Fort Detrick, MD 21702-5014.

Title: Gulf War Illnesses Research: Interactions of drugs, biologics and chemicals in Service members in deployment environments

The U.S. Army Medical Research and Materiel Command is soliciting proposals for novel studies on interactions of current or anticipated military medical products with other drugs, biologics, and chemicals, and in the context of military operational stressors (e.g., psychological stress, thermal load, high intensity or prolonged work). This research is intended to expand on current efforts to ensure safety and efficacy of current or anticipated medical products which may be used by Service members in previously untested and militarily unique combinations and conditions. Proposals must involve current or anticipated vaccines, drugs, or other prophylactic treatments used or planned for routine use in DoD programs. Examples of studies which are solicited under this broad agency announcement include:

- effectiveness of vaccines administered during periods of high stress;
- adverse effects of combinations of drugs and vaccines that might typically be provided to Service members;
- stress-induced alterations in brain access of drugs and biologics; environmentally-induced (e.g., nonionizing radiation, heat stress, sand, dehydration) alterations in drug toxicity and immune responses; and
- prospective studies of troops receiving anthrax and botulinum vaccines.

Proposals must provide a compelling justification and military/Gulf War relevance for the combinations and doses or levels of drugs, vaccines, chemicals, and environmental conditions to be studied and should provide preliminary data. Submissions will be considered from intramural (DoD) or extramural institutions; extramural institutions are encouraged to develop DoD medical research collaborations. Proposals should represent individual research proposals (NIH "RO1"-type grants) and are expected to average \$200K per year for up to four years of support; no proposal award will exceed \$1M in total funding. A total of approximately \$4M per year is available for the portfolio of projects to be funded under this topic. Proposals must be submitted according to general instructions contained in the Broad Agency Announcement 99-1 (see <http://www-usamraa.army.mil>). Full proposals are due by 4:00 pm EST, Wednesday, 28 April 1999. Proposals which are not responsive to the solicitation will not be reviewed. Investigators will be notified about funding recommendations approximately 90 days after the closing date. Send proposals to: Commander, U.S. Army Medical Research and Materiel Command, ATTN: MCMR-AAA (GWI99), 820 Chandler Street, Fort Detrick, MD 21702-5014.

Title: Gulf War Illnesses research: Multidisciplinary Studies of Fibromyalgia, Chronic Fatigue Syndrome, and Multiple Chemical Sensitivity.

The U.S. Army Medical Research and Materiel Command is soliciting proposals for research into Gulf War Illnesses that includes multidisciplinary studies of fibromyalgia, chronic fatigue syndrome, multiple chemical sensitivity and the use of research methods of cognitive and computational neuroscience. One or more projects will be funded for a total available amount of \$3 million dollars. Proposals which are not responsive to this solicitation will be rejected. Proposals must be submitted according to general instructions contained in the Broad Agency Announcement 99-1 (see <http://www-usamraa.army.mil>). Full proposals are due by 4:00 pm EST,

10 March 1999. Investigators will be notified about funding recommendations approximately 90 days after the closing date. Send proposals to: Commander, U.S. Army Medical Research and Materiel Command, ATTN: MCMR-AAA (GWI99), 820 Chandler Street, Fort Detrick, MD 21702-5014.

Title: Gulf War Illnesses research: Integrated psychosocial and neuroscience research on stress and somatic consequences

The U.S. Army Medical Research and Materiel Command is soliciting proposals for studies intended to predict, prevent, and treat somatic consequences of psychological stress relevant to chronic undiagnosed symptoms reported by many Gulf War veterans. This research is intended to advance the understanding of personal and environmental factors which contribute to a service member's health and perception of well-being during and after military deployment. Proposals must clearly represent multidisciplinary research, incorporating major contributions from both psychosocial and physiological/neuroscience research disciplines, and must define a well integrated hypothesis-driven research effort. Submissions will be considered from intramural (DoD) or extramural institutions; extramural institutions are encouraged to develop DoD medical research collaborations and may include cooperative agreements, co-investigator and federated lab arrangements. Current DoD research efforts and interests in this area are principally located at the Walter Reed Army Institute of Research, Naval Medical Research Center, and Uniformed Services University of the Health Sciences. More information about DoD In-House Research Development Testing and Evaluation programs and contact points can be found at "<http://www.ihreport.com/>".

Studies should represent unique research including many of the following elements:

- dynamic investigation of stress factors that relate to military operational environments (e.g., leadership, morale, cohesion, exposure to traumatic events, and challenging ambient physical conditions) and personal factors and characteristics (e.g., life events, marital, family, and cultural/ethnic variables)
- psychiatric epidemiological investigations of the baseline prevalence and predictors in the general military population for use of health care, specialized care, and psychiatric care, as well as predictors of attrition from the military
- investigation of links between service member perception of psychological well-being, utilization of health care services, and somatic consequences/symptoms including memory-cognition impairments, fatigue, headache, muscular pain or weakness, and decreased resistance to disease
- development of biobehavioral approaches to the treatment and prevention of chronic non-specific symptoms and physiological outcomes
- studies of the association of neurotransmitter, immunologic, and neuroendocrine pathways with chronic nonspecific symptoms and chronic stress disorders including those specifically connected with military deployments
- studies using functional imaging technologies such as magnetic resonance imaging, magnetic resonance spectroscopy, magnetoencephalography, single photon emission computed tomography, and positron emission tomography, to detect differences in neurophysiological structure, function, and neurochemistry in relation to cognitive and memory function in patients with non-specific symptoms such as those reported by Gulf War veterans

Proposals should represent individual research proposals (NIH "RO1"-type grants) and are expected to average \$200K per year for up to four years of support; no proposal award will exceed \$1M in total funding. A total of approximately \$4M per year is available for the portfolio of projects to be funded under in topic. Proposals must be submitted according to general instructions contained in the Broad Agency Announcement 99-1 (see <http://www-usamraa.army.mil>). Full proposals are due by 4:00 pm EST, Wednesday, 5 May 1999. Proposals which are not responsive to the solicitation will not be reviewed. Investigators will be notified about funding recommendations approximately 90 days after the closing date. Send proposals to:

Commander, U.S. Army Medical Research and Materiel Command, ATTN: MCMR-AAA (GWI99),
820 Chandler Street, Fort Detrick, MD 21702-5014.