



# **Appendix A**

## **Federally Funded Research Projects**



# **Appendix A 1**

## **Project Index By Department**



## DEPARTMENT OF DEFENSE PROJECTS

- DoD-1 Naval Health Study Program
- DoD-1 A Epidemiologic Studies of Morbidity Among Gulf War Veterans: A Search for Etiologic Agents and Risk Factors; A Study of Symptoms Among 1500 Seabees
- DoD-1 B Epidemiologic Studies of Morbidity Among Gulf War Veterans: A Search for Etiologic Agents and Risk Factors; Study 2: A Comparative Study of Hospitalizations among Active-Duty Personnel Who Participated in the Gulf War and Similar Personnel Who Did Not.
- DoD-1 C Epidemiologic Studies of Morbidity Among Gulf War Veterans: A Search for Etiologic Agents and Risk Factors; Study 3: A comparative study of pregnancy outcomes among Gulf War veterans and other active-duty personnel
- DoD-1 D Epidemiologic Studies of Morbidity Among Gulf War Veterans: A Search for Etiologic Agents and Risk Factors; Study 4: Infertility and Miscarriage in Gulf War Veterans
- DoD-1 E Epidemiologic Studies of Morbidity Among Gulf War Veterans: A Search for Etiologic Agents and Risk Factors; Study 5: Seabee Health Study
- DoD-1 F Epidemiologic Studies of Morbidity Among Gulf War Veterans: A Search for Etiologic Agents and Risk Factors; Study 6: A Comparison of Nonfederal Hospitalization Experience Among Veterans in California who have separated from active service: PGW vs. EV
- DoD-1 G Epidemiologic Studies of Morbidity Among Gulf War Veterans: A Search for Etiologic Agents and Risk Factors; Study 7: Prevalence of Congenital Anomalies Among Children of Persian Gulf War Veterans
- DoD-2 Physiological and Neurobehavioral Effects in Rodents from Exposure to Pyridostigmine, Fuels, and DEET
- DoD-4 The General Well-Being of Gulf War Era Service Personnel from the States of Pennsylvania and Hawaii: A Survey
- DoD-7 A Health Risk Assessment of Embedded Depleted Uranium: Behavior, Physiology, Histology, and Biokinetic Modeling
- DoD-7 B Carcinogenicity of Depleted Uranium Fragments
- DoD-8 Program DoD-8
- DoD-8 A Serologic Diagnosis of Viscerotropic Leishmaniasis (VTL)
- DoD-8 B Development of a Leishmania Skin Test Antigen (LSTA)
- DoD-9 Identification of the Genetic Factors Which Control Tropism in Leishmania
- DoD-10 Pyridostigmine Synergistic Toxicity Study

- DoD-11 Male/Female Differential Tolerances to Pyridostigmine Bromide
- DoD-13 Effects of Persian Gulf War Service on Military Working Dogs
- DoD-14 Risk Factors Among US Army Soldiers for Enrolling on the Department of Veterans Affairs Gulf War Registry
- DoD-15 Comparative Mortality Among US Military Personnel Worldwide During Operations Desert Shield and Desert Storm
- DoD-16 Kuwait Oil Fire Health Risk Assessment
- DoD-17 Retrospective Studies Involving Military Use of Pyridostigmine as a Pretreatment for Nerve Agent Poisoning
- DoD-18 Kuwait Oil Fires Troop Exposure Assessment Model (TEAM)
- DoD-19 Persian Gulf Veterans Health Tracking System
- DoD-21 Study of Variability In Pyridostigmine Inhibition of Blood Cholinesterases in Healthy Adults and Individuals With Symptoms Following Participation in Operation Desert Storm
- DoD-22 Chronic Organophosphorus Exposure and Cognition
- DoD-23 Acute and Long-Term Impact of Deployment to Southwest Asia on the Physical and Mental Health of Soldiers and their Families
- DoD-30 Epidemiological Studies Persian Gulf War Illnesses, PG Women's Health Linkage Study
- DoD-31 Dysregulation of the Stress Response in the Persian Gulf Syndrome
- DoD-32 Neuropsychological Functioning in Persian Gulf Era Veterans
- DoD-33 Effects of Pyridostigmine in Flinders Line Rats Differing in Cholinergic Sensitivity
- DoD-34 Characterization of Emissions from Heaters Burning Leaded Diesel Fuel in Unvented Tents
- DoD-35 Feasibility of Investigating Whether There is a Relationship Between Birth Defects and Service in the Gulf War.
- DoD-36 Fatigue in Persian Gulf Syndrome-Physiologic Mechanisms
- DoD-37 Neurobehavioral and Immunological Toxicity of Pyridostigmine, Permethrin, and DEET in Male and Female Rats

- DoD-38 Diagnostic Antigens of *Leishmania tropica*
- DoD-39 A Controlled Epidemiological and Clinical Study into the Effect of Gulf War Service on Servicemen and Women of the United Kingdom Armed Forces
- DoD-40 Psychological and Neurobiological Consequences of the Gulf War Experience
- DoD-41 Evaluation of Muscle Function in Persian Gulf Veterans
- DoD-42 The Symptomatic Persian Gulf Veterans Protocol: An Analysis of Risk Factors with an Immunologic and Neuropsychiatric Assessment
- DoD-44 Investigation of Seminal Plasma Hypersensitivity Reactions
- DoD-45 Air Force Women's Health Surveillance Study
- DoD-46 Exploratory Data Analysis with the CCEP Database
- DoD-47 Study of Mycoplasmal Infections in Gulf War Veterans
- DoD-48 Assessment of Genomic Instability via Chromosome 7 Inversion Frequency in a Gulf-War Syndrome Cohort vs Selected Control Groups
- DoD-49 Diagnosis and Dosimetry of Exposure to Sulfur Mustard: Development of Standard Operating Procedures and Exploratory Research on Protein Adducts
- DoD-50 Toxicokinetics of 0-Ethyl S-(2-Diisopropylaminoethyl) Methylphosphonothioate [(+)-VX] in Rats, Hairless Guinea Pigs and Marmosets - Identification of Metabolic Pathways
- DoD-51 Transgenic Engineering of Cholinesterases: Tools for Exploring Cholinergic Responses
- DoD-52 Female Gender and Other Potential Predictors of Functional Health Status Among Persian Gulf War Veterans
- DoD-53 Long-Term Effects of Subclinical Exposures to Sarin
- DoD-54 Assessment of Subchronic Neurobehavioral and Neuropathologic Effects in Rats Following Low-Level Sarin Exposure
- DoD-55 Low-Level Exposure to GB Vapor in Air: Diagnosis/Dosimetry, Lowest Observable Effect Levels, Performance-Incapacitation, and Possible Delayed Effects
- DoD-56 Low-Level Sarin Neurotoxicity and Its Modulation by Pyridostigmine
- DoD-57 Physiologic Effects of Stress in Gulf War Veterans



- DoD-58 Illness Among Persian Gulf War Veterans: Case Validation Studies
- DoD-59 Pyridostigmine-induced Neurodegeneration: Role of neuronal Apoptosis
- DoD-60 Butyrylcholinesterase Genetic Variants in Persons with Gulf War Illness
- DoD-61 Neurophysiologic and Neuropathologic Effects in Monkeys of Low Level Exposures to Sarin, Pyridostigmine, Pesticides, and Botulinum Toxoid
- DoD-62 Sarin and Pyridostigmine Interaction under Physical Stress: Neurotoxic Effects in Mice
- DoD-63 PGW Veterans: Epidemiological and Clinical Evidence for Residual Organophosphate Neurotoxicity
- DoD-64 Individual Differences in Neurobehavioral Effects of Pyridostigmine
- DoD-65 Multi-disciplinary Pathophysiologic Studies of Neurotoxic Gulf War Related Syndromes Leading to Diagnosis and Treatment
- DoD-66 Testing for Mycoplasmal infection replicability of nucleoprotein gene tracking and forensic polymerase chain reaction
- DoD-67 Antibacterial Treatment Method Based Upon the Excretion of Dead and Decaying Spherical Bacteria
- DoD-69 Five-Year Follow-Up of Army Personnel Exposed to Chemical Warfare Agents
- DoD-70 War Syndromes from 1900 to the Present: Symptom Patterns and Long-term Health Outcomes
- DoD-71 A Comparison of Post Deployment Hospitalization Between Vietnam and Gulf War Veterans
- DoD-72 Long-term Effects of Subchronic Exposure to Sarin, Alone and with Stress or Other Chemicals
- DoD-73 Post-deployment Morbid Stress, Behavior and Health: Developing a Model for Predicting Morbidity, Mortality, and other Adverse Outcomes
- DoD-74 Relationship of Stress Exposures to Health in Gulf War Veterans
- DoD-75 Toxic Interactions of Prophylactic Drugs and Pesticides
- DoD-76 Evaluations of Immunotoxicity due to Concurrent Exposure to DEET, Pyridostigmine, and JP-8 Jet Fuel
- DoD-77 Percutaneous Absorption of Chemical Mixtures Relevant to the Gulf War

- DoD-78 Experimental Models of Gulf War Syndrome
- DoD-79 Time Course of Stress-induced Impairment of Blood Brain Barrier
- DoD-80 Molecular Regulation of Corticosteroid Receptor Expression in Stress-Responsive Cells
- DoD-81 Immunotoxicity due to Coexposure to DEET, Pyridostigmine, and Stress
- DoD-82 Feasibility of Developing a Registry of PTSD Affected Veteran Sib Pairs
- DoD-83 Risk for Stress-related Substance Abuse: the Effects of Family History of Alcoholism
- DoD-84 Psychobiologic Alterations in Persian Gulf War Veterans with and without PTSD
- DoD-85 CNS Cytokines and CRH in Gulf War Veterans with Multiple Unexplained Symptoms
- DoD-86 Effects of Combat Stress on Structure and Function of the Hippocampus
- DoD-87 Measurement and Validation of Psychosocial Risk and Resilience Factors Accounting for Physical and Mental Health and Health-Related Quality of Life among PGWVs
- DoD-88 Clinical Relevance of Novel Immunological Markers in PTSD
- DoD-89 Limbic Blood Flow and Opiate Receptor PET in Posttraumatic Stress Disorder
- DoD-90 SPECT Benzodiazepine Receptor and MR Imaging in PTSD
- DoD-91 Neurological and Circadian Substrates of PTSD-like Behaviors
- DoD-92 Traumatic Experiences Persistently Enhance Cue-dependent Learning: Toward an Animal Model of Chronic Stress and Posttraumatic Stress Disorder
- DoD-93 Troops Exposed to Nerve Agents at Aberdeen Proving Ground: Follow-Up.
- DoD-94 Combined Analysis of the VA and DoD Gulf War Clinical Registries: A Study of Clinical Findings from Systematic Medical Examinations of 100,000 U.S. Gulf War Veterans
- DoD-95 Development of Diagnostic tools and alternative treatment drugs for Leishmania
- DoD-96 Deployment Health Center

- DoD-97 Surveillance of *B. pertussis* among Military Trainees with Respiratory Disease: Development and Validation of a Highly Sensitive PCR and Beacon Probe based Method for Diagnosis of Pertussis
- DoD-98 Investigation of a Baseline Medical Database to Evaluate the Health of Military Forces and Veterans
- DoD-99 DoD-wide Medical Surveillance for Potential Long-Term Adverse Events associated with Anthrax Immunization in Active Duty Service Members, Proposal 1: Hospitalizations
- DoD-100 Antibodies to Squalene
- DoD-101 Mechanisms in Chronic Multisymptom Illnesses
- DoD-102 Case-Control Study of Fatal Motor Vehicle Crashes Among Gulf War and Non-Deployed Veterans
- DoD-103 Human Metabolism and Interactions of Deployment-related Chemicals
- DoD-104 Clinical Evaluation of a Proposed New Gulf War Syndrome
- DoD-105 Neuroplasticity and Calcium Signaling in Stressed Rat Amygdala
- DoD-106 The Role of Th1/Th2 cytokine balance in Gulf War-related illness
- DoD-107 Stress, Organophosphates and Blood Brain Barrier Integrity
- DoD-108 Health Status of Current National Guard Members
- DoD-109 Disordered Responses to Orthostatic Stress in the Pathogenesis of Gulf War Syndrome Symptoms
- DoD-110 Predictors of Career and Family Dysfunction in Young Adults Enlisting in the United States Navy
- DoD-111 Autonomic Dysfunction in Gulf War Veterans
- DoD-112 Role of Respirable Saudi Arabian Sand and Pyridostigmine in the Gulf War Syndrome: An Autoimmune Adjuvant Disease?
- DoD-113 Interactions of Subsymptomatic Doses of Sarin with Pyridostigmine: Neurochemical, Behavioral, and Physiological Effects
- DoD-114 A Re-examination of Neuropsychological Functioning in Persian Gulf War Veterans

- DoD-115 A Randomized, Multi-Center, Controlled Trial of Multi-Model Therapy in Veterans with Gulf War Illnesses (EBT) (See also VA-62; formerly VA/DoD 1D)
- DoD-116 VA/DoD Core Funding of the Medical Follow-Up Agency (See also VA-63; formerly VA-DoD-2D/2V)
- DoD-116 A Follow-Up Investigation of Troops Exposed to Nerve Agents at Aberdeen Proving Ground (Pilot Study) (See also VA-63A; formerly VA/DoD-2DA)
- DoD-116 B Patterns of Pre-Persian Gulf War Illness and Health Care Seeking, Pilot Study (See also VA-63B; formerly VA/DoD- 2DB)
- DoD-117 Patterns of Pre-Persian Gulf War Illness and Health Care Seeking
- DoD-118 An Epidemiological Investigation into the Occurrence of Amyotrophic Lateral Sclerosis (ALS) Among Gulf War Veterans (See also VA-61)
- DoD-119 Antibiotic Treatment of Gulf War Veterans' Illnesses (ABT) (See also VA-55)
- DoD-120 Assessing the Potential Health Impact of the Gulf War on Saudi Arabia National Guard Members and Their Dependents
- DoD-121 Evaluation of the Health Risks of Embedded Depleted Uranium Shrapnel During Pregnancy and Offspring Development
- DoD-122 Carcinogenic Potential of Depleted Uranium and Tungsten Alloys
- DoD-123 Immunotoxicity of Depleted Uranium and Heavy Metal Tungsten Alloys
- DoD-124 Randomized, Controlled Trial for Combination Treatment with Pyridostigmine, DEET, and Permethrin
- DoD-125 A Randomized Clinical Trial of Cognitive-Behavioral Treatment for PTSD in Women (See also VA-74)
- DoD-126 Blood-Brain Barrier Transport of Uranium
- DoD-127 Depleted Uranium Fragment Carcinogenicity: Extrapolation of Findings in Rodents to Man
- DoD-128 Multifactorial Assessment of Depleted Uranium Neurotoxicity
- DoD-129 Inhalation of Uranium Oxide Aerosol: CNS Deposition, Neurotoxicity, and Role in Gulf War Illness
- DoD-130 Carcinogenicity and Immunotoxicity of Embedded Depleted Uranium and Heavy-Metal Tungsten Alloys in Rodents
- DoD-131 Magnetic Resonance and Spectroscopy of the Human Brain in Gulf War Illnesses

- DoD-132 Impaired Auditory Sensory Gating, Acoustic Startle Response: Effects of Long and Short Deployments on Army Combat Readiness
- DoD-133 Odors, Deployment Stress, and Health: A Conditioning Analysis of Gulf War Syndrome
- DoD-134 Identification and Development of Biological Markers of Human Exposure to the Insecticide Permethrin
- DoD-135 Biochemical Markers for Exposure to Low Doses of Organophosphorous Exposure
- DoD-136 A Mechanism-Based, Molecular Fingerprint Strategy for Detecting Biomarkers of Organophosphate Exposure
- DoD-137 Low Level Exposure to Sulfur Mustard: Development of a SOP for Analysis of Albumin Adducts and of a System for Non-Invasive Diagnosis on Skin
- DoD-138 Improving Blood Monitoring of Enzymes as Biomarkers of Risk from Anticholinergic Pesticides and Chemical Warfare Agents
- DoD-139 Assessment of the Role of Stress-Activated Kinase in the Pathogenesis of Gulf War Illnesses
- DoD-140 US Department of Defense Surveillance for Neoplasms in Infancy
- DoD-141 Physical, Mental, Social, and Family Health Outcomes of Gulf War Veterans
- DoD-142 Illnesses Among Persian Gulf War Veterans: Case Validation Studies (Iowa / Great Britain)
- DoD-143 Millennium Cohort Study
- DoD-144 Psychological Health Screening: Methods and Metrics for Deployed Forces
- DoD-145 Early Intervention Research Program to Enhance Soldier Resilience
- DoD-146 Assessment of Toxicology Assay Methods and Chemical Exposures Among a Cohort of US Marines Deployed in the Gulf War
- DoD-147 Development and Validation of the Automated Neuropsychological Assessment Metric (ANAM) for Deployment Health Monitoring Applications
- DoD-148 Predicting Operational Readiness for Deployed Army National Guard and Army Reserve Soldiers and Families

## **DEPARTMENT OF HEALTH AND HUMAN SERVICES PROJECTS**

- HHS-1 Health Assessment of Persian Gulf War Veterans from Iowa
- HHS-2 Disease Cluster in a Pennsylvania Air National Guard Unit, EPI-AID 95-18
- HHS-3 Biomarkers of Susceptibility and Polycyclic Aromatic Hydrocarbon (PAH) Exposure in Urine and Blood Cell DNA from U.S. Army Soldiers Exposed to Kuwaiti Oil Well Fires
- HHS-4 Suspected Increase of Birth Defects and Health Problems Among Children Born to Persian Gulf War Veterans In Mississippi
- HHS-5 Cognitive Function and Symptom Patterns in Persian Gulf Veterans
- HHS-6 Defining Gulf War Illness
- HHS-7 Immunotoxicity of Dermal Permethrin and Cis-Urocanic Acid
- HHS-8 Strategy to Identify Non-Additive Response to Chemical Mixtures
- HHS-9 Improving Health Risk Communications to Prevent Unexplained Illnesses Related to Military Deployments
- HHS-10 Health-e Voice: Optimized Implementation of a Stepped Clinical Risk Communications Guideline

## **DEPARTMENT OF VETERANS AFFAIRS PROJECTS**

- VA-1 Mortality Follow-up Study of Persian Gulf Veterans
- VA-2 VA National Health Survey of Persian Gulf Veterans
- VA-2 A VA National Survey of Persian Gulf Veterans - Phase I
- VA-2 B VA National Survey of Persian Gulf Veterans - Phase II
- VA-2 C VA National Survey of Persian Gulf Veterans - Phase III
- VA-3 Use of Roster of Veterans Who Served in Persian Gulf Area
- VA-4 Boston Environmental Hazards Research Center Program
- VA-4 Core Boston Environmental Hazards Research Center Program
- VA-4 A Evaluation of Cognitive Functioning of Persian Gulf Veterans
- VA-4 B Evaluation of Neurological Functioning in Persian Gulf Veterans
- VA-4 C Gulf War And Vietnam Veterans Cancer Incidence Surveillance
- VA-4 D Evaluation of Respiratory Dysfunction Among Gulf War Veterans
- VA-4 E The Aromatic Hydrocarbon Receptor (AhR) as a Biomarker of Susceptibility
- VA-4 F Validity of Computerized Tests
- VA-5 East Orange Environmental Hazards Research Center Program
- VA-5 Core East Orange Environmental Hazards Research Center Program
- VA-5 A Health and Exposure Survey of Persian Gulf Veterans
- VA-5 B Physiological and Psychological Assessments of Persian Gulf Veterans

- VA-5 C Effects of Exertion and Chemical Stress on Persian Gulf Veterans
- VA-5 D Effects of Genetics and Stress on Responses to Environmental Toxins
- VA-6 Portland Environmental Hazards Research Center: Environment, Veterans' Health and the Gulf War Syndrome. Core: Clinical and Epidemiology Research
- VA-6 Core Core Program: Portland Environmental Hazards Research Center: Environment, Veterans Health and the Gulf War Syndrome. Core Project for Clinical and Epidemiology Research
- VA-6 A Psychosocial, Neuropsychological and Neurobehavioral Assessment (Project I)
- VA-6 B Clinical and Neuroendocrine Aspects of Fibromyalgia (Project II)
- VA-6 C Neurotoxicity of Environmental Pollutants and Warfare Agents (Project III)
- VA-6 D DNA Damage from Chemical Agents and Its Repair (Project IV)
- VA-6 E Clinical and Epidemiology Leishmania Research
- VA-7 Desert Storm Reunion Survey
- VA-8 Psychological Test Data of Gulf War Veterans Over Time
- VA-9 Evaluation of Cognitive Functioning in Persian Gulf War Veterans Reporting War-related Health Problems
- VA-10 Memory and Attention in PTSD
- VA-11 Neuropsychological Functioning in Veterans
- VA-12 Psychological Assessment of Operation Desert Storm Returnees
- VA-13 Neurobehavioral Aspects of Persian Gulf Experiences: A Pilot Study
- VA-15 Vaccine-Mediated Immunity Against Leishmaniasis
- VA-16 Protective Immunity in Experimental Visceral Leishmaniasis
- VA-17 Immunological Evaluation of Persian Gulf Veterans



- VA-18 Chronic Gastrointestinal Illness in Persian Gulf Veterans
- VA-20 Psychological Adjustment in Operation Desert Shield/Storm Veterans
- VA-21 A Comparison of PTSD Symptomatology among Three Army Medical Units Involved in ODS
- VA-36 Stress Symptoms and Their Causal Attribution in Desert Storm Veterans
- VA-40 Musculoskeletal Symptoms in Gulf War Syndrome
- VA-46 Diarrhea in Persian Gulf Veterans: An Irritable Bowel-Like Disorder
- VA-47 Retrospective Verification of Mustard Gas Exposure
- VA-48 Cross-Sensitization as a CNS Model for Gulf War Chemical Intolerance
- VA-49 Sensitivity to Pyridostigmine Bromide: Persistent Neural Dysfunction
- VA-50 Neuropsychological findings in a sample of Operation Desert Storm veterans
- VA-51 Psychobiological Assessment of Desert Storm Veterans
- VA-53 Spouses and Children Program
- VA-54 Follow-up of Psychological and Neurocognitive Gulf War Outcome: Relation to Stress
- VA-55 Antibiotic Treatment of Gulf War Veterans' Illnesses (ABT) (See also DoD-119)
- VA-56 Birmingham's Gulf War Veterans' Illness Demonstration Clinic (13)
- VA-57 Case Management and Residential Rehabilitation for Persian Gulf War Veterans (13)
- VA-58 Implementation and Evaluation of Gulf War Veterans' Demonstration Project (13)
- VA-59 Demonstration Treatment Program for Gulf War Veterans With Unexplained Physical Symptoms (13)
- VA-60 Identification and Management of Sleep Disorders in Gulf War Veterans

- VA-61 An Epidemiological Investigation into the Occurrence of Amyotrophic Lateral Sclerosis (ALS) Among Gulf War Veterans (See also DoD-118)
- VA-62 A Randomized, Multi-Center, Controlled Trial of Multi-Model Therapy in Veterans with Gulf War Illness (EBT) (See also DoD-115; formerly VA/DoD 1V)
- VA-63 VA/DoD Core funding of the Medical Follow-Up Agency (See also DoD-116; formerly VA/DoD-2V/2D)
- VA-63 A Follow-Up Investigation of troops exposed to nerve agents at Aberdeen Proving Ground (Pilot Study) (See also DoD-116A; formerly VA/DoD-2VA/2DA)
- VA-63 B Patterns of Pre-Persian Gulf War Illness and Health Care Seeking Pilot Study (See also DoD-116B; previously VA/DoD-2VB)
- VA-64 Boston Environmental Hazards Research Center
- VA-64 A Functional Neuroimaging in Lead Exposed Adults
- VA-64 B Quantification and Validation of Structure-Function relationships through visuospatial test performance
- VA-64 C Development of a structured neurotoxicant assessment checklist (SNAC) for clinical use in veteran populations
- VA-65 San Antonio Environmental Hazards Center
- VA-65 A Does a variant of the human SOD2 gene increase sensitivity to hazards?
- VA-65 B The contribution of FEN-1 to genetic integrity subsequent to oxidative stress
- VA-65 C The importance of hydrogen peroxide detoxification in cellular protection
- VA-65 D Do defective Gpx1 and ALDH2 genes increase sensitivity to environmental hazards?
- VA-66 Physiological Responding in Posttraumatic Stress Disorder
- VA-67 Olfactory Functioning in Gulf War Veterans
- VA-68 Family Study of Fibromyalgia
- VA-69 Cardiovascular Hyporeactivity and Fatiguing Illness in Gulf War Veterans
- VA-70 A Clinical Evaluation of the Health Status of Persian Gulf War Veterans in VISN 8
- VA-71 Central Nervous System Modulation of Visceral Pain in the Persian Gulf Syndrome

- VA-72 Roles of Paraoxonase, Butyrylcholinesterase and Stress in Unexplained Illnesses
- VA-73 Pain Sensitivity in Gulf War Veterans with Medically Unexplained Musculoskeletal Pain
- VA-74 A Randomized Clinical Trial for Cognitive-Behavioral Treatment for PTSD in Women (See DoD-125)
- VA-75 ALS and Veterans: Are Veterans at Increased Risk?
- VA-76 Analysis of Hippocampal Volume in Aging Combat Veterans with PTSD
- VA-77 HPA Axis Reactivity in Men and Women with Chronic PTSD

# **Appendix A 2**

## **Project List by Research Focus Areas**



## Primary Focus Area

<i>Research Type</i>	Secondary Focus Area	Tertiary Focus Area	Project Number	Project Title
<b>Brain &amp; Nervous System</b>				
<i>Clinical</i>			DoD-101	Mechanisms in Chronic Multisymptom Illnesses
<i>Clinical</i>			DoD-111	Autonomic Dysfunction in Gulf War Veterans
<i>Clinical</i>			DoD-131	Magnetic Resonance and Spectroscopy of the Human Brain in Gulf War Illnesses
<i>Clinical</i>			DoD-132	Impaired Auditory Sensory Gating, Acoustic Startle Response: Effects of Long and Short Deployments on Army Combat
<i>Clinical</i>			DoD-86	Effects of Combat Stress on Structure and Function of the Hippocampus
<i>Clinical</i>			VA-12	Psychological Assessment of Operation Desert Storm Returnees
<i>Clinical</i>			VA-13	Neurobehavioral Aspects of Persian Gulf Experiences: A Pilot Study
<i>Clinical</i>			VA-20	Psychological Adjustment in Operation Desert Shield/Storm Veterans
<i>Clinical</i>			VA-21	A Comparison of PTSD Symptomatology among Three Army Medical Units Involved in
<i>Clinical</i>			VA-50	Neuropsychological findings in a sample of Operation Desert Storm veterans
<i>Clinical</i>			VA-64 B	Quantification and Validation of Structure-Function relationships through visuospatial test performance
<i>Clinical</i>			VA-66	Physiological Responding in Posttraumatic Stress Disorder
<i>Clinical</i>			VA-67	Olfactory Functioning in Gulf War Veterans

## Brain & Nervous System (continued)

<i>Clinical</i>		VA-69	Cardiovascular Hyporeactivity and Fatiguing Illness in Gulf War Veterans
<i>Clinical</i>		VA-71	Central Nervous System Modulation of Visceral Pain in the Persian Gulf Syndrome
<i>Clinical</i>		VA-73	Pain Sensitivity in Gulf War Vets with Medically Unexplained Musculoskeletal Pain
<i>Clinical</i>		VA-76	Analysis of Hippocampal Volume in Aging Combat Veterans with PTSD
<i>Clinical</i>		VA-77	HPA Axis Reactivity in Men and Women with Chronic PTSD
<i>Clinical</i>	Chemical Weapons	DoD-63	PGW Veterans: Epidemiological and Clinical Evidence for Residual Organophosphate Neurotoxicity
<i>Clinical</i>	Diagnosis	DoD-147	Development and Validation of the Automated Neuropsychological Assessment Metric (ANAM) for Deployment Health Monitoring Applications
<i>Clinical</i>	Diagnosis	DoD-32	Neuropsychological Functioning in Persian Gulf Era Veterans
<i>Clinical</i>	Diagnosis	VA-4 F	Validity of Computerized Tests
<i>Clinical</i>	Environmental Toxicology	VA-64 A	Functional Neuroimaging in Lead Exposed Adults
<i>Clinical</i>	Prevention	DoD-83	Risk for Stress-related Substance Abuse: the Effects of Family History of Alcoholism
<i>Clinical</i>	Symptoms & General Health	DoD-36	Fatigue in Persian Gulf Syndrome-Physiologic Mechanisms
<i>Clinical</i>	Symptoms & General Health	DoD-40	Psychological and Neurobiological Consequences of the Gulf War Experience
<i>Clinical</i>	Symptoms & General Health	DoD-41	Evaluation of Muscle Function in Persian Gulf Veterans

## Brain & Nervous System (continued)

<i>Clinical</i>	Symptoms & General Health		DoD-84	Psychobiologic Alterations in Persian Gulf War Veterans with and without PTSD
<i>Clinical</i>	Symptoms & General Health		DoD-89	Limbic Blood Flow and Opiate Receptor PET in Posttraumatic Stress Disorder
<i>Clinical</i>	Symptoms & General Health		HHS-5	Cognitive Function and Symptom Patterns in Persian Gulf Veterans
<i>Clinical</i>	Symptoms & General Health		VA-10	Memory and Attention in PTSD
<i>Clinical</i>	Symptoms & General Health		VA-11	Neuropsychological Functioning in Veterans
<i>Clinical</i>	Symptoms & General Health		VA-4 A	Evaluation of Cognitive Functioning of Persian Gulf Veterans
<i>Clinical</i>	Symptoms & General Health		VA-4 B	Evaluation of Neurological Functioning in Persian Gulf
<i>Clinical</i>	Symptoms & General Health		VA-51	Psychobiological Assessment of Desert Storm Veterans
<i>Clinical</i>	Symptoms & General Health		VA-54	Follow-up of Psychological and Neurocognitive Gulf War Outcome: Relation to Stress
<i>Clinical</i>	Symptoms & General Health		VA-6 A	Psychosocial, Neuropsychological and Neurobehavioral Assessment (Project I)
<i>Clinical</i>	Symptoms & General Health		VA-7	Desert Storm Reunion Survey
<i>Clinical</i>	Symptoms & General Health		VA-9	Evaluation of Cognitive Functioning in Persian Gulf War Veterans Reporting War-related Health Problems
<i>Clinical</i>	Symptoms & General Health	Diagnosis	DoD-31	Dysregulation of the Stress Response in the Persian Gulf Syndrome



## Brain & Nervous System (continued)

<i>Clinical</i>	Symptoms & General Health	Diagnosis	DoD-67	Antibacterial Treatment Method Based Upon the Excretion of Dead and Decaying Spherical Bacteria
<i>Clinical</i>	Symptoms & General Health	Environmental Toxicology	VA-5 C	Effects of Exertion and Chemical Stress on Persian Gulf Veterans
<i>Clinical</i>	Symptoms and General Health		DoD-133	Odors, Deployment Stress, and Health: A Conditioning Analysis of Gulf War Syndrome
<i>Clinical</i>	Treatment		DoD-90	SPECT Benzodiazepine Receptor and MR Imaging in PTSD
<i>Clinical</i>	Treatment	Symptoms & General Health	DoD-85	CNS Cytokines and CRH in Gulf War Veterans with Multiple Unexplained Symptoms
<i>Epidemiology</i>			DoD-114	A Re-examination of Neuropsychological Functioning in Persian Gulf War Veterans
<i>Epidemiology</i>			DoD-118	An Epidemiological Investigation into the Occurrence of Amyotrophic Lateral Sclerosis (ALS) Among Gulf War Veterans (See also
<i>Epidemiology</i>			DoD-82	Feasibility of Developing a Registry of PTSD Affected Veteran
<i>Epidemiology</i>			VA-36	Stress Symptoms and Their Causal Attribution in Desert Storm
<i>Epidemiology</i>			VA-61	An Epidemiological Investigation into the Occurrence of Amyotrophic Lateral Sclerosis (ALS) Among Gulf War Veterans (See also
<i>Epidemiology</i>			VA-72	Roles of Paraoxonase, Butyrylcholinesterase and Stress in Unexplained Illness
<i>Epidemiology</i>			VA-75	ALS and Veterans: Are Veterans at Increased Risk?
<i>Epidemiology</i>	Prevention		DoD-144	Psychological Health Screening: Methods and Metrics for Deployed Forces

## Brain & Nervous System (continued)

<i>Epidemiology</i>	Prevention		DoD-87	Measurement and Validation of Psychosocial Risk and Resilience Factors Accounting for Physical and Mental Health and Health-Related Quality of Life among PGWVs
<i>Epidemiology</i>	Symptoms & General Health		DoD-23	Acute and Long-Term Impact of Deployment to Southwest Asia on the Physical and Mental Health of Soldiers and their Families
<i>Epidemiology</i>	Symptoms & General Health		DoD-52	Female Gender and Other Potential Predictors of Functional Health Status Among Persian Gulf War Veterans
<i>Epidemiology</i>	Symptoms & General Health		VA-68	Family Study of Fibromyalgia
<i>Epidemiology</i>	Symptoms and General Health		DoD-148	Predicting Operational Readiness for Deployed Army National Guard and Army Reserve Soldiers and Families
<i>Mechanistic</i>			DoD-105	Neuroplasticity and Calcium Signaling in Stressed Rat Amygdala
<i>Mechanistic</i>			DoD-80	Molecular Regulation of Corticosteroid Receptor Expression in Stress-Responsive Cells
<i>Mechanistic</i>			DoD-91	Neurological and Circadian Substrates of PTSD-like Behaviors
<i>Mechanistic</i>			DoD-92	Traumatic Experiences Persistently Enhance Cue-dependent Learning: Toward an Animal Model of Chronic Stress and Posttraumatic Stress Disorder
<b>Chemical Weapons</b>				
<i>Clinical</i>	Diagnosis		VA-47	Retrospective Verification of Mustard Gas Exposure
<i>Clinical</i>	Pyridostigmine Bromide	Prevention	DoD-60	Butyrylcholinesterase Genetic Variants in Persons with Gulf War Illness

## Chemical Weapons (continued)

<i>Development</i>	Diagnosis	DoD-49	Diagnosis and Dosemetry of Exposure to Sulfur Mustard: Development of Standard Operating Procedures and Exploratory Research on Protein
<i>Epidemiology</i>		DoD-116 A	Follow-Up Investigation of Troops Exposed to Nerve Agents at Aberdeen Proving Ground (Pilot Study) (See also VA-63A; formerly VA/DoD-2DA)
<i>Epidemiology</i>		VA-63 A	Follow-Up Investigation of troops exposed to nerve agents at Aberdeen Proving Ground (Pilot Study) (See also DoD-116A; formerly VA/DoD-2VA/2DA)
<i>Epidemiology</i>	Symptoms & General Health	DoD-69	Five Year Follow-Up of Army Personnel Exposed to Chemical Warfare Agents
<i>Epidemiology</i>	Symptoms & General Health	DoD-93	Troops Exposed to Nerve Agents at Aberdeen Proving Ground: Follow-Up
<i>Mechanistic</i>		DoD-137	Low Level Exposure to Sulfur Mustard: Development of a SOP for Analysis of Albumin Adducts and of a System for Non-Invasive Diagnosis on Skin
<i>Mechanistic</i>		DoD-146	Assessment of Toxicology Assay Methods and Chemical Exposures Among a Cohort of US Marines Deployed in the Gulf War
<i>Mechanistic</i>		DoD-50	Toxicokinetics of O-Ethyl S-(2-Diisopropylaminoethyl) Methylphosphonothioate [(+)-VX] in Rats, Hairless Guinea Pigs and Marmosets - Identification of Metabolic Pathways
<i>Mechanistic</i>	Brain & Nervous System	DoD-53	Long-Term Effects of Subclinical Exposures to Sarin
<i>Mechanistic</i>	Diagnosis	VA-6 D	DNA Damage from Chemical Agents and Its Repair (Project IV)

## Chemical Weapons (continued)

<i>Mechanistic</i>	Environmental Toxicology		DoD-135	Biochemical Markers for Exposure to Low Doses of Organophosphorous Exposure
<i>Mechanistic</i>	Environmental Toxicology		DoD-136	A Mechanism-Based, Molecular Fingerprint Strategy for Detecting Biomarkers of Organophosphate Exposure
<i>Mechanistic</i>	Environmental Toxicology		DoD-138	Improving Blood Monitoring of Enzymes as Biomarkers of Risk from Anticholinergic Pesticides and Chemical Warfare Agents
<i>Mechanistic</i>	Prevention		DoD-51	Transgenic Engineering of Cholinesterases: Tools for Exploring Cholinergic Responses
<i>Mechanistic</i>	Pyridostigmine Bromide	Brain and Nervous System	DoD-113	Interactions of Subsymptomatic Doses of Sarin with Pyridostigmine: Neurochemical, Behavioral, and Physiological Effects

## Depleted Uranium

<i>Mechanistic</i>			DoD-126	Blood-Brain Barrier Transport of Uranium
<i>Mechanistic</i>			DoD-127	Depleted Uranium Fragment Carcinogenicity: Extrapolation of Findings in Rodents to Man
<i>Mechanistic</i>			DoD-128	Multifactorial Assessment of Depleted Uranium Neurotoxicity
<i>Mechanistic</i>			DoD-129	Inhalation of Uranium Oxide Aerosol: CNS Deposition, Neurotoxicity, and Role in Gulf War Illness
<i>Mechanistic</i>			DoD-130	Carcinogenicity and Immunotoxicity of Embedded Depleted Uranium and Heavy-Metal Tungsten Alloys in Rodents
<i>Mechanistic</i>	Environmental Toxicology		DoD-7 A	Health Risk Assessment of Embedded Depleted Uranium: Behavior, Physiology, Histology, and Biokinetic Modeling

## Depleted Uranium (continued)

<i>Mechanistic</i>	Environmental Toxicology	DoD-7 B	Carcinogenicity of Depleted Uranium Fragments
<i>Mechanistic</i>	Immune Function	DoD-123	Immunotoxicity of Depleted Uranium and Heavy Metal
<i>Mechanistic</i>	Reproductive Health	DoD-121	Evaluation of the Health Risks of Embedded Depleted Uranium Shrapnel During Pregnancy and Offspring Development
<i>Mechanistic</i>	Symptoms & General Health	DoD-122	Carcinogenic Potential of Depleted Uranium and Tungsten Alloys

## Diagnosis

<i>Clinical</i>		DoD-47	Study of Mycoplasmal Infections in Gulf War Veterans
<i>Development</i>		DoD-100	Antibodies to Squalene
<i>Development</i>		DoD-66	Testing for mycoplasmal infection replicability of nucleoprotein gene tracking and forensic polymerase chain reaction
<i>Development</i>		DoD-97	Surveillance of B. pertussis among Military Trainees with Respiratory Disease: Development and Validation of a Highly Sensitive PCR and Beacon Probe based Method for Diagnosis of Pertussis

## Environmental Toxicology

<i>Clinical</i>	Brain & Nervous System Interactions	VA-48	Cross-Sensitization as a CNS Model for Gulf War Chemical
<i>Clinical</i>	Diagnosis	VA-64 C	Development of a structured neurotoxicant assessment checklist (SNAC) for clinical use in veteran populations
<i>Clinical</i>	Symptoms & General Health	VA-4 D	Evaluation of Respiratory Dysfunction Among Gulf War Veterans
<i>Development</i>		DoD-16	Kuwait Oil Fire Health Risk Assessment
<i>Development</i>		DoD-18	Kuwait Oil Fires Troop Exposure Assessment Model (TEAM)

## Environmental Toxicology (continued)

<i>Development</i>			DoD-19	Persian Gulf Veterans Health Tracking System
<i>Development</i>	Interactions		DoD-34	Characterization of Emissions from Heaters Burning Leaded Diesel Fuel in Unvented Tents
<i>Epidemiology</i>			DoD-13	Effects of Persian Gulf War Service on Military Working Dogs
<i>Mechanistic</i>			DoD-134	Identification and Development of Biological Markers of Human Exposure to the Insecticide Permethrin
<i>Mechanistic</i>			VA-65 A	Does a variant of the human SOD2 gene increase sensitivity to hazards?
<i>Mechanistic</i>			VA-65 B	The contribution of FEN-1 to genetic integrity subsequent to oxidative stress
<i>Mechanistic</i>			VA-65 C	The importance of hydrogen peroxide detoxification in cellular protection
<i>Mechanistic</i>			VA-65 D	Do defective Gpx1 and ALDH2 genes increase sensitivity to environmental hazards?
<i>Mechanistic</i>	Brain & Nervous System	Chemical Weapons	DoD-22	Chronic Organophosphorus Exposure and Cognition
<i>Mechanistic</i>	Prevention		HHS-3	Biomarkers of Susceptibility and Polycyclic Aromatic Hydrocarbon (PAH) Exposure in Urine and blood Cell DNA from U.S. Army Soldiers Exposed to Kuwaiti Oil Well Fires
<i>Mechanistic</i>	Prevention		VA-4 E	The Aromatic Hydrocarbon Receptor (AhR) as a Biomarker of Susceptibility

## Immune Function

<i>Clinical</i>			DoD-106	The Role of Th1/Th2 cytokine balance in Gulf War-related illness
<i>Clinical</i>			DoD-48	Assessment of Genomic Instability via Chromosome 7 Inversion Frequency in a Gulf-War Syndrome Cohort vs Selected Control Groups

## Immune Function (continued)

<i>Clinical</i>	Brain & Nervous System		DoD-88	Clinical Relevance of Novel Immunological Markers in PTSD
<i>Clinical</i>	Symptoms & General Health		VA-17	Immunological Evaluation of Persian Gulf Veterans
<i>Clinical</i>	Symptoms & General Health		VA-6 B	Clinical and Neuroendocrine Aspects of Fibromyalgia (Project II)
<i>Mechanistic</i>	Interactions	Environmental Toxicology	HHS-7	Immunotoxicity of Dermal Permethrin and Cis-Urocanic Acid
<i>Mechanistic</i>	Pyridostigmine Bromide	Interactions	DoD-112	Role of Respirable Saudi Arabian Sand and Pyridostigmine in the Gulf War Syndrome: An Autoimmune Adjuvant Disease?

## Interactions

<i>Clinical</i>	Pyridostigmine Bromide		DoD-124	Randomized, Controlled Trial for Combination Treatment with Pyridostigmine, DEET, and Permethrin
<i>Development</i>	Environmental Toxicology		HHS-8	Strategy to Identify Non-Additive Response to Chemical Mixtures
<i>Mechanistic</i>	Brain & Nervous System	Chemical Weapons	DoD-54	Assessment of Subchronic Neurobehavioral and Neuropathologic Effects in Rats Following Low-Level Sarin Exposure
<i>Mechanistic</i>	Chemical Weapons	Brain & Nervous System	DoD-72	Long-term Effects of Subchronic Exposure to Sarin, Alone and with Stress or Other Chemicals
<i>Mechanistic</i>	Chemical Weapons	Brain & Nervous System	DoD-78	Experimental Models of Gulf War Syndrome
<i>Mechanistic</i>	Chemical Weapons	Pyridostigmine Bromide	DoD-55	Low-Level Exposure to GB Vapor in Air: Diagnosis/Dosimetry, Lowest Observable Effect Levels, Performance-Incapacitation, and Possible Delayed Effects
<i>Mechanistic</i>	Chemical Weapons	Pyridostigmine Bromide	DoD-56	Low-Level Sarin Neurotoxicity and Its Modulation by Pyridostigmine

## Interactions (continued)

<i>Mechanistic</i>	Chemical Weapons	Pyridostigmine Bromide	DoD-61	Neurophysiologic and Neuropathologic Effects in Monkeys of Low Level Exposures to Sarin, Pyridostigmine, Pesticides, and Botulinum Toxoid
<i>Mechanistic</i>	Chemical Weapons	Pyridostigmine Bromide	DoD-62	Sarin and Pyridostigmine Interaction under Physical Stress: Neurotoxic Effects in Mice
<i>Mechanistic</i>	Environmental Toxicology		DoD-103	Human Metabolism and Interactions of Deployment-related Chemicals
<i>Mechanistic</i>	Immune Function	Pyridostigmine Bromide	DoD-81	Immunotoxicity due to Coexposure to DEET, Pyridostigmine, and
<i>Mechanistic</i>	Pyridostigmine Bromide		DoD-77	Percutaneous Absorption of Chemical Mixtures Relevant to the Gulf War
<i>Mechanistic</i>	Pyridostigmine Bromide	Brain & Nervous System	DoD-2	Physiological and Neurobehavioral Effects in Rodents from Exposure to Pyridostigmine, Fuels, and DEET
<i>Mechanistic</i>	Pyridostigmine Bromide	Brain & Nervous System	DoD-37	Neurobehavioral and Immunological Toxicity of Pyridostigmine, Permethrin, and DEET in Male and Female Rats
<i>Mechanistic</i>	Pyridostigmine Bromide	Brain & Nervous System	DoD-75	Toxic Interactions of Prophylactic Drugs and Pesticides
<i>Mechanistic</i>	Pyridostigmine Bromide	Immune Function	DoD-76	Evaluations of Immunotoxicity due to Concurrent Exposure to DEET, Pyridostigmine, and JP-8 Jet Fuel

## Leishmaniasis

<i>Clinical</i>	Diagnosis	Treatment	VA-6 E	Clinical and Epidemiology Leishmania Research
<i>Development</i>	Diagnosis		DoD-38	Diagnostic Antigens of Leishmania tropica
<i>Development</i>	Diagnosis		DoD-8 A	Serologic Diagnosis of Viscerotropic Leishmaniasis (VTL)
<i>Development</i>	Diagnosis		DoD-8 B	Development of a Leishmania Skin Test Antigen (LSTA)



## Leishmaniasis (continued)

<i>Development</i>	Diagnosis	Treatment	DoD-95	Development of Diagnostic tools and alternative treatment drugs for Leishmania
<i>Mechanistic</i>	Prevention		VA-15	Vaccine-Mediated Immunity Against Leishmaniasis
<i>Mechanistic</i>	Prevention		VA-16	Protective Immunity in Experimental Visceral
<i>Mechanistic</i>	Treatment		DoD-9	Identification of the Genetic Factors Which Control Tropism in Leishmania

## Mortality

<i>Epidemiology</i>			DoD-15	Comparative Mortality Among US Military Personnel Worldwide During Operations Desert Shield and Desert Storm
<i>Epidemiology</i>			VA-1	Mortality Follow-up Study of Persian Gulf Veterans
<i>Epidemiology</i>	Prevention		DoD-102	Case-Control Study of Fatal Motor Vehicle Crashes Among Gulf War and Non-Deployed Veterans

## Prevention

<i>Epidemiology</i>			DoD-110	Predictors of Career and Family Dysfunction in Young Adults Enlisting in the United States Navy
<i>Epidemiology</i>			HHS-9	Improving Health Risk Communications to Prevent Unexplained Illnesses Related to Military Deployments
<i>Epidemiology</i>	Symptoms and General Health		DoD-140	US Department of Defense Surveillance for Neoplasms in Infancy
<i>Epidemiology</i>	Treatment		HHS-10	Health-e Voice: Optimized Implementation of a Stepped Clinical Risk Communications Guideline
<i>Epidemiology</i>	Treatment	Brain & Nervous System	DoD-145	Early Intervention Research Program to Enhance Soldier Resilience

## Pyridostigmine Bromide

<i>Clinical</i>		DoD-11	Male/Female Differential Tolerances to Pyridostigmine	
<i>Clinical</i>	Brain & Nervous System	Prevention	DoD-64	Individual Differences in Neurobehavioral Effects of Pyridostigmine
<i>Epidemiology</i>		DoD-17	Retrospective Studies Involving Military Use of Pyridostigmine as a Pretreatment for Nerve Agent Poisoning	
<i>Epidemiology</i>	Prevention	DoD-21	Study of Variability In Pyridostigmine Inhibition of Blood Cholinesterases in Healthy Adults and Individuals With Symptoms Following Participation in Operation Desert Storm	
<i>Mechanistic</i>	Brain & Nervous System	DoD-107	Stress, Organophosphates and Blood Brain Barrier Integrity	
<i>Mechanistic</i>	Brain & Nervous System	DoD-59	Pyridostigmine-induced Neurodegeneration: Role of Neuronal Apoptosis	
<i>Mechanistic</i>	Brain & Nervous System	DoD-79	Time Course of Stress-induced Impairment of Blood Brain Barrier	
<i>Mechanistic</i>	Brain & Nervous System	VA-49	Sensitivity to Pyridostigmine Bromide: Persistent Neural Dysfunction	
<i>Mechanistic</i>	Environmental Toxicology	VA-6 C	Neurotoxicity of Environmental Pollutants and Warfare Agents (Project III)	
<i>Mechanistic</i>	Interactions	DoD-10	Pyridostigmine Synergistic Toxicity Study	
<i>Mechanistic</i>	Interactions	DoD-139	Assessment of the Role of Stress-Activated Kinase in the Pathogenesis of Gulf War Illnesses	
<i>Mechanistic</i>	Interactions	VA-5 D	Effects of Genetics and Stress on Responses to Environmental	
<i>Mechanistic</i>	Prevention	DoD-33	Effects of Pyridostigmine in Flinders Line Rats Differing in Cholinergic Sensitivity	

## Reproductive Health

<i>Clinical</i>			VA-53	Spouses and Children Program
<i>Clinical</i>	Symptoms & General Health	Immune Function	DoD-44	Investigation of Seminal Plasma Hypersensitivity Reactions
<i>Epidemiology</i>			DoD-1 C	Epidemiologic Studies of Morbidity Among Gulf War Veterans: A Search for Etiologic Agents and Risk Factors; Study 3: A comparative study of pregnancy outcomes among Gulf War veterans and other active-duty
<i>Epidemiology</i>			DoD-1 D	Epidemiologic Studies of Morbidity Among Gulf War Veterans: A Search for Etiologic Agents and Risk Factors; Study 4: Infertility and Miscarriage in Gulf War
<i>Epidemiology</i>			DoD-1 G	Epidemiologic Studies of Morbidity Among Gulf War Veterans: A Search for Etiologic Agents and Risk Factors; Study 7: Prevalence of Congenital Anomalies Among Children of Persian Gulf War Veterans
<i>Epidemiology</i>			DoD-35	Feasibility of Investigating Whether There is a Relationship Between Birth Defects and Service in the Gulf War.
<i>Epidemiology</i>			HHS-4	Suspected Increase of Birth Defects and Health Problems Among Children Born to Persian Gulf War Veterans In Mississippi

## Symptoms & General Health

<i>Clinical</i>			DoD-1 A	Epidemiologic Studies of Morbidity Among Gulf War Veterans: A Search for Etiologic Agents and Risk Factors; A Study of Symptoms Among 1500 Seabees
<i>Clinical</i>			DoD-65	Multi-disciplinary Pathophysiologic Studies of Neurotoxic Gulf War Related Syndromes Leading to Diagnosis and Treatment
<i>Clinical</i>			VA-18	Chronic Gastrointestinal Illness in Persian Gulf Veterans

## Symptoms & General Health (continued)

<i>Clinical</i>			VA-40	Musculoskeletal Symptoms in Gulf War Syndrome
<i>Clinical</i>	Brain & Nervous System		DoD-57	Physiologic Effects of Stress in Gulf War Veterans
<i>Clinical</i>	Brain & Nervous System		DoD-58	Illness Among Persian Gulf War Veterans: Case Validation Studies
<i>Clinical</i>	Brain & Nervous System		VA-4Core	Boston Environmental Hazards Research Center Program
<i>Clinical</i>	Brain & Nervous System		VA-5 B	Physiological and Psychological Assessments of Persian Gulf Veterans
<i>Clinical</i>	Brain & Nervous System		VA-5 Core	East Orange Environmental Hazards Research Center Program
<i>Clinical</i>	Brain & Nervous System		VA-8	Psychological Test Data of Gulf War Veterans Over Time
<i>Clinical</i>	Brain & Nervous System	Reproductive Health	DoD-45	Air Force Women's Health Surveillance Study
<i>Clinical</i>	Diagnosis		DoD-109	Disordered Responses to Orthostatic Stress in the Pathogenesis of Gulf War Syndrome Symptoms
<i>Clinical</i>	Immune Function	Brain & Nervous System	DoD-42	The Symptomatic Persian Gulf Veterans Protocol: An Analysis of Risk Factors with an Immunologic and Neuropsychiatric Assessment
<i>Epidemiology</i>			DoD-1 B	Epidemiologic Studies of Morbidity Among Gulf War Veterans: A Search for Etiologic Agents and Risk Factors; Study 2: A Comparative Study of Hospitalizations among Active-Duty Personnel Who Participated in the Gulf War and Similar Personnel Who Did Not.

## Symptoms & General Health (continued)

<i>Epidemiology</i>	DoD-1 E	Epidemiologic Studies of Morbidity Among Gulf War Veterans: A Search for Etiologic Agents and Risk Factors; Study 5: Seabee Health Study
<i>Epidemiology</i>	DoD-1 F	Epidemiologic Studies of Morbidity Among Gulf War Veterans: A Search for Etiologic Agents and Risk Factors; Study 6: A Comparison of Nonfederal Hospitalization Experience Among Veterans in California who have separated from active service: PGW vs. EV
<i>Epidemiology</i>	DoD-104	Clinical Evaluation of a Proposed New Gulf War Syndrome
<i>Epidemiology</i>	DoD-116 B	Patterns of Pre-Persian Gulf War Illness and Health Care Seeking, Pilot Study (See also VA-63B; formerly VA/DoD- 2DB)
<i>Epidemiology</i>	DoD-120	Assessing the Potential Health Impact of the Gulf War on Saudi Arabia National Guard Members and Their Dependents
<i>Epidemiology</i>	DoD-14	Risk Factors Among US Army Soldiers for Enrolling on the Department of Veterans Affairs Gulf War Registry
<i>Epidemiology</i>	DoD-39	A Controlled Epidemiological and Clinical Study into the Effect of Gulf War Service on Servicemen and Women of the United Kingdom Armed Forces
<i>Epidemiology</i>	DoD-4	The General Well-Being of Gulf War Era Service Personnel from the States of Pennsylvania and Hawaii: A Survey
<i>Epidemiology</i>	DoD-46	Exploratory Data Analysis with the CCEP Database
<i>Epidemiology</i>	DoD-70	War Syndromes from 1900 to the Present: Symptom Patterns and Long-term Health Outcomes

## Symptoms & General Health (continued)

<i>Epidemiology</i>	DoD-71	A Comparison of Post Deployment Hospitalization Between Vietnam and Gulf War Veterans
<i>Epidemiology</i>	DoD-73	Post-deployment Morbid Stress, Behavior and Health: Developing a Model for Predicting Morbidity, Mortality, and other Adverse Outcomes
<i>Epidemiology</i>	DoD-74	Relationship of Stress Exposures to Health in Gulf War Veterans
<i>Epidemiology</i>	DoD-94	Combined Analysis of the VA and DoD Gulf War Clinical Registries: A Study of Clinical Findings from Systematic Medical Examinations of 100,000 U.S. Gulf War Veterans
<i>Epidemiology</i>	DoD-98	Investigation of a Baseline Medical Database to Evaluate the Health of Military Forces and Veterans
<i>Epidemiology</i>	DoD-99	DoD-wide Medical Surveillance for Potential Long-Term Adverse Events associated with Anthrax Immunization in Active Duty Service Members, Proposal 1: Hospitalizations
<i>Epidemiology</i>	HHS-1	Health Assessment of Persian Gulf War Veterans from Iowa
<i>Epidemiology</i>	HHS-6	Defining Gulf War Illness
<i>Epidemiology</i>	VA-2 A	VA National Survey of Persian Gulf Veterans - Phase I
<i>Epidemiology</i>	VA-2 B	VA National Survey of Persian Gulf Veterans - Phase II
<i>Epidemiology</i>	VA-3	Use of Roster of Veterans Who Served in Persian Gulf Area
<i>Epidemiology</i>	VA-4 C	Gulf War And Vietnam Veterans Cancer Incidence Surveillance
<i>Epidemiology</i>	VA-46	Diarrhea in Persian Gulf Veterans: An Irritable Bowel-Like Disorder

## Symptoms & General Health (continued)

<i>Epidemiology</i>		VA-5 A	Health and Exposure Survey of Persian Gulf Veterans
<i>Epidemiology</i>		VA-6 Core	Core Program: Portland Environmental Hazards Research Center: Environment, Veterans Health and the Gulf War Syndrome. Core Project for Clinical and Epidemiology Research
<i>Epidemiology</i>		VA-63 B	Patterns of Pre-Persian Gulf War Illness and Health Care Seeking Pilot Study (See also DoD-116B; previously VA/DoD-2VB)
<i>Epidemiology</i>		VA-70	A Clinical Evaluation of the Health Status of Persian Gulf War Veterans in VISN 8
<i>Epidemiology</i>	Brain & Nervous System	DoD-141	Physical, Mental, Social, and Family Health Outcomes of Gulf War Veterans
<i>Epidemiology</i>	Brain & Nervous System	DoD-142	Illness Among Persian Gulf War Veterans: Case Validation Studies (Iowa / Great Britain)
<i>Epidemiology</i>	Brain & Nervous System	DoD-143	Millennium Cohort Study
<i>Epidemiology</i>	Brain & Nervous System	VA-2 C	VA National Survey of Persian Gulf Veterans - Phase III
<i>Epidemiology</i>	Chemical Weapons	DoD-116	VA/DoD Core Funding of the Medical Follow-Up Agency (See also VA-63; formerly)
<i>Epidemiology</i>	Chemical Weapons	VA-63	VA/DoD Core funding of the Medical Follow-Up Agency (See also DoD-116; formerly)
<i>Epidemiology</i>	Diagnosis	HHS-2	Disease Cluster in a Pennsylvania Air National Guard Unit, EPI-AID 95-18
<i>Epidemiology</i>	Prevention	DoD-108	Health Status of Current National Guard Members

## Symptoms & General Health (continued)

<i>Epidemiology</i>	Prevention		DoD-117	Patterns of Pre-Persian Gulf War Illness and Health Care Seeking
<i>Epidemiology</i>	Reproductive Health		DoD-30	Epidemiological Studies Persian Gulf War Illnesses, PG Women's Health Linkage Study
<i>Epidemiology</i>	Reproductive Health	Treatment	DoD-96	Deployment Health Center

## Treatment

<i>Clinical</i>			DoD-119	Antibiotic Treatment of Gulf War Veterans' Illnesses (ABT)
<i>Clinical</i>			VA-56	Birmingham's Gulf War Veterans' Illness Demonstration Clinic (13)
<i>Clinical</i>			VA-57	Case Management and Residential Rehabilitation for Persian Gulf War Veterans (13)
<i>Clinical</i>			VA-58	Implementation and Evaluation of Gulf War Veterans' Demonstration Project (13)
<i>Clinical</i>			VA-60	Identification and Management of Sleep Disorders in Gulf War Veterans
<i>Clinical</i>	Brain & Nervous System		DoD-125	A Randomized Clinical Trial of Cognitive-Behavioral Treatment for PTSD in Women (See VA-74)
<i>Clinical</i>	Brain & Nervous System		VA-59	Demonstration Treatment Program for Gulf War Veterans With Unexplained Physical Symptoms
<i>Clinical</i>	Brain & Nervous System		VA-74	A Randomized Clinical Trial for Cognitive-Behavioral Treatment for PTSD in Women (See DoD-125)
<i>Clinical</i>	Symptoms & General Health		DoD-115	A Randomized, Multi-Center, Controlled Trial of Multi-Model Therapy in Veterans with Gulf War Illnesses (EBT) (See also VA-62; formerly VA/DoD 1D)
<i>Clinical</i>	Symptoms & General Health		VA-55	Antibiotic Treatment of Gulf War Veterans' Illnesses (ABT)



## Treatment (continued)

<i>Clinical</i>	Symptoms & General Health	VA-62	A Randomized, Multi-Center, Controlled Trial of Multi-Model Therapy in Veterans with Gulf War Illness (EBT) (See also DoD-115; formerly VA/DoD 1V)
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# **Appendix A 3**

## **Project Funding**

**(As of December 31, 2002)**



# NOTES ON REVISED TABLE OF SPENDING FOR GULF WAR VETERANS' ILLNESSES RESEARCH

Research Working Group  
Military and Veterans Health Coordinating Board  
December 31, 2001

**NOTE:** These notes and the attached table replace and supercede Appendix A-3 of the *Annual Report to Congress: Federally Sponsored Research on Gulf War Veterans' Illnesses for 2000* issued October 2001.

## General

1. All entries for research funding reflect money centrally committed to researchers (both intramural and extramural) to carry out the specific projects. These funds do not cover operational costs for administration, infrastructure, etc. Each department allocates these costs in slightly different ways, making it difficult to accurately account for these funds. For example, in VA the research appropriation does not pay for clinician/investigator salaries. By law those funds must come from the patient care appropriation.
2. A "blank" funding entry generally reflects years in which a project was not active (e.g. it had not started or it had come to an end).
3. Some multiyear projects receive all of their funding in the fiscal year of the authorization and appropriation. For those, the dollars authorized and appropriated are shown for that fiscal year. The remaining funding entries show \$0 for the years that the project is active.
4. Some intramural projects/programs are supported out of operational costs. For those projects, \$0 is entered for the funds in the fiscal years that the project is active.
5. Programs consisting of multiple projects are represented in one of two ways depending on how funds are centrally allocated:
  - a. **Funds centrally allocated to the program:** These programs are shown in the table as a main program indicated by project designation such as DoD-1, and projects in the program as DoD-1A, DoD-1B, etc. All funds are shown under the main program. Blank funding entries are shown for the individual projects.
  - b. **Funds centrally allocated to projects within a program:** The funds for these programs are only indicated by their projects without a main program identifier, for example, VA-2A and VA-2B.
6. Funds listed under FY'02 are only projections at this time.

## Specific

1. DoD-4 is part of a larger US Army study conducted at Walter Reed Army Institute of Research. Funding for this project has been combined into project DoD-23. In addition, projects DoD-8A and 8B are part of a larger US Army study in which all funding has been combined and is shown under program DoD-8.
2. HHS-3 was funded from the FY'91 appropriation, which is not included in this accounting.
3. HHS-4 was funded from the FY'93 appropriation, which is not included in this accounting.
4. Funds for VA-1 for FY'94 through FY'97 represent an aggregate of funds for both the VA Mortality Study and the VA National Survey of Persian Gulf Veterans. Beginning in FY'98, VA-1 reflects continuation of the VA Mortality Study. Beginning in FY'98, VA-2A, 2B, and 2C reflect funding for separate components of the VA National Survey of Persian Gulf Veterans.
5. In five instances (DoD-115 & VA-62, DoD-116 & VA-63, DoD-118 & VA-61, DoD-119 & VA-55, and DoD-125 & VA-74), two different designations represent the same project because they were funded jointly by both DoD and VA. The total funding appropriated for each of these five projects is broken down and reported separately by funding agency.

**Department of Defense Gulf War Research Funding**

PROJECT NO	PROJECT TITLE	STATUS*	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	TOTALS FY '94-'01	FY 2002 Projection
DoD-1	Naval Health Study Program	C	\$725,000	\$1,010,000	\$2,250,000	\$2,000,000	\$2,654,000				\$8,639,000	
DoD-1A	Epidemiologic Studies of Morbidity Among Gulf War Veterans: A Search for Etiologic Agents and Risk Factors; Study 1: A Study of Symptoms among 1500 Seabees.	C									\$0	
DoD-1B	Epidemiologic Studies of Morbidity among Gulf War Veterans: A Search for Etiologic Agents and Risk Factors; Study 2: A Comparative Study of Hospitalizations among Active-Duty Personnel Who Participated in the Gulf War and Similar Personnel Who Did Not.	C									\$0	
DoD-1C	Epidemiologic Studies of Morbidity among Gulf War Veterans: A Search for Etiologic Agents and Risk Factors; Study 3: A comparative study of pregnancy outcomes among Gulf War veterans and other active-duty personnel.	C									\$0	
DoD-1D	Epidemiologic Studies of Morbidity among Gulf War Veterans: A Search for Etiologic Agents and Risk Factors; Study 4: Infertility and Miscarriage in Gulf War Veterans.	C									\$0	

Status: C=Complete; O=Ongoing

**Department of Defense Gulf War Research Funding**

<b>PROJECT NO</b>	<b>PROJECT TITLE</b>	<b>STATUS*</b>	<b>FY 1994</b>	<b>FY 1995</b>	<b>FY 1996</b>	<b>FY 1997</b>	<b>FY 1998</b>	<b>FY 1999</b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>TOTALS FY '94-'01</b>	<b>FY 2002 Projection</b>
DoD-1E	Epidemiologic Studies of Morbidity among Gulf War Veterans: A Search for Etiologic Agents and Risk Factors; Study 5: Seabee Health Study.	C									\$0	
DoD-1F	Epidemiologic Studies of Morbidity among Gulf War Veterans: A Search for Etiologic Agents and Risk Factors; Study 6: A Comparison of Nonfederal Hospitalization Experience Among Veterans in California who have separated from active service: PGW vs. EV.	C									\$0	
DoD-1G	Epidemiologic Studies of Morbidity among Gulf War Veterans: A Search for Etiologic Agents and Risk Factors; Study 7: Prevalence of Congenital Anomalies Among Children of Persian Gulf War Veterans.	C									\$0	
DoD-2	Physiological and Neurobehavioral Effects in Rodents from Exposure to Pyridostigmine, Fuels, and DEET.	C	\$90,000	\$0	\$0	\$0					\$90,000	
DoD-4	The General Well-Being of Gulf War Era Service Personnel from the States of Pennsylvania and Hawaii: A Survey.	C	\$0								\$0	

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**Department of Defense Gulf War Research Funding**

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DoD-7A	Health Risk Assessment of Embedded Depleted Uranium: Behavior, Physiology, Histology, and Biokinetic Modeling.	C	\$897,000	\$0	\$0	\$0	\$0				\$897,000	
DoD-7B	Carcinogenicity of Depleted Uranium Fragments.	C	\$897,814	\$0	\$0	\$0	\$0	\$121,400	\$0		\$1,019,214	
DoD-8	Program DoD-8.	C	\$773,000	\$895,000	\$652,000	\$695,000	\$694,000	\$0			\$3,709,000	
DoD-8A	Serologic Diagnosis of Viscerotropic Leishmaniasis (VTL).	C	\$0	\$0	\$0						\$0	
DoD-8B	Development of a Leishmania Skin Test Antigen (LSTA).	O	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
DoD-9	Identification of the Genetic Factors Which Control Tropism in Leishmania.	C	\$0	\$150,000	\$0	\$0	\$0				\$150,000	
DoD-10	Pyridostigmine Synergistic Toxicity Study.	C	\$42,000	\$44,000							\$86,000	
DoD-11	Male/Female Differential Tolerances to Pyridostigmine Bromide.	C	\$549,000	\$359,000	\$0	\$0	\$0				\$908,000	
DoD-13	Effects of Persian Gulf War Service on Military Working Dogs.	O	\$0	\$0	\$97,000	\$200,000	\$120,000	\$200,000	\$0	\$0	\$617,000	\$0
DoD-14	Risk Factors Among US Army Soldiers for Enrolling on the Department of Veterans Affairs Gulf War Registry.	C	\$120,000	\$0	\$0	\$0					\$120,000	
DoD-15	Comparative Mortality Among US Military Personnel Worldwide During Operations Desert Shield and Desert Storm.	C	\$20,000	\$0							\$20,000	
DoD-16	Kuwait Oil Fire Health Risk Assessment.	C	\$345,000	\$137,000	\$50,000	\$127,000					\$659,000	

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DoD-17	Retrospective Studies Involving Military Use of Pyridostigmine as a Pretreatment for Nerve Agent Poisoning.	C	\$21,000								\$21,000	
DoD-18	Kuwait Oil Fires Troop Exposure Assessment Model (TEAM).	O	\$68,000	\$151,000	\$770,000	\$193,000	\$290,000	\$295,000	\$295,000	\$306,000	\$2,368,000	\$0
DoD-19	Persian Gulf Veterans Health Tracking System.	O		\$25,000	\$0	\$0	\$450,000	\$450,000	\$0	\$0	\$925,000	\$0
DoD-21	Study of Variability In Pyridostigmine Inhibition of Blood Cholinesterases in Healthy Adults and Individuals With Symptoms Following Participation in Operation Desert Storm.	C	\$38,000	\$100,000	\$0	\$0					\$138,000	
DoD-22	Chronic Organophosphorus Exposure and Cognition.	C	\$375,000	\$0	\$0	\$0	\$0				\$375,000	
DoD-23	Acute and Long-Term Impact of Deployment to Southwest Asia on the Physical and Mental Health of Soldiers and their Families.	C	\$621,000	\$688,000	\$764,000	\$985,000					\$3,058,000	
DoD-30	Epidemiological Studies Persian Gulf War Illnesses, PG Women's Health Linkage Study.	C		\$779,000	\$0	\$0	\$0	\$0	\$0	\$0	\$779,000	
DoD-31	Dysregulation of the Stress Response in the Persian Gulf Syndrome.	C		\$971,000	\$0	\$0	\$0	\$0	\$0		\$971,000	

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**Department of Defense Gulf War Research Funding**

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DoD-32	Neuropsychological Functioning in Persian Gulf Era Veterans.	C		\$353,000	\$0	\$0	\$0	\$0			\$353,000	
DoD-33	Effects of Pyridostigmine in Flinders Line Rats Differing in Cholinergic Sensitivity.	C		\$354,000	\$0	\$0	\$0	\$0			\$354,000	
DoD-34	Characterization of Emissions from Heaters Burning Leaded Diesel Fuel in Unvented Tents.	C		\$283,000	\$0	\$0	\$0	\$0			\$283,000	
DoD-35	Feasibility of Investigating Whether There is a Relationship Between Birth Defects and Service in the Gulf War.	C		\$427,000	\$10,000	\$63,000	\$0	\$10,500	\$0	\$0	\$510,500	
DoD-36	Fatigue in Persian Gulf Syndrome-Physiologic Mechanisms.	C		\$416,000	\$138,000	\$0	\$0	\$0			\$554,000	
DoD-37	Neurobehavioral and Immunological Toxicity of Pyridostigmine, Permethrin, and DEET in Male and Female Rats.	C		\$934,000	\$5,000	\$0	\$0	\$0			\$939,000	
DoD-38	Diagnostic Antigens of Leishmania tropica.	C		\$612,000	\$0	\$0	\$0				\$612,000	
DoD-39	A Controlled Epidemiological and Clinical Study into the Effect of Gulf War Service on Servicemen and Women of the United Kingdom Armed Forces.	C		\$865,000	\$0	\$28,400	\$155,000	\$0	\$124,868	\$0	\$1,173,268	

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DoD-40	Psychological and Neurobiological Consequences of the Gulf War Experience.	C		\$264,000	\$0	\$0	\$0	\$0	\$0	\$0	\$264,000	
DoD-41	Evaluation of Muscle Function in Persian Gulf Veterans.	C		\$906,000	\$0	\$0	\$0	\$0	\$0		\$906,000	
DoD-42	The Symptomatic Persian Gulf Veterans Protocol: An Analysis of Risk Factors with an Immunologic and Neuropsychiatric Assessment.	C			\$700,000	\$0	\$0	\$0	\$0	\$0	\$700,000	
DoD-44	Investigation of Seminal Plasma Hypersensitivity Reactions.	C			\$634,000	\$0	\$5,000	\$14,200			\$653,200	
DoD-45	Air Force Women's Surveillance Study	O	\$247,068	\$0	\$299,274	\$0	\$456,732	\$20,505	\$0	\$99,628	\$1,123,207	\$0
DoD-46	Exploratory Data Analysis with the CCEP Database.	C			\$60,000	\$100,000					\$160,000	
DoD-47	Study of Mycoplasmal Infections in Gulf War Veterans.	C			\$112,000	\$0	\$0				\$112,000	
DoD-48	Assessment of Genomic Instability via Chromosome 7 Inversion Frequency in a Gulf War Syndrome Cohort vs. Selected Control Groups.	C			\$74,000	\$0	\$0				\$74,000	
DoD-49	Diagnosis and Dosemetry of Exposure to Sulfur Mustard: Development of Standard Operating Procedures and Exploratory Research on Protein Adducts.	C			\$927,000	\$0	\$0	\$0	\$0		\$927,000	

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DoD-50	Toxicokinetics of 0-Ethyl S-(2-Diisopropylaminoethyl) Methylphosphonothioate [(+)-VX] in Rats, Hairless Guinea Pigs and Marmosets - Identification of Metabolic Pathways.	C			\$699,000	\$0	\$0	\$0			\$699,000	
DoD-51	Transgenic Engineering of Cholinesterases: Tools for Exploring Cholinergic Responses.	C			\$864,000	\$0	\$0	\$0	\$0		\$864,000	
DoD-52	Female Gender and Other Potential Predictors of Functional Health Status Among Persian Gulf War Veterans.	C	\$414,000	\$0	\$0	\$0	\$0	\$0			\$414,000	
DoD-53	Long-Term Effects of Subclinical Exposures to Sarin.	C			\$1,000,000	\$400,000	\$0	\$0	\$217,137	\$0	\$1,617,137	
DoD-54	Assessment of Subchronic Neurobehavioral and Neuropathologic Effects in Rats Following Low-Level Sarin Exposure.	C			\$315,000	\$100,000	\$0	\$0	\$0		\$415,000	
DoD-55	Low-Level Exposure to GB Vapor in Air: Diagnosis/Dosimetry, Lowest Observable Effect Levels, Performance-Incapacitation, and Possible Delayed Effects.	C			\$500,000	\$136,000	\$0	\$0	\$0	\$0	\$636,000	
DoD-56	Low-Level Sarin Neurotoxicity and Its Modulation by Pyridostigmine.	O			\$685,000	\$100,000	\$0	\$0	\$0	\$0	\$785,000	\$0

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DoD-57	Physiologic Effects of Stress in Gulf War Veterans.	C				\$909,000	\$0	\$0	\$0	\$0	\$909,000	
DoD-58	Illness Among Persian Gulf War Veterans: Case Validation Studies.	O				\$2,208,000	\$0	\$0	\$0	\$0	\$2,208,000	\$0
DoD-59	Pyridostigmine-induced Neurodegeneration: Role of neuronal Apoptosis.	C				\$625,000	\$0	\$0	\$0	\$0	\$625,000	
DoD-60	Butyrylcholinesterase Genetic Variants in Persons with Gulf War Illness.	C				\$125,000	\$0	\$0			\$125,000	
DoD-61	Neurophysiologic and Neuropathologic Effects in Monkeys of Low Level Exposures to Sarin, Pyridostigmine, Pesticides, and Botulinum Toxoid.	C				\$1,586,000	\$0	\$0	\$0		\$1,586,000	
DoD-62	Sarin and Pyridostigmine Interaction under Physical Stress: Neurotoxic Effects in Mice.	C				\$201,000	\$0	\$0			\$201,000	
DoD-63	PGW Veterans: Epidemiological and Clinical Evidence for Residual Organophosphate Neurotoxicity.	C				\$1,626,000	\$0	\$0	\$0		\$1,626,000	
DoD-64	Individual Differences in Neurobehavioral Effects of Pyridostigmine.	C				\$1,900,000	\$18,516	\$0	\$190,595	\$0	\$2,109,111	

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DoD-65	Multi-Disciplinary Pathophysiologic Studies of Neurotoxic Gulf War-Related Neurologic Syndromes Leading to Diagnosis and Treatment.	C				\$3,000,000	\$0	\$0	\$0		\$3,000,000	
DoD-66	Testing for Mycoplasmal Infection Replicability of Nucleoprotein Gene Tracking and Forensic Polymerase Chain Reaction.	C			\$49,940	\$100,000	\$40,000	\$403,000	\$140,319	\$0	\$733,259	
DoD-67	Antibacterial Treatment Method Based Upon the Excretion of Dead and Decaying Spherical Bacteria.	C				\$3,400,000	\$0	\$0			\$3,400,000	
DoD-69	Five Year Follow-Up of Army Personnel Potentially Exposed to Chemical Warfare Agents.	O				\$946,160	\$0	\$0	\$110,000	\$0	\$1,056,160	\$0
DoD-70	War Syndromes from 1900 to the Present: Symptom Patterns and Long Term Health Outcomes.	C				\$734,687	\$0	\$115,000	\$0	\$0	\$849,687	
DoD-71	A Comparison of Post-Deployment Hospitalization Incidence between Vietnam and Gulf War Veterans.	C				\$566,000	\$0	\$0	\$0		\$566,000	
DoD-72	Long-Term Effects of Subchronic Exposure to Sarin, Alone and with Stress and Other Chemicals.	O				\$996,000	\$0	\$0	\$0	\$0	\$996,000	\$0

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DoD-73	Post-Deployment Morbid Stress, Behavior and Health: Developing a Model for Predicting Morbidity, Mortality, and other Adverse Outcomes.	C				\$500,000	\$0	\$0	\$0	\$0	\$500,000	
DoD-74	Relationship of Stress Exposures to Health in Gulf War Veterans.	O				\$161,489	\$1,991,330	\$0	\$0	\$0	\$2,152,819	\$0
DoD-75	Toxic Interactions of Prophylactic Drugs and Pesticides.	O					\$1,380,157	\$0	\$0	\$0	\$1,380,157	\$0
DoD-76	Evaluation of Immunotoxicity Due to Concurrent Exposure to DEET, Pyridostigmine, and JP-8 Jet Fuel.	O					\$448,369	\$0	\$0	\$0	\$448,369	\$0
DoD-77	Percutaneous Absorption of Chemical Mixtures Relevant to the Gulf War.	C					\$760,031	\$0	\$0	\$0	\$760,031	
DoD-78	Experimental Models of Gulf War Syndrome.	C					\$2,179,097	\$444,800	\$0	\$0	\$2,623,897	
DoD-79	Time-course of Stress-Induced Impairment of the Blood Brain Barrier.	C				\$100,200	\$0	\$0	\$0		\$100,200	
DoD-80	Molecular Regulation of Corticosteroid Receptor Expression in Stress-Responsive Cells.	O				\$297,400	\$0	\$0	\$0	\$0	\$297,400	\$0
DoD-81	Immunotoxicity Due to Coexposure of DEET, Pyridostigmine, and Stress.	C				\$300,000	\$0	\$0	\$0	\$0	\$300,000	
DoD-82	Feasibility of Developing a Registry of PTSD-Affected Veteran Sib Pairs.	C				\$172,000	\$0	\$0	\$0		\$172,000	

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DoD-83	Risk for Stress-Related Substance Abuse: Effects of Family History of Alcoholism.	C				\$299,700	\$0	\$0	\$0	\$0	\$299,700	
DoD-84	Psychobiological Alterations Of Persian Gulf War Veterans with and without PTSD.	O				\$300,000	\$0	\$0	\$0	\$0	\$300,000	\$0
DoD-85	Central Nervous System Cytokines and CRH in Gulf War Veterans with Multiple Unexplained Symptoms.	O				\$149,900	\$149,200	\$0	\$0	\$0	\$299,100	\$0
DoD-86	Effects of Combat Stress on the Structure and Function of the Hippocampus.	O				\$300,000	\$297,800	\$0	\$0	\$0	\$597,800	\$0
DoD-87	Measurement and Validation of Psychosocial Risk and Resilience Factors Accounting for Physical and Mental Health and Health-Related Quality of Life among PGWVs.	O				\$289,100	\$0	\$0	\$0	\$68,044	\$357,144	\$0
DoD-88	Clinical Relevance of Novel Immunological Markers in PTSD.	C				\$242,300	\$0	\$0	\$0	\$0	\$242,300	
DoD-89	Limbic Blood Flow and Opiate Receptor PET in Posttraumatic Stress Disorder.	O				\$288,500	\$0	\$0	\$0	\$0	\$288,500	\$0
DoD-90	SPECT Benzodiazepine Receptor and MR Imaging in PTSD.	C				\$200,000	\$100,000	\$0	\$0	\$0	\$300,000	
DoD-91	Neurological and Circadian Substrates of PTSD-Like Behaviors.	O				\$300,000	\$299,000	\$0	\$0	\$0	\$599,000	\$0

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DoD-92	Traumatic Experiences Persistently Enhance Cue-dependent Learning: Toward and Animal Model of Chronic Stress and Posttraumatic Stress Disorder.	C				\$249,700	\$0	\$0	\$0	\$0	\$249,700	
DoD-93	Troops Exposed to Nerve Agents at Aberdeen Proving Ground: Follow-Up.	C						\$970,700	\$0	\$0	\$970,700	
DoD-94	Combined Analysis of the VA and DoD Gulf War Clinical Registries: A Study of Clinical Findings from Systematic Medical Examinations of 100,000 U.S. Gulf War Veterans.	O						\$1,318,069	\$206,727	\$0	\$1,524,796	\$0
DoD-95	Development of Diagnostic tools and alternative treatment drugs for Leishmania.	O						\$1,500,000	\$1,500,000	\$1,500,000	\$4,500,000	\$1,500,000
DoD-96	Deployment Health Center.	O						\$1,500,000	\$1,500,000	\$2,250,000	\$5,250,000	\$1,750,000
DoD-97	Surveillance of B. pertussis among Military Trainees with Respiratory Disease: Development and Validation of a Highly Sensitive PCR and Beacon Probe based Method for Diagnosis of Pertussis.	O						\$177,300	\$146,742	\$151,202	\$475,244	\$0
DoD-98	Investigation of a Baseline Medical Database to Evaluate the Health of Military Forces and Veterans.	O						\$332,500	\$188,000	\$364,182	\$884,682	\$0

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DoD-99	DoD-wide Medical Surveillance for Potential Long-Term Adverse Events associated with Anthrax Immunization in Active Duty Service Members, Proposal 1: Hospitalizations.	O						\$207,876	\$204,205	\$224,265	\$636,346	\$0
DoD-100	Antibodies to Squalene.	O						\$582,756	\$0	\$50,000	\$632,756	\$350,000
DoD-101	Mechanisms in Chronic Multisymptom Illnesses.	O						\$2,903,408	\$5,558,000	\$0	\$8,461,408	\$5,431,062
DoD-102	Case-control Study of Fatal Motor Vehicle Crashes Among Gulf War and Non-deployed Veterans.	O						\$249,908	\$254,047	\$253,793	\$757,748	\$0
DoD-103	Human Metabolism & Interactions of Deployment-related Chemicals.	O						\$686,332	\$46,315	\$0	\$732,647	\$0
DoD-104	Clinical Evaluation of a Proposed New Gulf War Syndrome.	C						\$999,998	\$9,311	\$0	\$1,009,309	
DoD-105	Neuroplasticity and Calcium Signaling in Stressed Rat Amygdala.	O						\$950,490	\$0	\$0	\$950,490	\$0
DoD-106	The role of Th1/Th2 cytokine balance in Gulf War-related Illness.	C						\$292,411	\$0	\$0	\$292,411	
DoD-107	Stress, Organophosphates and Blood Brain Barrier Integrity.	O						\$875,373	\$10,825	\$0	\$886,198	\$0
DoD-108	Health Status of Current National Guard Members.	O						\$498,166	\$0	\$264,375	\$762,541	\$0

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DoD-109	Disordered responses to Orthostatic Stress in the Pathogenesis of Gulf War Syndrome Symptoms.	O						\$917,762	\$147,523	\$397,243	\$1,462,528	\$0
DoD-110	Predictors of Career and Family Dysfunction in Young Adults Enlisting in the United States Navy.	C						\$127,920	\$63,705	\$0	\$191,625	
DoD-111	Autonomic Dysfunction in Gulf War Veterans.	O						\$999,481	\$0	\$0	\$999,481	\$0
DoD-112	Role of Respirable Saudi Arabian Sand and Pyridostigmine in the Gulf War Syndrome: An Autoimmune Adjuvant Disease?	C						\$256,916	\$0	\$0	\$256,916	
DoD-113	Interactions of Subsymptomatic Doses of Sarin with Pyridostigmine-Neurochemical, Behavioral, and Physiological Effects.	O						\$857,140	\$56,000	\$57,000	\$970,140	\$0
DoD-114	A Re-Examination of Neuropsychological Functioning in Persian Gulf War Veterans.	O						\$593,712	\$0	\$0	\$593,712	\$0
DoD-115	A Randomized Multi-Center Controlled Trial of Multi-Model Therapy in Veterans with Gulf War Illness (EBT) (see also VA-62; formerly VA/DoD-1D).	O						\$1,000,000	\$2,000,000	\$0	\$3,000,000	\$0
DoD-116	VA/DoD Core Funding of the Medical Follow-up Agency (See also VA-63; formerly VA/DoD-2D).	O	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$2,000,000	\$250,000

Status: C=Complete; O=Ongoing

**Department of Defense Gulf War Research Funding**

<b>PROJECT NO</b>	<b>PROJECT TITLE</b>	<b>STATUS*</b>	<b>FY 1994</b>	<b>FY 1995</b>	<b>FY 1996</b>	<b>FY 1997</b>	<b>FY 1998</b>	<b>FY 1999</b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>TOTALS FY '94-'01</b>	<b>FY 2002 Projection</b>
DoD-116A	Follow-Up Investigation of Troops Exposed to Nerve Agents at Aberdeen Proving Ground, (Pilot Study) (See also VA-63A; formerly VA/DoD-2DA).	C				\$0	\$0				\$0	
DoD-116B	Patterns of Pre-Persian Gulf War Illness and Health Care Seeking, Pilot Study (See also VA-63B; formerly listed as VA/DoD-2DB).	C				\$0	\$0	\$0			\$0	
DoD-117	Patterns of Pre-Persian Gulf War Illness and Health Care Seeking.	O							\$1,232,050	\$0	\$1,232,050	\$0
DoD-118	An Epidemiological Investigation into the Occurrence of Amyotrophic Lateral Sclerosis (ALS) among GWVs (See also VA-61).	O							\$1,500,000	\$0	\$1,500,000	\$0
DoD-119	Antibiotic Treatment of Gulf War Veterans' Illnesses (ABT).	O						\$500,000	\$1,000,000	\$0	\$1,500,000	\$0
DoD-120	Assessing Potential Health Impact of the Gulf War on Saudi Arabia National Guard Members and Their Dependents.	O						\$239,000	\$316,000	\$0	\$555,000	\$0
DoD-121	Evaluation of the Health Risks of Embedded Depleted Uranium Shrapnel on Pregnancy and Offspring Development.	C				\$300,000	\$250,000	\$25,000	\$15,000	\$10,000	\$600,000	
DoD-122	Carcinogenic Potential of Depleted Uranium and Tungsten Alloys.	C				\$25,000	\$25,000	\$25,000	\$30,000	\$35,000	\$140,000	

Status: C=Complete; O=Ongoing

**Department of Defense Gulf War Research Funding**

PROJECT NO	PROJECT TITLE	STATUS*	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	TOTALS FY '94-'01	FY 2002 Projection
DoD-123	Immunotoxicity of Depleted Uranium and Heavy Metal Tungsten Alloys.	C						\$15,000	\$20,000	\$15,000	\$50,000	
DoD-124	Randomized, Controlled Trial of Combination Treatment with Pyridostigmine, DEET, and Permethrin.	O						\$1,283,218	\$0	\$0	\$1,283,218	\$0
DoD-125	A Randomized Clinical Trial of Cognitive-Behavioral Treatment for PTSD in Women (See also VA-74)	O								\$477,000	\$477,000	\$0
DoD-126	Blood-Brain Barrier Transport of Uranium	O							\$790,884	\$0	\$790,884	\$0
DoD-127	Depleted Uranium Fragment Carcinogenicity: Extrapolation of Findings in Rodents to Man	O								\$399,582	\$399,582	\$0
DoD-128	Multifactorial Assessment of Depleted Uranium Neurotoxicity	O							\$661,156	\$0	\$661,156	\$0
DoD-129	Inhalation of Uranium Oxide Aerosols: CNS Deposition, Neurotoxicity, and Role in Gulf War Illness	O								\$1,276,220	\$1,276,220	\$0
DoD-130	Carcinogenicity and Immunotoxicity of Embedded Depleted Uranium and Heavy-Metal Tungsten Alloys in Rodents	O								\$983,164	\$983,164	\$0
DoD-131	Magnetic Resonance and Spectroscopy of the Human Brain in Gulf War Illness	O								\$5,377,526	\$5,377,526	\$0

Status: C=Complete; O=Ongoing

**Department of Defense Gulf War Research Funding**

<b>PROJECT NO</b>	<b>PROJECT TITLE</b>	<b>STATUS*</b>	<b>FY 1994</b>	<b>FY 1995</b>	<b>FY 1996</b>	<b>FY 1997</b>	<b>FY 1998</b>	<b>FY 1999</b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>TOTALS FY '94-'01</b>	<b>FY 2002 Projection</b>
DoD-132	Impaired Auditory Sensory Gating, Acoustic Startle Response: Effects of Long and Short Deployments on Army Combat Readiness	O								\$792,198	\$792,198	\$0
DoD-133	Odors, Deployment Stress, and Health: A Conditioning Analysis of Gulf War Syndrome	O								\$884,087	\$884,087	\$0
DoD-134	Identification and Development of Biological Markers of Human Exposure to the Insecticide Permethrin	O							\$775,155	\$0	\$775,155	\$0
DoD-135	Biochemical Markers for Exposure to Low Doses of Organophosphorus Insecticides	O							\$786,408	\$0	\$786,408	\$0
DoD-136	A Mechanism-Based, Molecular Fingerprint Strategy for Detecting Biomarkers of Organophosphate Exposure	O								\$748,858	\$748,858	\$0
DoD-137	Low Level Exposure to Sulfur Mustard: Development of a SOP for Analysis of Albumin Adducts and of a System for Non-Invasive Diagnosis on Skin	O								\$600,000	\$600,000	\$0
DoD-138	Improving Blood Monitoring of Enzymes as Biomarkers of Risk from Anticholinergic Pesticides and Chemical Warfare Agents	O								\$434,795	\$434,795	\$0
DoD-139	Assessment of the Role of Stress-Activated Kinase in the Pathogenesis of Gulf War Illness	O							\$892,399	\$434,512	\$1,326,911	\$0

Status: C=Complete; O=Ongoing

**Department of Defense Gulf War Research Funding**

<b>PROJECT NO</b>	<b>PROJECT TITLE</b>	<b>STATUS*</b>	<b>FY 1994</b>	<b>FY 1995</b>	<b>FY 1996</b>	<b>FY 1997</b>	<b>FY 1998</b>	<b>FY 1999</b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>TOTALS FY '94-'01</b>	<b>FY 2002 Projection</b>
DoD-140	US Department of Defense Surveillance for Neoplasms in Infancy	O								\$764,879	\$764,879	\$0
DoD-141	Physical, Mental, Social, and Family Health Outcomes of Gulf War Veterans	O								\$149,993	\$149,993	\$0
DoD-142	Illness Among Persian Gulf War Veterans: Case Validation Studies	O								\$267,337	\$267,337	\$0
DoD-143	Millennium Cohort Study	O							\$3,000,000	\$1,000,000	\$4,000,000	\$1,000,000
DoD-144	Psychological Health Screening: Methods and Metrics for Deployed Forces	O						\$109,000	\$295,000	\$250,000	\$654,000	\$250,000
DoD-145	Early Intervention Research Program to Enhance Soldier Resilience	O								\$250,000	\$250,000	\$250,000
DoD-146	Assessment of Toxicology Assay Methods & Chemical Exposures Among a Cohort of U.S. Marines Deployed in the Gulf War	O								\$100,000	\$100,000	\$675,000
DoD-147	Development of Validation of The Automated Neuropsychological Assessment Metric (ANAM) for Deployment Health Monitoring Applications	O				\$105,000	\$200,000	\$190,000	\$260,000	\$412,000	\$1,167,000	\$300,000
DoD-148	Predicting Operational Readiness for Deployed Army National Guard and Army Reserve Soldiers and Families	O								\$100,000	\$100,000	\$218,346
	<b>DoD Total Funds</b>		<b>\$6,492,882</b>	<b>\$10,973,000</b>	<b>\$11,905,214</b>	<b>\$28,880,536</b>	<b>\$13,213,232</b>	<b>\$23,508,841</b>	<b>\$24,793,371</b>	<b>\$21,997,883</b>	<b>\$141,764,959</b>	<b>\$11,974,408</b>

Status: C=Complete; O=Ongoing

### Health and Human Services Gulf War Research Funding

PROJECT NO	PROJECT TITLE	STATUS*	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	TOTALS FY '94-'01	FY 2002 Projection
HHS-1	Health Assessment of Persian Gulf War Veterans from Iowa	C		\$1,764,762	\$1,616,755	\$0	\$0	\$162,000	\$0	\$0	\$3,543,517	
HHS-2	Disease Cluster in a PA Air National Guard Unit	C		\$750,000	\$0	\$0	\$16,055	\$0	\$0		\$766,055	
HHS-3	Biomarkers of Susceptibility and Polycyclic Aromatic Hydrocarbon (PAH) Exposure in Urine and Blood Cell DNA from U.S. Army Soldiers Exposed to Kuwaiti Oil	C	\$0	\$0	\$0	\$0	\$0				\$0	
HHS-4	Suspected Increase of Birth Defects and Health Problems Among Children Born to Persian Gulf War Veterans in Mississippi	C	\$0	\$0	\$0						\$0	
HHS-5	Cognitive Function and Symptom Patterns in Gulf War Veterans	O					\$600,000	\$558,000	\$660,000	\$0	\$1,818,000	\$0
HHS-6	Defining Gulf War Illnesses	O					\$600,000	\$480,000	\$719,792	\$200,000	\$1,999,792	\$0
HHS-7	Immunotoxicity of Dermal Permethrin and Cis-Urcanic Acid	C					\$175,706	\$192,445	\$187,647	\$0	\$555,798	
HHS-8	Strategy to Identify Non-additive Response to Chemical Mixtures	C					\$242,586	\$247,933	\$0	\$0	\$490,519	
HHS-9	Improving Health Risk Communications to Prevent Unexplained Illnesses Related to Military Deployments	O								\$337,693	\$337,693	\$400,000
HHS-10	Health-e Voice: Optimized Implementation of a Stepped Clinical Risk Communications Guideline	O								\$461,177	\$461,177	\$400,000
	<b>Total HHS Funds</b>		<b>\$0</b>	<b>\$2,514,762</b>	<b>\$1,616,755</b>	<b>\$0</b>	<b>\$1,634,347</b>	<b>\$1,640,378</b>	<b>\$1,567,439</b>	<b>\$998,870</b>	<b>\$9,972,551</b>	<b>\$800,000</b>

Status: C=Complete; O=Ongoing









**Department of Veterans Affairs Gulf War Research Funding**

<b>PROJECT NO</b>	<b>PROJECT TITLE</b>	<b>STATUS*</b>	<b>FY 1994</b>	<b>FY 1995</b>	<b>FY 1996</b>	<b>FY 1997</b>	<b>FY 1998</b>	<b>FY 1999</b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>TOTALS FY '94-'01</b>	<b>FY 2002 Projection</b>
VA-20	Psychological Adjustment in Operation Desert Shield/ Storm Veterans	C	\$0								\$0	
VA-21	A Comparison of PTSD Symptomology among Three Army Medical Units Involved in ODS	C	\$0	\$0							\$0	
VA-36	Stress Symptoms and their Casual Attribution in Desert Storm Veterans.	C		\$0	\$0	\$0					\$0	
VA-40	Musculoskeletal Symptoms in Gulf War Syndrome.	C	\$0	\$0	\$0	\$0	\$0	\$0			\$0	
VA-46	Diarrhea in Persian Gulf Veterans: An Irritable Bowel-Like Disorder.	C		\$0	\$0	\$0	\$0	\$0	\$0		\$0	
VA-47	Louisville Center for the Study of Environmental Hazards to Reproductive Health.	C				\$349,700	\$299,700	\$299,700	\$139,960		\$1,089,060	
VA-48	Cross-Sensitization as a CNS Model for Chemical Intolerance.	C					\$99,900	\$89,400	\$92,840	\$45,000	\$327,140	
VA-49	Sensitivity to Pyridostigmine Bromide: Persistent Neural Dysfunction	O					\$112,090	\$147,950	\$141,696	\$144,024	\$545,760	\$123,794
VA-50	Neuropsychological findings in a sample of Desert Storm Veterans.	C		\$0	\$0						\$0	
VA-51	Psychobiological Assessment of Desert Storm Veterans.	C	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
VA-53	Spouses and Childrens Program.	O				\$101,360	\$98,651	\$51,088	\$33,655	\$12,934	\$297,688	\$25,000
VA-54	Follow-up of Psychological and Neurocognitive Gulf War Outcome: Relation to Stress	O						\$81,750	\$90,131	\$86,895	\$258,776	\$86,350
VA-55	Antibiotic Treatment of Gulf War Veterans' Illnesses (ABT) (see also DoD-115).	O						\$447,742	\$1,466,375	\$1,981,963	\$3,896,080	\$252,699

Status: C=Complete; O=Ongoing

**Department of Veterans Affairs Gulf War Research Funding**

<b>PROJECT NO</b>	<b>PROJECT TITLE</b>	<b>STATUS*</b>	<b>FY 1994</b>	<b>FY 1995</b>	<b>FY 1996</b>	<b>FY 1997</b>	<b>FY 1998</b>	<b>FY 1999</b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>TOTALS FY '94-'01</b>	<b>FY 2002 Projection</b>
VA-56	Birmingham's Gulf War Veterans' Illness Demonstration Clinic (13).	C					\$54,100	\$261,625	\$161,175		\$476,900	
VA-57	Case Management and Residential Rehabilitation for Persian Gulf War Veterans (13).	C					\$71,625	\$253,625	\$174,750		\$500,000	
VA-58	Implementation and Evaluation of Gulf War Veterans' Demonstration Project (13).	C					\$84,714	\$349,805	\$262,496		\$697,015	
VA-59	Demonstration Treatment Program for Gulf War Veterans with Unexplained Physical Symptoms (13)	C					\$45,750	\$348,225	\$259,500		\$653,475	
VA-60	Identification and Management of Sleep Disorders in Gulf War Veterans (13).	C					\$121,125	\$328,500	\$246,375		\$696,000	
VA-61	An Epidemiological Investigation into the Occurrences of Amyotrophic Lateral Sclerosis (ALS) among Gulf War Veterans.(See also DoD-118).	O							\$0	\$0	\$0	\$135,634
VA-62	A Randomized, Multi-Center Controlled Trial of Multi-Model Therapy in Veterans with Gulf War Illness (EBT) (See also DoD 115; formerly VA/DoD 1V).	O						\$788,000	3,756,826	\$1,971,233	\$6,516,059	\$50,600
VA-63	VA/DoD Core funding of Medical Follow-Up Agency (See also DoD 116; formerly VA/DoD-2V/2D).	O	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$2,000,000	\$250,000
VA-63A	Follow-up Investigation of troops exposed to nerve agents at Aberdeen Proving Ground (Pilot Study) (See also DoD-116A;formerly VA/DoD-2VA/2DA) .	C				\$0	\$0				\$0	

Status: C=Complete; O=Ongoing

**Department of Veterans Affairs Gulf War Research Funding**

PROJECT NO	PROJECT TITLE	STATUS*	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	TOTALS FY '94-'01	FY 2002 Projection
VA-63B	Patterns of Pre-Persian Gulf War Illness and Health Care Seeking Pilot Study (See also DoD 116B; previously VA/DoD-2VB).	C				\$0	\$0	\$0			\$0	
VA-64	Boston Environmental Hazards Research Center Program	O							\$112,360	\$245,300	\$357,660	\$300,000
VA-64A	Functional Neuroimaging in Lead Exposed Adults.	O									\$0	
VA-64B	Quantification and Validation of Structure-Function relationships through visuospatial test performance.	O									\$0	
VA-64C	Development of a structural neurotoxicant asesment checklist (SNAC) for clinical use in veteran populations.	O									\$0	
VA-65	San Antonio Environmental Hazards Research Center	O							\$116,750	\$250,000	\$366,750	\$300,000
VA-65A	Does a variant of human SOD2 gene increase Sensitivity to hazards?	O									\$0	
VA-65B	The contribution of FEN-1 to genetic integrity subsequent to oxidative stress.	O									\$0	
VA-65C	The importance of hydrogen peroxide detoxification in cellular protection.	O									\$0	
VA-65D	Do defective Gpx1 and ALDH2 genes increase sensitivity to environmental exposure?	O									\$0	
VA-66	Physiological Responding in Posttraumatic Stress Disorder	C						\$0	\$0	\$0	\$0	
VA-67	Olfactory Functioning in Gulf War Veterans.	C							\$7,500	\$7,500	\$15,000	

Status: C=Complete; O=Ongoing

**Department of Veterans Affairs Gulf War Research Funding**

<b>PROJECT NO</b>	<b>PROJECT TITLE</b>	<b>STATUS*</b>	<b>FY 1994</b>	<b>FY 1995</b>	<b>FY 1996</b>	<b>FY 1997</b>	<b>FY 1998</b>	<b>FY 1999</b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>TOTALS FY '94-'01</b>	<b>FY 2002 Projection</b>
VA-68	Family Study of Fibromyalgia	O							\$46,700	\$50,000	\$96,700	\$50,000
VA-69	Cardiovascular Hyporeactivity and Fatiguing Illness in Gulf War Veterans	O							\$122,243	\$135,487	\$257,730	\$139,808
VA-70	A Clinical Evaluation of the Health Status of Persian Gulf War Veterans in VISN 8	O					\$50,051	\$19,817	\$6,204	\$3,216	\$79,288	\$3,216
VA-71	Central Nervous System Modulation of Visceral Pain in Persian Gulf War Syndrome	O							\$125,313	\$181,692	\$307,005	\$183,829
VA-72	Roles of Paraoxonase, Butyrylcholinesterase and Stress in Unexplained Illness	O										\$50,000
VA-73	Pain Sensitivity in Gulf War Vets with Medically Unexplained Musculoskeletal Illness	O										\$50,000
VA-74	A Randomized Clinical Trial of Cognitive-Behavioral Treatment for PTSD in Women (see also DoD-125)	O								\$291,804	\$291,804	\$1,015,165
VA-75	ALS and Veterans: Are Veterans at Increased Risk?	O								\$68,544	\$68,544	\$139,600
VA-76	Analysis of Hippocampal Volume in Aging Combat Veterans with PTSD	O										\$145,000
VA-77	HPA Axis Reactivity in Men and Women with Chronic PTSD	O										\$101,400
<b>TOTALS</b>			<b>\$1,157,879</b>	<b>\$2,334,083</b>	<b>\$3,853,095</b>	<b>\$2,834,790</b>	<b>\$4,722,820</b>	<b>\$9,034,505</b>	<b>\$12,020,519</b>	<b>\$8,355,509</b>	<b>\$44,313,200</b>	<b>\$3,686,322</b>

Status: C=Complete; O=Ongoing

