# Report to Congress in Response to House Report 110-146 for the National Defense Authorization Act for Fiscal Year 2008, on Traumatic Brain Injury

## and

House Report 110-279 for Department of Defense Appropriations Act for Fiscal Year 2008, on Post-Traumatic Stress Disorder

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### Report to Congress in Response to House Report 110-146 and House Report 110-279

# I. Background for Execution of Fiscal Year 2007 Post-Traumatic Stress Disorder, Traumatic Brain Injury, and Burn, Orthopedic, and Trauma Research Appropriations

The "U.S. Troop Readiness, Veterans' Care, Katrina Recovery, and Iraq Accountability Supplemental Appropriations Act," Public Law 110-28, appropriated \$331.7 million (M) to the Defense Health Program account for research, development, test, and evaluation (RDT&E) in May 2007, to remain available until September 30, 2008. The Deputy Assistant Secretary of Defense (DASD) for Force Health Protection and Readiness (FHP&R) assigned the appropriated funds to the United States Army Medical Research and Materiel Command (USAMRMC) for management in accordance with Congressional intent, established by a related Senate Congressional Record dated May 24, 2007.

The Senate directed that \$300M be allotted to support post-traumatic stress disorder (PTSD) and traumatic brain injury (TBI) research (\$150M each) and \$31.7M be assigned to support Burn, Orthopedic, and Trauma research. DASD (FHP&R) also directed that USAMRMC manage the program according to the well-established two-tiered review process used in its Congressionally Directed Medical Research Programs (CDMRP) Office (Appendix I). In June 2007, USAMRMC assigned the \$300M PTSD and TBI research funds to CDMRP for management, along with an additional \$1M fiscal year 2007 (FY07) PTSD RDT&E appropriation (Conference Committee Report Number 109-676), for a total budget of \$301M. The remaining \$31.7M was assigned by USAMRMC to the United States Army Institute of Surgical Research (USAISR), Fort Sam Houston, Texas, to focus on Burn, Orthopedic, and Trauma research.

Subsequent to initiation of the research program, the House Committee Report, page 348, of the National Defense Authorization Act (NDAA) for Fiscal Year 2008 (FY08), directed the establishment of the TBI Research and Treatment Initiative to provide the opportunity for emerging technologies and concepts to compete for funding on the basis of technical merit and potential contribution for those with TBI. This TBI Initiative established in CDMRP process for use of these research funds reflects this intent. Moreover, the TBI Initiative with management through CDMRP supports the research priorities of the Defense Center of Excellence for Psychological Health and Traumatic Brain Injury (DCoE).

As described below, there is a well-defined open and competitive process for TBI research funding. Table 1 in the next section lists the five prioritized TBI research gaps. These gaps are consistent with the committee's recommendations by including TBI treatment, clinical management and rehabilitation research as well as neuroprotection and repair strategy research. The recommended research area of chronic epilepsy after TBI is addressed in the TBI treatment gap and the epidemiology gap, as well as a 15-year longitudinal study of over 1,200 Service members with TBI that results from Congressional direction in NDAA 2008, section 1634(a)(1). Table 2 contains the research funding mechanisms that also align with the committee recommendations. For example, the Multidisciplinary Research Consortium for TBI award (Appendix 6a) is a consortium of three academic university TBI programs. CDMRP has ensured that after competitive scientific and programmatic review, final awards execute those proposals deemed the most meritorious. Congress's recommended areas in the TBI Research and Treatment Initiative, as well as other important areas of TBI research, are described below as part of the CDMRP program.

Also subsequent to the initiation of the CDMRP research program, the House Appropriations Committee in its report accompanying the 2008 Defense Appropriations Act directed the Department of Defense (DoD) to study mental health care, the onset and nature of PTSD, and panic disorder, and to focus the research to address gaps in PTSD. The Mental Health initiative portion of the research program is responsive to this congressional direction because it funded 84 psychological health research proposals, and of these, 19 address mental health care, six address the onset and nature of PTSD, 10 address panic disorder. Appendix 8 lists the specific research proposals for these areas.

#### II. Execution of the \$301M PTSD/TBI Funds

#### A. Planning and Implementation

The PTSD and TBI Research Program was established in June 2007 to manage the \$301M dedicated to PTSD and TBI research. The program was renamed in January 2008 to Psychological Health and Traumatic Brain Injury (PH/TBI) Research Program. In Conference Report 110-477 (December 2007), Congress directed establishment of a DoD Centers of Excellence to develop comprehensive plans for programs and activities of the DoD to prevent, diagnose, mitigate, treat, research, and otherwise respond to TBI, PTSD, and other mental health conditions of the Armed Forces. In keeping with Congressional priorities specified in the Conference Report, the Psychological Health (PH) and TBI Research Program has integrated DCoE and budgeted \$45M of the \$300M PTSD/TBI 2007 Supplemental RDT&E funding to support DCoE RDT&E priorities (Appendix 2).

A stakeholders meeting, held on June 12, 2007, identified the highest priority PTSD and TBI research gaps relevant to addressing combat-related PTSD and TBI. The team of approximately 200 stakeholders recommended six PTSD and five TBI research focus

areas for which gaps in understanding needed to be addressed to promote better standard of care for PTSD and TBI in the areas of prevention, detection, diagnosis, treatment, and rehabilitation. A Joint Program Integration Panel (JPIP) (Appendix 3), established to provide programmatic oversight for the newly formed PH/TBI Research Program, met on June 13, 2007, to prioritize the PTSD and TBI research gaps (by dollars available for research) and to identify funding mechanisms and corresponding budget limits. Table 1 lists the prioritized PTSD and TBI gaps. Table 2 depicts the funding mechanisms, including the four Fast Track-Intramural (DoD and Department of Veterans Affairs [VA]) and 12 Extramural mechanisms recommended by JPIP. Following this meeting, the recommendations were forwarded to USAMRMC for concurrence, and to DASD (FHP&R) for concurrence and coordination of final approval via the appropriate DoD officials. After recommendations were approved, proposal solicitation was initiated in July 2007.

Program announcements for the four Intramural and 12 Extramural award mechanisms were released in July 2007. These mechanisms challenged the scientific community to design innovative research that would foster new directions, address neglected issues in, and bring new investigators into the fields of PTSD- and TBI-focused research. The deadlines for proposal submission ranged from August 16, 2007, to November 26, 2007. As of May 28, 2008, USAMRMC had received 591 PTSD-focused and 1,004 TBI-focused projects in response to the FY07 PH/TBI Research Program Intramural and Extramural Program announcements. An additional 44 proposals were submitted to the PH/TBI Research Program Clinical Consortium Program announcements.

Proposal review for these submissions followed the CDMRP two-tier review model recommended by the National Academy of Sciences Institute of Medicine. This model has received high praise from the scientific community, advocacy groups, and Congress. The first tier is a scientific peer review of proposals evaluated against established criteria for determining scientific merit. Multiple discipline-specific teams of scientists and focus area-specific (PTSD or TBI) consumer reviewers (those afflicted with or affected by TBI and/or PTSD) conducted three rounds of peer review. A summary of strengths and weaknesses was developed for each proposal; these were forwarded for consideration at the second tier of review. JPIP conducted the second tier, programmatic review. The group compared submissions to each other and recommended proposals for funding based on scientific merit and overall program goals. Three rounds of programmatic review yielded recommendations for funding 121 projects (as of May 28, 2008), which included one Clinical Consortium Coordinating Center Award (10 Clinical Consortium Study Sites will be supported under the Clinical Consortium Coordinating Center Award). Another 131 projects were recommended to a prioritized "Alternate" list. The Commanding General, USAMRMC, and DASD (FHP&R) approved these recommendations.

A panel of DCoE representatives conducted a fourth round of programmatic review and recommended funding 37 proposals from the prioritized PH/TBI Alternate List. The Director of DCoE concurred with these recommendations and DASD (FHP&R) approved them. Award negotiations are ongoing, with approximately 45 percent completed. The prioritized Alternate List still contains 94 projects. Remaining efforts include investment of remaining DCoE funds with two actions. The first involves selection of additional projects from the PH/TBI Research Program Alternate List for funding. The second concentrates on investing in Complementary and Alternative Medicine (CAM) and other projects solicited by USAMRMC on behalf of DCoE. USAMRMC received 84 CAM proposals on May 15, 2008. Peer and programmatic review for these projects began in June 2008. A graphic depicting execution steps for the \$301M PH/TBI Research Program is provided in Appendix 4. DCoE's Execution Plan is provided in Appendix 5. Additionally, the Joint Improvised Device Defeat Organization is currently considering supporting several proposals on the prioritized PH/TBI Research Program Alternate List aligned within their research priorities.

Table 1. Prioritized PTSD and TBI Research Gaps by Percentage of Available Funds

PTSD Research Gaps	Percentage of Available Funds
Treatment and Intervention	50%
Prevention	15%
Measures in Screening, Detection, and Diagnosis	10%
Epidemiological Studies	10%
Families/Caregivers Projects	10%
Neurobiology/Genetics	5%
TBI Research Gaps	Percentage of Available Funds
Treatment and Clinical Management	40%
Neuroprotection and Repair Strategy	22.5%
Rehabilitation/Reintegration Strategies	15%
Field Epidemiology	15%
Physics of Blast as it Relates to Brain Injury	7.5%

Table 2. PH/TBI Research Program Funding Mechanisms

Mechanism	Key Features		
Intramural Investigator-Initiated Research	To accelerate ongoing basic and clinically oriented DoD and VA research that supports (1) substantial improvements over today's approach to the treatment and clinical management of PTSD, (2) the development of novel preventive measures, and (3) the implementation of processes and procedures to enhance the quality of life of persons with PTSD and/or TBI.  Maximum Direct Cost: \$600,000/4years (additional with justification)  To accelerate the introduction of improved therapies, treatments, devices, or technologies for PTSD and/or TBI into the clinical setting.  Maximum Direct Cost: \$4M/4 years (additional with justification)		
Intramural Advanced Technology  - Therapeutic Development			
Concept	To spark new ideas, innovative technologies, and ground-breaking concepts that will drive forward the field of PTSD and/or TBI research  Maximum Direct Cost; \$150,000/18 months		
New Investigator	To increase the number of established PTSD and/or TBI researchers  Maximum Direct Cost: \$300,000/3 years		
Investigator-Initiated Research	To support basic and clinically oriented research that will (1) result in substantial improvements over today's approach to the treatment and clinical management of TBI, (2) facilitate the development of novel preventive measures, and (3) enhance the quality of life of persons with PTSD issues and/or TBI Maximum Direct Cost: \$600,000/4 years		
Advanced Technology – Therapeutic Development	To assess therapeutics and devices for the treatment, prevention, detection, and diagnosis of PTSD and/or TBI Maximum Direct Cost: \$4M/4years		
Multidisciplinary Research Consortium	To optimize research and accelerate the solution of a single critical overarching problem in PTSD and/or T8I research relevant to the prevention, detection, diagnosis, and/or treatment of PTSD issues and/or T8I.  Maximum Direct Cost: \$25M/5years		
PTSD/TBI Clinical Consortium	To escalate the development and marketing of novel-military relevant PTSD and TBI treatments and interventions  Total Costs: \$60M/5 years		

#### B. Outcomes

Scientific peer review and programmatic review are complete for all mechanisms solicited between July and November 2007. A total of 158 projects have been approved for funding, including 37 slated to be supported with PH/TBI Research Program funds allotted to DCoE (Appendix 6a and 6b). Tables 3 and 4 depict funding data by mechanism and by PTSD-specific and TBI-specific gap areas. Additionally, a prioritized Alternate List (Tables 5 and 6) contains 94 proposals for funding by remaining DCoE funding. Projects that remain on the Alternate List will be funded in priority order commensurate with cost savings. Detailed information on all PH/TBI Research Program

awards is posted at http://cdmrp.army.mil (under Search Award) for each award at the time of completion of award negotiation. Appendix 7 provides a list of the negotiated awards and brief highlights from select negotiated awards, by mechanism.

Table 3. Projects Recommended for Funding by Mechanism

PH Award Mechanism	Number of Projects Received	Number Recommended by JPIP/ Requested Budget	Number Recommended by DCoE/ Requested Budget	TOTALS Recommended for Funding / Requested Budget
Concept	238	20/\$4.4M	15/\$3.2M	35/\$7.6M
Intramural Advanced Technology – Therapeutic Development	14	4/\$16.3M	0/0	4/\$16.3M
Intramural Investigator- Initiated Research	82	16/\$20.0M	5/\$4.0M	21/\$24.0M
New Investigator	118	5/\$2.2M	5/\$2.0M	10/\$4.2M
Investigator-Initiated Research	106	5/\$6,4M	2/\$3.2M	7/\$9.6M
Advanced Technology – Therapeutic Development	25	0/0	0/0	0/0
Multidisciplinary Research Consortium	8	1*/\$32.6M	0/0	1/\$32.6M
TOTAL	591	51/\$81.9M	27/\$12.4M	78/\$94.3 <b>M</b>

<sup>\*</sup>Will result in 10 separate awards.

TBI Award Mechanism	Number Received	Number Recommended by JPIP/ Requested Budget	Number Recommended by DCoE/ Requested Budget	TOTALS Recommended for Funding/ Requested Budget
Concept	421	21/\$4.5M	3/\$0.6M	24/\$5.1M
Intramural Advanced Technology – Therapeutic Development	26	4/\$15.0M	1/ <b>\$5.2M</b>	5/\$20.2M
Intramural Investigator- Initiated Research	97	18/\$19.2M	3/\$1.8M	21/\$21.0M
New Investigator	191	8/\$3.1M	2/\$0.8M	10/\$3.9M
Investigator-Initiated Research	175	4/\$5.1M	1/\$0.8M	5/\$5.9M
Advanced Technology  – Therapeutic Development	65	3/\$10.8M	0/0	3/\$10.8M
Multidisciplinary Research Consortium	29	1*/\$33.7M	0/0	1*/\$33.7M
TOTAL	1,004	59/\$91.4M	10/\$9.2M	69/\$100.6M

PH/TBI Award Mechanism	Received	Recommended for Funding/Budget	Recommended for Funding/Budget by DCoE	Recommended for Funding /Budget Total
PH/TBI Clinical Consortium				
Coordinating	12	1/\$37M	0/0	1/\$37.0M
<ul><li>Center</li><li>Study Site</li></ul>	32	10**/0	0/0	10**/0
o Clinical Trials		\$13.9M	\$9.1M***	\$23.0M
TOTAL	44	11/\$50.9M	\$9.1 <b>M</b>	11/\$60M

<sup>\*</sup>Will result in 20 separate awards.

\*\*Will be funded as subawards under the Clinical Consortium Coordinating Center Award.

\*\*\*DCoE is funding \$9.1M of the clinical trials under the Clinical Consortium.

Table 4. Projects Recommended for Funding by Gap\*

PTSD Research Gaps	Number Received	Number Recommended by JPIP/ Requested Budget	Number Recommended by DCoE/ Requested Budget	TOTALS Recommended for Funding/ Requested Budget	Percentage Invested	Percentage Recommended by JPIP
Treatment and Intervention	225	30/\$92.8M	11/\$6.7M	41/\$99.5M	74.0	50
Prevention	37	6/\$4.1M	1/\$0.1M	7/\$4.2M	3.1	15
Screening, Detection, and Diagnosis	93	2/\$2.7M	2/\$0.7M	4/\$3.4M	2.5	10
Epidemiological Studies	54	6/\$3.1M	2/\$1.1M	8/\$4.2M	3.1	10
Families/ Caregivers	29	3/\$2.0M	2/\$0.9M	5/\$2.9M	2.1	10
Neurobiology/ Genetics	180	10/\$7.2M	9/\$2.9M	19/\$10.1M	7.5	5
TOTAL	618	57/\$111.9M	27/\$12.4M	84/\$124.3M	NA	NA
TBI Research Gaps	Number Received	Number Recommended by JPIP/ Requested Budget	Number Recommended by DCoE/ Requested Budget	TOTALS Recommended for Funding/ Requested Budget	Percentage Invested	Percentage Recommended by JPIP
Treatment and Clinical Management	305	23/\$91.0M	3/\$1.9M	26/\$92.8M	69.0	40
Neuroprotection and Repair Strategies	432	19/\$15.3M	1/\$5.2M	20/\$20.5M	4 Z	22.5
Rehabilitation/ Reintegration Strategies	145	7/\$5.8M	1/\$0.4M	8/\$6.2M	4,6	15
Field Epidemiology	66	6/\$2.9M	2/\$0.6M	8/\$3.5M	26	15
Physics of Blast	73	9/\$6.4M	3/\$1.1M	12/\$7.5M	5.8	7,5
TOTAL	1021	64/\$121.4M	10/\$9.2	74/\$130.5M	NA	NA

<sup>\*</sup>The \$60M budget for the Clinical Consortium Center and Sites was distributed between both PH and TBI gaps.

Table 5. Alternate Funding Data by Mechanism

PH Award Mechanism	Number of Proposals	Requested Budget (M)
Сопсерт	26	\$6.0
Intramural Advanced Technology – Therapeutic Development	0	0
Intramural Investigator-Initiated Research	4	\$5.1
New Investigator	1	\$0.4
Investigator-initiated Research	1	\$1.2
Advanced Technology – Therapeutic Development	O	0
Multidisciplinary Research Consortium	1	\$34,3
TOTAL	33	\$47.0
TBI Award Mechanism	Number of Proposals	Requested Budget (M)
Concept	22	\$4.4
Intramural Advanced Technology – Therapeutic Development	2	\$10.2
Intramural Investigator-Initiated Research	6	\$7.4
New Investigator	16	\$7.0
Investigator-Initiated Research	10	\$10.3
Advanced Technology – Therapeutic Development	3	\$13.1
Multidisciplinary Research Consortium	1	\$31.4
TOTAL	60	\$83.8
PH/TBI Clinical Consortium	Number of Proposals	Requested Budget (M)
Coordinating Center Clinical Trials	1	\$38.8
Study Site	0	NA
TOTAL	1	\$38.8

Table 6. Alternate Funding Data by Gap\*

PTSD Research Gaps	Number of Proposals	Requested Budget (M)
Treatment and Intervention	10	\$5.7
Prevention	0	0
Screening, Detection, and Diagnosis	4	\$0.2
Epidemiological Studies	1	\$0.2
Families/Caregivers	0	O
Neurobiology/ Genetics	21	\$40.8
TOTAL	33	\$46.9
TBI Research Gaps	Number of Proposals	Requested Budget (M)
Treatment and Clinical Management	20	\$59.4
Neuroprotection and Repair Strategies	23	\$9.4
Rehabilitation/ Reintegration Strategies	12	\$10.9
Field Epidemiology	2	\$2.4
Physics of Blast	3	\$1.7
TOTAL	60	\$83.8

<sup>\*\$38.8</sup>M for PH/TBI Clinical Consortium not showing

#### III. Execution of the \$31.7M Burn, Orthopedic, and Trauma Research Funds

#### A. Background and Implementatiou.

The USAMRMC assigned the \$31.7M Burn, Orthopedic, and Trauma funds to the United States Army Institute of Surgical Research (USAISR) in June 2007 for investment oversight. The USAISR assigned funds to the following research focus areas: Orthopedic Trauma Research Program (OTRP): \$5M; Burn Research: \$5M; Damage Control Resuscitation (DCR): \$10M; and Armed Forces Institute of Regenerative Medicine (AFIRM): \$10.1M (Appendix 9).

#### B. Status by Focus Area and Pending Actious

OTRP: 12 awards are complete or in process for a total of \$4,548M. The majority of the trauma that occurs in Operation Iraqi Freedom and Operation Enduring Freedom is orthopedic-related, particularly involving the upper and lower extremities. The purpose of OTRP is to complement, expand, and broaden the research in orthopedic trauma that DoD, National Institutes of Health, and industry currently fund. Emphasis is on clinical and mature technologies, with direction toward improvement of clinical outcomes in combat casualties. This is a competitive, peer review program that funded 12 of 96 submitted proposals in the areas of bone regeneration in a contaminated defect, prevention of infection, prevention of heterotopic ossification, improving the initial standards of care (e.g., irrigation and debridement), and regeneration of massive amounts of muscle.

Bnrn Research: Awards will focus on burn research.

**DCR:** A Request for Information was posted in December 2007 for a Massive Transfusion Prospective, Multicenter Trial Data Coordination Center. Inquiries were submitted and a Request for Proposals for \$9.2M is pending and will encompass the following:

- A data and coordination center will be developed to provide the necessary infrastructure to conduct a collaborative trial to identify the optimal blood component resuscitation ratios for patients receiving massive transfusion.
- Up to 25 centers will participate in this study as part of the multi-center consortium to correlate transfusion practices and blood component ratios.

**AFIRM:** Due to unanticipated issues precluding mixing of core Army and Office of the Secretary of Defense Supplemental funding on the AFIRM Cooperative Agreements in a single year, the first year of the AFIRM was entirely funded from the Office of the Secretary of Defense (OSD) Supplemental and the Army funds originally designated for

the AFIRM were used to fund the OTRP. Two awards were complete as of March 11, 2008: one to Wake Forest University (\$8.5M) and the second to Rutgers University (\$8.6M). The additional funds for these awards will come from the Navy, National Institutes of Health, and VA.

#### IV. Status of Mental Health Provider Staffing in DoD

#### A. Background

This section of this report responds to the Congress's request for information on the state of mental health experts available across the military in medical treatment facilities and in the private sector. In July 2007, DoD developed a 20+ factor model for providing the right mix and number of mental health providers across the enterprise: deployed; embedded into line units; integrated into primary care, prevention and training; and working on inpatient units mental health clinics. This model went far beyond typical models that merely account for a provider-to-patient ratios because it factored in patient risk factors to include deployments.

Determining the degree of shortage of mental health providers depends upon having a robust model that accurately reflects all requirements and contextual factors. To help DoD with this assessment, the Center for Naval Analyses received a contract to conduct a rigorous validation of a multi-factorial model. Validation is expected to be completed in late November 2008. Currently, this study is in the post-Institutional Review Board phase that includes a detailed assessment of current status as well as key informant interviews conducted with relevant stakeholders across the enterprise.

Although but one indicator of sufficiency of mental health care provider staffing, the degree to which initial access to mental health provider care can be provided across the enterprise in both the direct and network care systems provides an interim measure. In October 2007, DoD issued Health Affairs Policy 07-022 clarifying standards for access to mental health care (http://www.health.mil/Content/docs/pdfs/policies/2007/07-022.pdf) This policy clarified the expectation that initial access for a mental health assessment for a routine problem is to be the same as for other primary care complaints—seven days or fewer. Emergent (as soon as possible) and urgent (within 24 hours) access standards did not change. The policy guides providers to establish requirements for follow-on care after initial evaluation for mental health concerns according to the clinical needs of the patient. The standard for routine (non-urgent) consultation following initial evaluation remained at 28 days. Measures of initial access to mental health care in the direct care system and in the TRICARE network are positive, as discussed below.

# B. Uniformed and Civilian Mental Health Provider Staffing in Military Medical Treatment Facilities

Filling Service authorizations for uniformed mental health staff is relatively stable with the exception of doctoral psychologists in two Services and, to a lesser extent, for psychiatrists across the Services. To address this shortfall, all Services have compensated successfully for specific deficiencies by hiring appropriate civilian mental health providers in eombination with the addition of 50 Public Health Service mental health providers across DoD (150 of 200 total authorizations remain for additional Public Health Service mental health providers). The Center for Naval Analyses study mentioned above should be helpful in identifying any differences between current authorizations and Service requirements.

#### C. TRICARE Network Mental Health Care

TRICARE compliance with meeting initial access to mental health specialty care has been assisted by the addition of network mental health providers and by adding Mental Health Provider Locators for each TRICARE region. Beneficiaries are authorized to contact a listed network mental health provider of their choice for mental health care. Patients are authorized to receive up to eight unmanaged (no referral required) visits per year, and may be approved for additional visits as clinically indicated thereafter. Beneficiaries may also request the assistance of a Mental Health Provider Locator who will assist them to make an initial appointment, assuring seven-day access. TRICARE satisfaction surveys indicate that 90% of beneficiaries have little (15%) or no (75%) problem procuring their mental health appointments. It is expected that use of the Mental Health Provider Locators will help those who may have encountered difficulties accessing network care, and their success will be monitored as allowed by the patients assisted.

#### D. Access to Mental Health Care at Military Medical Treatment Facilities

Data tracking initial routine appointments for mental health care in DoD mental health clinics measuring from time-made to time-seen demonstrate that 97% of initial DoD mental health visits (by appointment or by showing up to the mental health clinic without an appointment) meet the seven-day or less access standard for initial access to mental health specialty care. This does not account for those who initially see mental health specialists in their primary care clinic (e.g., 65% of Air Force primary care clinics now have integrated mental health providers).

#### E. Recruiting and Retaining Uniformed Mental Health Providers in DoD

DoD is analyzing accession and retention bonus authorities received in the NDAA for FY08 to establish appropriate plans to attract and retain the right numbers and mix of mental health professionals to meet the needs of our population. DoD is also preparing separate notification regarding the consolidation of Special Pay, Incentive Pay, and Bonus Authorities, (per Section 661, NDAA for FY08), which will impact licensed clinical psychologists and licensed clinical social workers.

#### Appendix 1

#### Assistant Secretary of Defense for Health Affairs Appropriations Assignment Document



### OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE WASHINGTON, DC 2030 (-) 200

JUN 0 5 7007

#### MEMORANDUM FOR COMMANDER, US ARMY MEDICAL RESEARCH AND MATERIEL COMMAND

SUBJECT: Post Traumatic Stress Disorder Research, Traumatic Brain Injury Research and Burn, Orthopedic and Trauma Research

The "U.S. Troop Readiness, Veterans' Care, Katrina Recovery, and Iraq Accountability Appropriations Act", 2007, Public Law 110-28, appropriated \$331,700,000 to the Defense Health Program account for research, development, test, and evaluation to remain available until September 30, 2008. Consistent with Congressional intent, as established by the related Conference Committee report, these funds are allocated for peer reviewed research as follows: \$150,000,000 for post-traumatic stress disorder (PTSD) research, \$150,000,000 for traumatic brain injury (TBI) research, and \$31,700,000 for burn, orthopedic, and trauma research.

I request that the USAMRMC execute this requirement using the process similar to the Congressionally Directed Medical Research Program with three broad areas for proposals: Protection/Prevention; Identification/Assessment/Diagnosis; and Clinical Management (treatment). Future changes may be needed to respond to the recommendations of Task Forces and Planning Conferences on these subjects. Special attention should be paid to establishment of a Joint Programmatic Integration Panel for the PTSD and TBI Research Programs, and provide mechanism(s) to facilitate research proposals from federal clinicians. A Department of Veterans Affairs representative will serve on the Integration Panels. Special attention should be paid to funding research at PTSD and TBI Centers of Excellence. The PTSD Research Program, TBI Research Program, and the Burn, Orthopedic, and Trauma Research Program should be reported as required in a format similar to the DoD Congressionally Directed Medical Research Programs Annual Report.

Ellen P. Embrey

Deputy Assistant Secretary of Defense Force Health Protection & Readiness

ces

MG Gale Pollack, Acting Army Surgeon General
Dr. Barbara Sigford, National Program Director, Physical Medicine & Rehabilitation,
Department of Veterans Affairs

Appendix 2
Psychological Health/Traumatic Brain Injury (PH/TBI)
Research Program Budget

Congressional Appropriation	\$301.0M
Less: Withholds (e.g., SBIR*/USAMRMC)	(\$14.9M)
Appropriation Received	\$286.1M
Less: 6% Management Costs	(\$17.2M)
Amount Available for FY07 Research	\$268.9M
Funds Allotted to PH/TBI Research Program	(\$223.9M)
Funds Allotted to DCoE	(\$45M)

<sup>\*</sup>Small Business Innovation Research

# Appendix 3: Fiscal Year 2007 Joint Program Integration Panel

Chair	COL Karl Friedi		
Alternate Chair	Mr. Michael Leggieri		
DCoE <sup>1</sup> Director	BG Loree Sutton		
Alternate to DCoE Director	CDR Russell Shilling		
ASBREM <sup>2</sup> Secr	etarlat Members		
Army	COL R. Keith Martin		
Navy	CAPT Doug Forcino		
Air Force	Dr. Garrett Polhamus		
DDR&E <sup>3</sup>	Mr. Bart Kuhn		
OSD(HA) <sup>4</sup>	Dr. Sal Cirone		
Intera	gency		
VA <sup>5</sup>	Dr. Joseph Francis		
MIH <sup>6</sup>	Dr. Walter Koroshetz		
Medical Materiel Developer	Dr. Keith Prusaczyk		
Other Department of D	efense Representatives		
Army	COL Jonathan Jaffin		
USUHS <sup>7</sup> Dr. Steve Kaminsky			
JIEDDO <sup>8</sup>	Dr. James Wargo		
Service Clinic	al Consultants		
Air Force	LtCol Debra Malone Col Michael Jaffee Maj William Isler		
Army COL Mary Erickson COL Elspeth Ritcl LTC Kurt Grathwo			
Marine Corps	CDR William Tanner Mr. Bruce Barnes		
Navy	CAPT Robert Koffman CAPT James Bloom		

Department of Defense Center of Excellence for Psychological Health and Traumatic Brain Injury

Armed Services Biomedical Research Evaluation Management

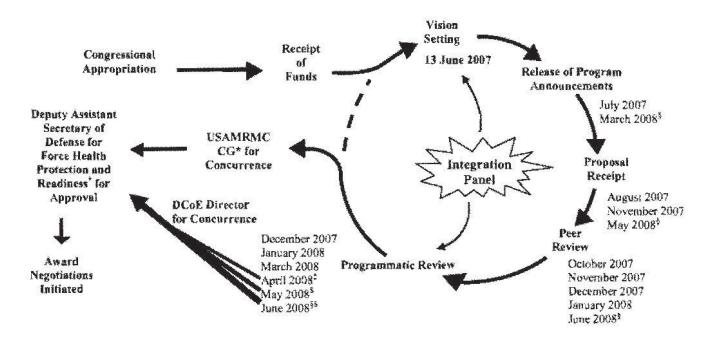
Director, Defense Research and Engineering

Office of the Secretary of Defense for Health Affairs

Department of Veterans Affairs

<sup>6</sup> National Institutes of Health
7 Uniformed Services University of the Health Sciences
8 Joint Improvised Explosive Device Defeat Organization

Appendix 4
Psychological Health/Traumatic Brain Injury Research Program Execution Cycle



<sup>\*</sup>MG George W. Weightman, Commander, USAMRMC

Ms. Ellen P. Embrey

<sup>\*</sup>DCoE contracted Programmatic Review Meetings in April and May to select proposals for funding from the Prioritized Alternate List \*Complementary and Alternative Medicine Research Program

Appendix 5:
The Department of Defense Center of Excellence Execution Plan

Investment Type	Amount of Investment
PH/TBI Research Projects	\$21.5M
Clinical Consortium	\$9,1M
Complementary and Alternative Medicine	\$4M
Pending	\$10.4M

### Appendix 6a:

Psychological Health/Traumatic Brain Injury Research Program Funding Recommendations from Joint Program Integration Panel by Mechanism\*

Post-Traumatic Stress Disorder (PTSD) New Investigator Award

Institution	Principal Investigator
Northern California Institute for Research and Education	Karen Seal
Research Triangle Institute (RTI)	Leyla Stambaugh
Uniformed Services University of the Health Sciences	Marjan Holloway
University of Arizona, Tucson	Patricia Haynes
University of Wisconsin, Madison	Tracey Smith

Traumatic Brain Injury (TBI) New Investigator Award

Institution	Principal Investigator
Banyan Biomarkers, Inc.	Stanislav Svetlov
Geneva Foundation	Kenneth Cameron
Physical Sciences Inc.	Nicusor Iftimia
University of Alabama at Birmingham	Candace Floyd
University of California, San Diego	Scott Matthews
University of California, San Francisco	Kenneth Monson
VA Medical Center, Bronx	R. Henderson
Washington University	David Brody

TBI Advanced Technology - Therapeutic Development Award

Institution	Principal Investigator
Brain Trauma Foundation, Inc.	Jamshid Ghajar
Cognosci, Inc.	Michael Vitek
University of Alabama at Birmingham	Irshad Chaudry

PTSD Multidisciplinary Research Consortium

Institution	Principal Investigator
Boston VA Research Institute, Inc. (BVARI)	Brett Litz
BVARI	Patricia Resick
Henry M. Jackson Foundation	David Riggs
University of Pennsylvania	Edna Foa
University of Texas at Arlington	Robert Gatchel
University of Texas Health Science Center at San Antonio (UTHSCSA)	Alan Peterson
UTHSCSA	Michael Escamilla
UTHSCSA	Peter Fox
UTHSCSA	John Roache
UTHSCSA	Randy Strong

<sup>\*</sup>Several award mechanisms allowed for multiple investigators on the same project; these lists include all funded investigators.

PTSD/TBI Clinical Consortium Coordinating Center Award

Institution	Principal Investigator
University of California, San Diego	Murray Stein

PTSD/TBI Clinical Consortium Study Sites

Institution	Principal Investigator
University of California, San Diego	Raul Coimbra
University of Cincinnati	Raj Narayan
Dartmouth College	Thomas McAllister
Duke University	Gerald Grant
Geneva Foundation	Gregory Gahm
Henry M. Jackson Foundation	David Benedek
University of Maryland, Baltimore	Howard Eisenberg
South Carolina Research Authority	Mark George
Spaulding Rehabilitation Hospital	Ross Zafonte
University of Washington	Nancy Temkin

TBI Multidisciplinary Research Consortium

Institution	Principal Investigator
Baylor College of Medicine (BCM)	Claudia Robertson
BCM	Harvey Levin
BCM	Michael Friedlander
BCM	Thomas Kent
BCM	Stephen LaConte
BCM	Matthew Rasband
BCM	Stelios Smirnakis
BCM	Andreas Tolias
BCM	Kimberly Tolias
BCM	Eli Mizrahi
Rice University	James Tour
University of Texas Medical Branch, Galveston (UTMBG)	Ping Wu
UTMBG	Jose Perez-Polo
University of Texas Health Science Center at Houston (UTHSCH)	Alex Valadka
UTHSCH	Pramod Dash
UTHSCH	Andrew Papanicolaou
UTHSCH	Ponnada Narayana
UTHSCH	Paul Swank
UTHSCH	Raymond Grili
Transitional Learning Center at Galveston	Brent Masel

PTSD Concept Award

Institution	Principal Investigator
BVARI	Gary Kaplan
Brentwood Biomedical Research Institute	Agnes Wallborn
Bronx Veterans Medical Research Foundation, Inc.	Rachel Yehuda
Feinstein Institute for Medical Research	Sandra Kaplan
Henry M. Jackson Foundation	He Li
Henry M. Jackson Foundation	Jennifer Rusiecki
Henry M. Jackson Foundation	Richard Siarey
Indiana University, Indianapolis	Erin Krebs
Institute for Medical Research, Inc., Durham, NC	Christine Marx
Mayo Clinic and Foundation, Jacksonville	Zhen He
Northern California Institute for Research and Education	Shira Maguen
Northern California Institute for Research and Education	Karen Seal
Research Triangle Institute (RTI)	Laurel Hourani
Scripps Research Institute	Eric Zorrilla
State University of New York, Downstate Medical Center	Peter Serrano
University of California, San Diego .	Victoria Risbrough
University of Delaware	Jeffrey Rosen
University of Texas Health Science Center at San Antonio	David Morilak
Yale University	Jane Taylor

PTSD Investigator-Initiated Research Award

Institution	Principal Investigator
Boston University, Boston Campus	Ellen DeVoe
New England Research Institute, Waterton	Mary Jo Larson
New England Research Institute, Waterton	Raymond Rosen
Palo Alto Institute for Research and Education	Joseph Ruzek
Uniformed Services University of the Health Sciences	David Riggs
University of Pennsylvania	Steven Thomas
VA Boston Healthcare System	Terence Keane

TBI Concept Award

Institution	Principal investigator
BVARI	Kevin Brailey
Case Western Reserve University	Pedram Mohseni
Catholic University of America	John Judge
Children's Hospital, Boston	Alexander Rotenberg
Clemson University	Ning Zhang
Emory University	Donald Stein
Foster-Miller, Inc.	Abduliatif Zaouk
Geneva Foundation	James Atkins
Geneva Foundation	Joseph Long
Institute for Medical Research, Inc., Durham, NC	Karen Tucker
Massachusetts General Hospital	John Sims
Memorial Sloan-Kettering Cancer Center	Eric Holland
Northern California Institute for Research and Education	Samuel Panter
Southern Illinois University	Arlene Tan
State University of New York, Downstate Medical Center	Peter Bergold
University of Illinois, Champaign/Urbana	Kenneth Watkin
University of Miami, School of Medicine	lan Hentall
University of Pittsburgh	Jun Chen
University of Pittsburgh	Amy Wagner
Veterans Research and Education Foundation, Tamps, FL	Frederick Heinzel

TBI Investigator-Initiated Research Award

Institution	Principal Investigator
Baylor College of Medicine	Harvey Levin
Cleveland Clinic Foundation	Stephen Rao
University of Maryland, Baltimore	J. Marc Simard
University of Miami School of Medicine	M. Bullock

Intramural PTSD Advanced Technology - Therapeutic Development Award

Institution	Principal Investigator
Massachusetts General Hospital	Roger Pitman
VA Medical Center, Atlanta, GA	James Bremner
VA Research & Education Corp of the Pacific	Leslie Morland
Yale University	Ismene Petrakis

### Intramural PTSD Investigator-Initiated Research Award

Institution	Principal Investigator
Charleston Research Institute, Inc.	Ronald Acierno
Biomedical Research Institute of New Mexico	Diane Castillo
Henry M. Jackson Foundation	Stephen Cozza
Tuscaloosa Research and Education Advancement Corporation	Lori Davis
Tuscaloosa Research and Education Advancement Corporation	Lori Davis
Geneva Foundation	Gregory Gahm
Naval Health Research Center	Gerald Larson
BVARI	Brian Marx
Biomedical Research Foundation, Little Rock	Jeffrey Pyne
Seattle Institute for Biomedical and Clinical Research	Murray Raskind
Palo Alto Institute for Research and Education	Craig Rosen
Philadelphia Research and Education Foundation	Richard Ross
VA Medical Center, Iowa City	Anne Sadler
Minnesota Veterans Research Institute	Nina Sayer
Naval Health Research Center	Tyler Smith
Veterans Medical Research Foundation of San Diego	Steven Thorp

### Intramural TBI Advanced Technology - Therapeutic Development Award

Institution	Principal Investigator Stephen Dalal	
U.S. Army Aeromedical Research Laboratory (USAARL)		
Henry M. Jackson Foundation	Daniel Freilich	
Henry M. Jackson Foundation	Gerard Ricdy	
Geneva Foundation	Frank Tortella	

### Intramural TBI Investigator-Initiated Research Award

Institution	Principal Investigator	
USAARL	Lynnette Bardolf	
University of Miami, School of Medicine	Helen Bramlett	
Naval Health Research Center	Walter Carr	
Naval Health Research Center	Mikulas Chavko	
Northern California Institute for Research and Education	Anthony Chen	
Henry M. Jackson Foundation	Jay Erickson	
Geneva Foundation	Jed Hartings	
Henry M. Jackson Foundation	Sharon Juliano	
Geneva Foundation	Joseph Long	
Geneva Foundation	Joseph Long	
USAARL	Barney McEntire	
Bronx Veterans Medical Research Foundation, Inc.	Giulio Pasinetti	
Henry M. Jackson Foundation	Karen Schwab	
Northern California Institute for Research and Education	William Seaman	
James A. Haley Veterans Research and Education Foundation	Kris Siddharthan	
Minnesota Veterans Research Institute	Scott Spanheim	
East Bay Institute for Research & Education	Dlane Swick	
Veterans Medical Research Foundation of San Diego	Nicholas Webster	

### Appendix 6b:

# Funding Recommendations from the Defense Center of Excellence for Psychological Health and Traumatic Brain Injury

Institution	Principal Investigator	Award Mechanism
BVARI	Casey Taft	Intramural PTSD Investigator-Initiated Research Award
Yale University	Steven Southwick	Intramural PTSD Investigator-Initiated Research Award
University of Michigan	Israel Liberzon	Intramural PTSD Investigator-Initiated Research Award
Henry M. Jackson Foundation	Carol Fullerton	Intramural PTSD Investigator-Initiated Research Award
Henry M. Jackson Foundation	Stephen Cozza	Intramural PTSD Investigator-Initiated Research Award
Geneva Foundation	Frank Tortella	Intramural TBI Advanced Technology – Therapeutic Development Award
McGuire Research Institute, Inc.	William Walker	Intramural TBI Investigator-Initiated Research Award
Detroit Research & Education Foundation	Pamela VandeVord	Intramural TBI Investigator-Initiated Research Award
University of Maryland, Baltimore	Rao Gullapalli	Intramural TBI Investigator-Initiated Research Award
Henry M. Jackson Foundation	Denes Agoston	PTSD Concept Award
Medical College of Georgia, Research Institute, Inc.	Clare Bergson	PTSD Concept Award
Tulane University	Laura Schrader	PTSD Concept Award
University of South Florida	Kathleen O'Rourke	PTSD Concept Award
VA Medical Center, East Orange, NJ	Kevin Beck	PTSD Concept Award
Massachusetts Institute of Technology	Edward Boyden	PTSD Concept Award
Tulane University	Fred Sautter	PTSD Concept Award
Palo Alto Institute for Research and Education	Jennifer Alvarez	PTSD Concept Award
Research Triangle Institute (RTI)	Paul Kizakevich	PTSD Concept Award
Dartmouth College	Laurie Slone	PTSD Concept Award

Institution	Principal Investigator	Award Mechanism
Georgetown University	Mary Ann Dulton	PTSD Concept Award
Dartmouth College	Claudia Zayfert	PTSD Concept Award
Henry M. Jackson Foundation	Brian Cox	PTSD Concept Award
American Psychiatric Institute for Research and Education	Farifteh Duffy	PTSD Concept Award
University of Pittsburgh, School of Medicine	Anne Germain	PTSD Investigator-Initiated Research Award
University of Michigan	Sandro Galea	PTSD Investigator-Initiated Research Award
Emory University	Seth Norrholm	PTSD New Investigator Award
Yale University	Deane Aikins	PTSD New Investigator Award
Veterans Medical Research Foundation of San Diego	Alan Simmons	PTSD New Investigator Award
Ernest Galio Clínic and Research Center	Philip Newton	PTSD New Investigator Award
George Washington University	Yan Su	PTSD New Investigator Award
Wayne State University	Liying Zhang	TBI Concept Award
Henry M. Jackson Foundation	Jennifer Rusiecki	TBI Concept Award
University of Washington	Francesco Curra	TBI Concept Award
North Florida Foundation for Research and Education, Inc.	Charles Levy	TBI Concept Award
Denver Research Institute	Thomas Beresford	TBI Investigator-Initiated Research Award
VA Medical Research Foundation of San Diego	Elizabeth Twamley	TBi New Investigator Award
Case Western Reserve University	Mark Walker	TB! New Investigator Award

#### Appendix 7

# Highlights from Psychological Health and Traumatic Brain Injury Research Program Negotiated Awards by Mechanism

#### POST-TRAUMATIC STRESS DISORDER (PTSD) CONCEPT AWARD

Deployment, PTSD Symptoms, and Comorbid Mental Health Conditions in the Active Force And Reserve Components

Hourani, Laurel/Research Triangle Institute

Post-traumatic stress disorder (PTSD) has been shown to co-occur with other conditions such as depression, suicidal thoughts and attempts, alcohol and drug abuse, anxiety, conduct disorder, chronic pain, and metabolic syndrome, but little is known about the prevalence and patterns of these co-occurrences.

The goal of this research is to develop models of PTSD risk from a wide array of deployment, stress, trauma, and mental health factors. Specifically, this study will (a) identify the underlying structure of co-occurring PTSD with substance use and mental disorders among active duty (AD) and reserve components (RC) military personnel using latent class analysis, and (b) examine variation in the underlying structure across subgroups defined by military and individual characteristics using logistic regression models.

This investigation will conduct in-dcpth analyses of two comprehensive data sets that together provide key information on PTSD symptoms and other risk behaviors for the total force, both AD and RC. The data sets are the 2005 Department of Defense (DoD) Survey of Health Related Behaviors among Active Duty Military Personnel and the 2006 DoD Survey of Health Related Behaviors among Guard/Reserve Personnel.

Findings will advance our understanding of the prevalence of co-occurring disorders with PTSD, and how individual and military factors may influence both the risk of PTSD and co-occurring mental and substance use disorders.

#### TBI CONCEPT AWARD

# Brain Tissue Regeneration After Traumatic Brain Injury Zhang, Ning/Clemson University

Currently, over 5.3 million individuals in the United States are suffering from traumatic brain injury (TBI) and despite tremendous effort in neuroprotection, and managing tissue damage and inflammation following TBI, current therapies have led to clinical failure in improving the mortality and neurological outcome, largely due to the inability of these treatments to re-vascularize and repopulate the lesion with functional neural cells.

The objective of this project is to re-vascularize and repopulate the TBI lesion cavity with functional neural cells for sustained structural and functional recovery. In particular, endogenous neural stem cells (NSCs) in the brain will be mobilized and manipulated to generate functional neural cells at the lesion cavity for cell replacement. Specifically, this study aims to accomplish (1) pre-engineering the lesion cavity with vasculature network, (2) mobilizing endogenous NSCs from their natural reservoir in the brain subventricular zone and site-specific recruitment to the vasculature network, and (3) in situ differentiation induction of the recruited NSCs into functional neural cells.

The overall hypothesis of this study is that a combined strategy based upon site-specific localized delivery of signaling growth factors for the mobilization, site-specific recruitment, and functional differentiation of endogenous NSCs in the brain to the TBI lesion that is pre-engineered with vasculature network, would promote neural repopulation of the lesion cavity, leading to significant improvement in neurological outcome in the TBI.

#### INTRAMURAL TBI INVESTIGATOR-INITIATED RESEARCH AWARD

Sensors To Assess Pressure-Mediated Effects On Blast-Induced Traumatic Brain Injury

Chavko, Mikulas/Naval Health Research Center

The detonation of any powerful explosive generates a blast wave, which is a sudden and extreme difference in pressure that leads to significant neurological injury. The precise mechanisms of brain injury after exposure to blast are not known.

This study will identify the potential pathways in which blast energy is transferred to brain tissue by the use of the FOP-MIV fiber optic pressure sensors (FISO Technologies, Quebec, Canada) and by detection of blast wave propagation through the body in a rat model of blast injury. Another hypothesis being tested is that current protection by body armor may actually increase intrathoracic pressure and aggravate brain blast injury.

Specifically, this study aims to (1) implantation, fixate, and test sensors in rats, (2) measure blast energy transmission into brain (aptitude, duration, and timing of transmitted energy in the brain will be compared with the corresponding pressure parameters measured by sensors implanted in other parts of the body and on the body surface), and (3) perform neurohistopathology studies which will allow correlation of the degree of neuronal disruption with the brain pressure intensity level. Brain histopathological measures will include gross neuronal pathology (hematoxylin and eosin staining, and Nissl staining), apoptosis, (deoxyribonucleic acid degradation, tunnel staining), and measures of axonal degeneration (silver staining).

# INTRAMURAL TBI ADVANCED TECHNOLOGY – THERAPEUTIC DEVELOPMENT AWARD

A Multifunctional Blood Substitute for Field Resuscitation of Polytrauma Combat Casualties with Brain Injury and Concomitant Hemorrhagic Shock

Freilich, Daniel/Naval Medical Research Center

Traumatic brain injury (TBI) and hemorrhagic shock (HS) are results of multiple injuries and remain the most common causes of trauma deaths. Most deaths occur prior to hospital arrival as a result of limited pre-hospital treatment, which usually includes basic life support, compression of accessible bleeding, and fluid resuscitation. Moreover, standard fluids restore intravascular volume but dilute oxygen content, sometimes exacerbating anaerobic metabolism, immune activation, coagulopathy, and hemorrhage.

Thus, clinical objectives of this study are to develop a Multifunctional Blood Substitute (MBS) containing vasoactivity-attentuated hemoglobin-based oxygen carrier (VA-HBOC-201) that improves cerebral perfusion pressure, brain oxygenation, and survival in polytrauma casualties with TBI and HS by extending in-hospital to pre-hospital capabilities.

Specifically, the swine model of TBI + HS will be utilized to evaluate pre-hospital resuscitation outcomes with: (1) MBS containing VA-HBOC-201 vs. standard fluids, (2) NaNO2 + MBS containing VA-HBOC vs. VA-HBOC-201, and (3) recombinant factor VIIa + MBS containing VA-HBOC-201 ± NaNO2 vs. VA-HBOC and standard fluids. Outcome measures will include systemic- and neuro-physiologic, ischemia-reperfusion injury, hematologic, immune transcriptive/translative, and NO chemistry parameters, and survival.

# INTRAMURAL PTSD ADVANCED TECHNOLOGY – THERAPEUTIC DEVELOPMENT AWARD

# Telemental Health and Cognitive Processing Therapy for Rural Combat Veterans with PTSD

#### Morland, Leslie/VA Health Care System, Pacific Islands

Research with military troops returning from Iraq and Afghanistan suggests that (1) combat-related PTSD is prevalent among new generation of veterans, and (2) many of these troops are returning to rural and remote areas with limited access to care. A potential solution to the problem of accessing care in remote areas can be telemental health technologies such as video-teleconferencing (VTC). However, there is a critical need for research that examines the efficacy of the VTC modality for delivering PTSD-specific evidence-based treatment interventions.

The proposed project is the first prospective, randomized clinical trial designed to evaluate the clinical effectiveness of delivering evidence-based cognitive behavioral group intervention specifically treating PTSD via VTC. This project will (1) train PTSD clinicians on the use of the VTC modality and the standardized Cognitive Processing Therapy protocol, (2) conduct assessments at multiple study intervals to determine maintenance of treatment effects, and (3) test effectiveness of a novel mode of mental health service delivery (VTC) vs. a traditional mode (in-person) for providing specialized mental health intervention Cognitive Processing Therapy to combat veterans with PTSD. Outcome domains will include: (1) clinical (symptom severity, social functioning), (2) process (perception of treatment, satisfaction, group therapy alliance, treatment compliance, and attrition and treatment credibility), (3) cost-effectiveness, and (4) potential influence of personal characteristics (ethnicity, education, military branch, etc.).

# INTRAMURAL PTSD INVESTIGATOR-INITIATED RESEARCH AWARD Addressing the Needs of Children and Families of Comhat Injured Cozza, Stephen/Uniformed Services University of the Health Sciences

At the present time, over 27,000 soldiers, sailors, marines, and airmen have been injured in the Iraq war. Many of these injured service members have families. Combat injuries on families, and on children in particular, which include initial distress and longer term injury adjustment challenges, may have strenuous effect. While these phenomena have been described and addressed in clinical treatment centers, no formalized assessment of the impact of combat injury on families has been conducted.

The proposed project is designed to evaluate five major clinical categories of parental and family function post-combat injury: (1) Acute child and parent traumatic stress symptoms, (2) levels of parental efficacy (e.g. emotional availability, disciplinary style), (3) parent-child communication, (4) alterations to family schedule and structure, and (5) long-term impact of injury on child, parent, and family function. Specifically the study aims to (1) identify the immediate impact of parental combat injury on children and families, (2) assess the progressive impact of injury on child, parent, and family function, and (3) determine the appropriateness of developing intervention strategies for this population.

Urgency exists to better understand the impact of parental combat injury on children and families. Further scientific effort in this area will not only benefit the military population, but also the extremely large number of U.S. children whose parents sustain serious traumatic injury throughout the nation.

### TBI NEW INVESTIGATOR AWARD

## Advanced Magnetic Resonance Imaging in Blast-Related TBI Brody, David/Washington University

Thousands of soldiers, marines, and other military personnel have had injuries to the brain due to the wars in Iraq and Afghanistan. TBI and its effects on brain functional connectivity are very difficult to directly detect and quantify in living patients using conventional magnetic resonance imaging (MRI) and computer tomography. However, new advances in MRI technology, such as diffusion tensor imaging (DTI) for detecting axonal injury and resting-state functional MRI for investigating brain functional connectivity, may help to overcome these challenges.

The objective of this proposal is to test these two advanced MRI methods, DTI and resting-state functional MRI, in active-duty military blast-related TBI patients acutely after injury, and correlate findings with TBI-related clinical outcomes 6-12 months later. Specifically, this prospective, observational study intends (1) to assess the extent of acute blast TBI-related abnormalities that are not apparent on conventional MRI scans by using DTI and resting-state functional MRI, (2) to determine specific patterns of imaging abnormalities that predict specific TBI-related clinical outcomes, and (3) to develop acute imaging predictors of overall 6-twelve month elinical outcomes.

The proposed project, if successful, will have a major impact on the care of TBI patients, their families and caregivers, and the American public.

## TBI INVESTIGATOR-INITIATED RESEARCH AWARD

The Effects Hypoxia on Cognitive Function in Aviators and Complex System Operators that Have Had a Mild Traumatic Brain Injury

Temme, Leonard/US Army Acromedical Research Laboratory

Preliminary observations suggest that individuals with mild TBI condition, usually asymptomatic, may experience functional deficits only under stressful physiological condition. Thus, the performance of such individuals, civilian or military, may be impaired under conditions in which their optimal performance is absolutely crucial.

The specific hypothesis of this proposal is that mild to moderate hypoxia reversibly uncovers neurological deficits in individuals who have experienced a mild TBI but who seem asymptomatic when breathing air with normal sea level concentrations of oxygen. This hypothesis will be tested by evaluating a group of asymptomatic patients with a history of mild TBI and an age- and gender-matched control group of individuals with no history of mild TBI under stressful condition. The stressful condition will be comprised of air/nitrogen gas mixtures that simulate the air found at high altitudes, which individuals routinely encounter in commercial and general aviation, and that military personnel, including ground forces, encounter in military aviation. Since these altitudes pose a hypoxic challenge, the scientists expect that at least some symptoms of mild TBI may be uncovered in the patient participants when confronting simulated altitudes. Outcome measures will include reflex eye movements, a neuro-cognitive battery, and standardized self-report of altitude-related symptoms.

If hypoxia does uncover deficits in patients with a history of mild TB1, important followup studies should be conducted to answer questions concerning the impact of other physiological stressors (e.g., sleep deprivation, fatigue, drug use, alcohol consumption).

### PTSD INVESTIGATOR-INITIATED RESEARCH AWARD

Dissemination of Evidence-Based Cognitive Behavioral Therapy Intervention Components: Online Self-Administered Training for Providers Treating Military Deployment-Related PTSD

## Ruzek, Joseph/Palo Alto Institute for Research and Education

Military personnel deployed to Iraq and Afghanistan are showing significant levels of PTSD and other problems associated with exposure to military deployment-related trauma. Veterans Healthcare Administration mental health clinicians will need to provide services to large numbers of individuals newly presenting with PTSD, while maintaining current heavy PTSD caseloads. Thus, a systematic, cost-effective training program is needed to teach mental health providers how to deliver short-term, efficacious, evidence-based treatments for PTSD.

The main study hypotheses are: (1) web-training will increase counselor skill in core PTSD-related Cognitive-Behavioral Therapy (CBT) techniques; (2) Web-training followed by expert group supervision will increase counselor skills over web-training alone and over usual local training; (3) Web-training will increase counselor knowledge, attitudes, and self-efficacy in evidence-based counseling practices; and (4) Training effects are mediated by participant engagement in training, measured by modules completed and expert group supervisions attended.

In particular, this study will (1) create web-ready text for core components of PTSD-related CBT, (2) translate text into an innovative web, (3) implement a telephone and web-based supervision/consultation to ensure that skills are implemented competently in routine clinical care, (4) develop a cost-effective, feasible methodology for measuring training impact, and (5) conduct a rigorous randomized control trial on the effectiveness of these training dissemination methods.

Appendix 8
Psychological Health Proposals Received by Selected Topic Area

Log Number	Pl Organization	Proposal Title	Award Type	Topic Area	Award Status
PT073238	Northern California Institute for Research and Education	Integrating Mental Health and Primary Care Services for OEF/OIF Combat Veterans With PTSD and Comorbid Disorders: Assessing the Evidence	PTSD Concept Award	Mental Health Care	Complete
PT073605	Northern California Institute for Research and Education	PTSD, Comorbid Disorders, and Service Utilization in Women Veterans	PTSD Concept Award	Mental Health Care	Complete
PT074137	Research Triangle Institute	Combat Stress Casualty Reduction: Pre- deployment Stress Inoculation Training	PTSD Concept Award	Mental Health Care	Complete
PT074161	Research Triangle Institute	Deployment, PTSD Symptoms, and Comorbid Mental Health Conditions in the Active Force and Reserve Components	PTSD Concept Award	Mental Health Care	Complete
PT074889	Palo Alto Institute for Research and Education	Dissemination of Evidence-Based CBT Intervention Components: Online Self-Administered Training for Providers Treating Military Deployment-Related PTSD	PTSD Investigator- Initiated Research Award	Mental Health Care	Complete
PT074889P1	New England Research Institute, Waterton	Dissemination of Evidence-Based CBT Intervention Components: Online Self-Administered Training for Providers Treating Military Deployment-Related PTSD	PTSD Investigator- Initiated Research Award	Mental Health Care	Complete

PT075789	Stanford University	Homecoming Line: Telephone Support for Veterans	Intramural PTSD Investigator- Initiated Research Award	Mental Health Care	Complete
	Georgetown University		A SAME TO SAME	Mental Health Care	Pending
·	Naval Health Research Center	1 A A A A A A A A A A A A A A A A A A A	4 4 4	Mental Health Care	Pending
	VA Health Care System, Pacific Islands	A LANGULUI A		Mental Health Care	Pending
	Yale University	1.1 mggama 4.4 mggama	A A A A A A A A A A A A A A A A A A A	Mental Health Care	Pending
	University of Michigan,	1 to 2 to	A CONTRACTOR OF THE CONTRACTOR	Mental Health Care	Pending
	Biomedical Research Foundation, Little Rock			Mental Health Care	Pending
	Uniformed Services University of the Health Sciences	billing and a second a second and a second a		Mental Health Care	Pending
ушинант -	VA Boston Healthcare System			Mental Health Care	Pending
a b	New England Research Institute, Waterton	A MANUFACTURE A		Mental Health Care	Pending
4.2	Northern California Institute for Research and Education			Mental Health Care	Pending
	University of Wisconsin, Madison	* <u>* * * * * * * * * * * * * * * * * * </u>	***************************************	Mental Health Care	Pending
. А. <del>Дендерова</del>	Research Triangle Institute		A A A A A A A A A A A A A A A A A A A	Mental Health Care	Pending

PT073670	Uniformed Services University of the Health Sciences	Corticosterone Administration to Promote Fear Memory Forgetting in an Animal Model of PTSD	PTSD Concept Award	Panic disorder	Complete
	Emory University			Panic disorder	Pending
- <u></u>	Ernest Gallo Clinic and Research Center			Panic disorder	Pending
PT073236	University of Delaware	Oxytocin and Social Support as Synergistic Inhibitors of Aversive Fear Conditioning and Fear-Potentiated Startle in Male Rats	PTSD Concept Award	Panic disorder	Complete
PT073560	Uniformed Services University of the Health Sciences	Role of MicroRNAs in the Synaptic Plasticity Dysfunction During Post-Traumatic Stress Disorder	PTSD Concept Award	Panic disorder (anxiety episodes)	Complete
PT073449	University of California, San Diego	Glutamate Transmission Enhancement for Treatment of PTSD	PTSD Concept Award	Panic disorder (failure of fear extinction)	Complete
PT073569	State University of New York, Downstate Medical Center	When Good Memory Mechanisms Go Bad: Toward an Understanding of the Role of PKM-Zeta in Post-Traumatic Stress Disorder	PTSD Concept Award	Panic disorder (fear and anxiety)	Complete
PT073232	Yale University	Stimulant Therapy and Memory Strength: Implications for the Emergence and Treatment of PTSD	PTSD Concept Award	Panic disorder (fear memory)	Complete
PT075099	University of Pennsylvania	Catecholamines in Posttraumatic Stress Disorder	PTSD Investigator- Initiated Research Award	Panic disorder (fear memory)	Complete

PT073577	Bronx Veterans Medical Research Foundation, Inc.	Molecular Mechanisms Underlying Individual Differences in Response to Stress in a Previously Validated Animal Model of PTSD	PTSD Concept Award	Panic disorder (fear response)	Complete
PT073231	Tulane University	Hormonal Regulation of Extinction: Implications for Gender Differences in the Mechanisms of PTSD	PTSD Concept Award	The onset and nature of PTSD	Complete
1444	University of Texas, Health Science Center at San Antonio			The onset and nature of PTSD	Pending
dddillillilli	University of Texas, Health Science Center at San Antonio	3366		The onset and nature of PTSD	Pending
And the second s	University of Michigan			The onset and nature of PTSD	Pending
**************************************	Uniformed Services University of the Health Sciences			The onset and nature of PTSD	Pending
	George Washington University	and the state of t		The onset and nature of PTSD	Pending

\* Topic Area
Mental Health Care
The Onset and Nature of PTSD
Panic Disorder

Total

Number of Projects

Appendix 9
Burn, Orthopedic, and Trauma Initiative Budget

Congressional Appropriation	\$31.7M
Less: Withholds (e.g., SBIR¹/USAMRMC)	(\$1.6M)
Appropriation Received	\$30.1341M
Amount Available for Fiscal Year 2007 Research	\$30.1M
Orthopedic Trauma Research Program	(\$5.0M)
Burn Research	(\$5.0M)
Damage Control Resuscitation	(10.0M)
Armed Forces Institute of Regenerative Medicine	(\$10.1M)

<sup>&</sup>lt;sup>1</sup> Small Business Innovative Research

# HEALTH AFFAIRS

### THE ASSISTANT SECRETARY OF DEFENSE

1200 DEFENSE PENTAGON WASHINGTON, DC 20301-1200

FEB 1 0 2009

The Honorable Carl Levin Chairman, Committee on Armed Services United States Senate Washington, DC 20510

Dear Mr. Chairman:

This letter and the enclosed report respond to three congressional reporting requests. First, it replies to House Armed Services Committee Report 110-146, which requests the Department of Defense (DoD) to report on its traumatic brain injury (TBI) Research and Treatment Initiative. Next, it answers House Appropriations Committee Report 110-279, which requests DoD to study mental health care, the onset and nature of post-traumatic stress disorder (PTSD), and panic disorder and to report on the plan for spending the funds appropriated in Public Law 110-28 for the creation of a dynamic, peer-reviewed research program on PTSD. Finally, it responds to another section of House Appropriations Committee Report 110-279 that requests a report on the state of mental health experts available across the military in medical treatment facilities and in the private sector.

The "U.S. Troop Readiness, Veterans' Care, Katrina Recovery, and Iraq Accountability Appropriations Act" appropriated \$331.7 million for research for PTSD, TBI, burn, orthopedic, and trauma research. DoD passed these funds to the United States Army Medical Research and Materiel Command (USAMRMC) to initiate TBI and PTSD research programs according to its well-established two-tiered review process of the Congressionally Directed Medical Research Programs Office.

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On October 27, 2008, we sent you a report intended to respond to these requests. but inadvertently omitted the section on the status of mental health provider staffing in DoD. The attached report corrects that error. We regret the error and apologize for any confusion that it may have caused. Thank you for your continued support of the Military Signis in preventited, working test offert in spring letter considered pourses present.

As Every Health System.

S. Ward Casscells, MD

Enclosure: As stated

ce:

The Honorable John McCain Ranking Member

# HEALTH APPAIRS

## THE ASSISTANT SECRETARY OF DEFENSE

### 1200 DEFENSE PENTAGON WASHINGTON, DC 20301-1200

FEB 1 0 2009

The Honorable Ben Nelson Chairman, Subcommittee on Personnel Committee on Armed Services United States Senate Washington, DC 20510

Dear Mr. Chairman:

This letter and the enclosed report respond to three congressional reporting requests. First, it replies to House Armed Services Committee Report 110-146, which requests the Department of Defense (DoD) to report on its traumatic brain injury (TBI) Research and Treatment Initiative. Next, it answers House Appropriations Committee Report 110-279, which requests DoD to study mental health care, the onset and nature of post-traumatic stress disorder (PTSD), and panic disorder and to report on the plan for spending the funds appropriated in Public Law 110-28 for the creation of a dynamic, peer-reviewed research program on PTSD. Finally, it responds to another section of House Appropriations Committee Report 110-279 that requests a report on the state of mental health experts available across the military in medical treatment facilities and in the private sector.

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Sincerely,

S. Ward Casscells, MD

Enclosure:

As stated

CC:

The Honorable Lindsey O. Graham

Ranking Member

# NEALTH APTAIRS

### THE ASSISTANT SECRETARY OF DEFENSE

1200 DEFENSE PENTAGON WASHINGTON, DC 20301-1200

FEB 1 0 2009

The Honorable Ike Skelton Chairman, Committee on Armed Services U.S. House of Representatives Washington, DC 20515

Dear Mr. Chairman:

This letter and the enclosed report respond to three congressional reporting requests. First, it replies to House Armed Services Committee Report 110-146, which requests the Department of Defense (DoD) to report on its traumatic brain injury (TBI) Research and Treatment Initiative. Next, it answers House Appropriations Committee Report 110-279, which requests DoD to study mental health care, the onset and nature of post-traumatic stress disorder (PTSD), and panic disorder and to report on the plan for spending the funds appropriated in Public Law 110-28 for the creation of a dynamic, peer-reviewed research program on PTSD. Finally, it responds to another section of House Appropriations Committee Report 110-279 that requests a report on the state of mental health experts available across the military in medical treatment facilities and in the private sector.

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Sir Big investment Starting to pay dividends
Sir Big in both care + research.

Very Best want

S. Ward Casscells, MD

Enclosure: As stated

CC:

The Honorable John McHugh Ranking Member

# HEALTH AFFAIRS

## THE ASSISTANT SECRETARY OF DEFENSE

1200 DEFENSE PENTAGON WASHINGTON, DC 20301-1200

FEB 1 0 2009

The Honorable Susan Davis
Chairwoman, Subcommittee on Military Personnel
Committee on Armed Services
U.S. House of Representatives
Washington, DC 20515

Dear Madam Chairwoman:

This letter and the enclosed report respond to three congressional reporting requests. First, it replies to House Armed Services Committee Report 110-146, which requests the Department of Defense (DoD) to report on its traumatic brain injury (TBI) Research and Treatment Initiative. Next, it answers House Appropriations Committee Report 110-279, which requests DoD to study mental health care, the onset and nature of post-traumatic stress disorder (PTSD), and panic disorder and to report on the plan for spending the funds appropriated in Public Law 110-28 for the creation of a dynamic, peer-reviewed research program on PTSD. Finally, it responds to another section of House Appropriations Committee Report 110-279 that requests a report on the state of mental health experts available across the military in medical treatment facilities and in the private sector.

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Enclosure: As stated

CC:

The Honorable Joe Wilson Ranking Member



### THE ASSISTANT SECRETARY OF DEFENSE

1200 DEFENSE PENTAGON WASHINGTON, DC 20301-1200

FEB 1 0 2009

The Honorable Robert C. Byrd Chairman, Committee on Appropriations United States Senate Washington, DC 20510

Dear Mr. Chairman:

This letter and the enclosed report respond to three congressional reporting requests. First, it replies to House Armed Services Committee Report 110-146, which requests the Department of Defense (DoD) to report on its traumatic brain injury (TBI) Research and Treatment Initiative. Next, it answers House Appropriations Committee Report 110-279, which requests DoD to study mental health care, the onset and nature of post-traumatic stress disorder (PTSD), and panie disorder and to report on the plan for spending the funds appropriated in Public Law 110-28 for the creation of a dynamic, peer-reviewed research program on PTSD. Finally, it responds to another section of House Appropriations Committee Report 110-279 that requests a report on the state of mental health experts available across the military in medical treatment facilities and in the private sector.

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Sincerely.

S. Ward Casscells, MD

Enclosure: As stated

cc:

The Honorable Thad Cochran Ranking Member

# 

### THE ASSISTANT SECRETARY OF DEFENSE

1200 DEFENSE PENTAGON WASHINGTON, DC 20301-1200

FE8 1 0 2009

The Honorable Daniel K. Inouye Chairman, Subcommittee on Defense Committee on Appropriations United States Senate Washington, DC 20510

Dear Mr. Chairman:

This letter and the enclosed report respond to three congressional reporting requests. First, it replies to House Armed Services Committee Report 110-146, which requests the Department of Defense (DoD) to report on its traumatic brain injury (TBI) Research and Treatment Initiative. Next, it answers House Appropriations Committee Report 110-279, which requests DoD to study mental health care, the onset and nature of post-traumatic stress disorder (PTSD), and panic disorder and to report on the plan for spending the funds appropriated in Public Law 110-28 for the creation of a dynamic, peer-reviewed research program on PTSD. Finally, it responds to another section of House Appropriations Committee Report 110-279 that requests a report on the state of mental health experts available across the military in medical treatment facilities and in the private sector.

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Sir Sincerely, now storting to just butter can, and promising research.

Enclosure: As stated

CC:

The Honorable Thad Cochran Ranking Member

# HEALTH AFFAIRS

## THE ASSISTANT SECRETARY OF DEFENSE

1200 DEFENSE PENTAGON WASHINGTON, DC 20301-1200

FEB 1 0 2009

The Honorable David R. Obey Chairman, Committee on Appropriations U.S. House of Representatives Washington, DC 20515

Dear Mr. Chairman:

This letter and the enclosed report respond to three congressional reporting requests. First, it replies to House Armed Services Committee Report 110-146, which requests the Department of Defense (DoD) to report on its traumatic brain injury (TBI) Research and Treatment Initiative. Next, it answers House Appropriations Committee Report 110-279, which requests DoD to study mental health care, the onset and nature of post-traumatic stress disorder (PTSD), and panic disorder and to report on the plan for spending the funds appropriated in Public Law 110-28 for the creation of a dynamic, peer-reviewed research program on PTSD. Finally, it responds to another section of House Appropriations Committee Report 110-279 that requests a report on the state of mental health experts available across the military in medical treatment facilities and in the private sector.

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S. Ward Casscells, MD

Enclosure: As stated

CC:

The Honorable Jerry Lewis Ranking Member

# HEALTH AFFARE

## THE ASSISTANT SECRETARY OF DEFENSE

1200 DEFENSE PENTAGON WASHINGTON, DC 20301-1200

FEB 1 0 2009

The Honorable John P. Murtha Chairman, Subcommittee on Defense Committee on Appropriations U.S. House of Representatives Washington, DC 20515

Dear Mr. Chairman:

This letter and the enclosed report respond to three congressional reporting requests. First, it replies to House Armed Services Committee Report 110-146, which requests the Department of Defense (DoD) to report on its traumatic brain injury (TBI) Research and Treatment Initiative. Next, it answers House Appropriations Committee Report 110-279, which requests DoD to study mental health care, the onset and nature of post-traumatic stress disorder (PTSD), and panic disorder and to report on the plan for spending the funds appropriated in Public Law 110-28 for the creation of a dynamic, peer-reviewed research program on PTSD. Finally, it responds to another section of House Appropriations Committee Report 110-279 that requests a report on the state of mental health experts available across the military in medical treatment facilities and in the private sector.

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Sincerely,
Services Health System.

S. Ward Casscells, MD

Enclosure: As stated

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The Honorable C. W. Bill Young Ranking Member