

Research Advisory Committee on Gulf War Veterans Illnesses
Recommendations
Adopted June 18, 2013

At its last in-person meeting on June 19, 2012, the Committee adopted detailed findings and recommendations and concluded that the Department of Veterans Affairs has failed to formulate and execute an effective Gulf War Illness research program. The majority of these findings remain unaddressed in whole or in part, including the most serious, which reflect actions by elements of VA and DoD staff seeking to roll back the clock to the 1990's and fundamentally reverse the progress that has been made in understanding and addressing Gulf War illness.

The recent change to the charter of the Committee, eliminating its oversight function and independence, is the latest and most egregious example of these staff actions. At the time of a senior leadership change, staff has persuaded VA leadership to endorse these actions.

The Committee makes the following recommendations to the Secretary. In the event that this is the last opportunity for the Committee to speak as an independent body, the Committee urges Congress to address these subjects through appropriate legislation.

1. The Committee recommends that the May 2013 charter change be rescinded and that VA leadership direct its attention to the real problems in VA's Gulf War research program, as detailed in its June 2012 findings and recommendations and updated below. The Committee notes that its June 19, 2012 findings and recommendations all relate to research, as have its prior recommendations, contrary to VA statements to the contrary that the Committee has acted outside its scope of interest.

Congress intended for the Committee to be independent of VA staff, as all VA Secretaries have recognized by providing for its independence in its original charter in 2002 and in each subsequent charter, including that signed by Secretary Shinseki in 2010. The 2013 charter change eliminates that independence. See Appendix A.

2. No more than one-third of Committee members should be replaced in any year. Members should not be selected by VA staff but rather include "scientists and veterans' advocates who have criticized past federal Gulf War research efforts," as stated in the January 23, 2002, VA news release announcing the initial formation of the Committee. See Appendix A. The membership of the Committee should reflect established scientific knowledge related to Gulf War veterans' health, including the fact that Gulf War illness is not a psychiatric condition.

3. The Committee reiterates its June 19, 2012 findings and recommendations, updated as follows.

a. The FY2014 VA budget request for Gulf War illness research has been re-set at \$15 million after being dropped to \$4.86 million in FY2013. However, VA has not historically spent the amount budgeted, and the amount spent has included a high percentage of studies not actually directed at Gulf War veterans, as described below.

b. The VA Gulf War strategic plan, as recently released, includes some changes recommended in June 2012. However, the plan remains fundamentally altered from the effective document assembled by working groups of VA staff and outside experts. Examples include a lack of prioritization, a lack of applicability of the plan throughout VA, a lack of follow-up provisions including the continued involvement of outside advisors in the implementation of the plan, and changing the scientifically proven procedures for the development of a case definition from a consensus panel of experts in the illness performing a rigorous data analysis, to a panel with little Gulf War expertise performing a literature search.

c. VA research reports to the Secretary and to Congress continue to overstate the level of research dollars spent on addressing the health of Gulf War veterans. The latest report overstates actual Gulf War-related research by one-third to one-half, including \$501,000 for generic ALS studies that include only a handful of Gulf War veterans. While this percentage represents an improvement over previous reports, it is still grossly misleading. Moreover, the Gulf War-related research includes large sums for projects inconsistent with the strategic plan developed by the working groups, including \$850,000 for a case definition by the Institute of Medicine by a committee with little expertise in Gulf War illness. [Attachment B.]

The Committee recommends that the following standard be adopted to govern which research projects are categorized as Gulf War research: Clinical studies and treatment trials listed in the Gulf War research portfolio must have the health of 1991 Gulf War veterans as the central hypothesis of the study, must be primarily composed of Gulf War veteran participants, and must be consistent with current research knowledge. Preclinical (animal) studies should be included if they are directly relevant to the research topics prioritized in the Gulf War research strategic plan.

d. Inappropriate VA staff involvement in the 2013 Institute of Medicine treatment report, as detailed in the June 2012 findings, has not been addressed, including VA staff misleading the IOM treatment committee to believe that VA's approach to managing chronic multisymptom illness in Gulf War veterans is based on not knowing if the illness is psychiatric or not. In addition VA staff charged the committee to review literature involving all populations with similar symptoms. This charge led to the adoption of a "working case definition" of chronic multisymptom illness (contrary to the definition provided by Congress in the statute ordering the IOM study) that eliminated any connection to Gulf War service or to the

fact that the illness is not psychiatric. The resulting vague definition (requiring symptoms in two out of six broad categories: fatigue, mood/cognition, musculoskeletal, gastrointestinal, respiratory, and neurologic) includes most undiagnosed chronic medical problems, making effective research to identify treatments and diagnostic markers impossible by eliminating meaningful differences between illnesses.

VA staff has subsequently initiated a new Institute of Medicine report to establish a case definition for chronic multisymptom illness in Gulf War veterans. This case definition will shape the future of all Gulf War illness research, for better or for worse. As detailed in the original VA Gulf War research strategic plan developed by the working groups, and as is customary in medical science, the case definition ought to be developed by a panel of experts in the illness using rigorous data analysis. The VA contract with the IOM provides for a panel with little Gulf War expertise to establish the case definition at a cost of \$850,000 via a literature review. To the extent that Gulf War experts are included in the panel appointed by the IOM, a majority are associated with views inconsistent with current scientific knowledge, and other members reflect interests in a psychiatric and psychosomatic approach to illness, which is also inconsistent with the expertise called for, given current scientific knowledge of Gulf War health.

It is recommended that the IOM case definition contract either be withdrawn or that the contract be modified to provide that the case definition will be developed by a panel of experts in the illness who conduct a rigorous data analysis.

e. VA has still not contracted for the IOM study of the prevalence of multiple sclerosis in Gulf War veterans ordered by Congress in 2008.

f. VA continues to conduct a large survey of Gulf War era veterans that omits the questions necessary to identify Gulf War multisymptom illness, while including excessive questions on stress and psychological problems. At the Committee's recent meeting, the Director of the VA Office of Public Health stated that the survey "goes beyond Gulf War illness" to provide a comprehensive assessment of the health of veterans of this era. In reality, however, the survey fails to include an assessment of Gulf War illness, or the symptoms needed to identify this problem by any case definition. A former VA senior epidemiologist, Dr. Steven Coughlin, testified to Congress on March 13, 2013 that VA staff lied to senior VA leadership regarding the time and cost required to fix this study.

Dr. Coughlin further testified that the VA Office of Public Health does not release studies that "produce results that do not support OPH's unwritten policy, [and] [o]n the rare occasions where embarrassing study results are released, data are manipulated to make them unintelligible... Anything that supports the position that Gulf War illness is a neurological condition is unlikely to ever be published."

<http://veterans.house.gov/witness-testimony/dr-steven-s-coughlin>

All allegations made by Dr. Coughlin in his sworn testimony should be thoroughly investigated by an independent body, including a review of all relevant documents and interviews with all relevant persons. The current VA investigation is limited to information provided by Dr. Coughlin or volunteered by the Office of Public Health.

VA has indicated that it does not intend to compare sarin-exposed (from the Khamisiyah weapons depot detonations) Gulf War veterans separately in current studies, although VA's two prior mortality studies have shown an increased incidence of brain cancer mortality in Gulf War veterans exposed to the Khamisiyah detonations for two or more days when compared with non-exposed Gulf War veterans. The Committee recommends that separate analyses be done to compare current rates of brain cancer mortality in Khamisiyah exposed Gulf War veterans.

g. VA websites and spokespersons continue to imply that Gulf War Illness is, or may be, psychiatric. The Office of Public Health Gulf War website is entitled 'Gulf War Veterans' Medically Unexplained Illnesses.'

<http://www.publichealth.va.gov/exposures/gulfwar/medically-unexplained-illness.asp>. This language is a reference to somatic illness, as indicated by the 2013 Institute of Medicine treatment report, influenced by VA: "Among the . . . terms used in the literature to label . . . somatic presentations, . . . [current] descriptive terms [include] medically unexplained symptoms . . ."

http://books.nap.edu/openbook.php?record_id=13539&page=100

The "illnesses" terminology also continues to imply that Gulf War veterans have no common health problem, although Gulf War multisymptom illness has been accepted by the Institute of Medicine since 2010 as a "diagnostic entity."

http://books.nap.edu/openbook.php?record_id=12835&page=204.

Appendix A

Changes to Research Advisory Committee Charter

The Congressional report that led to Public Law 105-368, which established the Research Advisory Committee along with other programs to improve the benefits and services provided to 1991 Gulf War veterans, was produced by the House Committee on Government Reform and Oversight following nineteen months of subcommittee investigation and hearings. The report, "Gulf War Veterans Illnesses: VA, DOD Continue To Resist Strong Evidence Linking Toxic Causes To Chronic Health Effects," concluded that "the subcommittee finds the status of efforts on Gulf War issues by the Department of Veterans Affairs, the Department of Defense, the Central Intelligence Agency, and the Food and Drug Administration to be irreparably flawed. . . [W]e find current approaches to research, diagnosis and treatment unlikely to yield answers to veterans' life-or-death questions in the foreseeable, or even far distant, future." <http://thomas.loc.gov/cgi-bin/cpquery/z?cp105:hr388.105>

Congress plainly had no confidence in government bureaucrats' handling of this issue. As the legislation went through Congress, it was addressed in various bills, but there was never any question that its purpose was to remedy this central problem. Senator Robert Byrd, introducing the language that was ultimately adopted into law, noted the "tireless efforts" of the Subcommittee on Government Reform and Oversight to review these problems. <http://thomas.loc.gov/cgi-bin/query/F?r105:4:./temp/~r105seeTSs:e0>:

The bureaucrats wanted no part of such an independent Committee. Although the legislation required that the Committee be established not later than January 1, 1999, the Clinton administration refused to appoint the Committee, and it was not established until January 2002.

Recognizing Congress's intent, when he established the Committee, then-Secretary Anthony Principi provided a charter to enable it to operate independently from staff and perform its statutory role. The January 23, 2002 VA news release announcing the appointment of the committee described its role broadly -- to "oversee" VA research -- and highlighted other key provisions of the charter: the "guiding principle ... to ultimately improve the health of Gulf War veterans," the mission to review "all relevant research . . . done in the past to assess methods, results and implications for future research" as well as future research plans themselves, the scope of review to include research at other departments, the deliberate inclusion in the committee membership of "scientists and veterans' advocates who have criticized past federal Gulf War research efforts."

http://www.nj.gov/military/news/archive2002/GWI_Advisory_Panel.htm

While minor changes have been made to the charter over the years, these fundamental provisions have been in the charter since its inception, including in the 2010 charter signed by Secretary Shinseki.

The new charter signed on May 17, 2013 summarily eliminates the historic purpose and independence of the Committee, particularly its oversight role and provision for the Committee to have its own staff to enable it to carry out that role.

1. The "guiding principle for the work of the Committee . . . that the fundamental goal of Gulf War health-related government research . . . is to ultimately improve the health of ill Gulf War Veterans, and that the choice and success of research efforts shall be judged accordingly" is gone. (Section 2, second paragraph of 2010 charter, has been deleted.) This provision gave the Committee a clear measuring rod for assessing Gulf War research efforts -- not by numbers of dollars spent, or studies funded, but by the only standard that mattered to Congress and to ill veterans themselves: whether it improves their health.

2. The role of the Committee "to assess the overall effectiveness of government research to answer central questions on the nature, causes, and treatments for health consequences of military service . . . during the 1990-1991 Gulf War" is gone. (Section 2, second paragraph of 2010 charter, has been deleted.) In the future, the Committee will not be permitted to address the troublesome concept of whether government research is effective. Eliminating this provision eliminates the oversight role of the committee.

3. The ability of the Committee to review "research plans, initiatives, strategies, and activities from other agencies supporting research about the health consequences of military service . . . during the 1990-1991 Gulf War" has been limited to "publically available" information. (Section 3, third paragraph of 2010 charter, "publically available" added.) The Committee was always intended to review the full scope of federal research.

4. The provision for the Committee to have its own staff is gone. From its inception, the Committee charter provided it with its own staff and a budget to support that staff, in recognition that the people who serve on advisory committees have other full-time jobs and are dependent on staff support to plan meetings, review background information, draft reports, and otherwise conduct business. Without its own staff, the Committee would have been dependent on the very career staff Congress had no confidence in, which led Congress to create the Committee. (Section 6, the first two sentences, from the 2010 charter, have been deleted, and with them all mention in that section that the committee has its own staff: "The Office of the Secretary will determine the budget and staff for the Committee, and will designate the VA organization to support this staff. [Note that it does not say, "to provide this staff." The VA organization was "to support this staff," ie, the Committee's own staff.] Such staff may have a technical director and may include . . ." The only sentence that remains in the new charter, "The Veterans Health Administration is designated to provide support to the Committee," absent the two deleted sentences, indicates that VHA will itself henceforth provide the staff support mentioned later in Section 7.

In Section 7, language indicating that the Committee has its own staff has also been deleted. The 2010 wording "the estimated annual cost for operating the Committee and its support staff is \$400,000 at 4 FTE" has been replaced with: "The annual cost for operating the Committee may not exceed \$400,000 per year. This operating cost includes approximately four full-time equivalent staff members who will support the Committee." In the 2010 charter, it is clear that the funding is for operating "the Committee and its support staff," another recognition that the Committee has its own staff. In the 2013 revision, "its support staff" is gone, and the new language clearly envisions that four full-time equivalent regular VA staff will support the Committee and that their salaries will be charged against the "not to exceed \$400,000" budget.

5. The Committee budget has been changed from \$400,000 to cover the Committee's meetings and its own staff, to "not to exceed \$400,000" to cover the Committee's meetings and four regular VA staff. (Section 7) The Committee will exercise no authority over its funding, which could be reduced to any amount.

6. The Committee is expected to meet at least once a year , compared to "[t]he Committee is expected to meet up to three times annually" in the 2010 charter. (Section 9)

Union Calendar No. 228
105TH CONGRESS
Report
HOUSE OF REPRESENTATIVES

1st Session

105-388

*GULF WAR VETERANS' ILLNESSES: VA, DOD CONTINUE TO RESIST STRONG
EVIDENCE LINKING TOXIC CAUSES TO CHRONIC HEALTH EFFECTS*

NOVEMBER 7, 1997- Committed to the Committee of the Whole House on the State of
the Union and ordered to be printed

*Mr. BURTON of Indiana, from the Committee on Government Reform and Oversight,
submitted the following*

SECOND REPORT

On October 31, 1997, the Committee on Government Reform and Oversight approved and adopted a report entitled 'Gulf War Veterans' Illnesses: VA, DOD Continue to Resist Strong Evidence Linking Toxic Causes to Chronic Health Effects.' The chairman was directed to transmit a copy to the Speaker of the House.

I. SUMMARY

Responding to requests by veterans, the subcommittee in March 1996 initiated a far-reaching oversight investigation into the status of efforts to understand the clusters of symptoms and debilitating maladies known collectively as 'Gulf War Syndrome.' We sought to ensure sick Gulf War veterans were being diagnosed accurately, treated effectively and compensated fairly for service-connected disabilities, despite official denials and scientific uncertainty regarding the exact causes of their ailments. We also sought to determine whether the Gulf War research agenda was properly focused on the most likely, not just the most convenient, hypotheses to explain Gulf War veterans' illnesses.

After 19 months of investigation and hearings, the subcommittee finds the status of efforts on Gulf War issues by the Department of Veterans Affairs [VA], the Department of Defense [DOD], the Central Intelligence Agency [CIA] and the Food and Drug Administration [FDA] to be irreparably flawed. We find those efforts hobbled by institutional inertia that mistakes motion for progress. We find those efforts plagued by arrogant incuriosity and a pervasive myopia that sees a lack of evidence as proof. As a

result, we find current approaches to research, diagnosis and treatment unlikely to yield answers to veterans' life-or-death questions in the foreseeable, or even far distant, future.

We do not come to these conclusions lightly. Nor do we discount all that has been done to care for, cure and compensate Gulf War veterans. But lives have been lost, and many more lives are at stake.



**Department of
Veterans Affairs**

Office of Public Affairs
Media Relations

Washington, DC 20420
(202) 273-5700
www.va.gov

News Release

FOR IMMEDIATE RELEASE

January 23, 2002

VA Creates Gulf War Advisory Committee

WASHINGTON – Secretary of Veterans Affairs Anthony J. Principi today announced a new advisory committee that will help the Department of Veterans Affairs (VA) oversee its research into the medical problems of Gulf War veterans.

"Gulf War veterans have waited too long for answers to many of their questions," Principi said. "This committee, composed of medical experts and veterans, will focus on the research that we hope will improve the health of ill Gulf War veterans."

The 12-member Research Advisory Committee on Gulf War Veterans' Illnesses was established by Congress to advise the VA secretary on proposed research studies.

The panel must submit an annual report on the status and results of government research during the previous year and on research priorities identified by the committee.

The group's charter, established by Section 104 of Public Law 105-368, which was signed Nov. 11, 1998, says the panel shall "provide advice and make recommendations to the Secretary of Veterans Affairs on proposed research studies, research plans and research strategies relating to the health consequences of military service in the Southwest Asia theater of operations during the Persian Gulf War."

Although the panel will not conduct research, its charter instructs the committee to review "all relevant research, investigations, and processes" done in the past to assess methods, results and implications for future research. The committee will also review proposed federal research plans, initiatives, procurements, grant programs and other activities regarding Gulf War-associated illnesses.

Gulf War Committee 2/2/2/2

The committee will be led by James H. Binns Jr., a Vietnam veteran, former principal deputy assistant secretary of defense, and chairman of the board of Parallel Design, Inc., of Tempe, Arizona, acquired by General Electric in December 2000.

The advisory committee will be assisted by an expert panel of scientists and subject matter authorities who will add additional expertise, functioning as an auxiliary that reviews committee

findings and provides expert guidance to the committee and the Secretary.

Membership of Research Advisory Committee on Gulf War Veterans' Illnesses And Expert Panel

Advisory Committee:

- James H. Binns Jr., Chairman,
- Dr. Nicola Cherry, Professor of Public Health Sciences at the University of Alberta,
- Dr. Beatrice Golomb, assistant professor of medicine at the University of California at San Diego,
- Dr. Robert Haley, chief of the epidemiology division of the University of Texas Southwestern Medical Center in Dallas,
- Marguerite Knox, nurse practitioner, Hopkins, S.C.,
- Dr. William J. Meggs, chief of the division of toxicology of the East Carolina University School of Medicine,
- Jack Melling, Ph.D., director of the Karl Landsteiner Institute for Vaccine Development in Vienna, Austria,
- Dr. Pierre Pellier, vice president, neurosciences, global medical affairs, with GlaxoSmithKline, Inc.,
- Lea Steele, Ph.D., director, Kansas Persian Gulf War Veterans Health Initiative and former epidemiologist with the U.S. Centers for Disease Control and Prevention,
- Joel C. Graves, an Army Gulf War veteran from Washington state,
- Stephen L. Robinson, executive director of the National Gulf War Resources Center; Silver Spring, Md.,
- Steve Smithson, assistant director of the Gulf War Task Force for the American Legion, Indianapolis, Ind.

The Expert Panel

- Dr. Ira B. Black, chairman, department of neuroscience and cell biology at the Robert Wood Johnson Medical School, Piscataway, N.J.,
- Dr. Joseph T. Coyle, Eben S. Draper professor of psychiatry and neuroscience, Harvard Medical School, Belmont, Mass.,
- Dr. Floyd E. Bloom, chair, department of neuropharmacology, Scripps Research Institute, La Jolla, Calif.,
- Dr. Eugene Johnson, professor, department of neurology, Washington University, St. Louis, Mo.,
- Dr. Marsel Mesulam, director, The Cognitive Neurology and Alzheimer's Disease Center, Northwestern University Medical School, Chicago,
- James J. Tuite, III, chief operating officer, Chronix Biomedical, Inc., Benicia, Calif.,
- Dr. Bailus Walker, Jr., professor of environmental and occupational medicine, Howard University, Washington, D.C.

Research Advisory Committee On Gulf War Veterans' Illnesses

Questions & Answers

Why is VA creating this committee?

Federal law (PL 105-368, Nov, 11, 1998) directed the Department of Veterans Affairs to create an advisory committee to review research programs and make recommendations about the direction of VA's exploration of the medical problems of Gulf War veterans.

How were the committee members chosen?

The Secretary of Veterans Affairs chose men and women who comprise a diverse set of scientific experts who have conducted Gulf War research as well as experts who have not, and thus bring "fresh eyes." Their expertise includes epidemiology, biomedicine, neurology, occupational health, toxicology and vaccinology. Likewise, four members of the committee are veterans (three from the Gulf War) and not necessarily scientists or clinicians. Among them are men and women from the advocate and veterans service organization communities as well as one Gulf War veteran who has not been involved in the issue. The committee chair is a successful business manager and Vietnam veteran conversant with the issue and skilled in organizing and focusing enterprises to accomplish goals.

Why did more than three years elapse between the legislation and the creation of the committee?

This administration cannot speak for the previous administration. It has taken us several months to refine the committee's charter, review previous research efforts, discuss with veterans the government's research program and recruit potential committee members.

Will the committee determine which research proposals get funded?

No. The committee will not decide which researchers or which research projects receive federal funding. The committee will advise the Secretary of Veterans Affairs, who will then make decisions regarding research. The committee's focus will be on broader issues – Is the government funding research that will answer the central questions about Gulf War illnesses? Are there gaps in the research?

What can the committee hope to achieve?

The committee can contribute to ensuring all appropriate avenues are explored and that promising research, as well as gaps in research, is identified to the Secretary of Veterans Affairs. The guiding principle of this committee is to advise on research in order to ultimately improve the health of Gulf War veterans. The work of the committee will be purposeful, grounded in the best science, and focused on results - whether they make a difference to the health of Gulf War veterans. The importance of gaining every advantage from the lessons of the Gulf War cannot be overstated. In the war on terrorism, these advantages may become critically important. The numbers of veterans and active duty personnel who have been, or may be, affected by service in the Gulf demand that we evaluate each avenue of potential research for answers to the health questions stemming from this event.

Will the committee review only VA funded research efforts/proposals?

No. Much research has also been done by the Department of Defense and the Department of Health and Human Services. The committee will review this research as well, to assess its potential for contributing to the answers we seek.

How is this committee different from other such efforts?

This committee will include representation from diverse viewpoints concerning the direction of applicable research, including the veterans of the war. The committee comprises some scientists and veterans' advocates who have criticized past federal Gulf War research efforts for not fully representing all viewpoints. Much research has occurred in the international community since the war; reflecting that fact, the committee includes several noteworthy members of the international scientific community.

Will the committee do its own research?

No. The committee will not do any research.

Who will the committee report to?

The committee will report to the Secretary of Veterans Affairs. An annual report, summarizing its activities, will be submitted to the Secretary by December 1 of each year for the preceding year.

How long will the committee be operate?

The committee is formed under Public Law and has no termination date.

How long will committee members serve?

People will serve terms of two or three years. We have staggered membership terms to provide continuity - not all terms will expire in a given year. The Secretary of Veterans Affairs may reappoint members when their terms have expired.

How was the committee chair chosen?

The Secretary of Veterans Affairs appointed the chairperson for a two-year term that may be renewed by the Secretary. His background is in the private sector. Over the past twenty-five years, he has been involved in starting and building two high-tech medical electronics companies. He has spent a lot of time working with doctors and scientists to develop better solutions to medical questions.

How often will the committee meet?

The committee will meet at least twice per year and more often at the discretion of the chairperson. Subcommittees will meet as necessary.

Can anyone attend committee meetings?

Committee meetings will be open to the public. Advance notice of meeting dates and times will be published in the Federal Register.

What is the Expert Panel and how will it function in relation to the committee?

The expert panel comprises top-tier scientists and authorities to whom the committee may turn from time to time for expert guidance or review. The Secretary of Veterans Affairs may also use the panel for comment on committee findings; thus it is an independent resource for the

department. Panelists were chosen by the Secretary of Veterans Affairs. They were appointed to staggered two- and three-year terms renewable by the Secretary.

Will the expert panel have a chair?

No. The committee chair, James H. Binns, Jr., will contact panelists to discuss duties and associated matters.

Will the Expert Panel meet with the committee or on its own?

Neither. The panel comprises six to eight panelists and may be consulted individually or collectively by members of the committee or the Secretary of Veterans Affairs. It's expected that most consultations will take place by telephone, mail or email, thus precluding any travel requirements for panelists, who have offered to serve without compensation

DEPARTMENT OF VETERANS AFFAIRS
CHARTER OF THE
RESEARCH ADVISORY COMMITTEE ON
GULF WAR VETERANS' ILLNESSES

1. OFFICIAL DESIGNATION: Research Advisory Committee on Gulf War Veterans' Illnesses.

2. AUTHORITY: The Committee is authorized by Public Law 105-368, § 104, and operates under the provisions of the Federal Advisory Committee Act, as amended, 5 U.S.C. App. 2.

3. OBJECTIVES AND SCOPE OF ACTIVITY: The Department of Veterans Affairs (VA) Research Advisory Committee on Gulf War Veterans' Illnesses provides advice and makes recommendations to the Secretary of Veterans Affairs on proposed research studies, plans, and strategies related to understanding and treating the health consequences of military service in the Southwest Asia theater of operations during the 1990-1991 Gulf War (Operations Desert Shield and Desert Storm). The Committee shall not conduct scientific research or review research proposals submitted to VA prior to funding. VA may, however, request individual Committee members with appropriate scientific expertise to participate in the review of such proposals.

The Committee shall meet in public session to review and advise the Secretary about VA-funded research relevant to understanding and treating the health consequences of military service during the 1990-1991 Gulf War; the processes conducted to solicit, review, and select such VA-funded research; and the methods, results, and implications of the research. The Committee may also review publically available research plans, initiatives, strategies, and activities from other agencies supporting research about the health consequences of military service in the Southwest Asia theater of operations during the 1990-1991 Gulf War. The Committee may advise the Secretary about the relationship between VA-funded research and research supported by other agencies. The Committee shall have access, to the extent provided by law, to VA documents and other information relevant to such reviews.

4. DESCRIPTION OF DUTIES: The Committee shall provide to the Secretary of Veterans Affairs, not later than December 1 of each year, an annual report summarizing its activities for the preceding year. The Committee may develop additional reports and recommendations regarding relevant research. All reports and recommendations must be approved by the Committee, in open public session, prior to submission to the Secretary or to other appropriate officials, as directed by the Secretary.

5. OFFICIAL TO WHOM THE COMMITTEE REPORTS: The Committee reports to the Secretary of Veterans Affairs.

6. OFFICE RESPONSIBLE FOR PROVIDING THE NECESSARY SUPPORT TO THE COMMITTEE: Support for the Committee will be provided by the Veterans Health Administration Office of Research and Development.

7. ESTIMATED ANNUAL OPERATING COSTS IN DOLLARS AND STAFF-YEARS: The annual cost for operating the Committee may not exceed \$400,000 per year. This operating cost includes approximately four full-time equivalent staff members who will support the Committee. All Committee members will receive travel expenses and a per diem allowance in accordance with the Federal Travel Regulation for any travel made in connection with their duties as members of the Committee.

8. DESIGNATED FEDERAL OFFICER: The Designated Federal Officer (DFO), a full time VA employee, will approve the schedule of Committee meetings. The DFO or a designee will be present at all meetings, and each meeting will be conducted in accordance with an agenda approved by the DFO. The DFO is authorized to adjourn any meeting when he or she determines it is in the public interest to do so.

9. ESTIMATED NUMBER AND FREQUENCY OF MEETINGS: The Committee is expected to meet at least once and up to three times annually.

10. DURATION: There is a continuing need for the Committee to assist the Secretary in carrying out the responsibilities described in Public Law 105-368, § 104.

11. COMMITTEE TERMINATION DATE: None.

12. MEMBERSHIP AND DESIGNATION: The Committee will be composed of approximately 12 members. Several members may be regular Government employees, but the majority of the Committee's membership will be special Government employees. The Committee membership will include, but is not limited to, Gulf War Veterans, representatives of such Veterans, and members of the medical and scientific communities representing appropriate disciplines such as, but not limited to, epidemiology, immunology, environmental health, neurology, and toxicology.

The Secretary will appoint Committee members for either a 2 or 3-year term of service. The Secretary may reappoint Committee members for additional 1 or 2-year terms. The Secretary will appoint the Chair of the Committee for an initial 2-year term. The Secretary may reappoint the Chair for an additional 1 or 2-year term.

The Secretary may appoint a panel of experts representing appropriate medical and scientific disciplines to assist the Committee in its work. Panelists may be called on by the Secretary for individual advice and consultation, and may advise the Committee on factual or technical aspects research at the request of the Committee chair, but they shall not be members of the Committee. Panelists will be nominated by the Committee chair and appointed by the Secretary.

13. SUBCOMMITTEES: The Committee is authorized to establish subcommittees, with DFO approval, to perform specific projects or assignments as necessary and consistent with its mission. The Committee chair shall notify the Secretary, through the DFO, of the establishment of any subcommittee, including its function, membership, and estimated duration. Subcommittees will report back to the Committee.

14. RECORDKEEPING: Records of the Committee shall be handled in accordance with General Records Schedule 26 or other approved agency records disposition schedules. Those records shall be available for public inspection and copying, subject to the Freedom of Information Act, 5 U.S.C. § 552.

15. DATE CHARTER IS FILED:

APPROVED:

 Date: 5/17/2013
Eric K. Shinseki
Secretary of Veterans Affairs

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The guiding principle for the work of the Committee shall be the premise that the fundamental goal of Gulf War health-related government research, either basic or applied, is to ultimately improve the health of ill Gulf War Veterans, and that the choice and success of research efforts shall be judged accordingly. The Committee shall assess the overall effectiveness of government research to answer central questions on the nature, causes, and treatments for health consequences of military service in the Southwest Asia theater of operations during the 1990-1991 Gulf War.

The Committee shall meet in public session to review VA-funded research relevant to understanding and treating the health consequences of military service in the 1990-1991 Gulf War, and the processes conducted to solicit, review and select such funded research, to assess their methods, results, and implications. The Committee may also review research plans, initiatives, and activities from other Federal agencies supporting research relating to the health consequences of military service in the Southwest Asia theater of operations during the 1990-1991 Gulf War. The Committee shall have access, to the extent provided by law, to VA documents and other information relevant to such reviews.

4. DESCRIPTION OF DUTIES: The Committee shall provide to the Secretary of Veterans Affairs, not later than December 1 of each year, an annual report summarizing its activities for the preceding year. The Committee may develop additional reports and recommendations regarding relevant research. All reports and recommendations must

be approved by the Committee, in open public session, prior to submission to the Secretary or to other appropriate officials, as directed by the Secretary.

5. OFFICIAL TO WHOM THE COMMITTEE REPORTS: The Committee reports to the Secretary of Veterans Affairs.

6. OFFICE RESPONSIBLE FOR PROVIDING THE NECESSARY SUPPORT TO THE COMMITTEE: The Office of the Secretary will determine the budget and staff for the Committee, and will designate the VA organization to support this staff. Such staff may have a technical director and may include contract personnel, VA employees, and/or individuals employed as temporary VA employees. The Veterans Health Administration is designated to provide support to the Committee.

7. ESTIMATED ANNUAL OPERATING COSTS IN DOLLARS AND STAFF-YEARS: The estimated annual cost for operating the Committee and its support staff is \$400,000 and 4 FTE. All members will receive travel expenses and a per diem allowance in accordance with the Federal Travel Regulation for any travel made in connection with their participation in Committee meetings.

8. DESIGNATED FEDERAL OFFICER: The Designated Federal Officer (DFO), a full time VA employee, will approve the schedule of Committee meetings. The DFO or a designee will be present at all meetings, and each meeting will be conducted in accordance with an agenda approved by the DFO. The DFO is authorized to adjourn any meeting when he or she determines it is in the public interest to do so.

9. ESTIMATED NUMBER AND FREQUENCY OF MEETINGS: The Committee is expected to meet up to three times annually. Meetings of the subcommittee(s) shall be convened as necessary.

10. DURATION: There is a continuing need for the Committee to assist the Secretary in carrying out the responsibilities described in § 104 of Public Law 105-368.

11. COMMITTEE TERMINATION DATE: None.

12. MEMBERSHIP DESIGNATION: The Committee membership will include, but is not limited to, Gulf War Veterans, representatives of such Veterans, and members of the medical and scientific communities representing appropriate disciplines such as, but not limited to, biomedicine, epidemiology, immunology, environmental health, neurology, and toxicology.

Members shall be appointed for 2 or 3-year terms. The Secretary may renew the memberships for 1 or 2-year terms. The Secretary shall appoint the chair of the Committee. The term of office for the chair shall be 2-years, also renewable by the Secretary for 1 or 2-year terms. The Committee will be composed of approximately 12 members. Several members may be Regular Government Employees (RGE), but the majority of the Committee's membership will be Special Government Employees (SGE).

The Secretary may establish a panel of experts representing appropriate medical and scientific disciplines to assist the Committee in its work. Panelists may be called on by the Secretary for individual advice and consultation, and may advise the Committee on factual or technical aspects research at the request of the Committee chair, but they shall not be members of the Committee. Panelists will be nominated by the Committee chair and appointed by the Secretary.

13. SUBCOMMITTEES: The Committee is authorized to establish subcommittees, with the Designated Federal Officer's (DFO) approval, to perform specific projects or assignments as necessary and consistent with its mission. The Committee chair shall notify the Secretary, through the DFO, of the establishment of any subcommittee, including its function, membership, and estimated duration. Subcommittees will report back to the Committee.

14. RECORDKEEPING: Records of the Committee shall be handled in accordance with General Records Schedule 26 or other approved agency records disposition schedules. Those records shall be available for public inspection and copying, subject to the Freedom of Information Act, 5 U.S.C. § 552.

15. DATE CHARTER IS FILED:

APPROVED:



Eric K. Shinseki
Secretary of Veterans Affairs

Date:

11/19/2010

Appendix B

Gulf War Research Funding Portfolio and Funding Summary Analysis

Analysis of VA Gulf War Illness Research Portfolio for FY2012-2013

June 11, 2013

On June 11, 2013, the VA Office of Research and Development (ORD) provided the Research Advisory Committee on Gulf War Veterans Illnesses (RAC) office with spreadsheets listing projects included in VA's FY2012 Gulf War research portfolio and projected FY2013 GW research portfolio.

RAC staff reviewed information on studies in the FY2012 Gulf War research portfolio to identify the research questions addressed by each project. Projects were then classified according to the degree the study focused on questions relevant to Gulf War service and the health of Gulf War veterans. Results of these analyses are summarized below.

Funding for Projects Included in the VA FY2012 Gulf War Research Portfolio

Total Funding for Projects Identified as Gulf War Research	\$ 6,723,556	(100%)
Studies of GW veterans health and effects of GW exposures GW multisymptom illness: \$3,874,737 (58%) ALS study involving GW veterans: \$168,600 (2%)	\$4,043,337	60%
Projects with more remote relevance to Gulf War veterans' health	\$ 910,928	14%
ALS, General	\$ 618,840	9%
Other unrelated studies MS, General: \$765,507 (11%) Pain, General \$384,344 (6%)	\$1,149,851	17%

Approximately 60% of ORD's FY2012 Gulf War research portfolio funding was for projects focused on issues specifically relevant to the health of Gulf War veterans. This included \$3.8 million for projects focused on treating Gulf War-related conditions, identifying potential biomarkers of illness (including funding for the Gulf War cohort and blood biorepository CSP #585) or the effects of Gulf War exposures, and \$168,000 for a study of ALS involving Gulf War veterans. Approximately \$900,000 (14%) was approved for projects with more remote relevance to Gulf War veterans' health, including

sleep studies and therapies for respiratory illnesses that are not related to Gulf War veterans specifically.

In addition, \$600,000 (9%) was spent for research in generic ALS studies. Also included was \$1.1 million (17%) in generic studies (not directed at Gulf War veterans) of conditions such as multiple sclerosis (an illness which has not been associated with Gulf War service, although it is suspected) and pain, including a study of women veterans of the current (OIF/OEF) Iraq war.

In these studies, the overwhelming majority of veterans with ALS, MS, and pain are veterans of other eras. The majority of these projects address basic research questions or treatment trials relating to symptoms or conditions that, like ALS, may be found in Gulf War veterans but are not specific to the Gulf War (e.g. multiple sclerosis, pain conditions). Further, the research questions addressed by these projects appear to be unrelated to the development of these conditions in Gulf War veterans.

In summary, 27-40% of the funding for the FY2012 Gulf War Research portfolio continues to be for projects that are either unrelated or not specific to Gulf War service and the health of Gulf War veterans. This funding level is an improvement from prior years, but remains highly problematic.

Funding for Projects Included in the VA FY2013 Gulf War Research Portfolio

Total Funding for Projects Identified as Gulf War Research	\$ 7,768,640	100%
Studies of Gulf War veterans' health and effects of Gulf War exposures GW multisymptom illness: \$5,119,860 ALS: \$168,600	\$ 5,288,460	68%
Projects with more remote relevance to Gulf War veterans' health	\$776,122	10%
ALS, General	\$ 585,421	8%
Other unrelated studies MS, General: \$639,057 (8%) Pain, General: \$479,580 (6%)	\$1,118,637	14%

Approximately 68% of ORD's FY2013 Gulf War research portfolio funding was for projects focused on issues specifically relevant to the health of Gulf War veterans. This included \$5.1 million for projects focused on treating Gulf War-related conditions (including two new treatment trials for GWI), identifying potential biomarkers of illness or the effects of Gulf War exposures, and \$168,000 for a study of ALS involving Gulf War veterans.) Approximately \$775,000 (10%) was approved for projects with more

remote relevance to Gulf War veterans' health, including sleep studies and therapies for respiratory illnesses that are not related to Gulf War veterans specifically.

In addition, \$585,000 (8%) was spent for research in generic ALS studies. Also included was \$1.1 million (14%) in generic studies (not directed at Gulf War veterans) of conditions such as multiple sclerosis and pain, including a study of women veterans of the current (OIF/OEF) Iraq war.

The FY2013 portfolio funding for Gulf War research shows an improvement from prior years with two-thirds of funding considered to be specifically focused on GWI or specifically relevant to the health of Gulf War veterans. However, treatment trials for ALS, MS and chronic pain syndromes (not specifically in GW veterans) continue to be included in the 'Gulf War research' portfolio. In addition, "Gulf War" studies include \$850,000 for a case definition by the Institute of Medicine by a committee with little expertise in Gulf War illness, contrary to customary medical practice and the recommendation of the working group of the Gulf War strategic plan.

Projected FY2012 ORD Support for Ongoing Gulf War Research Projects (18Apr2013)

FullName	VAMC	Title	Focus	Total FY 2012	Start Date	End Date
Clinical Trials				\$ 473,523		
Lin, Henry C. (M.D.)	Albuquerque, NM	Bacterial Overgrowth Associated with Chronic Multi-Symptom Illness Complex	Treatment of GW veterans with gastrointestinal symptoms	\$ 158,219	04/01/09	03/31/14
Kearney, David J. (M.D.)	Seattle, WA	A randomized controlled trial of a mindfulness based intervention for Gulf War Syndrome	Treatment of GW veterans with gastrointestinal symptoms	\$ 112,394	10/01/10	09/30/12
Cook, Dane B. (Ph.D.)	Madison, WI	Impact of Exercise Training on Pain and Brain Function in Gulf War Veterans	Treatment of pain in GW veterans with resistance exercise training	\$ 202,910	07/01/11	06/30/16
Biomarkers				\$ 3,727,408		
Fiore, Louis D. (MD)	Boston, MA	VA Gulf War Biorepository (CSP 501)	Gulf War Brain and DNA Bank	\$ 592,544	08/01/02	09/30/13
Madison, Roger D. (Ph.D.)	Durham, NC	Differential Gene Expression in Pathologies Associated with Neuronal Hyperexcitability: Links to Gulf War Illness	Identify genes that may be related to neuronal regeneration in Gulf War Veterans	\$ 70,250	04/01/03	12/31/11
Cook, Dane B. (Ph.D.)	Madison, WI	Imaging Pain Modulation in Gulf War Veterans with Chronic Muscle Pain	Functional imaging of Gulf War veterans with unexplained musculoskeletal pain	\$ 262,184	10/01/08	09/30/12
Provenzale, Dawn (M.D.)	Durham, NC	Gulf War Era Cohort and Biorepository (CSP 585)	Gulf War era repository of blood specimens	\$ 2,157,664	04/01/10	09/30/13
Kowall, Neil (M.D.) Christopher Brady (Ph.D.)	Boston, MA	VA Gulf War Veterans' Illnesses Biorepository (CSP 501B)	Gulf War Tissue Bank	\$ 237,878	10/01/10	09/30/13
Georgopoulos, Apostolos (M.D.)	Minneapolis, MN	MEG Synchronous Neural Interactions (SNI) in Gulf War Veterans	Diagnosis of multisymptom illness in GW Veterans using magnetoencephalography	\$ 406,888	10/01/11	03/31/13
Gulf War Veterans Illnesses				\$ 125,170		
Verne, G. Nicholas (Ph.D.)	Cincinnati, OH	Somatic Hypersensitivity in Veterans with IBS	Evaluation of altered central pain processing in IBS	\$ 125,170	04/01/12	03/31/16

* Includes 12.4% administrative overhead*

Projected FY2012 ORD Support for Ongoing Gulf War Research Projects (18Apr2013)

FullName	VAMC	Title	Focus	Total FY 2012	Start Date	End Date
Model Systems of GW Exposures/Illnesses				\$ 2,397,455		
Greenwood, Beverley (Ph.D., F.A.C.G.)	Oklahoma City, OK	Central Mechanisms Modulating Visceral Sensitivity	Central nervous system control of gastrointestinal pain (IBS)	\$ 90,574	10/01/08	03/31/13
Bedlack, Richard (M.D., Ph.D.)	Durham, NC	A Clinical Demonstration of an EEG Brain-Computer Interface for ALS Patients (CSP 567)	New treatment for ALS	\$ 26,296	10/01/08	01/01/13
Vandenbark, Arthur A. (Ph.D.)	Portland, OR	Immunoregulation of Myelin Specific T Lymphocytes	New treatment for MS	\$ 168,600	01/01/09	12/31/12
Bourdette, Dennis N. (M.D.)	Portland, OR	Lipoic Acid Therapy for Experimental Autoimmune Encephalomyelitis	New treatment for MS	\$ 168,600	10/01/09	09/30/13
Hinrichs, David (Ph.D.)	Portland, OR	Multiple Antigenic Peptides to Alter the Course of Autoimmune Disease	New treatment for MS	\$ 168,600	04/01/10	03/31/14
Elmets, Craig (M.D.)	Birmingham, AL	Host Defense Mechanisms in Polyaromatic Hydrocarbon Compounds	Mechanisms of toxicity of polyaromatic hydrocarbon pollutants	\$ 168,600	10/01/10	09/30/14
Singh, Inderjit (Ph.D.)	Charleston, SC	Neuroprotection and Myelin Repair Mechanisms in Multiple Sclerosis	New treatment for MS	\$ 259,707	10/01/10	09/30/14
Shiromani, Priyattam (Ph.D.)	Charleston, SC	Sleep Neurobiology and Circuitry	Control of sleep	\$ 303,406	10/01/10	09/30/14
Chase, Michael H.	West Los Angeles, CA	Prevention of Hippocampal Neurodegeneration due to Age and Apnea	New treatment for neurodegenerative effects of sleep apnea	\$ 270,322	01/01/11	12/31/14
Kowall, Neil (M.D.)	Boston, MA	Epigenetic Mechanisms Relevant to the Pathogenesis of ALS	Genetic mechanisms underlying ALS	\$ 168,600	01/01/11	12/31/14
Schlosser, Rodney J. (M.D.)	Charleston, SC	Nanoparticle Coupled Antioxidants for Respiratory Illness in Veterans	Nanoparticle (sand) derived respiratory illness	\$ 168,600	04/01/11	03/31/15
Greenwood, Beverley (Ph.D., F.A.C.G.)	Oklahoma City, OK	Understanding Pain of Gastrointestinal Origin in Women that Serve in OEF/OIF	Central nervous system control of gastrointestinal pain (IBS)	\$ 168,600	04/01/11	03/31/15
Shetty, Ashok (Ph.D.)	Durham, NC	Memory and Mood Enhancing Therapies for Gulf War Illness	Development of new therapy for ill Gulf War Veterans	\$ 266,950	09/30/11	12/31/15
				\$ 6,723,556		
				Total Distributed by ORD in FY 2012		

Projected FY2013 ORD Support for Ongoing Gulf War Research Projects (11June2013)

FullName	VAMC	Title	Focus	Total FY 2013	Start Date	End Date
Clinical Trials				\$ 1,166,773		
Lin, Henry C. (M.D.)	Albuquerque, NM	Bacterial Overgrowth Associated with Chronic Multi-Symptom Illness Complex	Treatment of GW veterans with gastrointestinal symptoms	\$ 43,278	04/01/09	03/31/14
Cook, Dane B. (Ph.D.)	Madison, WI	Impact of Exercise Training on Pain and Brain Function in Gulf War Veterans	Treatment of pain in GW veterans with resistance exercise training	\$ 386,948	07/01/11	06/30/16
Ashford, J. Wesson (M.D., Ph.D.)	Palo Alto, CA	rTMS for the Treatment of Chronic Pain in GW1 Veterans	Treatment of chronic pain in GW Veterans using repetitive transcranial magnetic stimulation	\$ 309,100	01/01/12	12/31/15
Naeser, Margaret (Ph.D.)	Boston, MA	Transcranial, Light-Emitting Diode (LED) Therapy to Improve Cognition in GWWI	Treatment for cognitive difficulties in GW Veterans using light therapy	\$ 427,447	04/01/13	03/31/17
Biomarkers				\$ 3,211,942		
Kowall, Neil (M.D.)	Boston, MA	VA Gulf War Biorepository	Gulf War ALS Brain and DNA Bank	\$ 501,185	08/01/02	09/30/13
Provenzale, Dawn (M.D.)	Durham, NC	Gulf War Era Cohort and Biorepository (CSP 585)	Gulf War era repository of blood specimens	\$ 2,155,789	04/01/10	09/30/13
Kowall, Neil (M.D.) Christopher Brady (Ph.D.)	Boston, MA	VA Gulf War Veterans' Illnesses Biorepository (CSP 501B)	Gulf War Tissue Bank	\$ 263,848	10/01/10	09/30/13
Georgopoulos, Apostolos (M.D.)	Minneapolis, MN	MEG Synchronous Neural Interactions (SNI) in Gulf War Veterans	Diagnosis of multisymptom illness in GW Veterans using megnetoencephalography	\$ 198,667	10/01/11	03/31/13
Falvo, Michael (M.D.)	East Orange, NJ	Diagnostic Utility of mtDNA Content and Exercise Challenge in Veterans with GWWI	Diagnosis of multisymptom illness in GW Veterans using megnetoencephalography	\$ 92,453	04/01/13	03/31/15
Gulf War Veterans Illnesses				\$ 1,047,998		
Verne, G. Nicholas (Ph.D.)	Cincinnati, OH	Somatic Hypersensitivity in Veterans with IBS	Evaluation of altered central pain processing in IBS	\$ 197,998	04/01/12	03/31/16
Institute of Medicine	Washington, DC	Consensus Case Definition for Chronic Multisymptom Illness in 1990-1991 Gulf War Veterans	Consensus case definition	\$ 850,000	05/01/13	04/30/14

Projected FY2013 ORD Support for Ongoing Gulf War Research Projects (11June2013)

FullName	VAMC	Title	Focus	Total FY 2013	Start Date	End Date
Model Systems of GW Exposures/Illnesses				\$ 2,341,927		
Greenwood, Beverley (Ph.D., FACG)**	Oklahoma City, OK	Central Mechanisms Modulating Visceral Sensitivity	Central nervous system control of gastrointestinal pain (IBS)	\$ 112,982	10/01/08	03/31/17
Bedlack, Richard (M.D., Ph.D.)	Durham, NC	A Clinical Demonstration of an EEG Brain-Computer Interface for ALS Patients (CSP 567)	New treatment for ALS	\$ 84,236	10/01/08	01/01/13
Vandenbark, Arthur A. (Ph.D.)**	Portland, OR	Immunoregulation of Myelin Specific T Lymphocytes	New treatment for MS	\$ 42,150	01/01/09	12/31/16
Bourdette, Dennis N. (M.D.)	Portland, OR	Lipoic Acid Therapy for Experimental Autoimmune Encephalomyelitis	New treatment for MS	\$ 168,600	10/01/09	09/30/13
Hinrichs, David (Ph.D.)**	Portland, OR	Multiple Antigenic Peptides to Alter the Course of Autoimmune Disease	New treatment for MS	\$ 168,600	04/01/10	03/31/14
Elmets, Craig (M.D.)	Birmingham, AL	Host Defense Mechanisms in Polyaromatic Hydrocarbon Compounds	Mechanisms of toxicity of polyaromatic hydrocarbon pollutants	\$ 168,600	10/01/10	09/30/14
Singh, Inderjit (Ph.D.)	Charleston, SC	Neuroprotection and Myelin Repair Mechanisms in Multiple Sclerosis	New treatment for MS	\$ 259,707	10/01/10	09/30/14
Shiromani, Priyattam (Ph.D.)**	Charleston, SC	Sleep Neurobiology and Circuitry	Control of sleep	\$ 168,600	10/01/10	09/30/14
Chase, Michael H.	West Los Angeles, CA	Prevention of Hippocampal Neurodegeneration due to Age and Apnea	New treatment for neurodegenerative effects of sleep apnea	\$ 270,322	01/01/11	12/31/14
Kowall, Neil (M.D.)	Boston, MA	Epigenetic Mechanisms Relevant to the Pathogenesis of ALS	Genetic mechanisms underlying ALS	\$ 168,600	01/01/11	12/31/14
Schlosser, Rodney J. (M.D.)	Charleston, SC	Nanoparticle Coupled Antioxidants for Respiratory Illness in Veterans	Nanoparticle (sand) derived respiratory illness	\$ 168,600	04/01/11	03/31/15
Greenwood, Beverley (Ph.D., FACG)**	Oklahoma City, OK	Understanding Pain of Gastrointestinal Origin in Women that Serve in OEF/OIF	Central nervous system control of gastrointestinal pain (IBS)	\$ 168,600	04/01/11	03/31/15
Shetty, Ashok (Ph.D.)**	Durham, NC	Memory and Mood Enhancing Therapies for Gulf War Illness	Development of new therapy for ill Gulf War Veterans	\$ 281,000	09/30/11	12/31/15
Kinlay, Scott (M.D.)	Boston, MA	Vascular and Skeletal Muscle Function in Gulf War Veterans Illness	Mechanism of muscle fatigue after Gulf War exposures	\$ 111,330	04/01/13	03/31/16
				\$ 7,768,640		
				Total Distributed by ORD in FY 2013		

* Includes 12.4% administrative overhead*