

CENTER FOR THE STUDY OF TRAUMATIC STRESS

2011 Annual Report



RESEARCH | EDUCATION | CONSULTATION | TRAINING



WWW.CSTSONLINE.ORG

HISTORY

The Center for the Study of Traumatic Stress (CSTS) was established in 1987 to address U. S. Department of Defense concerns around the psychological impact and health consequences resulting from the traumatic impact of: 1) the possibility, or actual use, of weapons of mass destruction (WMD) during combat, acts of terrorism or hostage events; 2) combat, peacemaking, peacekeeping, and operations other than war; 3) natural disasters such as hurricanes, tornadoes, or floods; and, 4) more common stress producing events such as physical assaults and motor vehicle, shipboard, or airplane accidents in both the uniformed and civilian communities.

THE CENTER:

■ *Develops and carries out research* programs to extend our knowledge of the medical and psychiatric consequences of war, deployment, trauma, disaster and terrorism, including weapons of mass destruction.

- *Educates and trains* health care providers, leaders, individuals and public and private agencies on how to prevent, mitigate and respond to the negative consequences of war, deployment, traumatic events, disasters, and terrorism.
- *Consults with private and government agencies* on medical care of trauma victims, their families and communities, and their recovery following traumatic events, disasters and terrorism.
- *Maintains an archive of medical literature* on the health consequences of traumatic events, disasters and terrorism for individuals, families, organizations, and communities.
- *Provides opportunities for post-doctoral training* of medical scientists to respond to and research the health consequences of trauma, disaster, and terrorism.



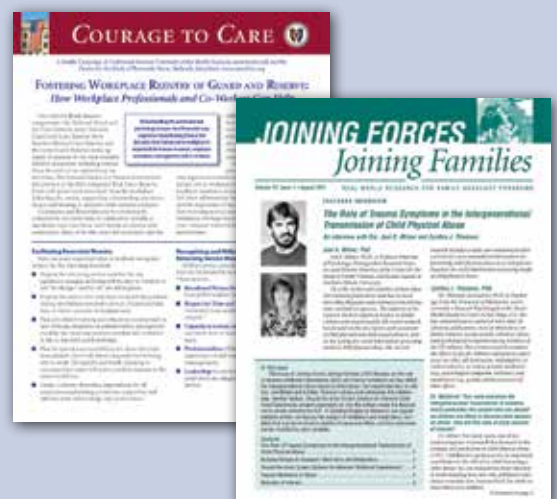
The Center's research supports the psychological health and resilience of our nation's soldiers, sailors, airmen and marines from bench to bedside, from war to disaster.

In its seventh year, the Center's Courage to Care initiative was the first e-communication campaign on military unique health issues, especially those related to our nation's war on terrorism.

In continuous publication for over 15 years, the Center's Joining Forces newsletter advances research knowledge and best practices in family violence, child neglect and maltreatment to the U.S. Army's Family Advocacy Program professionals.



The Center has been involved in nearly every major disaster our nation has faced in the past 25 years, including the BP oil spill in the Gulf.



ENDURING COMMITMENT



Dear Colleagues and Friends,

Since its establishment in 1987, The Center for the Study of Traumatic Stress (CSTS) has demonstrated an *enduring commitment* to trauma research, education, training and consultation. Our work is aimed at improving the psychological health and resilience of individuals, groups and communities exposed to traumatic stress and traumatic events, especially those related to war, disasters, terrorism and public health threats. As part of the Department of Psychiatry in the School of Medicine of the Uniformed Services University (USUHS), the Center's scientists, educators and clinicians bring scholarly and research oriented problem solving to the mental and behavioral health problems of the Department of Defense and the nation.

2011 marked a year of great productivity for our Center. Continuing our work to support the soldiers, sailors, marines and airmen of the Department of Defense, we advanced existing projects and undertook new and unprecedented research that supports psychological health, resilience, and post deployment function of service members, their families and children. The Center made great strides in its collaborative involvement in *Army STARRS* (Study to Assess Risk and Resilience in Servicemembers), a 5-year study funded by the Army and the National Institute of Mental Health, and the largest study ever to address suicide in the Army and perhaps suicide as a national health problem. Among a number of achievements, the Center, in collaboration with Harvard University, University of Michigan, and University of California, San Diego, completed the groundbreaking task of obtaining, assembling, integrating and documenting more than 1.1 billion data records on demographic, socio-economic, health care, and service member experiences from nearly forty different DoD and Army databases.

The Center and its Child and Family Program received funding to conduct *The National Military Family Bereavement Study*, the first major study to systematically examine the impact of a U.S. service member's death on surviving family members, an example of the Center's commitment to pursuing new frontiers in research. Our Center is often called upon to consult with leadership in government, healthcare, industry and academia. This year, our Center, along with USUHS, provided consultation to the Office of the First Lady of the President of the United States to support its *Joining Forces* initiative, a national campaign that promotes awareness and brings expertise to bridge the military and civilian communities around military-specific health and social issues. In addition, members of the Center participated in a number of Institute of Medicine workshops, conferences and committees as experts on disaster and emergency care and preparedness.



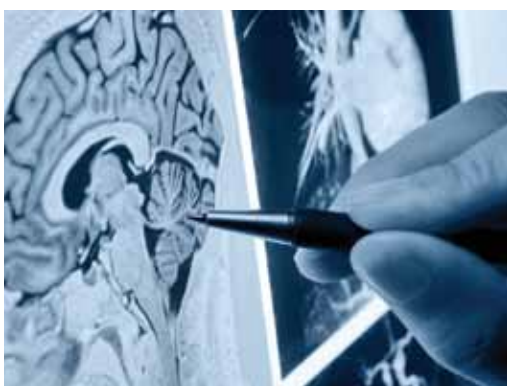
The Center's rich history in trauma research bridges both military and disaster psychiatry. In 2011, the Center responded to significant national and international disasters. We offered assistance to the state of Arizona in the aftermath of the shooting rampage and assassination attempt on Representative Gabrielle Giffords. The Center provided important trauma-informed resources, translated into Japanese with the assistance of a former Disaster Psychiatry Fellow living in Japan, in the aftermath of the Great Eastern Japanese Earthquake. This outreach has led to an ongoing consultative relationship with the Japanese Cabinet.



Our educational resources include development and distribution of fact sheets on the impact of combat injury on intimacy. The timeliness and attention to an often forgotten aspect of injury recovery generated extensive media coverage in both DoD and non-military media outlets throughout 2011.

Additionally, the Center's work received recognition on many levels. A Center Associate Director received the Frank Ochberg Award for Media and Trauma Study, which recognizes significant contributions by clinicians and researchers on the relationship of media and trauma. I am pleased to have been named to receive the American College of Physicians William C. Menninger Memorial Award for Distinguished Contributions to the Science of Mental Health.

The following pages describe in more detail our extensive research portfolio and projects, and the Center's 2011 scholarly publications, national and international conference and poster presentations. The facing page depicts our extensive research network and the many collaborative organizations and funders who make our work possible.

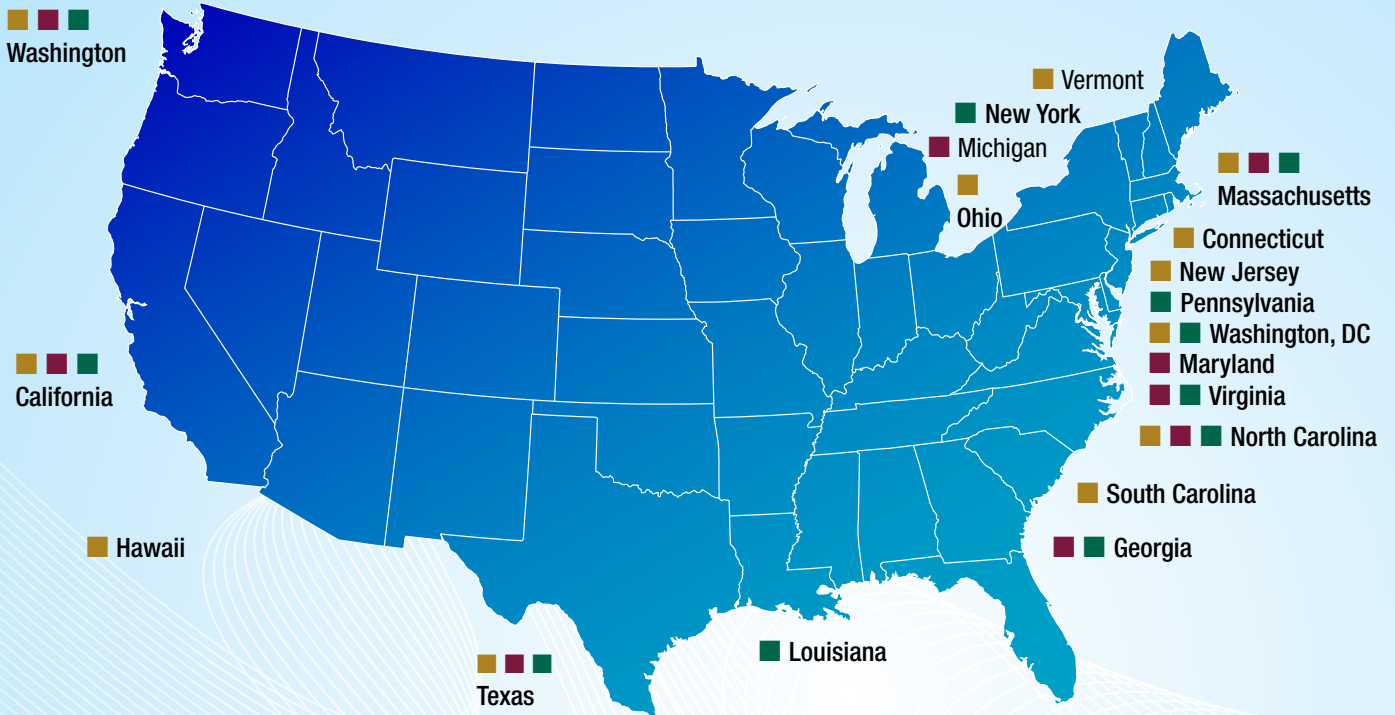


At the close of 2011, the Center enters its quarter century benchmark — 25 years of service and translational research involving a sustained focus on collaboration from basic to clinical sciences, from laboratory to field research, from direct clinical care to population level prevention. We assist the Department of Defense in leading the nation in trauma-informed care, and rapidly moving findings from bench to bedside and from war to disaster. Our work is strengthened by our being part of the Uniformed Services University of the Health Sciences, supported by the Henry M. Jackson

Foundation for the Advancement of Military Medicine, a partnering center of the Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury, and our proximity and clinical research interface with Walter Reed National Military Medical Center. I want to take this opportunity to thank you for your interest in the Center for the Study of Traumatic Stress and its enduring commitment to the psychological and behavioral health of our nation's military and civilian communities, and our nation's public health in the aftermath of war, natural disasters and traumatic events.

Robert J. Ursano, M.D.
Director

U.S. CSTS COLLEAGUES AND COLLABORATIONS



VA HOSPITALS

Boston, MA
 Central Texas
 Charleston, SC
 Cincinnati, OH
 Durham, NC
 East Orange, NJ
 Hartford, VT
 Honolulu, HI
 Palo Alto, CA
 San Diego, CA
 Tacoma, WA
 Washington, DC
 West Haven, CT

ARMY STARRS

Ann Arbor, MI (University of Michigan)
 Bethesda, MD (WRNMMC)
 Boston, MA (Harvard Medical School)
 Ft. Bragg, NC
 Ft. Hood, TX
 Ft. Stewart, GA
 San Diego, CA (UC San Diego)
 Tacoma, WA (JB Lewis-McChord)

CSTS COLLABORATING ORGANIZATIONS

Alexandria, VA (NASMHPD; National Military Family Association)
 Atlanta, GA (CDC)
 Boston, MA (Harvard — FOCUS-CI project; Bereavement project)
 Ft. Bragg, NC (Traumatic Stress & Biomarkers project)
 Harker Heights, TX (Military Child Education Coalition)
 Los Angeles, CA (UCLA — FOCUS-CI project; NCTSN)
 New Orleans, LA (Tulane School of Social Work — Disaster Mental Health)
 New York, NY (Columbia University — Bereavement project; Sesame Workshop)
 Philadelphia, PA (Drexel University — Bereavement project)
 Seattle, WA (University of Washington — FOCUS-CI project)
 Washington, DC (NIOSH; DHS; Zero to Three; TAPS; American Gold Star Mothers; American Gold Star Wives)



THE PSYCHOLOGICAL AND BEHAVIORAL HEA

Our nation's wars in Iraq and Afghanistan have led to high rates of posttraumatic stress, posttraumatic stress disorder (PTSD), depression, suicide, co-morbid concussions, traumatic brain injuries (TBIs), and other issues of combat-related mental and behavioral health. Numerous studies have shown that veterans with PTSD also experience relationship and financial problems, poor self-care and increased suicidal ideation.



The Center's translational research model bridges its pioneering work in neuroscience and the neurobiology of stress to the improved clinical care of military unique health issues, especially posttraumatic stress disorder (PTSD), mild traumatic brain injury (mTBI) and suicide. 2011 saw advances in the Center's laboratory-based research in the neurobiology of stress and its clinical and epidemiologic studies, which encompass psychopharmacology, the application of cutting-edge medical technology and studies that address the modifiable risk and protective factors of suicide and suicide ideation.

BIOMARKERS FOR PTSD

The Center's neuroscience research has resulted in the discovery of potential biomarkers for PTSD, potential biomarkers for suicide risk and increased understanding of gene expression patterns that underlie biomarkers. These findings may ultimately be used to diagnose diseases promptly and accurately, to identify individuals at high-risk for certain diseases and to follow the course of response to treatment.

In 2011, CSTS neuroscientists found that a brain-derived neurotrophic factor (BDNF) is associated with PTSD and startle response (a major arousal manifestation of PTSD) in 461 U.S. military service members who were deployed during the wars in Iraq and Afghanistan. BDNF, a member of the nerve growth factor family of neurotrophins, was discovered in the early 1980s by Barde, et al. This family of proteins that induce the survival, development, and function of neurons has been found to have central roles in the development, physiology, and pathology of the nervous system. Substantial evidence demonstrates that BDNF is associated with stress and stress related behaviors.

CSTS neuroscientists also found that the subjects with PTSD had higher levels of BDNF in their peripheral blood plasma than the non-PTSD controls. Finally, complementing the data from the human subjects, it was demonstrated that in a rodent model BDNF levels were significantly increased in both blood plasma and brain hippocampus by inescapable tail shock. Those data are accompanied by an obvious elevation of the startle response. This initial data suggest that BDNF

ALTH OF SERVICE MEMBERS

is involved in abnormal stress responses underlying PTSD risk. BDNF blood levels and SNP Val66Met may serve as useful biomarkers to detect and further our mechanistic understanding of PTSD risk.

INTRuST CONSORTIUM RESEARCH

The Center plays an important research role through its leadership of The *National Capital Area Integrated Clinical Study Site*, an established network of clinician-researchers at Walter Reed National Military Medical Center (WRNMMC), the D.C. Veterans Administration Hospital, and the Armed Forces Retirement Home who are initiating clinical trials for novel medications and psychotherapy treatment for PTSD and other combat-related disorders. The site is one of 10 such study sites across the nation which comprise the INTRuST (Injury and Traumatic Stress) Consortium for Psychological Health and TBI. 2011 saw advances in some of the network's important projects.

Recruitment and enrollment in the INTRuST Consortium's randomized control trial of *Acceptance and Commitment Therapy* (ACT) was initiated. This study is a pilot exploration of a mindfulness-based therapeutic intervention to help soldiers cope with post-deployment distress and disorders such as depression, mild TBI, and PTSD despite the symptoms they may be experiencing. A second Consortium study conducted in collaboration with the Washington, D.C. VA seeks to examine the effectiveness of Ganaxolone, a synthetic neurosteroid for PTSD. This study received Institutional Review Board (IRB) approval, and recruitment and enrollment commenced in 2011.

The Veterans Administration's Office of Research and Development has recognized the importance of a PTSD biorepository—a collection of various biological specimens such as blood and saliva from donors with PTSD and other deployment related illnesses, as well as healthy controls, and a larger national biorepository for all neuropsychiatric illnesses. In 2011, the INTRuST Biorepository Protocol received IRB approval to be conducted in conjunction with INTRuST consortium clinical trials including Acceptance and Commitment Therapy, Ganaxolone, and Transcranial Magnetic Stimulation (TMS) at WRNMMC.

There was also IRB approval to begin collecting data for the *Brain Indices Study*. This study will conduct



Sgt. Chad Parrott and Capt. Greg Reger demonstrate a simulator used to help in the treatment of PTSD at Madigan Army Medical Center.

neuropsychological and electrophysiological assessments, as well as neuroimaging and neurological soft signs, to evaluate the associations between baseline indices of brain structure and function, and the course of PTSD symptoms over a 6-month follow-up period in service members with TBI and non-TBI injuries. As with most of the INTRuST studies, the Brain Indices Study is multi-site, and involves researchers from prestigious institutions including USUHS, Harvard, University of California, San Diego, Dartmouth, and Duke.

INNOVATIVE MEDICAL TECHNOLOGIES

The Center is also conducting research that involves the use of innovative medical technologies. In collaboration with the Medical University of South Carolina and the INTRuST Consortium, the Center received IRB approval to conduct *A Pilot Safety and Feasibility Study of High Dose Left Prefrontal Transcranial Magnetic Stimulation* for the rapid stabilization of acute suicidal behavior. TMS, an FDA-approved therapy for treatment of depression, involves the application of a strong, pulsing magnetic field to an individual's head, thus reaching his or her cerebral cortex. This study will examine the effectiveness of TMS for treatment of PTSD and suicidal behaviors.



Soldiers assigned to the 4th BCT, 1st Cavalry Division, watch an instructional video before providing saliva samples for DNA collection at the University of Texas. The Soldiers volunteered for a battery of tests designed to track how their brains and bodies function before and after their upcoming deployment to Iraq.

2011 saw phase one of a new study using an innovative electronic, hand-held device and methodology, Ecological Momentary Assessment (EMA). EMA is used to examine symptoms of PTSD and depression “in real time” in service members undergoing rehabilitation. The study, *Ecological Momentary Assessment of Posttraumatic Stress Symptoms in Service Members Undergoing Rehabilitation*, will provide a new perspective on identifying PTSD symptom patterns and environmental influences that may foster more effective treatments.

TRAUMATIC STRESS AND BIOMARKERS

An exciting study building upon the Center’s finding of p11 as a genetic marker for PTSD in rats is its *Traumatic Stress and Biomarkers in a Military Population Study*. This study is seeking to replicate p11 findings from the animal studies, as well as explore other potential biomarkers that have been identified in non-CSTS studies. In 2011, Center scientists deployed a team to Ft. Bragg, NC to collect survey data, blood and saliva samples from volunteer research subjects from the 82nd Airborne Division.

ARMY STARRS

The Center is involved in a 5-year project funded by the Army and the National Institute of Mental Health, *Army STARRS* (Study to Assess Risk and Resilience in Servicemembers). Army STARRS is the largest project ever to address suicide in the Army and perhaps suicide as a national health problem in the general population. The project is examining both risk and protective factors for suicidal behaviors. The ultimate goal of the project is to develop data-driven methods for mitigating or preventing suicide behaviors, and improving the overall mental health and behavioral functioning of Army Soldiers during and after their Army service.

Calendar year 2011 was a very productive period for Army STARRS resulting in enormous progress on many of the component studies. *The Historical Data Study* completed its groundbreaking task of obtaining, assembling, integrating and documenting more than 1.1 billion data records from nearly forty different DoD and Army databases. This extraordinarily rich, de-identified data resource on demographic, socio-economic, health care, and military and personal experiences represents more than 1.6 million Soldiers who were on active duty from 2004 through 2009. This is a landmark effort not only because of the sheer





volume and complexity of these data, but because it is the first time these disparate databases have been linked and integrated. The Army STARRS team began preliminary analyses of this historical cohort.

In early 2011, data collection began for the *New Soldier Study*. This study involves collecting baseline personal demographic, behavioral health, social and neurocognitive data at three Army Forts from a sample of Soldiers during their first week in the Army. By the year's end, data was collected from more than 18,200 Soldiers. Blood collection was added to this study in the fall and blood samples were obtained from more than 3,700 Soldiers by year's end.

The commencement of data collection for the *All Army Study* also took place in early 2011. This study involves collecting personal demographic, behavioral health, social, and neurocognitive data from a representative sample of active duty Army Soldiers. It includes Army units inside and outside the U.S., including in-theater units. As of the end of 2011, there was data collected from more than 14,100 Soldiers.

The Soldier Health Outcomes Study (SHOS) involves two case-control studies (SHOS-A and SHOS-B). SHOS-A is a study of active duty Soldiers who attempted suicide, and SHOS-B is a study of active duty Soldiers who died by suicide. In 2011, the study design and procedures were finalized for both studies, and the required approvals from multiple IRBs were obtained. SHOS-A required a monumental effort to

establish procedures, collaboration, and agreements from six separate IRBs, as well as developing and obtaining approval for five sets of site-specific consent materials. Soldier recruitment and data collection for SHOS-A began late in 2011.

The Army STARRS team also designed the instruments and procedures, and obtained IRB approvals, for the *Pre/Post Deployment Study*. This study will involve collection of survey data and blood samples from approximately 10,000 Soldiers shortly before deployment, and additional survey data and blood samples from as many as possible after they return from deployment. We successfully completed a pilot study in the fall of 2011.

Unprecedented in its breadth, depth and complexity, 2011 marked three significant and historic achievements. The Secretary of the Army wrote a letter acknowledging and supporting the confidentiality requirements of Army STARRS. The challenges were successfully met of bringing together multiple IRBs to agree on and approve SHOS-A. Lastly, the Army STARRS team obtained and integrated large and complex datasets containing more than 1.1 billion records from nearly forty different DoD and Army databases for more than 1.6 million Soldiers.

The Center hosted the *6th Annual Amygdala Stress and PTSD Conference* in April. Over 300 scientists, leaders and professionals attended the conference, which focused on *Frontiers in Behavioral Neuroscience Special Topics "Fear in the Human Mind."*



ABOVE: Soldiers complete the Post-Deployment Health Reassessment. LEFT: U.S. Army soldiers search the roof of an Afghan home for weapons and explosives during an air-assault mission in Khost province, Afghanistan.

THE PSYCHOLOGICAL HEALTH OF MILITARY

More than two million children have experienced one or more parental deployments. While many military families manage well, the impact of multiple deployments, single parenting under stress, combat injury and parental death is associated with elevated distress among adults and children in military communities. Reducing these negative effects requires robust community health strategies and prevention programs based upon sound research. Educational outreach that extends awareness and knowledge of these issues to health and community support professionals in military and civilian communities is critical to military family health.

2011 CHILD AND FAMILY PROGRAM ACTIVITY AND ACHIEVEMENTS

The Child and Family Program (CFP) of the Center for the Study of Traumatic Stress has distinguished itself, since its establishment in 2006, as a national leader in advancing scientific knowledge, clinical interventions, and educational resources addressing the needs of children and families affected by trauma, especially our nation's military families and children. The research of CFP examines deployment stress, parenting and family function and the impact of war injury, illness and death on military children and families. In 2011, the CSTS and its CFP received funding to conduct the first study on the impact of service member death on military families (described below).

Another unique aspect of CFP has been its versatility in translating its expertise in military family trauma to support the educational outreach of national media initiatives. For the past few years, the Center and its CFP have served in an advisory capacity to Sesame Workshop in developing its three-part, multimedia series, *Talk, Listen, Connect*, to help military children cope with deployments, homecomings, wartime illness and injury, and most recently parental death. Apropos to this unique involvement and numerous others, the CSTS and its CFP won the Frank Ochberg Award for Media and Trauma Study, which recognizes significant contributions by clinicians and researchers on the relationship of media and trauma.

In 2011, CFP received funding to conduct The National Military Family Bereavement Study, the first rigorous scientific study (Congressionally Directed Medical Research Program) to examine the impact of a U.S. service member death on surviving family members. U.S. military active duty deaths have totaled over 15,000 since September 11, 2001. Over a third of the deaths are attributable to the wars in Iraq and Afghanistan. Conservative estimates tell us that 6–10 individuals are impacted for each service member who dies, thus affecting approximately 120,000 family members or more. The need to study individual and family bereavement resulting from U.S. military service member death is critical to understanding the grief and loss experiences of this unique survivor population. This study's findings will provide a scientific basis to inform policies effecting survivor care.



FAMILIES AND CHILDREN

Leadership consultation is another important role of CFP. In 2011, CFP, CSTS and USUHS provided expertise in military family trauma, health and resilience to The Office of the First Lady of the President of the United States in support of *Joining Forces*, the first national initiative to bridge military and civilian community response through heightened and informed awareness of the unique health and social challenges of military life. In this way, CFP joins our national discourse extending its knowledge to our nation's communities.

2011 saw important advances in ongoing research related to combat injury, child neglect and maltreatment (see page 15 for a complete listing of these research projects). In the area of public education, CFP developed and disseminated a series of fact sheets under the banner, *Resources for Recovery*, which address the impact of visible and invisible injuries on intimacy. Because of their timeliness and attention to an often, overlooked aspect of combat injury recovery, these fact sheets generated extensive media coverage in both DoD and non-military media outlets throughout 2011. The fact sheets for health providers and for service members and their families are available on the Center's website, www.cstsonline.org.

CFP's Director and a number of the program's research and clinical staff were actively engaged in presentations to military and civilian professionals at national and international conferences throughout the year. CFP has demonstrated an enduring commitment to improving the psychological and behavioral health of our nation's military families and children

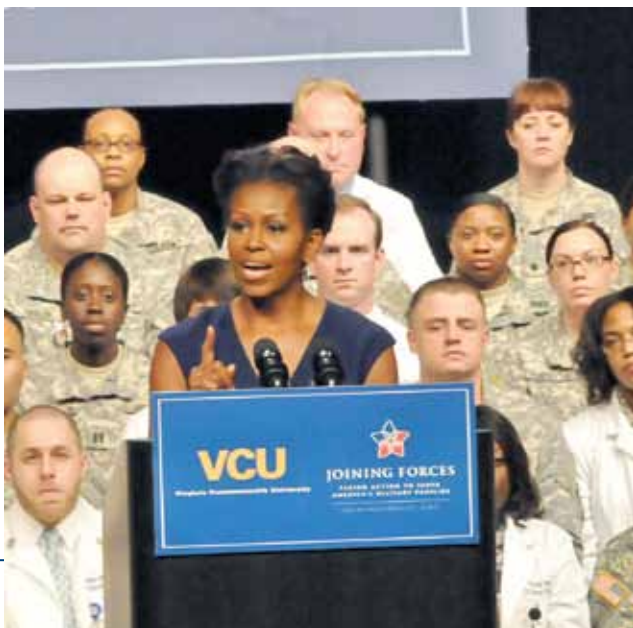
Intimacy and Health: The Impact of PTSD and Stress-Related Disorders On Returning Service Members

- The impact of injury on intimacy is an often neglected aspect of healthcare and one that is especially important in caring for our nation's service members and families.
- Service members who feel in some way changed for the worse by their war experiences may find it hard to share themselves in intimate, physical relationships or they may worry that they will pass on this negative change to their partner through intimacy.



This Resources for Recovery fact sheet is one of four in a series that addresses the impact of emotional and physical injury on intimacy and relationship health.

through its research, its educational activities and products and its extensive consultative outreach to all levels of DoD, the federal government, and diverse stakeholders. CFPs work and impact is strengthened by its collaborations with National Child Traumatic Stress Network (NCTSN), Zero to Three, Military Child Education Coalition (MCEC) and National Military Family Association (NMFA), the Tragedy Assistance Program for Survivor (TAPS), Army Survivor Outreach Services (SOS), and its interface and proximity to the National Intrepid Center of Excellence (NICoE) and the Walter Reed National Military Medical Center (WRNMMC).



DISASTER MENTAL HEALTH

Disaster mental health examines the impact and implications of individual, community and organizational responses to traumatic events from natural disasters such as hurricanes, earthquakes and tsunamis, to human made disasters such as the Gulf Oil Spill and terrorist events such as the Washington, D.C. sniper attacks. Through research, education and consultation, the Center has been involved in nearly every major disaster our nation has faced in the past 25 years.



In 2011, the Center for the Study of Traumatic Stress responded to some significant national and international disasters providing valuable educational resources and expert consultation. The Center also advanced its ongoing disaster research and disaster training projects, and disseminated its knowledge in disaster psychiatry and disaster mental health through presentations and participation in professional conferences, briefings and media-related activity.

DOMESTIC DISASTER RESPONSE

Disaster anniversaries provide opportunities for needed remembrance and oftentimes, teachable moments to reinforce disaster preparedness behaviors. In early 2011, the Center's Director discussed the public response to national disasters, and how they affect the national psyche on a Minnesota Public Broadcasting Service Radio Show as part of the 25th anniversary of the space shuttle Challenger disaster. Shortly afterwards, the Center offered consultative assistance to the Executive Director of the National Association of State Mental Health Program Directors (NASMHPD) in the aftermath of the Arizona shooting rampage and assassination attempt on Representative Gabrielle Giffords. An Associate Director of CSTS was a major participant in the development of an important resource, the NASMHPD publication, "Responding to a High-Profile Tragic Incident Involving a Person with a Serious Mental Illness: A Toolkit for State Mental Health Commissioners."

The Center provided consultative assistance on another domestic event with disaster implications, providing written and phone consultation to the Missouri Department of Mental Health (MO DMH) regarding the destruction by the Army Corps of Engineers of the levee at Birds Point, Missouri. This outreach was useful to all parts of Missouri's government including its public information officers and coroners.

INTERNATIONAL DISASTER RESPONSE

In March, the Center provided extensive disaster education resources to support the response efforts to the Great Eastern Japan Earthquake. A former USUHS Disaster and Preventive Psychiatry Fellow living in Sendai, Japan and working with the Japanese Defense Forces at the National Defense School of Medicine,

facilitated the translation from English into Japanese of relevant Center fact sheets. These disaster response fact sheets were widely disseminated, and captured the attention of the Japanese Cabinet, which has engaged the Center's expert consultation up to the present. The Center also consulted with the International Initiative for Mental Health Leadership on short-term and long-term mental health needs in the aftermath of the earthquake in Christchurch, New Zealand.



DISASTER MENTAL HEALTH INTERVENTIONS AND RESEARCH

Throughout the Center's history, its trauma research has identified and addressed vulnerable and often-times underserved populations. Three years ago, Center scientists developed and introduced a Psychological First Aid-based intervention called *Troop Education for Army Morale (TEAM)*. TEAM was designed to help U.S. Army Mortuary Affairs Soldiers and spouses cope with the complex challenges of deployment and exposure to body handling and recovery in the combat theater. TEAM offered post deployment group workshops, handouts, a dedicated website, concierge support phone and email services, and encouraged natural support systems such as spouse and buddy care. 2011 preliminary findings indicate that TEAM was helpful for managing stress, connecting and communicating with others (important for reducing barriers to seeking care), and for providing support to fellow soldiers. Relaxation training was beneficial for common anxiety and sleep problems, and soldiers especially enjoyed the open and interactive group discussions that enabled them to share experiences and solutions to their problems.

BEHAVIORAL AND PUBLIC HEALTH INITIATIVES

Center scientists also address issues related to behavioral and public health. An Associate Director of the Center served on an Expert Advisory Board to the Rosalynn Carter Institute for Caregiving (RCI), advising on future directions of their programs. The focus of these programs is to better understand and support family caregivers whose family members, including veterans, have a wide variety of chronic medical conditions. The potential impact of this effort is to influence corporate giving for veterans populations, building on existing, high quality programming, and to increase attention to and focus upon family caregiving for veterans.

Throughout the year, CSTS scientists were actively involved in addressing issues related to terrorism, humanitarian assistance and disaster relief missions, violence as a contagious disease and Psychological First Aid. These presentations and collaborative relationships involved such organizations as the National Library of Medicine, the American Psychiatric Association, Centers for Disease Control and Prevention, the Annual Rosalynn Carter Symposium on Mental Health Policy, as well as numerous DoD sites throughout the country.

BELOW: Sgt. David Bentley uses a transient to determine right angles at an excavation site. Bentley and 28 other U.S. Army Reserve and National Guard Soldiers were participating in a search and recovery exercise held June 19 at the Mortuary Affairs training site at Fort Lee, VA. LEFT: Senior Chief Personnel Specialist Amy Henson, from Sheboygan, WI, and Chief Yeoman Kenneth Vinoya, from Jacksonville, FL, clear debris in the aftermath of the massive tsunami in Japan on March 11th.



2011 TIMELINE OF CSTS PRESENTATIONS, BR PROFESSIONAL ASSOCIATIONS, MEDIA

CSTS scientists disseminate knowledge on their research and trauma-informed care through content briefings to military and government leaders, participation in professional and scientific conferences, national and international, through consultations and training, media events and features, and participation on medical and scientific boards. Here are some highlights of the Center's 2011 monthly activities:

JANUARY 2011

- 'Midmorning,' Minnesota PBS Radio: Discussed the public response to national disasters as part of the 25th anniversary of the space shuttle Challenger disaster
- Research Advisory Group: Hosted expert panel drawn from Tragedy Assistance Program for Survivors (TAPS), the National Center for PTSD (NCPTSD), Harvard, Columbia, University of Pittsburgh, and UCLA as part of a CDMRP study recommended for funding on Military Family Bereavement
- Arizona Shooting Rampage: Offered assistance to the National Association of State Mental Health Program Directors and Mental Health Authority in aftermath of Arizona mall shooting disaster

FEBRUARY 2011

- Military Operational Medicine Research Program (MOMRP) Conference. Ft. Detrick, MD: Presented Army STARRS (Army Study to Assess Risk and Resilience in Servicemembers) and the interim progress report for "Acceptance and Commitment Therapy (ACT) for Distress and Impairment in OEF/OIF Veterans" study
- Pentagon Channel: Interviewed on the impact of injury, physical and emotional, on intimacy and its relationship challenges for service members and their loved ones
- American Forces Press Service: Interviewed for a feature entitled, "Center Provides Advice on Post-Deployment Intimacy Issues"

MARCH 2011

- Tale of Our Cities 2011: Planning for an Interdisciplinary Response to Terrorist Use of Explosives, sponsored by the City of New York and the Centers for Disease Control and Prevention: Presented "Terrorism by Explosives: Public Health and Mental Health Resilience"
- American Occupational Health Conference, Washington, DC: Presented "From War to Work: Understanding the Strengths and Needs of Returning Guard and Reserve Members"
- National Child Traumatic Stress Network All-Network Conference, Tampa, FL: Served on workshop panel, "Enhancing Military Family Resilience: Current Models, Specific Strategies and Opportunities"
- White House Initiative: Attended meeting of experts regarding the First Lady's public education campaign, "Enhancing the Well-being and Psychological Health of the Military Family"
- 2011 DoD/VA Suicide Prevention Conference, Boston, MA: Presented "Suicide Prevention Research in the Acute Clinical Setting: Challenges and Opportunities"
- Annual Meeting of the Anxiety Disorders Association of America, New Orleans, LA: Presented "Promoting Resilience in Disaster First Responders: A Psychological First Aid-based Approach"
- Navy Bureau of Medicine and Surgery (BUMED): Consultation and educational resource support to assist the Navy Surgeon General's response to The Great Eastern Japan Earthquake
- Disaster Information Management Center, National Library of Medicine: Participated in the Disaster Information Outreach Symposium addressing information processing in high stress situations

APRIL 2011

- American Society for Pharmacology & Experimental Therapeutics (ASPET) Annual Meeting, Washington, DC: Presented "Overview of the Clinical Problem of PTSD in the Military" at the Neurobiology of Post-Traumatic Stress Disorder (PTSD) and Implications for Treatment Symposium
- 6th Annual Amygdala, Stress and PTSD Conference, Bethesda, MD: "Frontiers in Behavioral Neuroscience Special Topics." Hosted this conference attended by over 300 scientists, academic leaders and professionals
- Society for Research in Child Development, Montreal, QC, Canada: Presented "Military Children during Wartime: Risk, Resilience, and Community Response"
- CDC Deployment Safety and Resilience Team, Atlanta, GA: Conducted training for 27 CDC staff responsible for the well being of CDC staff domestic and global
- George Washington University: Presented "Psychiatric Consequences of Terrorism" to Political Science graduate students
- VA's Federal Coordinating Center's (FCC) Reception, Denver, CO: Represented the United States Public Health Service (USPHS) Services Access Teams, which established a learning environment for players to exercise emergency response plans, policies and procedures pertaining to a National Disaster Medical System

LEGEND

- **RED** = media-related activities
- **BLUE** = military-related activities
- **GREEN** = disaster and trauma-related activities



LEARNINGS, CONSULTATIONS, SCIENTIFIC AND

MAY 2011

164th Annual Meeting of the American Psychiatric Association, Honolulu, HI:

- “Scope, Current Evidence, and Innovative Approaches in Managing PTSD”;

- “Updates on the Psychological Impacts of the Wars in Afghanistan and Iraq”;

- “Overview of Psychological Trauma, Posttraumatic Stress, Posttraumatic Stress Disorder and Trauma Disorders: Biomarkers for Resilience, Treatment and Prevention”

- RTI Policy Forum 6, Washington, DC: Presented “Heroes at Home: Understanding the Impacts of Wartime Deployments on Military and Veteran Families”

- Scientific Advisory Board of the Ohio Army National Guard Mental Health Initiative: Provided scientific guidance for major longitudinal Guard, mental health study

JUNE 2011

- US Army’s PTSD Subject Matter Expert Working Group: Reviewed current medications for PTSD and associated symptoms

- TBI/PTSD Imaging Collaboration Conference, Ft. Benning, GA: Presented “Posttraumatic Stress: War, Disaster and Trauma Recovery” to Commanders, and “PTSD: From War to Disaster and Bench to Bedside” to Ft. Benning’s health care providers

- Casualty Affairs Board, Fredericksburg, VA: Presented Overview of National Bereavement Study

- New Jersey Health Care System/Dept of Veterans Affairs’ 8th Annual Best Practices, Best Outcomes Conference: Presented the keynote address, “Fostering Resilience in Returning Combat Veterans”

- New Jersey Academy of Family Physicians (NJAFP): Presented on a panel, “Caring for Returning Veterans”

JUNE 2011 (CONTINUED)

- Work, Stress, and Health 2011 Conference, Orlando, FL: Presented “Challenges in US Army Mortuary Affairs Remains Recovery Mission to 2010 Haiti Earthquake”

- 2011 USPHS Scientific & Training Symposium: Presented “National Guard and Reserve Members: Returning to Work from War”

JULY–AUGUST 2011

- Army STARRS: Hosted a 2-day meeting addressing study for USU, HJF, NIMH leadership and the Scientific Oversight Committee (SOC)

- Huffington Post, Reuters and CBS Radio: Participated in an interview regarding, “Children of Military Service Members”

- Wounded Warriors and Rehabilitative Justice Conference, Washington, DC: Presented “PTSD and Legal Issues in Returning Veterans”

- U.S. Medicine: Facilitated a feature on the Center’s Resources for Recovery fact sheets on the impact of injury on service members and their families

- DCoE Monthly Webinar: Presented Post-traumatic Stress Disorder and Natural Disasters, presenting specifically on “Terrorism, Toxins, Communicating and Caring”

SEPTEMBER 2011

- Institute of Medicine’s Workforce Resiliency Programs: Presented “Defining Long-Term Resiliency for the Department of Homeland Security”

- Naval Medical Center Portsmouth’s Annual Macklin Symposium: “Humanitarian Assistance Conference: Presented public mental health principles, including Psychological First Aid, and the medical perspective of humanitarian assistance and disaster relief missions

OCTOBER 2011

- George Washington University School of Medicine, Washington, DC: Presented the Seymour Perlin Lecture, “From Battlefield to Homefront and Homefront to Battlefield: Health Risk Behaviors and PTSD”

- NIH Fall Research Festival, Bethesda, MD: Presented “PTSD and Traumatic Brain Injury: Defining the Problem(s)”

- Association of the United States Army (AUSA) Annual Meeting, Washington, DC: Presented “America’s Families: Honoring Our Survivors”

- American Academy of Child and Adolescent Psychiatry Annual Meeting, Toronto, ON, Canada: Chaired the “Disaster Psychiatry: The State of the Field” workshop

- Grand Rounds, Behavioral Health, Camp Lejeune, NC: Presented “Update on Pharmacotherapy for PTSD”

NOVEMBER 2011

- International Society for Traumatic Stress Studies 27th Annual Meeting, Baltimore, MD: Discussant for featured symposium, “The Great Eastern Japan Earthquake: Responses of Japanese Mental Health Professionals and the Japanese Society of Traumatic Stress Studies (JSTSS)”

- American Psychiatric Association’s Institute on Psychiatric Services Meeting, San Francisco, CA: Presented “Scope, current evidence, and innovative approaches in managing PTSD in the military”

- 6th Biannual INTRuST Consortium Meeting, San Diego, CA: Presented, “Brain Indices of Risk for Posttraumatic Stress Disorder after Mild Traumatic Brain Injury”

DECEMBER 2011

- Military Continuing Legal Education Conference for Disability Counselors and Judge Advocates, Arlington, VA: Presented “Reintegration Challenges for Returning Veterans”

RECOGNITION AND REMEMBRANCE

RECOGNITION

Each year the work of Center scientists receives recognition from national organizations and prestigious professional associations. In 2011, this recognition reflects contributions from science to public education, and the versatility of educational venues from research organizations to national media outlets.

Dr. Robert J. Ursano, Chairman, Department of Psychiatry, Professor of Psychiatry and Neuroscience, Uniformed Services University Medical School, was notified to receive the *American College of Physicians William C. Menninger Memorial Award for Distinguished Contributions to the Science of Mental Health*. Dr. Ursano serves as Director of the Center for the Study of Traumatic Stress.

Dr. Stephen J. Cozza, Professor, Department of Psychiatry, Uniformed Services University Medical School and Associate Director, Child and Family Program, Center for the Study of Traumatic Stress, received the *Frank Ochberg Award for Media and Trauma Study*. This award recognizes significant contributions by clinicians and researchers on the relationship of media and trauma. Both DoD and civilian media sources have sought out his expertise in the impact of deployment and combat injury on military families and children.

Dr. Connie Duncan was elected as a *Fellow of the Society of Clinical Psychology (Division 12) of the American Psychological Association (APA)*, which is in recognition of the contributions she has made to the understanding of brain dysfunction in neuropsychiatric disorders, including schizophrenia and traumatic brain injury. Dr. Duncan is Research Associate Professor, Department of Psychiatry, Uniformed Services University Medical School.

Center scientists, **Dr. Matthew M. Goldenberg, Lt Col Derrick Hamaoka, LCDR Patcho Santiago and Dr. James E. McCarroll**, won the MedEdPORTAL-sponsored *Call for Culturally Competent Training/Learning Modules for Treatment of U.S. Service Members and their Families* at the 2011 Association of American Medical Colleges Annual Meeting. Their winning submission was titled, "Basic Training: A Primer on Military Life and Culture for Health Care Providers and Trainees."

Nancy Vineburgh, Associate Professor of Psychiatry, Uniformed Services University Medical School and Associate Director, Office of Public Education and Preparedness, Center for the Study of Traumatic Stress, received the *2011 American Graphic Design Award* for the 2010 CSTS Annual Report.

DR. HERBERT HAUPTMAN REMEMBRANCE

It is with deep sadness that we report the 2011 passing of a distinguished CSTS Scientific Advisory Board member, Dr. Herbert Hauptman, aged 94. In 1985 Hauptman and Jerome Karle received the Nobel Prize in Chemistry for their development of revolutionary methods for determining the structure of molecules vital to life. Dr. Hauptman's groundbreaking work in the field of X-ray crystallography continues to have monumental implications for the design of therapeutic drugs to prevent and treat life-threatening diseases, and he was instrumental in defining the field of



biomedical research itself over the decades. As president of the Hauptman-Woodward Medical Research Institute, he helped to build it into a world-renowned research center.

According to Satish K. Tripathi, President, University of Buffalo, "Dr. Hauptman was widely considered to be the most important scientist ever

to have lived in Western New York." Dr. Hauptman's daughter, Dr. Carol Fullerton, is Professor of Psychiatry at Uniformed Services University Medical School and Director of Scientific Research, Center for the Study of Traumatic Stress.

2011 FUNDED GRANTS

STUDY	FUNDING INSTITUTION
Family Violence and Trauma Project III	US Army
Protecting the Health, Safety & Resilience of Deployed Staff	CDC
Clinical Study Site for PTSD and TBI (sub-award)	UC San Diego
Addressing the Needs of Children and Families of Combat Injured	CDMRP
Mortuary Affairs Soldiers: Early Intervention and Altering Barriers to Care for Traumatic Stress and PTSD	CDMRP
Deployment Family Stress: Child Neglect and Maltreatment in U S Army Families	CDMRP
Mental Health and Service Utilization Among Reserve and National Guard Forces (sub award)	Columbia University
PTSD trajectory, co-morbidity, and utilization of mental health services among Reserve forces (sub award)	Columbia University
PTSD trajectory, co-morbidity, and utilization of mental health services among National Guard Soldiers	CDMRP
CSTS — Program Grant 2008	DCoE
CSTS — Program Grant 2010	DCoE
CSTS — Program Grant 2011	DCoE
FOCUS-CI Preventive Intervention with Children and Families of Combat Injured	CDMRP
Brain Indices of Risk for PTSD after Mild TBI	CDMRP
Evaluation of Sesame Workshop’s “Talk, Listen, Connect”	Sesame Workshop
Initial Randomized Controlled Trial of Acceptance and Commitment Therapy (ACT) for Distress and Impairment in OEF/OIF Veterans	CDMRP
A Pilot Safety and Feasibility Study of High Dose Left Prefrontal Transcranial Magnetic Stimulation (TMS)	UC San Diego
A Proof-of-Concept, Double-blind, Randomized, Placebo-Controlled Study of Ganaxolone in PTSD	UC San Diego
Modifiable Risk and Protective Factors for Suicidal Behaviors in the US Army	NIMH
Modifiable Risk and Protective Factors for Suicidal Behaviors in the US Army — ARRA	NIMH
Modifiable Risk and Protective Factors for Suicidal Behaviors in the US Army – Supplement	NIMH
Impact of Service Member Death on Military Families: A National Study of Bereavement	CDMRP
The Injury and Traumatic Stress (INTRuST) CONSORTIUM Biorepository	UC San Diego
Riluzole Augmentation Treatment for Complicated PTSD (MOMRP)	US Army

2010–2011 PUBLICATIONS (DEPT. OF PSYCHI)

Biggs QM, Fullerton CS, Reeves JJ, Grieger TA, Reissman DB, Ursano RJ. Acute stress disorder, depression and tobacco use in disaster workers following 9/11. *Am J Orthopsychiatry*. 2010;80(4): 586–592.

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Cozza SJ, Guimond JM, McKibben JBA, Chun RS, Arata-Maiers TL, Schneider B, Maiers A, Fullerton CS, Ursano RJ. Combat-injured service members and their families: The relationship of child distress and spouse-perceived family distress and disruption. *J Trauma Stress*. 2010;23(1): 112–115.

Diebold C, Waits W, Brown M, Benedek DM. Military psychiatry graduate medical education. In: Ritchie EC, ed. *Textbook of Combat and Operational Psychiatry*. Borden Institute Textbooks of Military Medicine, Office of the Surgeon General of the United States Army; 2011: 669–692.

Ritchie EC, Benedek DM. Psychological issues and mass fatality. In: Gursky EA, Fierro MF, eds. *Death In Large Numbers: The Science, Policy and Management of Mass Fatality Events*. American Medical Association; 2011: 279–304.

Flynn BW. Community and organizational responses to disaster. In: Kaufman R, Edwards R, Mirsky J, Avgar A, eds. *Crisis As An Opportunity: Organizational And Community Responses to Disasters*. University Press of America; 2011: 1–15.

Fullerton CS, Reissman DB, Gray C, Flynn BW, Ursano RJ. Earthquake response and psychosocial health outcomes: Applying lessons from integrating systems of care and recovery to Haiti. *Disaster Med Public Health Prep*. 2010;4(1): 15–17.

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Jiang X, Chen A, Smerin S, Zhang L, Li H. Pharmacology of 5-HT₂ modulation of amygdala & hypothalamus in anxiety disorders. In: Kalinin V, ed. *Anxiety Disorders*. InTech; 2011: 39–50.

Schneider B, Bradley J, Warner CH, Benedek DM. Psychiatric medications in military operations. In: Ritchie EC, ed. *Textbook of Combat and Operational Psychiatry*. Borden Institute Textbooks of Military Medicine, Office of the Surgeon General of the United States Army; 2011: 151–162.



This award-winning photo taken by Brian Flynn, CSTS Associate Director, depicts the United States Public Health Service (PHS) ribbon bar worn on the uniform of a member of the United States Public Health Service Commissioned Corps.

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Brian Flynn, CSTS Associate Director, photographed the images: Ft. Lee's Joint Mortuary Affairs Center sign, and two flag headstones at the US Naval Academy Cemetery.

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FACES OF CSTS



All "Faces of CSTS" photographs by Brian Flynn.

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