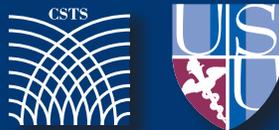


Center for the Study of Traumatic Stress

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Center for the Study of Traumatic Stress

The Center for the Study of Traumatic Stress provides knowledge, leadership and applications for preparedness, response and recovery from the consequences of combat, peace keeping, peace making, terrorism, natural and human-made disasters, trauma and pandemic threat.

Background

The Center for the Study of Traumatic Stress (CSTS) provides knowledge, leadership and applications for preparedness, response and recovery from the consequences of combat, peace keeping, peace making, terrorism, natural and human-made disasters, trauma and pandemic threat. Situated at the crossroads of military and disaster psychiatry, the Center's work bridges the unique and common issues of populations exposed to trauma to enhance the resilience of our military — service members and their families — and the health and security of our nation's citizens, families, communities and important institutions such as the federal and civilian workplace.

The Center was established in 1987 and is located and staffed within the Uniformed Services University to address Department of Defense (DoD) concerns about psychological, behavioral and health care outcomes resulting from large-scale traumatic events among military and civilian populations as well as the threat or exposure to weapons of mass destruction. The Center became a permanently funded DoD program in FY 2006. The Center conducts research and provides education and consultation that is often in real-time with global impact. This range of activities brings knowledge to the emerging problems of individuals, communities and families exposed to war, disaster and trauma.

Prior to Desert Storm, the Center pioneered research on exposure to weapons of mass destruction through its work in Air Force simulation exercises dealing with chemical and biological terrorism. This early work has now generated an unprecedented body of research, including a database of more than 20,000 articles on the psychological, social and behavioral manifestations of exposure to traumatic events. These resources address mental health responses ranging from resilience to psychiatric illness such as post-traumatic stress disorder (PTSD), acute stress disorder, and depression. Since its founding, the Center has provided critical national problem solving and relevant information for nearly every major disaster the Nation has faced. The Center focuses on translational research and knowledge — from the laboratory to the bedside, field, clinic, public education initiatives and public policy. It strives to assist the Department of Defense and the nation in better responding to and preparing for the health and public health effects of traumatic events through research, education and consultation. Education, research and training activities occur onsite, offsite, through distance learning and through collaborations with federal, state and private organizations.

The Center uniquely positions itself as a multidisciplinary problem solving neuroscientific laboratory addressing the brain related prevention, onset and recovery elements of the neurobiology of trauma related exposures.

The Center brings together some of the nation's leading experts in military and disaster psychiatry along with scientific researchers, organizational and social psychologists and health communication professionals to facilitate a unique, multi-faceted approach to trauma and its impact. It maintains active collaborations with the world's leading experts in these areas. The Center's Director, Robert J. Ursano, M.D. is an internationally recognized scholar, educator and public health consultant on trauma and its impact on individuals, communities and nations as well as a distinguished author of seminal literature in this field.

The following highlights of the Center's activities — recent and current — describe specific projects and the populations served.

Research in Neuroscience and Neurobiology

The Center's research in neuroscience and neurobiology addresses human and animal models of trauma stress response. The Center uniquely positions itself as a multidisciplinary problem solving neuroscientific laboratory addressing the brain related prevention, onset and recovery elements of the neurobiology of trauma related exposures. The Center, in collaboration with the Stanley Brain Research Laboratory and researchers and scientists from National Center for PTSD of the Department of Veterans' Affairs, the National Institute of Health, and 14 academic partners, established the world's first Post Traumatic Stress Brain Bank. This initiative has led to a Post Traumatic Stress Brain Studies Group dedicated to studies of post-mortem brain tissue. Investigators within the group obtained pilot data from both microarray and real-time PCR studies suggesting potential genetic markers for PTSD. It is envisioned that this work will ultimately lead to an understanding of the traumatic stress response at the gene and cellular levels and to innovative treatments for PTSD and posttraumatic stress. Advances in genomics and molecular biology have given researchers the potential to identify PTSD biomarkers that may be present, for example, in a blood sample, to definitively diagnose patients who exhibit clinical symptoms of PTSD or to identify those who may be at particularly high risk for the development of PTSD. In an exciting development, Center neuroscientists have identified a potential biomarker for PTSD, a depression associated protein, called p11, based on an animal model of PTSD and post-mortem brain tissue of PTSD patients obtained from the Post Traumatic Stress Brain Bank.

The Center's work in neuroscience also includes cutting-edge research on factors that affect risk for drug and alcohol abuse, and other behavioral health risks. With funding from the National Institute on Drug Abuse and the Department of the Army, Dr. Frances Gabbay and Dr. Connie Duncan are examining aspects of inhibitory control implicated in risk of drug abuse, including response inhibition (or impulsivity), novelty response, and reward sensitivity. Utilizing components of *event-related brain potentials* (ERPs) that are markers of these cognitive functions, this research will help to specify the cognitive processes that underlie inhibitory control, their bases in the brain, and their interplay with situational factors, particularly those encountered in military service. As such, the findings of this CSTS research program will guide our efforts to treat and prevent the devastating consequences of substance abuse, as well as those related to other risk behaviors. This research program is of substantial importance in light of

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the emerging mental health problems of veterans returning from Iraq and Afghanistan.

In its role to educate neuroscientists, the Center hosted **The 2nd Annual Conference on Neurobiology of Amygdala and Stress** “Anxiety, Fear, Memory and Mood: From Neurobiology to PTSD and Mood Disorders”. This widely attended conference held in April 2007 with internationally renowned speakers focused on basic neuroscience and translational research. In 2006, the Center awarded two Neuroscience Fellowships to graduate students to foster the development of scientists to advance neurobiological research on traumatic stress.

Military Psychiatry

Center scientists are actively engaged in mental health studies of active duty, Guard and Reserve personnel as well as veterans. The Center's present research focuses on the effects of military deployment, combat stress and post trauma re-entry experiences. This research strengthens the work of military leaders, physicians and mental health providers aimed at fostering recovery from the impact of war and other high stress environments associated with combat, peacekeeping or humanitarian assistance in turbulent environments.

Through both a National Institute of Mental Health and a DoD funded grant, Principal Investigator and Center scientist, COL Charles Engel, MC, MPH, is examining the feasibility and effectiveness of an internet-based treatment for PTSD in returning veterans. DESTRESS-PC (**Delivery of Self-Training and Education for Stressful Situations — Primary Care**) was developed to deliver cognitive-behavioral therapy (CBT) through a secure Internet site to reduce the PTSD symptoms of war-zone exposed soldiers and veterans. This intervention is focused on increasing mental health-related functioning, reducing depression, generalized anxiety, and somatic symptoms, and improving attitudes regarding formal mental health treatment.

The broad objective of this research, conducted with the Deployment Health Clinical Center at Walter Reed Army Medical Center and in collaboration with the National Center for PTSD, Boston University, and the Center for Health Care Research, Medical University of South Carolina, is to improve primary care mental health services for military personnel and veterans with posttraumatic stress disorder (PTSD) related to war-zone trauma with implications for providing early, high quality access to low-stigma mental health services for victims of other traumatic events, including terrorist attacks and natural or man-made disasters.

Military psychiatry also addresses the mental health issues of deployment, reintegration and military family health to enhance the resilience of service personnel and their families in times of war and peacekeeping in the 21st Century. To this end, the Center conducts deployment impact studies on service members and their families. This research includes psychiatric surveillance among battle-injured soldiers and deployed support personnel who are also exposed to personal safety threats. Such exposures place healthcare workers and other support personnel at greater risk for subsequent mental health problems. A landmark paper based on research conducted by Center scientist, CAPT Thomas A. Grieger, MC, USN, “Post-traumatic Stress Disorder and Depression in Battle-Injured Soldiers,” was

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published in the *American Journal of Psychiatry* in 2006. Center studies also include measuring the psychological effect on healthcare providers treating severely injured and disfigured military members.

Many Center studies represent collaborative work with other universities, federal agencies and international centers. With the University of Virginia's Critical Incident Analysis Group (CIAG) the CSTS, through a DoD funded project, has been examining the concept of community shielding. This project seeks to examine how the military community would respond to terrorist attack, natural disaster, or pandemic flu at a large military post near a major urban area. This effort highlights some of the issues in helping communities continue to function in the face of such events. The results have been briefed to the Office of the Assistant Secretary of Defense, Homeland Defense.

In collaboration with the University of Michigan, CSTS developed and submitted a ground-breaking proposal for a nationwide longitudinal study of the mental health of soldiers in the Guard and Reserves. This research will be targeted to the specific issues and stressors that affect members of the Reserve Components and produce data that will help in addressing their long-term needs.

Working with the Deployment Health Clinical Center, Center scientists are studying methods to improve behavioral and rehabilitative elements of primary care for military populations with special focus on veterans with medically unexplained physical symptoms. This specific work is funded by the National Institutes of Health, Centers for Disease Control and Prevention, Department of Defense and Department of Veterans' Affairs (VA). Studies with the National Committee for Employer Support of the Guard and Reserve have examined the stresses on Reserve members called to active duty.

The Center was one of four of the organizing sponsors of the NIMH-DoD-VA conference, **Mapping the Landscape of Deployment Related Adjustment and Mental Disorders**. This conference held in Washington, D.C. brought together over fifty world class experts to jointly review the DoD, NIMH and VA research needs in the area of PTSD. This first ever conference resulted in a workshop report distributed widely throughout all the agencies.

The National Academy of Sciences, Institute of Medicine (IOM) invited Dr. Ursano to serve as a member of the committee on PTSD, Disability and Compensation that reviewed the Department of Veterans' Affairs programs and needs for veterans with PTSD. Dr. Engel and Dr. Ursano were asked to provide expert presentations on PTSD and PTSD treatment to two committees of the IOM reviewing this area.

The Center provides ongoing education and consultation to the highest levels of the federal government and DoD. The Center developed a fact sheet, *From Injury to Home: Integrating Networks of Medical and Psychosocial Support on the Road from Battlefield Injury*, that was widely distributed to numerous DoD, VA and Congressional committees reviewing the importance of continuity of care and caring for returning soldiers and veterans. "From Injury to Home" served as an important organizing document for many of those working on this timely and important area of health care planning and change. Dr. Ursano, LTC David Benedek, MC, USA and Dr.

Disaster psychiatry brings together the knowledge and practice of psychiatry to inform approaches aimed at preventing, mitigating and responding to the psychological and behavioral outcomes of disasters on individuals, families and communities.

Stephen Cozza were asked to provide an education session for all four star Generals of the U.S. Army, which took place at the Chief of Staff's conference with the Secretary of the Army in attendance.

The Center's research literature on military medicine is extensive and the database is rich in important historical and contemporary publications. These references inform and guide current research and policy. Through school-based, hospital-based and community-based teaching, the Center educates military physicians, psychiatrists, psychologists, social workers, nurse practitioners and command elements regarding the military unique aspects of psychiatry.

Through distance learning and as visiting professors at civilian and military medical training centers throughout the country, Center educators provide continuing medical education in military trauma, disaster and terrorism. Additionally, the Center sponsors military psychiatry fellowships resulting in international scholars and clinicians working at the Center thereby expanding its global academic influence.

Disaster Psychiatry

Disaster psychiatry brings together the knowledge and practice of psychiatry to inform approaches aimed at preventing, mitigating and responding to the psychological and behavioral outcomes of disasters on individuals, families and communities. The Center, one of the leading institutions in the world for addressing the field of disaster behavioral health, brings lessons learned from studying human behavior under extreme stress in the military to ensure informed responses to individual and population-based trauma. Research on civilian disasters includes the impact of disaster and rescue work on first responders as well as its effects on long-term healthcare providers. Centers for Disease Control and Prevention (CDC) engaged CSTS to conduct an organizational assessment of CDC deployment operations, policy and practices in an effort to identify factors to sustain resilience in emergency responders. The Center works closely with the Centers for Disease Control and Prevention advancing research and outreach education in disaster behavioral health.

The Center's Scientific Director, Carol S. Fullerton, Ph.D., leads an innovative public health study partnering with CDC, the National Institute of Occupational Safety and Health, and the University of Miami and Florida Department of Health. The study involves longitudinal research to understand the vulnerability and resilience of our nation's public health responders and their work in the hurricanes of 2004 and 2005. This study also demonstrates a partnership across federal, state and academic organizations helping to prepare our nation's health care personnel. Dr. Fullerton provides invaluable leadership as the recipient of the prestigious James Leonard Award for Excellence in Clinical Research for her work on the acute and long-term effects of trauma exposure on disaster workers, which was the feature article for the *American Journal of Psychiatry*.

Disaster psychiatry ensures that principles of behavioral health and mental health care are in the medical arsenal supporting the public health response to disaster management. Center Associate Director and former U.S. Public Health Service Assistant Surgeon General Brian Flynn has provided a training course in disaster behavioral health to Florida hospitals in

*Funded by the U.S. Army, this program provides support via briefings, papers, staff studies and a quarterly newsletter, *Joining Forces Joining Families*, addressing the scientific and medical aspects of child and spouse abuse.*

collaboration with the Miller School of Medicine of the University of Miami, disseminating CSTS resources.

The Center conducted a study of several Fortune 100 corporations exploring the status of terrorism preparedness, employee preparedness, and business and workplace continuity. The resulting published report, *Workplace Preparedness for Terrorism*, has been widely disseminated to corporations and federal workplaces. The report is accessible at <http://www.centerforthestudyoftraumaticstress.org/downloads/CSTS%20Sloan%20Workplace.pdf>.

Since September 11, 2001, the Center's pioneering work on exposure to weapons of mass destruction has become an invaluable national resource. Center research and outreach also encompasses populations that are vulnerable and often overlooked. Examples include Center research on the effects of the 2002 Washington metropolitan area sniper attacks on the homeless and studies exploring the effects of disasters on rural communities.

This past year, two, national expert consensus conferences, one sponsored by NIMH and the other cosponsored by CSTS and the New York Medical College, addressed key issues in disaster mental health. CSTS scientists were major contributors. The NIMH conference addressed first responders and prevention of Post Traumatic Stress. The CSTS/NYMC conference was web broadcast and addressed early intervention for disaster mental health. The National Disaster Mental Health Recommendations from the meeting were adopted by the American Psychiatric Association.

The Center has also partnered with Dr. Ronald Kessler of Harvard University in a large collaborative study of the mental health effects of Katrina in the disaster region. This longitudinal study is ongoing. In addition, the collaboration of the CSTS, Dr. Kessler at the Harvard University Department of Health Care Policy and the National Center for PTSD scientist Dr. Terrence Keane, has resulted in a submission of a major grant proposal to develop a National Disaster Survey Center sponsored by NIMH.

● **Special Programs Serving Special Populations**

Family Violence Project

The Center's Family Violence and Trauma Project has been in existence for more than ten years. Funded by the U.S. Army, this program provides support via briefings, papers, staff studies and a quarterly newsletter, *Joining Forces Joining Families*, addressing the scientific and medical aspects of child and spouse abuse. This project completed two empirical studies of family violence and deployment and its research results have directly influenced Department of Defense policy. The particular area of stress on military families that can result in child neglect was first identified by scientists at the Center and has resulted in model programs to bring attention to the military child. Additionally, the project's literature database is richly used for scientific reference to improve the development of family violence research protocols and to further military and civilian social workers' research education. Through the Family Violence Program Center, scientists provide training and education for clinicians, planners, leaders and policy makers on post war adjustments, challenges and stressors.

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Military Children and Families

In May of 2006, CSTS expanded its reach and expertise around the effects of trauma on families and children from war, natural disaster, terrorism and bioterrorism. Dr. Stephen Cozza, former Chief of Psychiatry of Walter Reed, joined the CSTS as Associate Director of Child and Family Programs. Dr. Cozza is nationally recognized for his work focused on the effects of trauma on military families including the impact of parental trauma and combat injury on our nation's military children. He served as a consultant to Sesame Street's production in English and Spanish of *Talk, Listen, Connect*, an educational DVD distributed by Walmart to help military families manage the traumatic effects of deployment on children. Cozza provides ongoing consultation to the Military Child Education Coalition and he presented at the White House conference, Helping America's Youth. The President of the American Academy of Child and Adolescent Psychiatry selected him to serve as Chair for the Academy's Disaster and Trauma Committee.

The Center develops public education projects to communicate its expertise to special populations. For example, *Courage to Care for Me* is an educational initiative that was introduced during April 2007, the Month of the Military Child. The project provided a colorfully designed onesie (infant clothing) with a Courage to Care for Me tag explaining the project's message: parenting during war time is challenging and requires courage that is as important on the homefront as in theatre. Military healthcare clinics and military family advocacy programs distributed the onesie to new mothers and military parents to foster positive parenting and preventive health behaviors to mitigate the risk of child maltreatment during stressful times.

National Law Enforcement

Collaborating with the National Law Enforcement Academy, the Center is performing a landmark needs assessment among law enforcement personnel of training needs for officers faced with chemical, biological or radiological terrorism. This assessment will involve state, city, county and rural agency officers from all parts of our nation.

Education, Public Education and Training

Courage to Care, the Center's health information initiative, provides valuable, timely and easy to distribute information to military families, providers and their communities. Since its 2004 inaugural edition, *Courage to Care* has highlighted such topics as the reintegration of family members post deployment, psychological first aid, issues facing Guard and Reserve members reentering the workplace, helping children cope during deployment, and protecting the health of families. The fact sheets are available at www.usuhs.mil/psy/courage.html.

Joining Forces Joining Families (JFJF) is a quarterly newsletter written by the Center's Family Violence Project team. JFJF brings important research in the field of family violence to the Army's Community Support and Family Advocacy networks. The newsletter includes interviews with national and international experts in this field and is accessible electronically on the Center's site, <http://www.centerforthestudyoftraumaticstress.org/education.joiningforces.shtml>.

Disaster and Preventive Psychiatry Fellowship is a two year fellowship

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program, the first of its kind, for the Department of Psychiatry's Center for the Study of Traumatic Stress. Fellows complete an intensive study and research program guided by Center Director, Robert J. Ursano, M.D., and earn a Masters in Public Health. Graduates have gone on to leadership positions in academic and health policy to support the highest levels of military healthcare leadership such as special psychiatric consultant to the US Army Surgeon General. At present there is one U.S. Army sponsored Fellow. There are presently planned to be two (Army and Navy) Fellows in the upcoming year.

Consultations

Center experts provide consultation to military leadership as well as federal agencies on a wide range of disaster related issues. The Center for the Study of Traumatic Stress represented the University at a U.S. Department of Labor White House Planning Council Task Force charged to frame the issues relevant to and make recommendations for the development of a national psychological and social support initiative to identify and address the nation's behavioral and mental health needs in response to a severe influenza pandemic. Dr. David Benedek, Senior Scientist in the CSTS, was a major participant in this White House workgroup reviewing pandemic protection plans and workforce protection for the federal government. The report, which reflects much of the CSTS knowledge base, was presented to the White House work group planning for action. The overarching goal of the policy-setting initiative was focused on reducing societal disruptions and dysfunction before, during, and after an influenza pandemic. The elements addressed in the white paper generated by this task force will also strengthen the Nation's psychosocial capacity to manage other public health emergencies—bioterrorism in particular.

Additional consultations and training have been with U.S. Department of Energy, US Marshalls, US Drug Enforcement Agency, U.S. Department of Health and Human Services and a federal consortium of employee assistance professionals on disaster planning and response. The Center has provided consultations to private sector employers to enhance performance continuity and resilience around traumatic events. In the aftermath of Hurricanes Katrina and Rita, the Center was asked to consult with Chevron, Texaco and the Dupont Corporation. Union Pacific Railroad sought and was provided consultation regarding the challenges confronting Guard and Reserve reentry into the workplace.

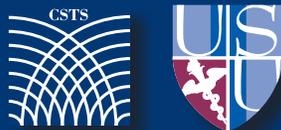
Presentations

Center scientists provide educational presentations to foster knowledge about behavioral health implications of disaster in diverse populations throughout the country. This educational leadership extends to the impact of traumatic events for our military population as well as the public health impact and implications of traumatic events on the nation and its citizens. Dr. Ursano was the invited speaker at Harvard University's **Radcliffe Institute 2006-2007 Lecture in the Social Sciences**, presenting "Psychological and Behavioral Responses to Disaster" to a distinguished audience. Dr. Benedek presented to National Guard and State Mental Health Directors. Dr. Cozza has been providing leadership in educating the Nation on the

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stressors of deployment on military families and children at national conferences including national leaders.

Center presentations to military leadership, federal and state public health stakeholders address a variety of topics related to the impact of disaster, terrorism, war and pandemics. Examples of Center presentations are: “Long Term Engagement of Disaster Volunteers: Issues and Interventions” to the Ohio Department of Mental Health; “When the Helper Becomes Victim: Early Interventions for First Responders” to the U.S. Drug Enforcement Agency; “Early Interventions in Mass Violence and Disasters: Psychological First Aid and Grief Leadership” to the National Capital Area Social Workers; “Early Interventions after Mass Violence: Public Health Models Applied to Military and Civilian Communities,” at the SHORESH Israeli-U.S. Biomedical Conference, Herzlyiah, Israel; “Disability Evaluations in US Soldiers returning from Operation Iraqi Freedom and Operation Enduring Freedom,” at the U.S. Army Center for Health Promotion and Preventive Medicine Force Health Protection Conference, Albuquerque, NM; “Addressing the Mental Health Needs of First Responders in Public Health Emergencies, Natural Disasters, and Terrorist Events,” to the National Association of State Mental Health Program Directors in Kissimmee, Florida.



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