

# Center for the Study of Traumatic Stress

2020 Annual Report

CSTS



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"In this Annual Report, we present summaries of our recent contributions. Our goal is to improve trauma-related care by preparing treatment providers to address the impact of trauma and its far-reaching effects, thereby building a more trauma-informed environment across the continuum of our military and civilian healthcare systems."

— Dr. Robert J. Ursano

# From the Director

Dear Center Colleagues and Friends,



In 2020, the world experienced the COVID-19 pandemic, a once-in-a-generation event that spared no nation. The United States alone reported over half a million deaths during the first year of the pandemic. The Center for the Study of Traumatic Stress (CSTS) has participated in con-

sultation and research to better understand the effects of COVID-19 on military and civilian populations, including healthcare providers, and military components activated across the United States in support of the COVID-19 response.

CSTS is an integral part of the Department of Psychiatry of the Uniformed Services University (USU). As many of you know, CSTS was established in 1987 and has been fulfilling our mission to mitigate the impact of trauma on individuals and communities from exposure to war, disasters, terrorism, community violence, and public health threats. The Center is fully engaged in activities that support the Strategic Framework and mission of USU, as well as the Military Health System, and the broader mission of the Department of Defense (DoD). Through our broad range of activities, we sustain national readiness, enhance national security, and serve an essential role for the DoD and the nation. The Center's work and extensive fact sheets related to the COVID-19 pandemic is a recent example of these efforts.

The Center's mission is accomplished through a multi-faceted approach that includes leadership, research, training, education, consultation, and global health engagement. CSTS continues to support an outstanding multi-disciplinary and collaborative team of scientists, educators, clinicians, staff, and leaders.

Currently, the Center's attention is focused on responding to the COVID-19 pandemic, as well as our ongoing work on posttraumatic stress disorder (PTSD), traumatic brain injury (TBI), suicide and

suicide-related behavior, and disaster response and preparedness. CSTS helps inform our nation's policies and responses to the impacts of exposure to trauma, natural and human-made disasters and, especially at this time, the health emergency response to COVID-19.

The Center's work begins in our laboratories, extends to our communities, the nation, and across the globe. Importantly, we bridge science from the gene, to the person, to the community, and from Service member to unit. We translate knowledge into action by providing rapid consultation, education, and support to personnel responding to the health needs of Service members and their families. In addition, we provide support to disaster and public health personnel responding to global crises such as the COVID-19 pandemic. CSTS is uniquely situated to bridge military and disaster psychiatry.

Our advanced analytic activities include using innovative techniques such as ecological momentary assessment, digital assessments, machine learning, complex algorithms, and predictive analytics to enhance personalized medicine. We use data mining techniques and state-of-the-art statistical methods to analyze previously untapped data sources independently and jointly with other data to gain new insights, resulting in better and faster decision-making, in order to improve health.

In this Annual Report, we present summaries of our recent contributions. Our goal is to improve trauma-related care by preparing treatment providers to address the impact of trauma and its far-reaching effects, thereby building a more trauma-informed environment across the continuum of our military and civilian healthcare systems.

As we develop this report in early 2021, CSTS is integrally involved with the DoD's continuing COVID-19 pandemic response. CSTS is providing just-in-time educational resources and surveillance assessments for DoD and our nation's healthcare systems. The Center has developed collaborations with the New York National Guard as they respond to the

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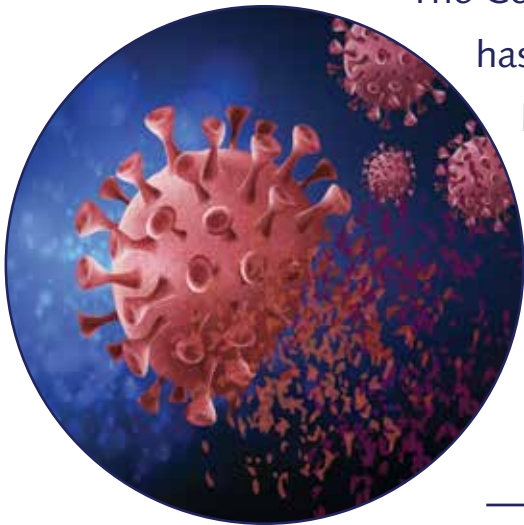
**From the Director, continued from page 1**

effects of COVID-19. In addition, we have consulted as subject matter experts to New York City during the fall 2020 surge in COVID-19 cases. We have collaborated with our partner and stakeholder organizations providing resources and assistance in response to COVID-19. Closer to home, we have participated in assessing the impact of the pandemic on USU personnel and students. This partnership culminated in the USU resiliency survey providing valuable information to USU leadership.

Please visit the Center's website ([www.cstsonline.org](http://www.cstsonline.org)) and the Center's dedicated COVID-19 response page (<https://bit.ly/3gxZ84z>) for the latest updates in our COVID-19 activities. Most of this work started in 2020, and is ongoing.

On behalf of everyone at CSTS, I would like to extend our appreciation to all of our colleagues and friends who have collaborated with us and assisted us throughout 2020 to help us support the Military Health System, the DoD, and the nation, and respond to the COVID-19 pandemic.

Robert J. Ursano, MD  
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Director, Center for the Study of Traumatic Stress  
Uniformed Services University



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# Our Mission

As an integral part of USU, CSTS's activities support the USU Strategic Framework and the mission of the DoD. CSTS is committed to advancing trauma-informed care.

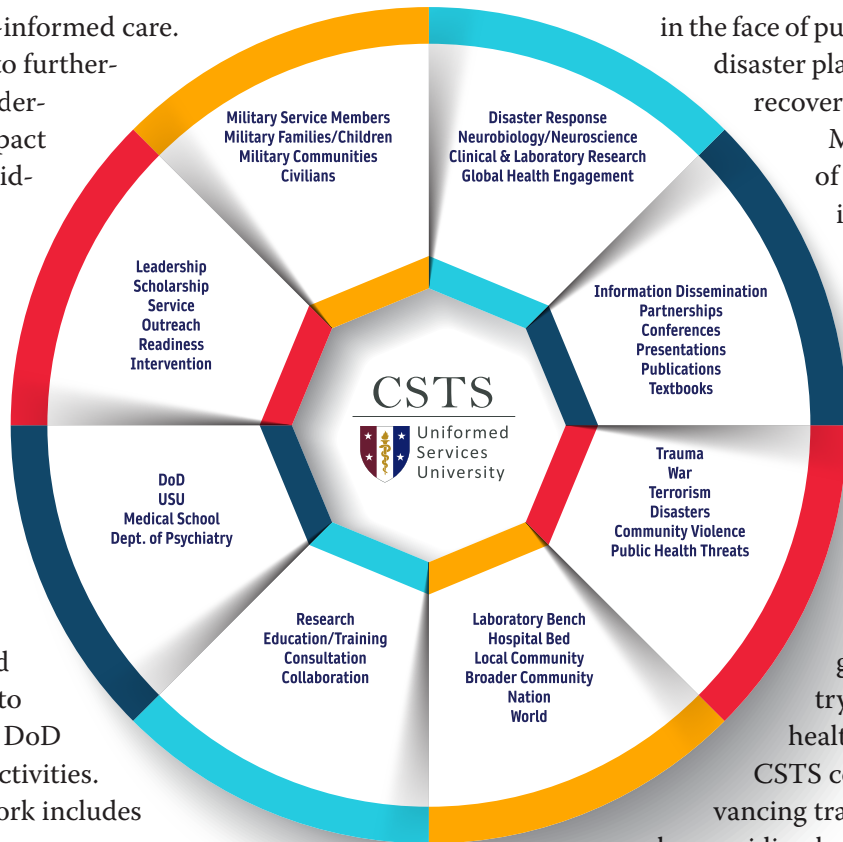
We are dedicated to furthering the nation's understanding of the impact of trauma on individuals, families, and communities. The Center is part of our nation's federal medical school (America's Medical School) at USU, and the Center's mission is aligned with the needs of the DoD and the nation, and is well-positioned to rapidly respond to DoD mission-relevant activities.

The Center's work includes a broad range of trauma exposures: combat, terrorism, natural and human-made disasters, public health threats, and humanitarian operations. CSTS has been involved

in nearly every major disaster our nation has experienced in the past 30 years. The Center helps to ensure that behavioral health is addressed in the face of public health threats, disaster planning, and disaster recovery.

Mitigating the effects of disaster and trauma in military and civilian populations is part of the effort to foster community and national resilience. The Center informs and educates community, regional, state, national, and global stakeholders in government, industry, healthcare, public health, and academia.

CSTS contributes to advancing trauma-informed care by providing leadership in research, education, training, consultation, global health, and service.



## COVID-19 Response Highlights

The Center was involved with the DoD's COVID-19 response from the onset of the pandemic. CSTS Scientists and staff maintained key collaborations with the National Guard Bureau (NGB) and other entities within New York City. In addition, the Center was critical in developing COVID-19 knowledge products such as fact sheets on critical topics, including how to talk to children about COVID-19,

how to manage grief during the pandemic, and how to establish better sleep patterns while working remotely or in new environments. CSTS was instrumental in helping USU leadership assess the impact of COVID-19 on the USU workforce through consultation on the USU resiliency survey to inform USU leadership.



# HIGHLIGHTS OF THE CENTER'S COVID-19 RESPONSE

## COVID-19 Activities with the National Guard Bureau

The Center worked with the National Guard Bureau (NGB) to help the New York National Guard (NYNG) develop a rapid public health surveillance assessment to inform leadership and provide action-oriented recommendations related to stressors, resilience factors, and behavioral health responses. In addition, CSTS Scientists developed training materials designed to reduce distress and increase resilience in NG personnel who were called upon to handle the remains of the dead. CSTS continues to collaborate with the NGB and NYNG with education, consultation, and ongoing surveillance.



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COVID-19 preparedness, including Sesame Workshop's Sesame Street in Communities (<https://bit.ly/3xcuJPg>), Blue Star Families, the Military Child Education Coalition, as well as other educational efforts supporting professional communities. The

Center highlighted the effect of the pandemic on children and families as part of CSTS fact sheets that were distributed globally in English and Spanish. In order to address challenges associated with COVID-related deaths, Center Scientists published a blog post, *Death notification, grief,*

*and posttraumatic stress: Implications for COVID-19 deaths* in the International Society for Traumatic Stress Studies' Trauma Blog (<https://bit.ly/32x4Jjq>).

## COVID-19 Activities with New York City

In Spring 2020, the Mayor of New York City (NYC) and the United States Northern Command (USNORTHCOM) Commander requested support from CSTS to assist NYC during their spring COVID-19 case surge. CSTS, in collaboration with other organizations, developed a five-module resilience training program, which was delivered to more than 1,000 civilian personnel within the NYC healthcare system. Center Scientists also provided consultation support to the Mount Sinai Health System in addressing initial and ongoing challenges for healthcare workers during the pandemic.

## COVID-19 Child and Family Knowledge Products and Consultations

The CSTS Child and Family Program (CFP) was actively involved in the Center's response to the COVID-19 pandemic through programmatic consultation and the development of child and family informational resources. CFP personnel consulted with public health organizations regarding

## Uniformed Services University COVID-19 Resilience Operational Assessment

In Spring 2020, CSTS assisted in the development of the operational assessment of students and personnel working at USU to better understand USU operations during the pandemic. The assessment examined factors pertaining to the experiences of students and personnel, including university resources, leadership, experience working/teleworking, and work/life balance during the COVID-19 pandemic. This assessment was designed to better understand the impact of the COVID-19 pandemic on work and morale, support, and health, as well as identify resources to support the mission of USU. In particular, the assessment informed work taskings, and organizational support and resources. CSTS developed a follow-up assessment to be administered in February 2021 in order to further support the USU mission.

These highlights demonstrate some, but not all, of the Center's substantial contributions to mitigate the impact of COVID-19. In the following pages, we detail the Center's research, teaching, and consultation in response to COVID-19.

# Research

CSTS was involved in a broad range of research, including epidemiological, clinical, and laboratory research. The research was designed to support the Military Health System (MHS) in its efforts to maintain a medically-ready military force for both peacetime and wartime, and to deliver integrated, affordable, effective, and high quality health services. CSTS research encompassed investigations ranging from the causes of suicide in Service members, to the psychological responses to trauma and disasters, to clinical investigations of the symptomatology and treatment of PTSD. The ultimate goals of all CSTS research activities are to improve military readiness and the quality of military care.

## RESEARCH ON SERVICE MEMBERS

### Study to Assess Risk and Resilience in Servicemembers — Longitudinal Study (STARRS-LS)

*Formerly the Army Study to Assess Risk and Resilience in Servicemembers (Army STARRS)*



STARRS-LS is the continuation of a research project that began more than ten years ago to address the increasing and persistent problem of suicide among Army personnel. The original research project, Army STARRS, was conducted from 2009 to 2015. The first iteration of STARRS-LS began in 2015 and ended in 2020. The current STARRS-LS continuation project began in 2020 and will run through 2025. The Army STARRS and STARRS-LS projects were designed and conducted under the scientific direction and project management oversight of CSTS through a collaborative effort involving USU, the University of California, San Diego (UCSD), Harvard Medical School, and the University of Michigan.

Army STARRS, funded by the Army, included a series of several distinct but integrated studies designed to comprehensively examine the mental health and resilience of active duty Soldiers, including Regular Army, Army National Guard, and activated Army Reserve. The project involved large representative samples of Soldiers, making it the largest research effort of mental health risk and resilience ever conducted among military personnel. The largest of the studies was an historical cohort study of all Soldiers (more than 1.6 million) on active duty from 2004 to 2009. Army STARRS also included cross-sectional studies, a four-wave longitudinal study, and two case-control studies that involved collecting data directly from a combined total of more than 100,000 active duty Soldiers throughout the U.S. and overseas. The studies included administering questionnaires and neurocognitive tests, collecting blood samples, and performing state-of-the-art data analyses and genetic studies.

CSTS is expanding the size, extending the time-frame, and enhancing the Army STARRS research through two five-year DoD-funded projects, STARRS-LS. Under STARRS-LS, the Center is continuing to use the STARRS platforms, systems, and data to conduct further analyses and to collect additional follow-up data for three cohorts of Soldiers. The historical cohort established under Army STARRS has been extended by obtaining an additional seven years of Army/DoD administrative data (2010-2016). This historical cohort follow-up study now includes all active-duty Soldiers (approximately 3 million) over the thirteen-year period from 2004 to 2016.

In 2020, because wave 3 survey data collection was to begin during the COVID-19 pandemic, the research team added a new COVID-19 section to the survey that included 22 questions about the respondents' experiences during the pandemic and the impact it may have had on them. This offers a unique opportunity that will allow the research team to assess and compare the mental health and behav-

ioral health effects among a representative sample of Soldiers, both pre-pandemic and eventually post-pandemic.

The research team conducted briefings of the research progress and findings throughout 2020. These included briefings to the STARRS Government Steering Committee, and briefings at the Pentagon to senior DoD and Army leadership, including the Assistant Secretary of Defense for Health Affairs, the Deputy Under Secretary of the Army, and the Army Surgeon General.

Due to the abundance of actionable findings produced by the STARRS research, the Army established a workgroup called the STARRS Research Advisory Team (SRAT). The SRAT is comprised of Army and DoD personnel tasked to review STARRS findings and recommend actions that the Army and/or DoD can take, based on those findings. The STARRS PIs continued to meet with the SRAT on a quarterly basis throughout 2020 to present STARRS findings and discuss how to best translate the research findings into Army and DoD actions.

### **Psychological Stress and Resilience in Mortuary Affairs (MA) Soldiers: Longitudinal Study**

U.S. Army mortuary affairs (MA) Soldiers recover, identify, and evacuate the remains of the deceased from the theater of war and other mission sites. They are a unique population of Soldiers who are exposed to death and deployment-related stress, and work in combat and other extreme environments. The CSTS longitudinal research of MA Soldiers represents the



longest ongoing study to examine the individual, unit, and family stressors, risk factors, and resilience of MA Soldiers. The study includes quantitative data collected through questionnaires, qualitative data collected through semi-structured interviews, and saliva samples, which will be analyzed for potential DNA- and RNA-related biomarkers of stress and resilience. Questionnaires were group-administered to MA detachments approximately one week before and after deployment to the Middle East. Empirical and descriptive data were collected on factors such as PTSD, depression, distress (e.g., anger, hostility, somatization), substance use, and instrumental and emotional support.

In 2020, Reserve MA Soldiers from the 1019<sup>th</sup> Quartermaster Company (QM CO) (Staten Island, New York) and the 673<sup>rd</sup> QM CO (Dover, Delaware) participated in the study by completing deployment-related questionnaires. In March, CSTS study personnel met with MA Soldiers in-person at Fort Hood, Texas to administer questionnaires and collect saliva samples. Afterward, questionnaire administration was adapted to an online format due to the COVID-19 pandemic. In total, 150 questionnaires and 62 saliva samples were collected in 2020. Overall, the study questionnaire has been administered more than 70 times and more than 3,450 questionnaires have been collected since the study began in 2005.

In July 2020, interviews were conducted with active-duty MA Soldiers from the 54<sup>th</sup> and 111<sup>th</sup> QM COs (Fort Lee, Virginia) who participated in Defense Support of Civil Authorities missions to NYC and Washington, DC, respectively. The goal of the missions was to support the Federal Emergency Management Agency (FEMA) and the local offices of the Chief Medical Examiner during surges in the COVID-19 pandemic. MA Soldiers processed remains of the deceased and assisted in the design and setup of disaster portable mortuary units. The remains were civilians of all ages and demographic backgrounds and the Soldiers saw all causes and manners of death (e.g., vehicular accidents, homicide, suicide, and COVID-19).

Findings from the MA study target resilience, preparation, training, and education of Soldiers for



the stressors of deployment and work with the deceased. Data analyses in 2020 included an examination of traumatic exposures, deployments, psychological distress, and rates of PTSD and depression. Fact sheets describing stress management strategies for mortuary operations were created based on MA Soldier interviews.

Related to the work with MA Soldiers, in 2020 CSTS personnel began participating in weekly MA synchronization meetings with the U.S. Northern Command (USNORTHCOM), U.S. Army North (USARNORTH), 377<sup>th</sup> Theater Sustainment Command, 4<sup>th</sup> Expeditionary Sustainment Command, Joint Mortuary Affairs Center, and others in support of Defense Support of Civil Authorities missions involving mass death.

### **Troop Education for Army Morale**

Troop Education for Army Morale (TEAM), a novel stress management and resilience building early intervention program, was designed to improve post-deployment readjustment in U.S. Army mortuary affairs (MA) Soldiers — a group at high risk for psychological distress. The intervention was based on the five evidence-informed principles of Psychological First Aid (PFA): safety, calming, connectedness, self-efficacy, and hope/optimism. TEAM was delivered through four group workshops, informational handouts, a dedicated website, and phone and email support services. A total of 125 MA Soldiers participated in the study. Baseline questionnaires indicated that MA Soldiers had a high number of traumatic exposures and rates of PTSD and depression, similar to combat troops. While the intervention did not specifically reduce rates of PTSD, the TEAM intervention was well-accepted and the majority of Soldiers (89%) reported that TEAM was helpful for them. Calming (relaxation training) and problem solving were two of the skills reported to be most helpful.

In 2020, the TEAM intervention materials were adapted for an online format using remote video conferencing and sharing materials electronically when individuals were not able to meet in-person due to restrictions related to the COVID-19 pandemic. Importantly, the TEAM program information

and intervention materials were requested by the U.S. National Guard Bureau in order to educate and support National Guard personnel who, although largely not trained for mortuary affairs duties, were frequently called on to handle remains of the dead from the COVID-19 pandemic. The online TEAM intervention content can be delivered through group sessions at specified intervals (e.g., once a week) or posted on a dedicated website for 24/7 access. The 2020 online adaptation of TEAM broadened application of the intervention for use in other military and civilian populations, including medical personnel, police, firefighters, disaster workers, mortuary personnel, or others who work with the dead.

### **Ecological Momentary Assessment of Posttraumatic Stress Symptoms in U.S. Military Service Members (Daily Diary Study)**

The Daily Diary Study used a novel ecological momentary assessment methodology to assess in real time the posttraumatic stress symptoms of U.S. Service members. The Daily Diary Study represents the cutting edge in psychological assessment methodology, measures, equipment, technology, and research designed to better understand and improve the well-being of Service members. The study examined the relationship between variability in posttraumatic stress symptoms and psychiatric disorders, sleep, health risk behaviors (e.g., alcohol and tobacco use), pain, and other areas of health and functioning. Participants completed assessments of posttraumatic stress symptoms four times daily for 15 consecutive days on electronic tablets, using a sophisticated software application developed for use in this study. Psychiatric disorders (e.g., PTSD, depression) were assessed at baseline and in one- and three-month follow-up assessments. Participants had the option to donate saliva and/or blood samples for genetic analysis to identify potential genetic biomarkers and gene-environment interactions that may distinguish and/or mediate stress responses and resilience to stress-related disorders. Participants also had the option to wear a wrist actigraph to objectively measure sleep and complement self-reports of sleep during the 15-day daily diary assessment period.

In early 2020, nine Service members enrolled in the study, provided genetic biomarker samples, and wore wrist actigraphs. Recruitment was paused in March to protect the safety of participants and study staff due to the COVID-19 pandemic. In total, 183 subjects were recruited since the study began. Data analyses in 2020 included an examination of night-to-night and weekday versus weekend variation in sleep disturbances (i.e., short sleep duration, poor sleep quality, trouble falling asleep, and difficulty staying asleep) in individuals with and without PTSD. A manuscript examining the relationship between sleep disturbances and variation in post-traumatic stress symptoms was published in the peer-reviewed journal *BMC Psychiatry*, and a poster on statistical approaches to analyzing ecological momentary assessment data was presented at a national scientific conference. In addition, a manuscript presenting the most recent findings was submitted for publication.

### **Firearm Behavioral Practices in U.S. Army Service Members and Veterans**

In 2020, CSTS Scientists, along with collaborators at Harvard University, were awarded a two-year R01 grant from the Centers for Disease Control and Prevention (CDC) to study firearm behavioral practices in U.S. Army Service members and veterans and their impact on suicidal behaviors. This study will examine the longitudinal relationships between firearm storage and carrying practices, personality traits, and local gun laws, and the risk for suicide attempts and death by suicide. The study will use STARRS-LS data to perform secondary analyses.

An in-depth analysis of the interactions between personality characteristics, reasons for gun ownership, use and storage practices, geographical location, and current firearms laws will identify potential medical, psychosocial, public policy, and command interventions to mitigate the relationship between firearm ownership and suicide. The broader impact of this study will enhance our understanding of the factors that put people at risk or protect them from firearm-related violence. This study will examine factors related to suicide in a controlled setting among a population of men and women in the age range in

which suicide is most prevalent in the general population. This study will provide opportunities for new insights that can assist the military in suicide prevention, and which can carry forward more generally to civilian society.

### **PTSD and Sleep Study**

Sleep disturbances and PTSD are prevalent and often co-occur among Service members with combat experience. Whether sleep disruptions occur singly or with PTSD, they are associated with long-term negative consequences, including depression, hospitalizations, disability, and — as this CSTS research study has demonstrated — increased risk for cardiovascular disease. No treatment for sleep disturbances is universally effective, and co-occurring PTSD further complicates treatment decisions. The Center is leading an effort to identify factors that predict variation in sleep disorder treatment response, thereby helping clinicians select effective treatments for individuals. This effort, in collaboration with Harvard Medical School, utilizes data from the Army STARRS, as well as data from the Sleep Disorders Center at the Walter Reed National Military Medical Center (WRNMMC). This approach circumvents issues that have plagued prior studies by providing a large sample of Service members with sleep disturbances and an abundance of predictors for use in Heterogeneity of Treatment Effects analyses to identify predictors of treatment response. During COVID-19, the study team reordered priorities to focus on aspects of research that could be done remotely. Resumption of research activities at WRNMMC is expected as vaccination rates increase. This research will form the basis for clinical tools to improve treatment selection for individuals with PTSD-related and other sleep disturbances, a goal that is more urgent given evidence that sleep disorders are among the long-term sequelae of COVID-19, and an effect of the social isolation, disruptions in daily routines, and other stressors that have occurred in response to the pandemic.

### **Reserve Components of the U.S. Armed Forces**

The Citizen Soldiers of the Reserve Components (RC) of the U.S. Armed Forces play an im-

portant role in national defense, and a critical role assisting communities nationwide in response to the COVID-19 pandemic. Compared to the Active Component (AC), RC personnel experience unique stressors, both when the nation is at war and when the RC is called upon to activate for emergency service, such as disasters, and situations such as COVID-19, or providing support to civil authorities during times of unrest. CSTS is strongly committed to supporting the RC through the full range of their activities and providing understanding of the unique stressors and how they affect health and performance of the RC. This commitment extends to addressing the needs of not only RC members, but also their families. CSTS fulfills this commitment to the RC through research to better understand their special needs, combined with consultation to RC units and leaders. The Center's goal is to provide information products that will enable RC decision makers to use the best available knowledge in supporting RC members.

### *Reserve Component Longitudinal Studies*

CSTS continued the Mental Health and Service Utilization among Reserve and National Guard Forces study in collaboration with Dr. Sandro Galea at Boston University. Using a representative national cohort of 2,003 National Guard and Reserve Service members, this study specifically addresses the epidemiology and trajectory of mental health problems, deployment stress, health risk behaviors, and healthcare utilization over a four-year period. CSTS is actively analyzing this comprehensive dataset to address the health and resilience factors and experiences of the RC personnel. This past year, the Center examined the relationship of social support trajectories and mental health problems, including PTSD and suicidal ideation. Four distinct social support trajectories (low, medium, high-low, and high-high) were identified and associated with both baseline and follow-up mental health problems. On the one hand, there were significant pairwise differences between any two trajectories on having subsequent PTSD or suicide ideation. On the other hand, having a baseline mental health problem increased the risk of having a low or medium social support trajectory.

In addition, having baseline PTSD was associated with a higher risk of having a high-low social support trajectory. These results highlighted the importance of including social support in prevention and intervention programs to mitigate risks of adverse mental health outcomes in RC personnel.

The Army STARRS project and the follow-on STARRS-LS have provided a wealth of data about RC Soldiers. The team continued to study the long-term health of RC Soldiers, using administrative datasets as well as data collected as part of the STARRS survey research. Recent work used administrative records from 2004-2009 to examine the patterns and predictors of RC suicide attempts during deployment to the wars in Iraq and Afghanistan, and to determine whether they differ from the patterns and predictors of suicide attempts in the Active Component (AC). The suicide attempt rate for RC Soldiers during deployment (81 per 100,000 person-years) was about half that of AC Soldiers (157 per 100,000 person-years). The lower RC rate was present among both men and women and across age groups. RC Soldiers were less likely than AC Soldiers to attempt suicide even after accounting for differences in socio-demographic and Army career characteristics. The lower suicide attempt rate among RC Soldiers persisted over the course of deployment. Importantly, the time course of risk was similar for the RC and AC Soldiers, with risk increasing during the initial months in-theater, peaking around mid-deployment, and then decreasing through the end of deployment. Overall, the results suggest that RC and AC Soldiers have similar patterns and predictors of suicide attempt during deployment, but RC Soldiers have lower risk even after controlling for important risk factors. The team will continue to focus on the RC as a population of special interest, using the ongoing STARRS-LS surveys and more recent administrative data.

### *National Guard COVID-19 Response*

In 2020, the National Guard (NG) deployed in unprecedented numbers across numerous states to support civilian healthcare systems overwhelmed by COVID-19. NG personnel performed a range of operational activities, such as work within hospitals



and neighborhoods, which included exposure to human remains. Due to the unique stressors of this domestic response, the New York NG, in conjunction with the National Guard Bureau, requested support from CSTS to better understand the impact of COVID-19 on the well-being and readiness of Service members.

### *New York National Guard Warfighter Readiness and Resilience Assessment*

The U.S. National Guard is a critical element of the Nation's response to the COVID-19 pandemic. Identifying, monitoring, and understanding the NG's resilience and risk factors related to the COVID-19 pandemic are central to sustaining force readiness. Given the immediate need for information on force health and readiness, CSTS collaborated with the New York National Guard (NYNG) to develop a rapid public health surveillance assessment to identify stressors, resilience factors, and behavioral health outcomes among NG personnel in response to COVID-19. The assessment, conducted from August to November 2020, was successful, with participation from more than 4,000 NYNG personnel. This assessment identified pandemic-related stressors and experiences among Guard members who did and did not activate in response to the pandemic. CSTS will produce a rapid report that provides NYNG leadership with actionable recommendations. This assessment will inform the development of future assessments of the National Guard.

### *National Guard COVID-19 Operations Working with Human Remains*

NG personnel were activated in many U.S. states to assist with COVID-19 support activities, including handling the remains of the dead. They worked closely with hospitals, emergency services, and offices of the Chief Medical Examiner and were frequently tasked with collecting and transporting remains. When activated under Title 32, NG personnel can enter private residences to assist emergency services and medical examiner personnel in collecting remains. Most NG personnel are untrained and inexperienced in operations that involve human remains, and performing these activities is extremely

stressful and increases the risk for adverse reaction during and after operations. In order to address these needs, CSTS produced training guidelines designed to reduce distress and increase resilience in NG personnel and other populations who must work with the dead without specialized training. The content of the training materials was divided into three operation phases: prior to, during, and after mortuary affairs operations, and was designed to be understandable to those without specialized training in working with remains. CSTS provided actionable recommendations and training guidelines to the National Guard Directors of Psychological Health, National Guard Bureau for immediate use.

## **RESEARCH IN THE CHILD AND FAMILY PROGRAM**

The Child and Family Program (CFP) conducts research to better understand the needs of all children and families affected by traumatic events, with special emphasis on the needs of U.S. military families. Military children and families possess unique strengths, but can also be affected by combat-related illness and injury, bereavement, child maltreatment and family violence that result in vulnerabilities. CFP maintains collaborative relationships with faculty and students within other departments at USU (e.g.,





doctoral dissertation graduate students, Department of Pediatrics researchers, Capstone program participants), other academic institutions, and community organizations. The products of CFP's research program inform scientists, clinicians, and the general public about the impact of stress and trauma on children and families through scientific publications, national and international presentations, and hardcopy/web-based resources. CFP's pioneering research is also translated into actionable and educational materials for military and government stakeholders, clinicians, and community leaders. In addition, CFP consults with military and government leadership, informs national media outlets, and conducts projects that promote a deeper understanding of children in the U.S. and throughout the world.

## Bereavement

### *The National Military Family Bereavement Study (NMFBS)*

The NMFBS was the first large, systematic study to examine the impact of U.S. military Service member death on surviving family members. The goal of the study was to build upon existing bereavement research by determining how psychological, physical, and behavioral outcomes of grief are influenced by the experiences of military family members. The study included archival data analyses, a longitudinal survey study, biosample (saliva) collections, and focus group qualitative data. The longitudinal study included approximately 850 adults and 120 children, and 981 participants provided saliva samples for analysis of biomarkers associated with bereavement. Findings have informed development of diagnostic criteria for a condition of impairing grief. As part of this groundbreaking work, CSTS partnered with colleagues at Columbia University, New York University, University of Pittsburgh, and the University of California, San Diego to develop a proposal for clinically-relevant criteria of a persistent grief disorder to be included in future editions of the Diagnostic and Statistical Manual of Mental Disorders (DSM), and discussed in a publication in *Psychological Medicine* in 2020. CSTS Scientists found a higher prevalence

of depression, PTSD, and adjustment disorder post-death, and an increase in mental healthcare utilization in military widows. Another publication highlighted the independent contributions of complicated grief, depression, and anxiety to cognitive failures in bereaved individuals, and a third publication described a codebook developed to analyze qualitative focus group data from family member survivors of military-related deaths. The NMFBS has identified the need of military family survivors to access healthcare services that can treat loss-related conditions.

### *Stepping Forward in Grief (SFG) Study*

A virtual app that addresses grief adaptation may be a helpful resource for bereaved military family members. CFP formed a partnership with the Center for Complicated Grief at Columbia University to adapt principles from Complicated Grief Therapy (CGT), found to be helpful in civilian populations, for a digital intervention aimed to assist with grief integration and decrease risk for long-term problems. The goal of SFG, a randomized controlled trial, was to compare the effectiveness of two digital programs (GriefSteps and WellnessSteps) in helping those bereaved by military service-related death. More than 550 participants were randomized to one of the two conditions and completed baseline, three-month, and six-month follow-up assessments about their current mental health and experience with the program. CSTS Scientists are currently conducting analyses to determine the impact of GriefSteps and WellnessSteps on grief adaptation.

### *Study of Long-Term Outcomes of Terrorism-Related Grief*

CFP partnered with Voices of September 11 (VOICES), a nonprofit organization that aids 9/11-affected families, and the Canadian Resource Centre for Victims of Crime (CRC), an organization supporting family members who were bereaved by the Air India Flight 182 bombing, to investigate long-term bereavement outcomes in family members (e.g., grief, traumatic symptoms, resilience, and posttraumatic



growth) following a terrorism-related death. More than 400 bereaved family members completed online questionnaires about their experiences. Two manuscripts were published; the first identified three groups of bereaved family members who were differentiated according to patterns of depression, anxiety, and grief. The second manuscript examined the effect of receiving multiple notifications about the identification of fragmented remains of a family member. Results indicated that multiple notifications were differentially associated with posttraumatic stress, but not grief severity. Results from this publication were also described on the *International Society for Traumatic Stress Studies' (ISTSS) Trauma Blog* and were used to develop an interactive fact sheet for healthcare providers about death notification within healthcare facilities.

### *Bereavement Coping Study*

The goal of this study was to determine whether military family survivors of suicide, accident, and combat deaths use similar or different coping strategies following bereavement and to examine associations between risk factors (hopelessness and reasons for living), specific coping strategies, and outcomes (grief, depression). Approximately 230 individuals participated. Analyses will identify 1) associations between different coping strategies and grief, depression, and posttraumatic growth and 2) changes between previously collected baseline and current coping data. This information will identify actionable targets for intervention programs. A publication from this study used data from NMFBS to examine differential contributions of specific coping strategies and their relationships with cause of death in contributing to grief severity, depression, and posttraumatic growth.

### *Disenfranchised Grief*

Through its collaborations with Sons and Daughters in Touch (SDIT), an organization composed of children whose fathers died or were missing in action (MIA) in the Vietnam War, CFP noted the consistency with which this population felt their loss was not acknowledged or rejected. This phenomenon was consistent with the concept of disenfran-

chised grief (DG), which describes the experiences of bereaved persons whose grief was not or could not be openly acknowledged, publicly mourned, or socially supported by others. In response and recognition of the importance of DG, particularly in light of the COVID-19 pandemic, CFP is currently developing research on DG to include developing a measure of DG. CFP is refining and testing this instrument in the SDIT population, as well as among individuals who suffered losses due to perinatal death, suicide, substance abuse, criminal activity, and HIV.

### **Child Maltreatment in U.S. Military Communities and Families**

Another focus of the CFP is the identification of risk factors for child maltreatment in military families in order to inform prevention and intervention strategies that strengthen military family health, well-being, and resilience. CFP's initial work focused on child neglect, the child maltreatment type most commonly reported in the U.S. and most frequently associated with child fatality. The aim was to identify factors that increase risk of child neglect by examining characteristics of substantiated child neglect cases in U.S. Army families. Data were collected from records of 400 cases from four high operational tempo Army installations in the continental U.S. Multiple manuscripts describing findings from this project have been published in *Military Medicine* and *Child Maltreatment*.

CFP Scientists are currently participating in a Congressionally mandated study designed to advance understanding of risk and protective factors for all



types of child maltreatment (i.e., neglect, physical abuse, sexual abuse, and emotional abuse) in military families from all service branches. Phase I of the project involved a case-control study of military families with dependent children to identify the family, service member, and military characteristics associated with heightened and diminished risk of substantiated child maltreatment incidents. In Phase II, survival analyses will be conducted to investigate the contribution of family demographic characteristics, family events, military events, and family health events to the timing of the first incident of substantiated child maltreatment. Results will identify characteristics of the military family life course associated with child maltreatment in order to inform DoD's child maltreatment prevention efforts.

### Combat Injured Families

CFP Scientists conducted three studies to examine the impact of combat injury on military families. These studies included families participating in Operation Purple Healing Adventures (OPHA), an annual summer camp program for combat-injured Service members and their families sponsored by the National Military Family Association (NMFA), families of patients at WRNMMC and San Antonio Military Medical Center affected by combat injury, and families participating in Families OverComing Under Stress-Combat Injury (FOCUS-CI), a family-centered, strength-based, and evidence-informed preventive intervention. Ongoing data analyses will help to better understand combat injury's impact on Service members and their families and inform interventions that more effectively address their needs.

### Family Violence

The COVID-19 pandemic and associated stay-at-home orders raised concerns among Army Family Advocacy Program (FAP) leaders that family violence may increase during this period. School closures, limited medical services (e.g., routine care like well-baby checks), and service delivery changes (e.g., increased reliance on telehealth platforms) would all potentially reduce visibility of child maltreatment and spouse abuse. As a result, Army FAP leadership

requested increased (quarterly) monitoring of installation-level FAP report changes throughout 2020. The CSTS Family Violence and Trauma Project (FVTP) helped meet Army FAP needs by assessing Army-wide and installation-level FAP reporting changes throughout the year. Also new in 2020, Army FAP requested assistance with monthly analysis of data related to problematic sexual behavior incidents among children and youth. Collectively, these analytical findings helped inform family violence prevention efforts across Army FAP.

Highlights of CSTS knowledge products in 2020 included the publication of two newsletters on family violence: *Joining Forces Joining Families (JFJF)* and *Research Review (RR)*.

- JFJF presents an interview with a subject matter expert on topics of interest to the Army family violence community. In 2020, two newsletters were produced that featured (1) in-depth coverage of DoD's child abuse pediatrics capabilities; and (2) traumatic brain injury among survivors of intimate partner violence (IPV).
- RR consists of summaries of research on IPV and child maltreatment. Summaries of IPV-related topics included the association of coercive control with women's experience of violence, the health risks of strangulation, how the lack of adequate food in a household can be associated with IPV, and residential mobility and how it can increase or decrease the risk of child maltreatment. Child maltreatment-related summaries included child shame from physical and sexual abuse, the possible relationship between suicidal feelings and social connections, the importance of parental supervision to prevent child neglect, and the association between children's report card release date and corporal punishment.
- Army family violence fatality review board report that summarized the demographics of victims of family violence-related fatality victims and perpetrators, risk factors for fatal events, and case characteristics of Army fatalities compared to reports from international literature on fatalities.
- Military Health System Research Symposium poster presentation (virtual) on same-day domestic violence and child maltreatment allegations.



## RESEARCH IN NEUROSCIENCE AND NEUROBIOLOGY

### Laboratory Research in Neuroscience and Neurobiology

#### *Genetics and Biomarkers*

In early 2020, with shutdowns due to the COVID-19 pandemic, the Center's biomarker research encountered significant challenges to conducting in-person lab research. Despite these obstacles, the team has been able to adapt and overcome these challenges to further its research goals. CSTS Scientists examined a hypothesis that a sex-related difference of mitochondrial DNA copy number (mtDNAcn) may potentially be a biomarker for PTSD. CSTS laboratory personnel used the TaqMan assay as well as blood samples and scores on the PTSD Checklist (PCL) from male and female Service members to identify the potential biomarkers. This study demonstrated that female subjects with PTSD showed significantly higher mtDNAcn compared with either male/female non-PTSD control subjects or male subjects with PTSD. However, there was no significant difference of mtDNAcn between males with PTSD and male/female non-PTSD controls. The findings suggested that mtDNAcn may be gender dependent in PTSD, at least among Service members, and sex-related impairment of the mitochondria may play a role in PTSD pathophysiology and serve as a biomarker for PTSD in female Service members.

#### *Drug Development for the Treatment of PTSD*

The Center, in collaboration with the University of California, Irvine (UCI), established a multi-species methodology for evaluating potential new compounds to treat PTSD. This effort uses a non-mammalian model (zebrafish) for high-throughput screening in conjunction with a long-established rodent model. The zebrafish colony provides an abundance of potential research opportunities in drug development and beyond. The zebrafish lab continues testing large chemical libraries to both create standard drug profiles within the zebrafish system, and to find promising candidates for drug



*CSTS staff conducting zebrafish testing and care.*

repurposing. Experimental progress was slowed in 2020 due to COVID-19, but high-throughput testing is expected to resume, and chemical libraries with drug candidates potentially targeting a wide range of biological processes will be tested for neuroactivity.

#### *Chronobiology, Light, and Sleep Research*

The overarching goal of the Chronobiology, Light, and Sleep (CLAS) lab research program is to further understand sleep, circadian rhythms, and light in order to maximize human health and well-being. To that end, the program takes two major research approaches. From a basic science perspective, we focus on the neural mechanisms underlying the modulation of photic sensitivity for the biological effects of light. From a translational perspective, the program examines how the basic science of this primitive sensory system can guide the rational development of clinical therapies and architectural lighting strategies. One key aspect of a successful transition to application includes a carefully developed, tailored, and tested educational component, which has become an emerging priority for the CLAS lab. Since methods for examining circadian rhythms in humans under more naturalistic conditions are quite limited and controlled laboratory studies are impractical for many populations of interest, parallel work includes the validation of novel strategies for assessing sleep and circadian health in the home environment.

Early in 2020, the CLAS lab made a strategic



pivot from examining hospital shiftworkers over to shiftworkers in other operational settings that have not been impacted by COVID-19 in the same way. This move required a no-cost extension, Institutional Review Board (IRB) modifications, and establishment of new study site partners. In addition, the lab developed several health tip sheets that describe how to optimize sleep in order to boost the immune system and maximize vaccination efficacy; these were provided to local area hospitals in an effort to help during the pandemic. In collaboration with an immunologist, a commentary was written and submitted for publication on the same topic. Due to COVID-19 restrictions, the CLAS lab's in-person, expert-led sleep education program was adapted for a virtual format and IRB approval was obtained so that pilot data could be collected, which confirmed both feasibility and efficacy of the new remote administration. A grant was awarded to the CLAS lab for a study of the temporal dynamics of the acute alerting properties of light. This research will take place in the newly renovated laboratory that can now support the work. Two grant proposals were submitted, and seven peer review publications have come out, including original research articles on studies of shiftworkers and review articles on the physiological effects of light.

## Clinical Research in Neuroscience and Neurobiology

### *Riluzole Augmentation Treatment for Complicated Combat-Related PTSD*

The Center recently published promising results from a multi-site clinical trial testing the efficacy of riluzole for treatment of combat-related PTSD. The study demonstrated that veterans who experienced continued PTSD symptoms despite treatment with evidence-based medications for PTSD, showed greater improvement in hyperarousal symptoms, such as exaggerated startle responses and hypervigilance, when treated with riluzole when compared to placebo. Riluzole did not demonstrate significant adverse effects. This study was funded by the U.S. Army Military and Operational Medical Readiness Program and enrolled participants at WRNMMC

and the Syracuse Veterans Affairs Medical Center from 2014 to 2017. Riluzole alters activity of glutamate, the primary excitatory neurotransmitter in the brain and is currently FDA-approved for treatment of amyotrophic lateral sclerosis. In addition to data on PTSD and other psychiatric symptoms, the study collected magnetic resonance spectroscopy in the amygdala and anterior cingulate cortex before and after treatment as a potential biomarker of illness and treatment response. CSTS Scientists have collaborated with researchers at Brigham and Women's Hospital and Draper Laboratory to identify brain metabolites in the areas of interest and their association with improvement in PTSD symptoms.

### *Enhancing Fear Extinction via Angiotensin Type 1 Receptor Inhibition: A Randomized Controlled Trial in PTSD*

CSTS completed its collaboration with UCSD as part of a multi-site clinical trial testing the efficacy of the blood pressure medication losartan for treatment of PTSD. Losartan is an angiotensin receptor blocker, currently FDA-approved for treatment of high blood pressure. This trial compared treatment with losartan to placebo as mono-therapy for over 10 weeks of PTSD treatment. The primary outcome of this study was improvement in PTSD symptoms as measured by the Clinician Administered PTSD Scale (CAPS) at the beginning and end of treatment. This study also examined the influence of a specific angiotensin converting enzyme (ACE) gene as a potential biomarker of treatment response. Data from this study are in preparation for publication.



## *Nightmare Deconstruction and Reprocessing for Treatment of PTSD-related Nightmares*

Nightmares and insomnia are among the most common and debilitating re-experiencing symptoms of PTSD, and for many patients they are the most resistant to evidence-based treatment. CSTS is continuing a clinical pilot trial of Nightmare Deconstruction and Reprocessing (NDR), an exposure-based psychotherapy for PTSD-related nightmares and insomnia. NDR is an adaptation of the Hill cognitive-experiential model for working with dreams in psychotherapy. Participants work with therapists to recall their most distressing nightmare images and their associated distressing thoughts and feelings in order to facilitate reconsolidation of trauma-related memories. CSTS partnered with WRNMMC, Naval Medical Center San Diego, and the National Institutes of Health to test a range of potential psychometric, physiologic, and biochemical markers of NDR's tolerability and feasibility as a treatment for military Service members and veterans. In addition to assessing nightmare and insomnia severity, suicidality, and PTSD symptoms, the study is testing several potential biomarkers of treatment response. The study team is analyzing genetic and inflammatory biomarkers at various points in treatment as potential indicators of treatment response, and also collecting continuous physiologic indicators of stress, such as heart rate variability and skin conductance using wearable technology. The study has been enrolling participants since 2019, with expected continued enrollment through 2021. As a result of precautions required by the COVID-19 pandemic, this study transitioned to virtual encounters for most study visits and continues to enroll participants.

## *The Veterans Affairs (VA) National PTSD Brain Bank*

The VA National PTSD Brain Bank is the first human tissue biorepository dedicated to supporting neurophysiological research on the causes, progression, and treatment of traumatic stress. The VA's National Center for PTSD leads this consor-



tium with participating VA medical centers and other institutions, including CSTS. Since its establishment in 2014, the Brain Bank has obtained 281 tissue donations, with an additional 163 living persons presently enrolled to serve as future donors. Donors receive comprehensive longitudinal assessment via clinical interview from the time of enrollment until the time of their death, when their brain tissue is donated to the Brain Bank.

The Brain Bank collects, processes, and stores the clinical and biological information which can then be distributed to investigators nationwide and afford researchers the opportunity to examine the molecular, morphological, and biochemical effects of traumatic stress on the brain and generate proposed mechanisms of PTSD, develop pharmacological interventions, and study for biomarkers and endophenotypes.

CSTS Scientists serve on the Brain Bank's Scientific Advisory Board and direct the Brain Bank's Assessment Core. The Assessment Core developed a postmortem diagnostic assessment protocol which delineates a standardized process to conduct comprehensive psychiatric and medical record reviews and corroboration of medical record information via interviews with next of kin and/or others familiar with a donor's life history. Through CSTS, the Brain Bank also collaborated with the Lieber Institute for Brain Development, the USU Collaborative Health Initiative Research Program (CHIRP), and Yale University to perform whole genome sequencing and methylation studies.

In 2020, CSTS was preparing to begin recruitment for the Brain Bank at the Armed Forces Retirement Home in Washington, DC; however, recruitment was postponed due to the COVID-19 pandemic. Despite COVID-19 restrictions, the Brain Bank was able to enroll 54 potential donors and received 15 tissue donations from other participating sites. CSTS also began working with Duke University to help conduct third-party interviews for their post-mortem diagnostic assessment of tissue donors. Brain Bank investigators at CSTS also collaborated on numerous scientific articles published in 2020, including the first complete transcriptomic analysis of human brain prefrontal cortex in PTSD.

## RESEARCH ON DISASTERS AND TERRORISM

### Florida Department of Health Response to Multiple Hurricanes

CSTS Scientists continued to examine psychological and behavioral responses following natural disasters, including posttraumatic disorders, psychological distress, and health risk behaviors. Further, during the past year, the Center specifically examined protective factors that promote recovery and resilience following disaster exposure, including collective efficacy, social support, and hurricane preparedness. This work is particularly important as the world has experienced multiple disasters during 2020, including the COVID-19 pandemic, the devastation and destruction caused by the wildfires in the western United States, bushfires in Australia, and a record number of hurricanes globally.

During 2020, Center Scientists identified factors that play a role in recovery from multiple hurricane exposure by examining the behavioral responses and time to recovery in Florida Department of Health workers who were both first responders to, and personally affected by, an unprecedented series of hurricanes that occurred in 2004 and 2005. In two studies, CSTS: 1) examined the influence of individual perceived collective efficacy prior to the 2005 hurricanes on community residents' self-reports of hurricane preparedness; and 2) examined pre-hurricane individual and interpersonal factors that influence time to recovery following the 2005 hurricanes. Notably, higher perceived collective efficacy was associated with greater hurricane preparedness nine months after the hurricanes, even after adjusting for individual and community socio-demographic characteristics, personal injury/damage, community storm damage, and hurricane preparedness prior to the hurricanes. Importantly, less social support from respondents' spouse, friends, and family, more work presenteeism (e.g., lack of concentration or productivity at work), higher levels of personal injury/damage as a result of the hurricanes, and higher emotional response during the hurricanes were associated with a longer time to recovery following the hurricanes. This research suggests the importance of neighborhood cohesion, so-

cial support, work performance, and peritraumatic factors such as emotional response and extent of hurricane injury/damage in promoting resilience. Action-oriented strategies include community-level interventions and programs focused on enhancing social and workplace support, and attention to peritraumatic responses.

### Washington Navy Yard Shooting Study

The Center completed data collection at the Washington Navy Yard in Washington, DC, as part of a multi-site study in collaboration with the University of California, Los Angeles (UCLA) and funded by the National Institute of Justice. This study was designed to better understand risk and protective factors associated with response efforts following community mass violence. The first phase of the study involved performing assessments at the sites of five school mass shootings. The second phase focused on six community violence events, including the Washington Navy Yard workplace mass shooting in 2013, to examine the impact of this incident. This collaboration leveraged a long-standing relationship with Naval Sea Systems Command (NAVSEA) to provide a better understanding of the social and occupational difficulties still impacting personnel following the event. The Center and UCLA will conduct analyses of this qualitative data to develop a report that will inform public policy on future interventions following mass violence events. CSTS has submitted a manuscript which describes methodology with disaster survivors — both military and civilian — and captures critical lessons learned in conducting research on behavioral health impacts of mass violence in military communities that will serve as a seminal publication to better inform the field in support of future efforts.



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# Education and Training

An essential element of the Center's work is training and education. Center Scientists provide education and training to USU medical students committed to service in the nation's Air Force, Navy, Army, and Public Health Service. CSTS educates healthcare personnel and community leaders at the local, state, and federal levels, as well as national, global, and private sector settings. CSTS also sponsors conferences, symposia, seminars, and forums on numerous areas including disasters, terrorism, war, and other aspects of trauma. CSTS advances military and disaster psychiatry through presentations, training, outreach, and participation in conferences, collaborations, and workshops throughout the U.S. and global community. CSTS also expands knowledge and provides education through public health efforts and interventions before, during, and after a broad range of disaster events.

One of the Center's instrumental public health education tools is development and dissemination of educational materials to inform stakeholders, including: healthcare personnel, families, community



*CSTS Scientist, Dr. Hamaoka speaking at a conference.*

and organizational leaders, first responders, public health emergency workers, teaching professionals, and policy makers. For more than two decades, CSTS created and disseminated just-in-time, customized, highly actionable, easy-to-read educational fact sheets in order to aid national and global stakeholders in mitigating adverse effects of disasters through optimized preparedness, response, and recovery efforts.

In 2020, the Center's primary focus was on the COVID-19 pandemic. This included providing COVID-19 educational resources to partners throughout the DoD, other federal agencies, state and local agencies, professional associations, and international partners. CSTS also responded to other disaster events, including ongoing wildfires in California and Hurricane Laura, which impacted the southeastern United States.

## **DISASTER RESPONSE AND PUBLIC EDUCATION**

Since its inception in 1987, the Center has been providing disaster preparedness and response education and consultation in a variety of forms and in many situations. CSTS personnel have provided on-the-ground education and consultation in response to extreme national and global disasters, as well as immediate and long-term online, video, and telephonic support to assist response and recovery efforts following a wide range of disaster events, which have impacted various organizations and communities.

The Center's Assistant Director serves as Chair of the Disaster Committee for the American Psychiatric Association, the world's largest professional organizing body of psychiatrists. Current and former CSTS personnel have been sought out to provide guidance on disaster preparedness, response, and recovery efforts as a result of the experience and subject-matter expertise obtained while working at the Center.



In early 2020, the Center provided ongoing consultation and remote training for medical personnel in the Puerto Rico Veterans Administration health-care system to address the stress and trauma of exposure to recurrent earthquakes, which took place while the island was still rebuilding following the 2017 devastation caused by Hurricane Maria. CSTS also provided global disaster mental health support to colleagues in Australia with educational materials and consultative efforts in response to massive wildfires. Following the deadly mass shootings in Nova Scotia, Center Scientists provided ongoing consultation and resources to support local response efforts in this more remote and rural region of Canada. Within the United States, CSTS also provided educational resources and support to the State Mental Health Directors, state-level District Branches of the American Psychiatric Association, and the Office of the Assistant Secretary for Preparedness and Response in support of the devastating wildfires that ravaged the West Coast of the United States, as well as Hurricane Laura, which resulted in widespread damage and the dislocation of tens of thousands of citizens from the Gulf Coast region.

In mid-March of 2020, the Center took a leadership role in global disaster mental health response to COVID-19 in support of numerous stakeholders at the local, state, federal, national, and international levels. CSTS rapidly developed and distributed numerous easy-to-read, actionable fact sheets that were widely disseminated to critical partners in need of resources early in the pandemic. CSTS members provided education and training to numerous healthcare organizations and federal interagency partners on the unique mental health effects of pandemics on individuals and communities. Center Scientists delivered nearly 50 presentations in support of a broad range of stakeholders that were involved in pandemic response and published more than a dozen manuscripts to better inform the field on addressing mental health challenges and enhancing resilience for Service members, healthcare workers, families, patients, and community leaders.

The following are additional examples of Center disaster response and education activities in 2020:

- Center Scientists provided educational support

to the USU Master of Public Health Program by delivering educational seminars on domestic and international disaster behavioral health.

- A CSTS Associate Director conducted a class titled, “Behavioral Health and Leadership” at George Washington University (GWU). It was part of a course in Leadership in Crisis & Catastrophe in GWU’s Crisis, Emergency & Risk Management Program.
- For the fifth consecutive year, a Center Scientist was invited to provide disaster psychiatry training for the fourth-year psychiatry residents at the University of Maryland/Sheppard Pratt Psychiatry Residency Program.



## NEUROSCIENCE AND BEHAVIOR MODULE FOR PRE-CLERKSHIP USU MEDICAL STUDENTS

The eight-week Neuroscience & Behavior Module is an annual, required multidisciplinary course for 180 first year USU School of Medicine (SoM) students. The module teaches medical students the principles of neuroscience through integrated content across a range of disciplines. From this foundation, students learn to recognize, describe, and diagnose common neuroscience-related medical conditions with a focus on effective management of a wide variety of neurologic and psychiatric conditions. Effective, safe, and patient-centered clinical skills, including the performance of neurologic and mental status examinations, were developed through simulated patient experiences. Topics related to military medicine, medical history, and health systems

science are integrated throughout the module with the goal of fostering a robust and well-rounded education for future military medical officers.

The module has 177 contact hours and involves more than 100 faculty from every department in the SoM. Only 48% of contact hours in the module are lecture-based; the remaining contact hours are filled with small groups, dissections, labs, simulated patient events, reviews, and of course — examinations. The module is highly regarded by students and faculty alike as one of the best modules in the pre-clerkship curriculum. In 2019, the module was recognized for pre-recording all lectures into a higher-quality format that was more accessible to students than recording live lectures. In preparation for 2020, the module continued to enhance online lecture delivery by improving and re-recording 52/137 (37%) video lectures. In collaboration with the Dean's Office, the module also embedded questions (checks for understanding) into 85/137 (62%) of video content using Panopto's built-in quiz feature. Module instructors expanded the flipped classroom approach from five to six weekly sessions. These flipped classrooms required students to attend a live session to answer questions based on clinical cases that wove together the lecture content they independently watched from that week. A weekly series of operational vignettes was also incorporated. These vignettes, collected from USU graduates and faculty, were intended to demonstrate the operational importance of the material the students were learning each week. Lastly, based on consultation with the Assessment Sub-Committee and the Associate Dean for Assessment, every module exam question was carefully blueprinted, down to the objective.

Then, during the first week of the module, COVID-19 infections in the U.S. reached a point that required the University to transition to 100% distance learning. Due to this transition, module instructors needed to convert all of the other content online, which included the following: Pharmacology Case-Based Learning, Pathology Small Groups/Labs, Anatomy Dissections, Clinical Reasoning Small Groups, Mental Status Examination Small Groups, Neurology Examination Small Groups, Biostatistics

Journal Club, Reflective Practice, Communication Workshop, Interactive Reviews, and Summative Quizzes and Exams.

In response to these efforts in transitioning all program elements to distance learning, the Neuroscience Module was awarded the Teaching with Technology Award.



*CSTS staff conducting online assessment training.*

## **CSTS INTERNATIONAL FELLOWSHIP**

The Center welcomed LTC (Dr.) Teck Hwee Soh, who is a psychiatrist and medical director within the Singapore Armed Forces. Dr. Soh joined CSTS in February 2020 to start a nine month CSTS fellowship. This fellowship was created with the goal of promoting high-level cross collaboration and learning between different international partners and CSTS. Dr. Soh's predecessor, Dr. John Wong (former Surgeon General of Singapore) was the first recipient of this international fellowship. Due to the COVID-19 pandemic, Dr. Soh was recalled back to Singapore in early 2020 to support his country's response efforts.

## **EDUCATION AND TRAINING IN COMBAT AND OPERATIONAL STRESS CONTROL: OPERATION BUSHMASTER**

CSTS Scientists offer training in Combat and Operational Stress Control (COSC) as a core component in military medical education. In line

with USU's mission to prepare uniformed health professionals to support the readiness of the U.S. Armed Forces, CSTS Scientists engaged in curriculum preparation, faculty development, and direct teaching as part of the annual medical field training exercise, OPERATION BUSHMASTER. This training exercise challenged senior medical and graduate nursing students to operate in forward medical units in a complex battlefield simulation over four days. Students evaluated and treated a continuous stream of battlefield casualties and non-battle injuries, and conducted public health and health outreach activities while on a simulated combat deployment. Evaluation and treatment of combat and operational stress reactions were core skills taught and evaluated as part of the exercise. CSTS faculty collaborated with the psychiatry residency programs of the National Capital Consortium and the San Antonio Uniformed Services Health Education Consortium to provide an opportunity for resident physicians to develop their teaching skills and understanding of COSC as part of their core military-unique curriculum. This exercise was canceled in 2020 due to COVID-19. However, it will resume in 2021.

## EDUCATIONAL CONFERENCES

### Amygdala, Stress, and PTSD Conference

In 2020, the 15th Annual Amygdala Conference, sponsored by CSTS in collaboration with the USU Department of Psychiatry, USU Neuroscience Program, USU Department of Family Medicine, and the WRNMMC Department of Psychiatry, was postponed due to COVID-19 restrictions. For 2021, the planning committee has been fortunate to secure the same speakers from the Salk Institute, WRNMMC, Phoenix Australia Centre for Posttraumatic Mental Health, Icahn School of Medicine at Mount Sinai, and the Uniformed Services University for 2021's virtual conference. The speakers plan on presenting and discussing such topics as fMRI-guided transcranial magnetic stimulation treatment for depressive symptoms, COVID-19 behavioral health assessment teams, evidence-based treatments for PTSD, the transcriptional and epigenetic basis of stress effects

on the brain, and neural circuit mechanisms of emotional and social processing.

## TRAINING TO SUPPORT RESEARCH

The Center trains and educates its own staff, including research support staff such as Research Assistants (RAs). RAs play an important role in supporting research at CSTS, and are provided with opportunities to learn by working closely with CSTS Scientists and staff. The RAs contribute to Center research in many ways, including conducting literature searches, data collection, data entry and quality control, producing tables and graphic representations of study findings, and writing summary reports of meetings. RAs acquire valuable research skills at CSTS, including developing slides and posters for research presentations, and presenting research findings to professionals as well as the general public. In addition, RAs are offered professional development opportunities, including attending, presenting posters, and representing CSTS at professional conferences, and assisting with manuscript preparation for publication in peer-reviewed scientific journals. Many RAs move on to further their education by pursuing advanced degrees. Others advance to careers in research and other related fields. CSTS RAs have furthered their education at institutions including Yale, Notre Dame, Johns Hopkins, Duke, Columbia, Georgetown, London School of Hygiene and Tropical Medicine, University of Maryland, George Washington University, Catholic University, and USU. Opportunities that RAs have pursued following their experience at CSTS have included:

- Ph.D. programs in psychology and related fields
- Medical school
- Law school
- Master's degree programs in psychology, counseling, public health, and social work
- Training positions at the NIMH and other institutes at the NIH
- Careers with the FBI



## DISSEMINATION AND IMPLEMENTATION OF HEALTH AND RESEARCH KNOWLEDGE

### Fact Sheets and Infographics

Fact sheets are a highly regarded and long-standing communication tool of CSTS. They are easy to understand, topic-focused, and actionable education resources developed using expert knowledge to communicate essential behavioral health content on difficult and/or crisis-related issues. Fact sheets and infographics address the needs of a broad range of partners and stakeholders, including healthcare providers, first responders and emergency workers, family members, community leaders, and policy makers. CSTS fact sheets, which are developed, updated, disseminated, and maintained in an online repository, address a wide range of issues pertaining to preparedness and response for disasters, such as mass violence, natural disasters, and pandemics; risk and crisis communication; elements of crisis leadership; family health behaviors; and health risk education. CSTS fact sheets and infographics provide readers with resources tailored to the unique aspects of disaster events and the disaster community. The Center develops and rapidly disseminates fact sheets in real time, following major disasters and traumatic

events such as community violence, terrorism and bioterrorism, and public health threats.

In 2020, in response to COVID-19, the Center developed and disseminated 32 unique fact sheets and infographics addressing mental health aspects of the pandemic and its impact on families and patients, healthcare workers, and community and military leaders. Content addressed unique issues including finding the right words to talk with children, supporting family members during quarantine, optimizing sleep for healthcare workers, aiding healthcare personnel in making death notifications, assisting personnel and leaders in addressing challenges of exposure to human remains, and how leaders can address community and organizational grief during the pandemic. The fact sheets were distributed around the world and became essential education resources in the COVID-19 behavioral health response for the United Nations, NATO ally nations, National Academies of Sciences, Engineering, and Medicine, American Medical Association, National Association of State Mental Health Program Directors, Assistant Secretary for Preparedness and Response, Centers for Disease Control and Prevention, American Psychiatric Association, and numerous others.

### Website

The CSTS website ([www.CSTSonline.org](http://www.CSTSonline.org)) is a primary tool that is used to further the goal of disseminating relevant and timely information to a wide range of stakeholders. Throughout the year, CSTS personnel continually added content and made content more accessible. Material available on the website includes summaries of current research activities, publication citations, newsletters, conference reports, and a searchable repository of CSTS disaster mental health education fact sheets. The website includes a “What’s New” section to highlight recent disaster education materials, research initiatives, publications, conference summaries, and announcements of upcoming events.

In 2020, the CSTS website saw 106,317 users from 192 countries around the world. On average, 8,860 users visited the site daily throughout the calendar year. Most website visitors were from the U.S. at 78,660 (74.0%). The top 10 countries with the highest number







of visitors included more than 800 users per country. The top five countries with the highest number of visitors had more than 1,500 users. Japan had 8,199 users (7.7%), Mexico had 2,229 (2.1%), Canada had 2,057 (1.9%), and China had 1,851 (1.7%). Desktop utilization remained the most used viewing style on the website at 77,294 (73.3%) users. Mobile access had 26,091 (24.5%) users, up from 22.0% in 2019.

The most viewed section in 2020 was the COVID-19 Pandemic Response Resources webpage (<https://bit.ly/32BXp61>) that was created in February 2020. This page had a total of 61,578 users through the year, with an average length of time on the page of 3 minutes 49 seconds. The most views in a month and on a single day were both in March 2020, which had 2,382 users visit the page in a single day, and had 25,693 total monthly users. The Spanish language version of the page was the fourth most visited page on the CSTS site and had 3,450 users. The Japanese language version of the site was the fifth most viewed, with 3,221 users.



## Social Media

In 2020, the Center continued to grow its online presence through the use of social media. These social media resources allowed for the timely dissemination of relevant content to our partners and the public. New in 2020 was the addition of COVID-19 infographics. CSTS Twitter followers increased by 34% and CSTS Facebook followers increased by 34% in the past year. The Center encourages people to visit and follow CSTS postings via Twitter and Facebook to stay up-to-date on new CSTS activities and publications. “Like” CSTS on Facebook at Center for the Study of Traumatic Stress and follow CSTS on Twitter @CSTS\_USU.

*In response to the COVID-19 crisis, CSTS produced dozens of knowledge products for medical professionals, mental health workers, DoD, USU, researchers, government officials, citizens, and first responders. (<https://bit.ly/32BXp61>)*

# Consultation

Consultation has always been and remains a core function of the Center. It is a primary mechanism through which CSTS staff share research findings and apply the deep and broad experience of CSTS staff and leadership. The fact that consultations are sought from CSTS, rather than sought by CSTS, is a testament to the respect that the Center receives from around the world. In addition, consultation is a valuable mechanism to assure that CSTS staff are aware of, and responsive to, those who face challenges and opportunities related to trauma of many types. The Center has developed relationships with, and provides consultation to, many agencies and organizations throughout the DoD and other federal agencies, as well as with state, local, and national agencies, professional associations, and international organizations. The Center has established many long-standing organizational relationships and is continuously increasing its consultative activities with new organizations. 2020 was no exception. New consultative relationships were established and existing relationships continued to strengthen. The following are examples and updates of some long-standing CSTS consultations as well as some new activities.

The long-standing relationships CSTS enjoys both inside the U.S. and beyond helped facilitate rapid, high quality, and creative contributions in the wake of the COVID-19 pandemic. These activities spanned information, education, and consultative efforts. CSTS developed a resource website with customized, just-in-time, public mental health education fact sheets to help families, healthcare personnel, military and community leaders, and businesses plan for, and respond to, the COVID-19 global outbreak. These resources were shared with national, federal, and international organizations, including those listed in the following pages, and were widely disseminated by them throughout their networks. In addition to the international organizations described below, global entities utilizing the resources included the Ministries of Defense (Canada, the Netherlands,

Australia, the United Kingdom, and New Zealand), the Japan Self Defense Force, and the Pacific Rim College of Psychiatrists. The resources were included in EvidenceAid, an international organization that collects and disseminates evidence-based best practices in response to humanitarian crises and disaster events.

## DEPARTMENT OF DEFENSE

CSTS was sought out by Directors of Psychological Health at the Defense Health Agency (DHA) to provide guidance and resources on mitigating risks and promoting resilience for Service members deployed in support of civilian COVID-19 operations. Critical information was provided to help better prepare Service members for these activities, which had features of humanitarian and other civilian disasters, as well as to guide recovery efforts.

Scientists at CSTS also supported DHA leadership in a collaboration among the White House, HHS Innovations, and the National Association of Broadcasters to develop public health messages for a variety of target audiences intended to assist with overcoming barriers and facilitating health behaviors to more effectively control the pandemic.

The Center was asked to speak on the mental health impact of the COVID-19 pandemic to DoD's Joint Trauma System, a multi-national coalition of healthcare personnel involved in the management and movement of trauma patients around the globe. The presentation was delivered to hundreds of personnel in the U.S. and around the globe and served to enhance force readiness and global health security during the pandemic response.

Medical Affairs at DHA invited the CSTS Assistant Director to speak to the Chief Medical Officers (CMO) and Chief Nursing Officers (CNO) team, comprised of CMOs and CNOs from all Medical Health System installations and systems, about adverse mental health effects and optimizing Service member sustainment during response to COVID-19.

CSTS and the USU Department of Psychiatry leadership served as expert consultants at a Health Affairs/Defense Health Agency media roundtable regarding the impact of COVID-19 on military families, which resulted in the publication of numerous media reports.

The Center has a long relationship with the Joint Mortuary Affairs Center (JMAC) and broader mortuary affairs community, providing ongoing education and training post-deployment to mitigate adverse effects of exposure to human remains for military personnel. CSTS authored an Operational Stress chapter in the JMAC manual used to guide doctrine and preparedness for Service members. Importantly, the chapter was updated to reflect unique aspects of exposure to remains in the context of COVID-19. In addition, CSTS Scientists provided consultation to leaders before, during, and after COVID-19 missions to help guide resilience and sustainment efforts for Service members exposed to high volumes of deceased remains, often in conjunction with deployment to support civilian healthcare and other facilities during the pandemic.

The USU Psychiatry Department Chair, CSTS Director, and a senior CSTS Scientist consulted with the Behavioral Health team at Fort Bliss, TX to provide resources and guidance on the development of assessment instruments in order to better under-



*CSTS Scientist and staff members on data collection trip to Fort Hood, TX (February 2020).*

stand the impact of COVID-19 stressors on military warfighter and healthcare personnel.

The Center developed a new collaboration with the U.S. Military Academy at West Point to explore issues of insider threats and the psychological effects on current Service members. Three Center Scientists delivered a seminar on “Psychological Impact of Disasters and Various Threats” to the Center for the Development of Security Excellence to assist their members in better understanding psychological aspects of security.

## **U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES (DHHS)**

DHHS disaster and trauma responsibilities overlap with the activities of CSTS. The Center works with the Assistant Secretary for Preparedness and Response (ASPR) and the Substance Abuse and Mental Health Services Administration (SAMHSA).

### **Assistant Secretary for Preparedness and Response (ASPR)**

During 2020, CSTS continued and expanded its collaboration with ASPR staff and leadership. This long-standing relationship allowed the Center to gain awareness of new and existing federal issues and initiatives, and to provide consultation and information sharing on disaster and emergency issues.

Throughout the year, two senior CSTS leaders actively participated in regular meetings with an ASPR-led group representing many federal agencies, all of which were engaged in missions related to the behavioral health sequelae of COVID-19. The purpose of these meetings was to identify resources developed by all the parties for integration into a common location. In addition, the group identified gaps in resources that can direct future efforts of member institutions. This activity was significant in the government-wide scope of CSTS activities and consultations. This interaction provided the opportunity to share CSTS expertise with various federal stakeholders and to help influence the work of the participating departments and agencies.

Two CSTS leaders wrote an article for the ASPR/ Technical Resources, Assistance Center, and In-



formation Exchange quarterly publication, *The Exchange*, addressing concerns for healthcare personnel at risk for adverse behavioral health consequences during the COVID-19 pandemic. The collaboration resulted in a widely disseminated and well-received article (*Supporting Healthcare Professionals in Times of Disaster: Reflections on “At-Risk Employees”*): <https://bit.ly/2QK0MoS>

### **Substance Abuse and Mental Health Services Administration (SAMHSA)**

The Center and SAMHSA have been working together since SAMHSA's founding in 1992. SAMHSA is the lead federal agency responsible for supporting and improving national mental health services. CSTS provided emerging evidence-based articles and materials to assist SAMHSA in their national leadership role. In 2020, three CSTS senior leaders led a presentation at an All-Hands meeting of SAMHSA's Center for Mental Health Services (CMHS) entitled, “*Challenges and Hope in a Time of Chaos.*” This presentation included a broad range of topics highlighting the complexity of the current disaster environment and explored several special challenges, requested by CMHS, including grief, leadership, and individual, and organizational approaches to enhance well-being.

### **Centers for Disease Control and Prevention (CDC)**

A CSTS Associate Director conducted a 12-session weekly training series on stress and resilience for public health department personnel. The series was funded by the CDC and conducted through the Hurricane Response Hub, National Network of Public Health Institutes. Presentations were shared with Joseph Barbara, MD, an emergency medicine physician at George Washington University. While the series was initiated to address hurricane-related stress and resilience, it expanded to address any long-lasting disaster response. As a result of topics generated by COVID-19, the organizers broadened the invitation by increasing participation from the initial 15 participants to approximately 80 participants per session.

### **VETERANS AFFAIRS (VA)**

CSTS leadership provided a remote video presentation followed by dial-in discussion with a multi-disciplinary group of approximately 40 mental health providers (psychiatrists, psychologists, and social workers) in Puerto Rico as part of the VA Caribbean Healthcare System that provided clinical care and outreach to communities impacted by severe earthquakes and tremors throughout the island. This educational and consultative meeting established the groundwork for ongoing consultation work to support the personnel responding to this disaster event as well as annual remote tele-education that will be incorporated into the VA Caribbean Healthcare System training for mental health providers in order to enhance their ability to prepare, respond, and recover from disasters.

The Assistant Director at CSTS provided consultation and education to the VA's Mental Illness Research, Education, and Clinical Center on issues related to stress and trauma for healthcare workers during COVID-19. The discussions and webinar presented to hundreds of personnel served as part of ongoing efforts to enhance well-being for VA personnel and optimize healthcare to their patient population.

### **THE NATIONAL CENTER FOR DISASTER MEDICINE AND PUBLIC HEALTH (NCDMPH)**

CSTS maintained a strong and growing relationship with NCDMPH. In 2020, a major collaboration between these two USU Centers was completed. In July, the second edition of the *Curriculum Recommendations for Disaster Health Professionals: Disaster Behavioral Health* was published. It was designed as a guidance document to provide a framework from which to develop future disaster behavioral health curricula and to provide resources to support these curricula. This second edition has been considerably enhanced with expanded resources, the addition of hyperlinks to free access material throughout the publication, and includes an additional section with resources dedicated to the COVID-19 pan-



demic. The document can be accessed at: <https://bit.ly/2QF9Ueu>

Following publication, both Centers jointly presented a webinar entitled, “*New Behavioral Health Tool for the COVID-19 Era*.” The goal was to increase awareness and utilization of the newly published guidance. Approximately 100 participants attended.

In keeping with a long-standing collaboration, CSTS leaders presented seminars on, “*Critical Concepts in Disaster Behavioral Health*,” and “*International Disaster Mental Health: Victims and Responders*,” to approximately 15 joint, military, interdisciplinary MPH students.

As in prior years, two members of the Center’s leadership team served as Associate Editors for the journal, *Disaster Medicine and Public Health Preparedness*, a publication affiliated with NCDMPH.

## PROFESSIONAL ORGANIZATIONS

### NATIONAL ASSOCIATION OF STATE MENTAL HEALTH PROGRAM DIRECTORS (NASMHPD)

The Center’s nearly two-decade-long relationship with NASMHPD continued to thrive. NASMHPD is a membership organization representing state mental health authorities (Commissioners) responsible for preparedness, response, and recovery from large- and small-scale disasters. CSTS assisted the Commissioners in addressing the many challenges inherent in those systems, including issues faced by military families and veterans who are served by the state public mental health systems. In 2020, NASMHPD continued to facilitate CSTS consultation to specific states and localities following disasters and community violence events. CSTS and NASMHPD leadership were in frequent contact throughout the year to identify and address information on disaster response. NASMHPD remained a key distribution and utilization vehicle for the Center’s targeted public information products.

The relationship with NASMHPD became even closer during 2020 in response to COVID-19 and the challenges faced by the states. Two CSTS leaders participated in multiple meetings with the leader-

ship of NASMHPD and the leadership of ASPR to better understand and assist the state mental health authorities.

As a result of these consultations, two CSTS leaders were the key presenters in a meeting organized by NASMHPD to all of the state and territorial mental health directors and their medical directors. The topic was focused on enhancing general disaster behavioral health in the states and how that may relate to pandemics in particular.

### NATIONAL CHILD TRAUMATIC STRESS NETWORK (NCTSN)

The Center continued to work with NCTSN in collaboration with the Network’s Military and Veteran Families Program to develop and implement trauma-informed, evidenced-based interventions and approaches for military children and families.

A senior CSTS leader served as a panelist for an NCTSN webinar titled, “*COVID-19 Discussion Addressing Grief and Traumatic Grief*.” Approximately 40 NCTSN members participated.

A CSTS Scientist served as the incoming Chair of the NCTSN Military and Veteran Families Collaborative Group. The Collaborative Group is a venue for NCTSN staff, leaders from the DoD and SAMHSA, as well as academic experts, to develop and share resources to advance understanding of child trauma among military and veteran children.



## MILITARY CHILD EDUCATION COALITION (MCEC)

MCEC's mission is to support the educational, developmental, and social-emotional needs of military-connected children worldwide. CSTS has had a long and productive relationship with MCEC.

In 2020, a CSTS Associate Director conducted a webinar, "COVID-19: Supporting Families and Children," for MCEC, which was attended by approximately 350 military parents and service providers. This webinar resulted in the development of a podcast episode, "Helping Kids Cope with the COVID-19 Pandemic," which was made available to the public for MCEC's "For the Sake of the Child" podcast. In addition, a CSTS Associate Director presented a Parent to Parent Webinar, "PTSD and the Military/Veteran Family," to more than 160 MCEC members.

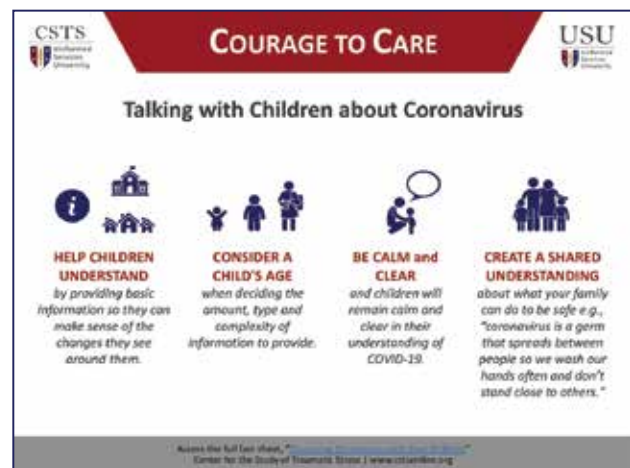
## NATIONAL ACADEMIES OF SCIENCES, ENGINEERING, AND MEDICINE (NASEM)

The CSTS Assistant Director presented to the National Academy of Medicine's (NAM) Action Collaborative on Clinician Well-Being and Resilience to address "Supporting Clinician Well-Being During COVID-19." The NAM is one of the three academies that comprise the NASEM. This activity was a collaboration with the Accreditation Council for Graduate Medical Education, American Hospital Association, and Association of American Medical Colleges, and served to inform policy and the knowledge base.

A CSTS Associate Director and members of the NASEM Committee on Military Family Well-Being co-presented findings and recommendations from the recent NASEM report, "Strengthening the Military Family Readiness System for a Changing American Society" (published September 2019) to the spouse of the Chairman of the Joint Chiefs of Staff, Mrs. Holly Milley, and other senior service spouses, at General Mark Milley's quarters, Fort Myer, VA.

The CSTS Director and a CSTS Associate Director served on the Planning Committee for the Global Forum on Innovation in Health Professional Educa-

tion's workshop in November 2019, to examine how health professions education and practice organizations and programs were addressing social determinants that contributed to mental health disparities across the lifespan. The workshop introduced topics for ongoing discussions on how disparities can affect the mental health and well-being of patients, families, communities, and care providers across the learning continuum. The proceedings of the workshop were published in April, 2020: <https://bit.ly/2JTJT4o>. The workshop resulted in new efforts to develop instruments to assess knowledge, skills, and practice ability related to social determinants of mental health among healthcare professionals.



## THE AMERICAN PSYCHIATRIC ASSOCIATION (APA)

CSTS personnel assisted in the initiation of the APA's efforts in disaster psychiatry by establishing the Committee on Disaster Psychiatry in 1992 and the Center has continued to be actively involved in this and other APA activities. CSTS worked with the APA and other national medical associations to educate and train health professionals on disaster mental health.

During 2020, CSTS leadership continued to strengthen the APA's role in disaster mental health. The Center's Assistant Director continued to serve as Chair of APA's Disaster Committee and oversaw the work of the APA Caucus on Climate Change and Mental Health.

In response to the global COVID-19 pandemic and its profound impact on mental health, the APA President elevated the Disaster Committee to the level of Task Force in support of national and global health. Under the leadership of the CSTS Assistant Director, the Disaster Committee provided consultation and subject-matter expertise to APA leadership, a number of district branches, inter-component collaborations within the APA, and Congressional inquiries and requests related to the pandemic as well as issues of structural racism and civil unrest in the United States. The Disaster Committee sponsored more than a dozen educational events as part of the APA's Annual Meeting, and disseminated 13 guidance documents on pandemic response to support APA members, district branches, and leadership in support of the health and safety of the nation. The CSTS Assistant Director was selected to serve as a distinguished speaker for the APA Spring Highlights, an online two-day education activity delivered to a live audience of more than 12,000 psychiatrists and other mental health professionals from around the world.

Several CSTS leaders were presenters and panelists on the APA webinar, *"COVID-19 and Mental Health: Caring for the Public and Ourselves."* The webinar was held early in the first year of the COVID-19 pandemic to address feelings of emotional distress due to the uncertainty around the impact, spread, and scope of the disease. Psychiatrists played an important role in supporting patient management of psychosocial issues and responses that arise from the disease's impact on them, their families, and their community. This free webinar delineated how psychiatrists can support patients, communicate with family members and children, and be a resource to other providers during the COVID-19 pandemic.

The COVID-19 pandemic has brought new and expanded contributions to the APA by CSTS leaders. In response to COVID-19, a senior CSTS leader made several contributions to an APA blog, including, *"Coronavirus and Mental Health: Taking Care of Ourselves During Infectious Disease Outbreaks:"* <https://bit.ly/2SCH0wk>. The content was accessed by 25,278 users on social media, with 729 total engagements and 428 link clicks. In addition, several invited

articles were published in APA News on the topics of leadership during the pandemic, and behavioral health strategies to support vaccine acceptance.

A senior CSTS leader was invited to present at the first ever, "Fellows Town Hall" hosted by the APA Foundation, bringing together psychiatrists from all of the APA fellowship training programs for a brief didactic presentation and extended, interactive Q&A to support trainees dealing with the personal and professional challenges of the pandemic.

## **COLLEGE FOR BEHAVIORAL HEALTH LEADERSHIP (CBHL)**

CSTS entered into a new relationship with the CBHL in 2020. It was facilitated by the relationship with the International Initiative of Mental Health Leadership (IIMHL). CBHL is composed of public and private leaders in behavioral health across the nation. Two senior CSTS Scientists were the lead presenters and small group discussants for the webinar, *"Disasters and Behavioral Health in Today's World: Implications for Leadership."* There were approximately 90 participants representing both public and private organizations. The content included trends in disaster behavioral health and challenges facing behavioral health leaders in the age of the COVID-19 pandemic.

## **FEDERATION OF ASSOCIATIONS IN BEHAVIORAL AND BRAIN SCIENCES (FABBS)**

A CSTS Scientist attended the annual FABBS meeting as a Member-At-Large on the Board of Directors. The goal of the meeting was to (a) identify research in behavioral and brain sciences that addresses the four priorities of the incoming 2021 presidential administration; (b) advance strategies for increasing funding for the behavioral and social sciences at the National Science Foundation; (c) evaluate the interface between behavioral and brain sciences as articulated in the NIMH Strategic Plan; and (d) discuss the role of federal funding, scientific societies, and academic departments in increasing diversity and addressing systemic racism. Other meeting attendees included representatives of the Office of Behavioral



and Social Science Research, National Institutes of Health; the Social, Behavioral, and Economic Sciences Directorate, National Science Foundation; and representatives of the 26 scientific societies comprising FABBS.

## **SESAME WORKSHOP**

A CSTS Associate Director participated in a Sesame Workshop Advisory teleconference on strategies to address challenges to young children resulting from the COVID-19 pandemic, and produced a webinar on the development of materials to support young children affected by COVID-19. In addition, CSTS Scientists provided consultation to Sesame Workshop focused on topic updates for the Sesame Street for Military Families (SS4MF) website, including deployment, military homecoming, injuries, and grief.

## **WELLCOME LEAP**

The Psychiatry Department Chair and CSTS Director were part of a USU team that consulted with Wellcome Leap in discussing cutting-edge areas of science. They presented on the STARRS research and its use of predictive analytics and machine learning to identify those at highest risk for suicide, suicide-related behavior, and other mental/behavioral health issues.

## **STATE AND CITY CONSULTATIONS**

### **California**

At the request of the State of California, three CSTS leaders provided review, comment, and consultation on the California Disaster Behavioral Health Plan. The development of the plan is an ongoing process. It provided a good opportunity to better understand the challenges faced by states as they prepare for, and respond to, disasters. It also provided a vehicle to expand the application of science to practice, system, and policy development. CSTS provided consultation to California in their

ongoing development of the plan and the planning process.

### **New York City**

CSTS Scientists were asked by the Mayor of New York City (NYC) and the USNORTHCOM Commander to support NYC during their COVID-19 surge in the spring of 2020. This collaboration involved development of a long-standing relationship with NYC Health + Hospitals, Greater New York Healthcare Association, Department of Mental Health and Hygiene, and the NYC Fire Department. In collaboration with these organizations, CSTS made vital contributions to the development of a five-module resilience training program. This “train the trainer” program was delivered to more than 1,000 personnel within the NYC healthcare system. These personnel used the training to serve as resilience champions and peer coaches to help facilitate well-being and help-seeking, as well as promote leadership and organizational interventions. These interventions seek to provide help to caregivers as a way of conserving vital human capital resources and protect public health. CSTS provided extensive subject matter expertise in the development of NYC healthcare system resilience and sustainment assessment practices that aim to gather critical information to enhance leadership and organizational decision-making in support of the healthcare workforce. In addition, CSTS Scientists served as panelists for resilience presentations and provided ongoing guidance and support for NYC data gathering efforts.

Center Scientists provided consultation to the Mt Sinai Health System in addressing early and evolving challenges for healthcare workers during initial and subsequent waves of the COVID-19 pandemic. CSTS provided guidance on the adverse mental health effects of exposure to trauma, unique effects of the pandemic in a high impact “hotspot” zone, and interventions to support mental health well-being and sustain workforce performance. A CSTS Assistant Director was invited to speak on “Grief Leadership” as part of the Mt Sinai Leadership Series.





## INTERNATIONAL OUTREACH

The reach of CSTS consultation activities extends beyond the nation's borders to the international community. The following are examples of CSTS international activities in 2020.

### International Ministerial 5-Eyes Alliance

The Center continued to collaborate with the Mental Health Research Innovation Collaborative (MHRIC) of the International Ministerial 5-Eyes Alliance. The MHRIC is a mental health-focused task group comprised of military- and veteran-related centers from Australia, the United Kingdom, New Zealand, Canada, and the United States (the member nations of the 5-Eyes Alliance). This core group of centers and departments joined together to work on defense and veteran mental health. Throughout the COVID-19 pandemic, Center Scientists collaborated with colleagues from the 5-Eyes MHRIC to develop and disseminate educational resources, share knowledge and best practices, and develop research in critical domains to optimize response and recovery to the global pandemic. This consortium focused on high-risk populations, such as healthcare workers and military personnel serving on the frontlines of the COVID-19 pandemic response.

### North Atlantic Treaty Organization (NATO)

The CSTS Assistant Director spoke at the NATO Symposium, "*Confronting the Pandemic: A Mental*

*Health Perspective and Maintaining Operational Readiness of NATO Forces.*" The information presented served as the foundation for a NATO report to the Committee of Chiefs of Military Medical Services (COMEDS) that informs NATO force protection efforts throughout the global pandemic. CSTS Senior Scientists were invited speakers at a Disaster and Military Medicine (DiMiMED) annual international military conference, "*Coping with COVID - Combating the Catastrophe and Dealing with the Disruption,*" an international education and information sharing event of NATO nations, which disseminated emerging knowledge and best practices in addressing the range of challenges posed by the COVID-19 pandemic.

### Defense Institute for Medical Operations (DIMO)

A CSTS Scientist supported DIMO by participating as a subject matter expert at a five-day course on military mental health in Nigeria. The U.S. five member team, comprised of active duty mental health providers, trained 26 students in the tenets of military psychiatry with a focus on combat stress and PTSD. The Nigerian learners were highly skilled psychiatrists, clinical psychologists, social workers, and psychiatric nurses with extensive combat experience, as well as emergency responders from the National Fire Service and the Nigeria Security and Civil Defense Corps (NSC-DC). The course helped initiate Nigeria's tri-service, multi-disciplinary collaboration, to increase awareness of capabilities and operational approaches, with the goal of ongoing project planning and support. The instruction also created interest in training Service members and emergency responders in Psychological First Aid (PFA). Culturally-specific tool development, including screening questionnaires and treatment protocols will be incorporated into clinical interviews. In addition, a CSTS Scientist helped update the DIMO Military Mental Health Course over a period of several months, resulting in a new up-to-date interactive, comprehensive course.

### *Outcomes from the meeting included:*

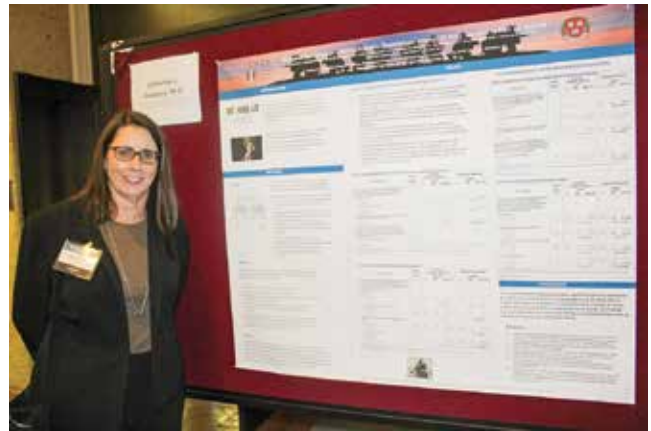
1. Increased collaboration between the tri-service, multi-disciplinary students, many of who had never interacted with each other prior to this experience. These students worked collaboratively throughout the course to increase awareness of each other's missions and operational approaches.
2. Leaders from the Federal Fire Service and NSC-DC were present and discussed plans to train emergency responders in PFA and to develop relationships with local mental health providers to help care for responders.
3. Multiple Nigerian military mental health providers/leaders reported a desire to train more, and potentially all, Nigerian Service members in PFA.
4. Several students expressed an interest in developing tools (e.g., screening questionnaires, treatment protocols, etc.) that are culturally specific to Nigeria, along with incorporating the Cultural Formulation Interview (CFI) into their clinical interviews.

### **International Initiative of Mental Health Leadership (IIMHL)**

In 2020, CSTS established a new international relationship with IIMHL, representing senior public mental health leadership in member countries focusing on improving mental health services. Member countries are the U.S., Canada, England, Scotland, the Republic of Ireland, Australia, New Zealand, and Sweden.

At the request of IIMHL, CSTS developed and delivered two consultation documents to assist members with broadening their knowledge regarding disaster mental health resources to address building and enhancing national preparedness and response to disaster.

In addition, two senior CSTS leaders conducted a series of web-based consultations with IIMHL member countries on leadership issues for the public mental health sector in the era of COVID-19.



*CSTS Scientist, Dr. Dempsey presenting at a prior Amygdala Conference.*

### **Canada**

A senior CSTS leader presented a webinar at the “*Mental Health in the COVID-19 Pandemic*” annual conference, Disaster Psychiatry Canada. Approximately 2,000 participants attended from 16 countries representing mental health, 13 other medical disciplines, as well as professionals in the fields of disaster response and public health emergency work.

CSTS leadership provided consultation to senior representatives from the Mental Health Commission of Canada to enhance national preparedness and response capacity for extreme events such as natural and human-caused disasters, terrorism, mass violence, and epidemics. CSTS provided the Canadian representatives with key documents and resources to assist in developing a national strategy. This consultation strengthened existing relationships with mental health stakeholders in Canada.

CSTS provided education materials and consultation to the Canadian military to assist with their response to the mass shooting in Nova Scotia. The materials included resources to assist first responders, healthcare personnel, families, and community leaders.

## SCIENTIST PROFILE: GARY H. WYNN, MD

**GARY H. WYNN, MD**, Colonel in the United States Army, Professor and Assistant Chair, Department of Psychiatry, and CSTS Senior



Scientist. After 29 years on active duty in the Army, he will be retiring in early 2021 to pursue the next chapter of his career. Below are Dr. Wynn's reflections on his long career, and how COVID-19 has affected his approach to research and collaborations.

### **What are your thoughts upon looking back at your substantial career?**

It's interesting to look back at my 29 year career, starting at West Point. Many things have changed, much for the better. One key change has been the evolution of how mental health is addressed within the military. There used to be substantial stigma around mental health. However, while there is still stigma, there is much less than before and many structural aspects of stigma have faded, for example, policies like losing your security clearance if you are diagnosed with PTSD or depression. I have also noticed changes in leadership regarding mental health stigma.

In addition, we've come a long way toward understanding military-relevant mental health conditions such as PTSD. While we still have much work to do, I believe there is reason for optimism and hope in the new treatments and approaches that are being developed and studied.

For much of my career, the Iraq and Afghanistan Wars have dominated the military's attention. It is hard to think of a time when we were not on some form of war footing. I do worry about the long-term effects on our military and our society from many years of involvement in war. That being said, it has been an absolute privilege to serve in the United States Army. I have been afforded many opportunities during my time in service. USU is the place where I started my medical career 25 years ago and where I will end my active-duty career as a Colonel, a Professor, and an Assistant Department

Chair. I will always cherish my experience at USU moving forward.

### **Are there lessons to be learned from the COVID-19 impact on research in 2020?**

It is hard to think of anything in my career, or the careers of my mentors, that has affected research as much as the COVID-19 pandemic. USU underwent a near total shutdown with the exception of animal care and COVID-related research. Placing research activities in a holding pattern was difficult, and slowly opening things up forced us to develop new processes that incorporated social distancing requirements and a reimagining of research tasks. This also came with an associated change in daily personal interactions, a loss that had been a source of enjoyment and new ideas. These changes were reflected on the national stage when many conferences were canceled or moved online. While online conferences are better than cancellation, the lack of socialization and potential for new collaborations and investigations was a loss.

### **How have your international collaborations fared considering the impact of the pandemic?**

Over the past five years, I have served as the U.S. representative to NATO, through which I have gained a good deal of experience working with international collaborations prior to 2020. Like much of the rest of the world, COVID-19 halted most international meetings and travel. Initially, the crisis within the U.S. turned our attention closer to home and decreased the frequency of interaction with international colleagues. However, after the first wave of COVID-19, there was a noticeable increase in communication among many of my international colleagues. In an unexpected way the pandemic, which forced us to work primarily online, resulted in closer connections between overseas colleagues. My Canadian and Dutch colleagues were now just as close as my day-to-day work colleagues. This resulted in spending more time talking, collaborating, and writing with my NATO and 5-Eyes colleagues than at any other point in my career. I considered this to be one of the few silver linings to 2020.



# Publications

(Names in bold text are CSTS personnel)

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- Zhang, L., Hu, X. Z., Li, X., Chen, Z., Benedek, D. M., Fullerton, C. S., Wynn, G., Biomarker Team, & Ursano, R. J.** (2020). Potential chemokine biomarkers associated with PTSD onset, risk and resilience as well as stress responses in US military service members. *Translational Psychiatry*, 10(1), 31. doi: 10.1038/s41398-020-0693-1
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## BOOKS AND BOOK CHAPTERS

- Regier, D. A., Goldberg, D. P., Ustun, B. T., & Reed, G. M.** (2020). DSM-5 and ICD-11 classifications. In J. R. Geddes, N. C. Andreasen, & G. M. Goodwin (Eds.), *New oxford textbook of psychiatry (3rd ed)*. Oxford University Press.
- Ursano, R. J., Morganstein, J. C., & West, J. C.** (2020). Essential issues on terrorism: Planning for acute response and intervention. In E. Vermetten, I. Frankova, L. Carmi, O. Chaban, & J. Zohar (Eds.), *NATO science for peace and security series: Risk management of terrorism induced stress — Guidelines for the golden hours (Vol. 148, pp. 3-9)*. IOS Press.
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- West, J. C., Hamaoka, D. A., & Ursano, R. J.** (2020). Outpatient treatment of the suicidal patient. In L. H. Gold & R. Frierson (Eds.), *Textbook of suicide risk assessment and management*. American Psychiatric Publishing.



# Presentations, Blogs, Interviews, Briefings, Awards, and Appointments

*(The names in bold text are CSTS personnel.)*

## PRESENTATIONS

Covid-19 and mental health: Caring for the public and ourselves. **Morganstein, J. C., Cozza, S. J., West, J. C., Koyfman, S., & Ursano, R. J.**

Webinar presented to the membership, American Psychiatric Association, March 2020.

Disaster Psychiatry and Behavioral Health From War and Terrorism to Earthquakes... and Coronavirus, Finding Structure in Chaos. **Ursano, R. J.** Webinar presentation given for Boston Veterans Affairs, Grand Rounds. Boston, MA, March 2020.

Disasters and mental health in today's world: Implications for state mental health authorities. **Flynn, B. W., & Morganstein, J. C.** Webinar presented at the State Commissioners monthly meeting, National Association of State Mental Health Program Directors, March 2020.

COVID-19 and mental health: How Army psychiatrists can help. **Morganstein, J.C.** Webinar presented at the United States Army Psychiatrists "All Call", United States Army Medical Command, Defense Health Agency, April 2020.

Disasters and mental health in today's world: Implications for mental health leadership. **Flynn, B. W., & Morganstein, J. C.** Webinar presented to the National Representatives for the International Initiative for Mental Health Leadership, April 2020.

Preparing for a marathon: Caring for patients and sustaining the well-being of healthcare workers during COVID-19. **Morganstein, J. C.** Webinar presented at the Annual Spring Highlights, American Psychiatric Association, April 2020.

Sustaining healthcare worker & organizational wellbeing in a prolonged crisis: Challenges and opportunities during COVID-19. **Morganstein, J. C.** Webinar presented at the Wellbeing Committee meeting, Accreditation Council of Graduate Medical Education, April 2020.

Caring for ourselves and patients during prolonged crisis: Challenges and opportunities in public

mental health. **Morganstein, J. C.** Webinar presented at Fellows Town Hall, American Psychiatric Association Foundation, May 2020.

Clinician well-being during COVID-19: Challenges and opportunities. **Morganstein, J. C.** Webinar presented at "Supporting Clinician Well-Being During COVID-19", National Academies of Medicine's Action Collaborative on Clinician Well-Being and Resilience in partnership with the Accreditation Council on Graduate Medical Education, American Hospital Association, and Association of American Medical Colleges, May 2020.

COVID-19: Supporting families and children. **Cozza, S. J.** Webinar presented at the Military Child Education Coalition, May 2020.

COVID-19: Supporting families and children. **Cozza, S. J.** Webinar presented at Berkshire Community College, MA, May 2020.

Death notification, grief, and posttraumatic stress: Implications for COVID-19 deaths. **Cozza, S. J.** Webinar presented at the National Child Traumatic Stress Network: Child Traumatic Grief-Traumatic Separation Committee Journal Club, May 2020.

Stepping Forward in Grief: An online selective intervention for bereaved military families. **Cozza, S. J. & Shear, M. K.** Webinar presented at the VA/DoD Survivors Forum, May 2020

Sustaining the well-being of healthcare workers during COVID-19. **Morganstein, J. C.** Webinar presented at Health & Wellness Grand Rounds, Texas A&M University Health Science Center College of Medicine, May 2020.

Sustaining a healthcare workforce during prolonged crisis: Challenges & opportunities for high-risk occupations. **Morganstein, J. C.** Webinar presented at the COVID-19 Town Hall, American Society of Anesthesiologists, May 2020.

Addressing and supporting physician mental health during challenging times. **Morganstein, J. C.** Webinar presented at Well-being and Professional Fulfillment Program, American College of

- Physicians, June 2020.
- COVID-19 and mental health: Crisis leadership and healthcare workforce resilience. **Morganstein, J. C.** Webinar presented at the Virtual Learning Hour Special Series, Institute for Healthcare Improvement and Well Being Trust, June 2020.
- Disaster Psychiatry and Behavioral Health From War and Terrorism to Earthquakes... and Coronavirus. **Ursano, R. J.** Virtual presentation at the University of North Carolina, Chapel Hill Department of Psychiatry, Grand Rounds. Chapel Hill, NC, June 2020.
- Healthcare worker sustainment and patient care during prolonged crisis: Finding structure in chaos. **Morganstein, J. C.** Webinar presented at the “Mental Health in the COVID-19 Pandemic” annual conference, Disaster Psychiatry Canada, June 2020.
- Integrative lighting and measurement in domestic and workplace settings: It gets more complicated. **Glickman, G., & Bessman, S.** Presentation at the 34th Annual Meeting of the Associated Professional Sleep Societies (virtual), Philadelphia, PA, June 2020.
- Illuminating measures in the field: Quantifying photic intensity and spectral quality in applied research settings. **Bessman, S., Snider, M., Wilkerson, A., Davis, R., Herf, M., Spitschan, M., & Glickman, G.** Presentation at the Society for Research on Biological Rhythms (virtual), Amelia Island, FL, June 2020.
- Mental health in the COVID-19 pandemic. **Ursano, R. J.** Webinar presented at the “Mental Health in the COVID-19 Pandemic” annual conference, Disaster Psychiatry Canada, June 2020.
- Photoreceptor mediation of the accelerating effect of dim light on behavioral adjustment to shifting schedules. **Glickman, G., Harrison, E., Evans, J., & Gorman, M.** Presentation at the Society for Research on Biological Rhythms (virtual), Amelia Island, FL, June 2020.
- Sustaining the well-being of healthcare workers during COVID-19. **Morganstein, J. C.** Webinar presented at Caregiver Grand Rounds, Tufts Medical Center, June 2020.
- Personal and professional wellness. Fattal, O., Eros-Sarnyai, M., Salway, J., **Morganstein, J. C.** Webinar panelist presentation at Module 2 (of 5), Healing, Education, Resilience and Opportunity for New York’s Frontline Workers, Greater New York Hospital Association, June 2020.
- PTSD and the military/veteran family. **Cozza, S. J.** Webinar presented to the Military Child Education Coalition, June 2020.
- Wellbeing of healthcare workers during COVID-19. **Benedek, D. M.** Webinar panelist presentation at the National Center for Disaster Medicine and Public Health, Bethesda, MD, June 2020.
- Challenges and hope in a time of chaos. **Flynn, B. W., Vance, M. C., & Morganstein, J. C.** Webinar presented at the All-Hands meeting for the Center for Mental Health Services, Substance Abuse and Mental Health Services Administration, July 2020.
- Disasters and behavioral health in today’s world: Implications for leadership. **Flynn, B. W., & Morganstein, J. C.** Webinar presented to the College of Behavioral Health Leadership and the International Initiative for Mental Health Leadership, August 2020.
- Nightmare deconstruction and reprocessing: Integrating collection of physiologic stress indicators via wearable technology and genomic analyses in piloting a psychotherapy for trauma-related nightmares. **Spangler, P., Azad, A., West, J., Benedek, D., Zhang, L., Gill, J., Dempsey, C., Paxton, M., Phares, A., Mai, J.** Virtual poster presentation at the American Psychological Association’s 2020 Virtual Convention, August 2020.
- Predicting clinically significant response to primary care treatment for depression in veterans using electronic health records. **Vance, M. C., Chang, M. M., Sussman, J. B., Zivin, K., & Pfeiffer, P. N.** Virtual poster presentation at the Academy Health Annual Research Meeting, August, 2020.
- Enhancing sustainment and fostering resilience for military health care workers responding to COVID-19. **Morganstein, J. C., Wynn, G. H., & Benedek, D. M.** Webinar presented for the Clinical Case Conference series, Joint Trauma System, Defense Health Agency, Department of Defense, September 2020.
- Finding structure in chaos: Leadership, risk, and virtual care during COVID-19. **Morganstein, J. C.** Webinar presented at the symposium “Confronting the Pandemic: A Mental Health Perspective and Maintaining Operational Readiness of NATO Forces,” North Atlantic Treaty Organization, September 2020.
- Risk and resilience of lifetime stressful experiences among US Army Soldiers at risk for suicide. **Dempsey, C. L., Benedek, D. M., Zuromski, K.,**

- Nock, M. K., **Aliaga, P., Ao, J., Georg, M. W., Broshek, C., Mullins-Hussain, B., Weinberg, A., & Ursano, R. J.** Virtual poster presentation at the American Psychological Association's 2020 Virtual Convention, August 2020.
- Relationship of social networks to hurricane preparedness behaviors. **Liu, A. G., Mash, H. B. H., Fullerton, C. S., Morganstein, J. C., Vance, M. C., Wang, L., Mullins-Hussain, B., & Ursano, R. J.** Virtual presentation at the 30th Annual Neuroscience Program Open House, Uniformed Services University, October 2020.
- The role of child and adolescent psychiatrists when disasters strike: A training course in the age of COVID-19. **Cozza, S. J.** Workshop presentation at the Disaster Workshop AACAP virtual meeting, October 2020.
- COVID-19 & public mental health: Enhancing resilience for patients & healthcare workers during prolonged crisis. **Morganstein, J. C.** Webinar presented at the Mental Illness Research Education and Clinical Center, Veterans Administration, October 2020.
- Enduring through disillusionment: Finding structure in the chaos of a prolonged global health crisis. **Morganstein, J. C.** Webinar presented at the Well-Being Committee, Accreditation Council of Graduate Medical Education, October 2020.
- Finding structure in chaos: Sustainment for healthcare workers and patients during COVID-19. **Morganstein, J. C.** Webinar presented at the 24th Annual Speakers Forum, Pro Bono Counseling Project, October 2020.
- How are (and are not) psychodynamic concepts and treatment effective in the treatment of trauma? **Ursano, R. J.** Webinar presented at Trauma and Mind in War and Life, Understanding and Treating Trauma: A Psychoanalytic Psychodynamic Philosophical Perspective, The Contemporary Freudian Society, October, 2020.
- Psychosocial impacts of crisis and disaster events: How individuals, organizations, and leaders can help. **Morganstein, J. C.** Webinar presented at the Federal Workforce Summit, Government Executive and Graduate School USA, October 2020.
- Psychological and behavioral impact of disasters in COVID-19. **Morganstein, J. C.** Webinar presented at Trauma and Mind in War and Life, Understanding and Treating Trauma: A Psychoanalytic Psychodynamic Philosophical Perspective, The Contemporary Freudian Society, October 2020.
- Holiday wellness: Fostering well-being during challenging times. **Benedek, D. M.** Virtual panelist presentation at the Walter Reed Army Institute of Research, November 2020.
- Relationship of collective efficacy to perceived hurricane preparedness. **Liu, A. G., Mash, H. B. H., Fullerton, C. S., Mullins-Hussain, B., & Ursano, R. J.** Virtual poster presentation at the virtual 36th Annual Meeting of the International Society for Traumatic Stress Studies, November 2020.
- Relationship of social networks to hurricane preparedness behaviors. **Liu, A. G., Mash, H. B. H., Fullerton, C. S., Morganstein, J. C., Vance, M. C., Wang, L., Mullins-Hussain, B., & Ursano, R. J.** Virtual poster presentation at the virtual 36th Annual Meeting of the International Society for Traumatic Stress Studies, November 2020.
- Risk and resilience of lifetime stressful experiences among US Army Soldiers at risk for suicide. **Dempsey, C. L., Benedek, D. M.,** Zuromski, K. L., Nock, M. K., **Aliaga, P., Ao, J., George, M. W., Broshek, C., Mullins-Hussain, B., Weinberg, A., & Ursano, R. J.** Virtual poster presentation at the virtual 36th Annual Meeting of the International Society for Traumatic Stress Studies, November 2020.
- Crisis leadership in COVID-19: Impact on healthcare workers, sustaining well-being & leading through grief. **Morganstein, J. C.** Webinar presented at Michigan Health & Hospital Association, November 2020.
- Enhancing mental health force protection in COVID-19: Impact, risk & interventions. **Morganstein, J. C.** Webinar presented at the Combat Casualty Care Conference, Joint Trauma System, Defense Health Agency, November 2020.
- Grief leadership during crisis events. **Morganstein, J. C.** Webinar presented at "Insights For Leaders", Mount Sinai Health System, November 2020.
- Integrating physiologic assessment of sleep disturbance and in-session stress in a pilot trial of an exposure-based treatment for trauma-related nightmares and insomnia. **Spangler, P., Azad, A., West, J., Zhang, L., Gill, J., Benedek, D., Dempsey, C., Paxton, M., Phares, A., Hillman, K., & Pujol, J.** Virtual poster presentation at the virtual 36th Annual Meeting of the International Society for Traumatic Stress Studies, November



2020.

- Leadership, risk, and interventions: Enhancing military readiness and sustainment during COVID-19. **Morganstein, J. C.** Webinar presented at the DiMiMed International Conference on Disaster and Military Medicine, November 2020.
- Posttraumatic stress disorder and sleep disorders: Effects on cardiovascular disease risk in active duty U.S. Army enlisted Servicemembers. Belleau, E. A., Krantz, D. S., **Gabbay, F. H., Aliaga, P. A., Ursano, R. J., & Wynn, G. H.** On demand oral presentation at the virtual 129th annual meeting of AMSUS, December 2020.
- COVID-19 & public mental health: Enhancing resilience for patients & healthcare workers during prolonged crisis. **Morganstein, J. C.** Webinar presented at General Medical Staff meeting, Thomas Jefferson University Hospital, December 2020.
- COVID-19 & public mental health: Enhancing resilience for patients & healthcare workers during prolonged crisis. **Morganstein, J. C.** Webinar presented at Saint Luke Institute, December 2020.
- Supporting the well-being of Servicemembers and families during COVID-19. **Morganstein, J. C.** Webinar presentation for the Chief Medical Officers and Chief Nursing Officers, Medical Affairs, Defense Health Agency, December 2020.

## BLOGS

- Cozza, S. J., Fisher, J. E., Morganstein, J. C., Flynn, B. W., Biggs, Q. M., Zuleta-Miranda, R., Fullerton, C. S., Benedek, D. M., & Ursano, R. J.** (2020, April 20) Death notification, grief, and posttraumatic stress: Implications for COVID-19 deaths. *International Society for Traumatic Stress Studies Blog*. <https://istss.org/public-resources/trauma-blog/2020-april/death-notification,-grief,-and-posttraumatic-stress>
- Jacobs, J. & **Vance, M. C.** (2020, August 17). Advocacy as antidote to burnout: Perspectives from intern year. *Psychiatric News*. <https://psychnews.psychiatryonline.org/doi/10.1176/appi.pn.2020.8b18>
- Morganstein, J. C.** (2020, February 19). Coronavirus and mental health: Taking care of ourselves during infectious disease outbreaks. *American Psychiatric Association*. <https://www.psychiatry.org/news-room/apa-blogs/apa-blog/2020/02/coronavirus-and-mental-health-taking-care-of-ourselves>

*during-infectious-disease-outbreaks*

- Morganstein, J. C.** (2020, March 4). The role of psychiatrists during the coronavirus outbreak. *Psychiatric Times*. <https://www.psychiatrictimes.com/view/role-psychiatrists-during-coronavirus-outbreak>
- Morganstein, J. C.** (2020, March 23). PsychPearls: Battling loneliness during the COVID-19 pandemic. *Psychiatric Times*. <https://www.psychiatrictimes.com/view/psychpearls-battling-loneliness-during-covid-19-pandemic>
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## INTERVIEWS AND BRIEFINGS

- Dr. Morganstein was interviewed by *Yale Climate Connections* (<https://www.yaleclimateconnections.org/>) to provide information about the adverse

psychological and behavioral effects of climate-related disasters.

- Dr. Ursano was interviewed by *Reuters Health* on the STARRS paper, “Factors associated with suicide ideation in US Army soldiers during deployment in Afghanistan.” The article can be found here: <https://www.reuters.com/article/us-health-military-suicide/many-soldiers-thinking-about-suicide-show-no-signs-idUSKBN1ZS32M>
- Dr. Stephen Cozza was interviewed by documentary filmmaker Ms. Elisa Gambino, from One Production Place, as part of her project with *Stars and Stripes* to create a series of eight video stories about trends in military family life to be published on the *Stars and Stripes* website. The discussion revolved around the different issues military families face and how policies, programs, and services are being used as potential solutions.
- Dr. Stephen Cozza and Dr. Benedek answered questions at a Health Affairs/Defense Health Agency media roundtable regarding the impact of COVID-19 on military families, which led to the publication of numerous media reports.
- Dr. Benedek was interviewed by Francis Rose of *WJLA TV* for a segment on military medical preparedness for an increase in mental health care demand, access to care, and self-care tips which aired on *WJLA Government Matters TV* and 80 affiliates cross the nation.
- Dr. Vance was interviewed for the podcast *Psychiatry Unbound* about her recently released book, *A Psychiatrist’s Guide to Advocacy*.
- The *Army News Service* published an article on the Army website ([army.mil](http://army.mil)) titled “VA joins Army in major DoD research effort to prevent suicides.” The article announced the VA joined the Army, DoD, and NIMH in support of the STARRS research program that has been ongoing since 2009 under the leadership of Principal Investigator Dr. Ursano at USU/CSTS. The STARRS program, which is the largest mental health program ever conducted on military personnel, was funded by the DoD for another five years. Dr. Richard W. Thomas, President of USU, was quoted in the article: “The STARRS study is leading us to new approaches to sustain the health and readiness of our service members. Its findings have contributed to new approaches for prevention, treatment, and health care policies for the entire Military Health System and for the nation. STARRS represents yet another way that military medicine contributes

to the health and wellbeing of our troops and their families.” The link to the article is: <https://www.army.mil/article/238093>

## AWARDS AND APPOINTMENTS

- The USU Department of Psychiatry created an award in honor of Dr. Ursano, who was the longest serving Chair of the Department and the founder of CSTS. The Robert J. Ursano Award will be given to the graduating medical student who demonstrates the greatest potential to become a clinician-educator-researcher. Judging will be done by the Department Education Committee based upon student participation in psychiatry-related educational projects, research, psychiatry capstone projects, educational innovations, presentations, and academic performance.
- Dr. Vance was appointed as a member of the APA Committee on the Psychiatric Dimensions of Disasters.
- Maj Meyer and MSgt Steward were recipients of the 1st Quarter Air Force Element Award. Maj Meyer was awarded the Field Grade Officer (FGO) of the Quarter and MSgt Steward was awarded the Senior Noncommissioned Officer (SNCO) of the Quarter.
- The poster, “Nightmare Deconstruction and Reprocessing: Integrating Collection of Physiologic Stress Indicators via Wearable technology and Genomic Analysis in Piloting a Psychotherapy for Trauma-Related Nightmares,” by Dr. Spangler and the CSTS Clinical Team, was awarded the Jeremy Safran Poster Award during the APA 2020 Virtual Convention, sponsored by the APA Division 29 and the Society for the Exploration of Psychotherapy Integration.
- Dr. Glickman and Dr. Morganstein were selected as Dean’s Impact Award winners from the Psychiatry Department. The Dean recognized their respective contributions to USU’s ongoing response to COVID-19 through their selections.
- Dr. Ursano was designated a 2020 Clarivate Web of Science Highly Cited Researcher. Fewer than 6,200, or about 0.1%, of the world’s researchers, in 21 research fields and across multiple fields, have earned this exclusive distinction in 2020. This elite group is recognized for their exceptional research influence, demonstrated by the production of multiple highly-cited papers that rank in the top 1% by citations for field and year in the Web of Science.

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# Funded Grants

AWARDS (Jan-Dec 2020)	FUNDING INSTITUTION
Evaluation of the Safety and Pharmacokinetics of the FAAH Inhibitor URB597	USAMRMC
Brain Bank Project: Consortium for the Translational Neuroscience and Treatment of Stress and PTSD (VA Biorepository Brain Bank: PTSD Brain Bank Protocol)	VA
Study to Assess Risk and Resilience in Servicemembers — Longitudinal Study (STARRS-LS)	DHP
Continuation of the Army Study to Assess Risk and Resilience in Servicemembers (ARMY STARRS)	DHP
Family Violence and Trauma Project	IMCOM
GREAT-SF (Grief-Focused Resilience Activities and Training for Surviving Families): An Online Selective Intervention for Bereaved Military Families	CDMRP
Military-Related Risk for Child Neglect in DoD Families: A Population Study to Inform Future DoD Child Neglect Prevention Efforts	MCFP
Enhancing Fear Extinction via Angiotensin Type 1 Receptor Inhibition: A Randomized Controlled Trial in Posttraumatic Stress Disorder	UCSD
Pilot Trial of Nightmare Deconstruction and Reprocessing, a Novel Treatment for PTSD-Related Nightmares and Insomnia	USAMRMC
Continuation Pilot Trial of Nightmare Deconstruction and Reprocessing, a Novel Treatment for PTSD-Related Nightmares and Insomnia	USAMRMC
Identifying Predictors of Treatment Response in Service-members with Posttraumatic Stress Disorder Related Sleep Disturbances: Use of Large Datasets to Improve Treatment Selection over the Military Lifecycle	USAMRMC
Support for Voices of September 11th - Public Safety Canada	Voices of September 11th
Center for the Study of Traumatic Stress (CSTS) Program	DHP
Coping Strategies Used by Survivors of Suicide Loss	AFSP
Personalized Medicine Approach to Light Treatment for Increasing Alertness and Performance in Operational Settings	ONR Global
Identifying Motivations for Service Members and Veterans Owning Firearms, Storing Them in Unsafe Conditions and Using Them to Hurt Others or Themselves	CDC

# Federal, State, Academic, Non-Profit, and other Organizations

CSTS has interacted over time with numerous federal, state, academic, and non-profit organizations in fulfillment of the Center's research and public purpose missions. CSTS would like to acknowledge and thank these organizations.

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Stanford University  
Substance Abuse and Mental  
Health Services Administration,  
Department of Health and Human  
Services  
Suicide Awareness Voices of Education  
Syracuse University  
Syracuse VA Medical Center  
The Compassionate Friends  
Tragedy Assistance Program for  
Survivors  
Travis Manion Foundation  
Tulane University, School of Social  
Work  
Uniformed Services University  
Union Pacific Railroad  
University of California, Irvine  
University of California, Los Angeles  
University of California, San Diego  
University of Maryland  
University of Melbourne, Australia  
University of Michigan  
University of Minnesota  
University of Pennsylvania  
University of Pittsburgh  
University of South Carolina  
University of Virginia  
University of Washington  
University Medical Center Utrecht,  
Netherlands  
U.S. Air Force

U.S. Army  
U.S. Army Family Advocacy Program  
U.S. Army Family Programs  
U.S. Army Installation Management  
Command  
U.S. Army Medical Research and  
Development Command  
U.S. Department of Agriculture  
U.S. Department of Defense  
U.S. Department of Energy  
U.S. Department of Health and Human  
Services  
U.S. Department of Homeland Security  
U.S. Department of Justice  
U.S. Department of State  
U.S. Department of Veterans Affairs  
U.S. Military Academy at West Point  
U.S. Navy  
U.S. Postal Service  
Veterans Administration Medical  
Center of DC  
Veterans Affairs (VA) Connecticut  
Healthcare System  
Veterans Affairs/Department of  
Defense Survivors Forum  
Virginia Commonwealth University  
Voices of September 11, Inc.  
Walter Reed Army Institute of  
Research, Department of Defense  
Walter Reed National Military Medical  
Center, Department of Defense  
West Virginia University  
Western New York Psychiatric Society  
Wright State University  
Yale University  
Yellow Ribbon Reintegration Program  
Zero to Three





# Snapshot of CSTS



*CSTS 2020 Holiday Party.*

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Uniformed Services University  
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