

# Center for the Study of Traumatic Stress

*Emerging Horizons*

2022 Annual Report



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The Center's activities bridge across the science of the gene, the person, the community, and moves from this knowledge to action. CSTS scientists scan the *emerging horizon* to identify psychological and behavioral health threats to provide responsive and research-based solutions.

— Dr. Robert J. Ursano

# From the Director

This year, 2022, the Center for the Study of Traumatic Stress (CSTS) completed its 35th year of national and international contributions as one of



the leading organizations in the Nation, focused on applying science to the psychological and behavioral health care needs of those exposed to trauma and disaster. Established in 1987, CSTS continues to fulfill its mission in support of the Uniformed Services University (USU) and

the Department of Defense (DoD) to mitigate the impact of trauma, exposure to war, disasters, terrorism, community violence, and public health threats. The Center's activities bridge across the science of the gene, the person, the community, and moves from this knowledge to action. CSTS scientists scan the *emerging horizon* to identify psychological and behavioral health threats to provide responsive and research-based solutions. Through the Center's work, we sustain national readiness, enhance national security, and serve an essential role to the Nation and global community as a world-renowned leading Center in trauma and disaster psychiatry.

In the past year, our focus, like the Nation's and the world's, has been on *COVID-19*. The pervasive effects of the virus continue to reach across the Nation and the globe. The Center provided COVID-19 support at numerous levels — with consultation, research, and knowledge tools disseminated nationally and internationally.

In addition to the Center's real-time COVID-19 response, the Center provided *support to our*

*allies in Ukraine* since the March 2022 invasion. Our colleagues in Ukraine and throughout Europe are working tirelessly to support their citizens and military units in the wake of the Russian invasion. The Center's response has been rapid, comprehensive and targeted. CSTS has produced specific, requested, and extensive knowledge products in support of Ukraine, including fact sheets, pocket cards, leader guides, and educational support. Many of these resources have been translated into multiple languages. In our support, we also partnered with NATO colleagues, the Five Eyes Nations (United States, United Kingdom, Canada, Australia, and New Zealand), and the World Health Organization in consultations and development of app-based support and research to identify needs.

Informed by the CSTS's leadership and the CSTS research findings from Army STARRS (Study to Assess Risk and Resilience in Servicemembers), a new program in suicide prevention, the CSTS *Suicide Prevention Program (SPP)* was established. The SPP translates science into actionable, evidence-based resources for military and non-military populations to reduce suicidal behavior and promote protective environments. The SPP has 12 lines of effort in collaboration with multiple research partners.

The SPP and the Center's support of Ukraine highlight the reach and impact the Center has built by its collaborative, matrixed response model in providing psychiatric and behavioral health solutions. While supporting contemporary challenges, like COVID-19 and the war in Ukraine, the Center has continued to work addressing persistent challenges such as suicide,

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Our overarching goal is to improve trauma-related care through prevention, early intervention and preparing health care providers and community leaders with tools to address the impact of trauma and its far-reaching effects.

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

acute stress reactions, posttraumatic stress disorder (PTSD), traumatic brain injury (TBI), and disaster response and preparedness.

The CSTS mission is accomplished through leadership, research, training, education, service, outreach, collaboration, consultation, and global health engagement. The Center has an outstanding multi-disciplinary and collaborative team of scientists, educators, clinicians, staff, and thought leaders to carry out these activities, advance our goals and our mission, and enhance national preparedness.

The Center continues its groundbreaking approaches to examining the impact of death and bereavement on military families, novel treatments for PTSD, the role of ketamine in treatment and collaborating in the development of genetic markers of disease. Our advanced analytic approaches include big data analytic approaches from phenotype to gene, focusing on personalized medicine to identify at-risk individuals for early intervention, and to identify disease course, phases, and targets for intervention. Our big data approaches, in collaboration with national leaders in these approaches, use machine learning methodologies and predictive analytics for identifying those at risk and the right treatment for the right person. Our whole genome sequencing work spans a wide array of international collaborations often related to STARRS, and in USU our collaboration with the Center for Military Precision Health. We use data mining techniques and state-of-the-art statistical methods to gain new insights,

resulting in better and faster decision-making support tools and improved health.

In 2022, CSTS scientists published approximately 50 peer-reviewed manuscripts in leading national and international journals. Center scientists also gave dozens of presentations at conferences and professional meetings to enhance discussions, collaborations, and networking, as well as science. CSTS has extensive collaborations within DoD and with other federal and state agencies, as well as with academic and international partners. In 2022, we, again, expanded our partnership network at all levels.

In this Annual Report, you will find summaries of our new areas of focus as well as our ongoing activities. Our overarching goal is to improve trauma-related care through prevention, early intervention and preparing health care providers and community leaders with tools to address the impact of trauma and its far-reaching effects. Building a trauma-informed approach to sustaining readiness, resilience and health, CSTS continues to look into the future across horizons that many do not yet see.

On behalf of CSTS, I extend our appreciation to our colleagues and friends with whom we have collaborated as we continue our watch of the emerging horizons of psychological and behavioral health needs for our Military Health System, the DoD, and the Nation.

Robert J. Ursano, MD  
Professor of Psychiatry and Neuroscience  
Department of Psychiatry  
Director, Center for the Study of Traumatic Stress  
Uniformed Services University

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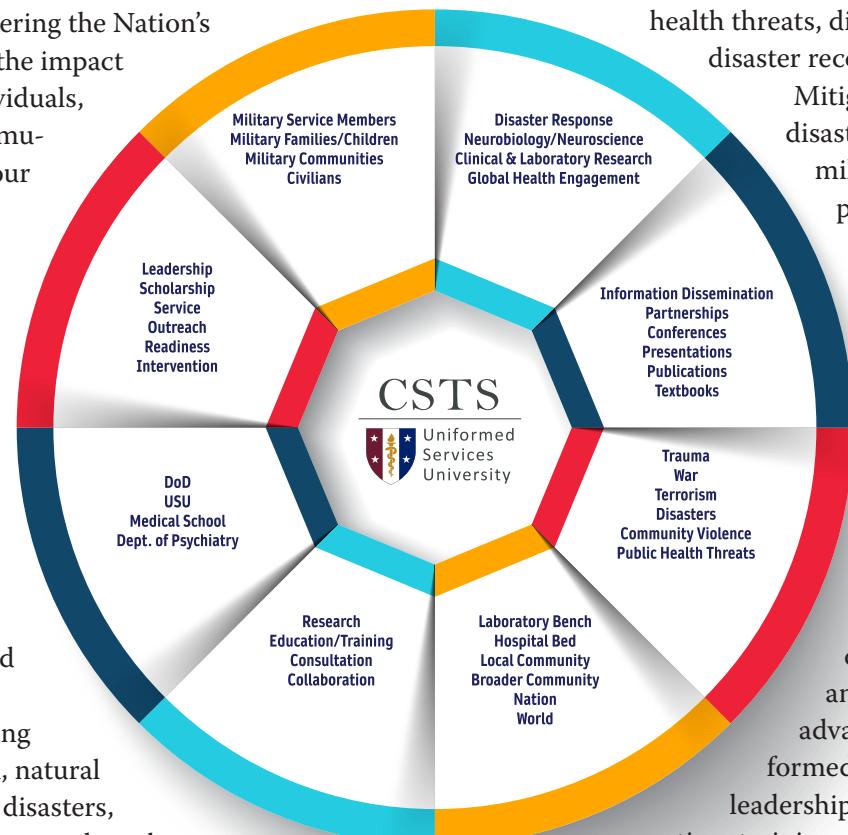
# Our Mission

CSTS supports the USU Strategic Framework and the mission of the DoD. The Center is committed to advancing trauma-informed care and is dedicated to furthering the Nation's understanding of the impact of trauma on individuals, families, and communities. As part of our Nation's federal medical school (America's Medical School) at USU, the Center's mission is well-positioned to rapidly respond to DoD mission-relevant activities.

The Center's work spans a broad range of trauma exposures, including combat, terrorism, natural and human-made disasters, public health threats, such as the COVID-19 pandemic, and humanitarian operations. CSTS has been involved in nearly every

major disaster our Nation has faced over the past 35 years. The Center works 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 builds community and national resilience. The Center informs and educates community, regional, state, national, and global stakeholders in government, industry, health care, public health, and academia. CSTS advances trauma-informed care by providing leadership in research, education, training, consultation, global health, and service.



## CSTS CAPABILITIES

CSTS is a multidisciplinary and multifaceted research center that possesses the capabilities to study psychiatric and psychological phenomena and their sequelae at the molecular, individual, organization, national and international levels. Our core and focused capabilities illustrate the key ways that CSTS ensures relevant research and consultation for our stakeholders.

### Core Capabilities

- Rapid Response to Psychological Impact of Emerging Threats
- Disaster Psychiatry
- Public Health
- Laboratory Neuroscience
- Translational Science
- Randomized Clinical Trials
- Applied Military Research
- Cutting-Edge Statistics & Methodologies

### Focused Capabilities

- Big Data & Machine Learning
- Early Emotional Response to Trauma & Stress
- Event-Related Disorders
- Mental Health Sequelae
- Treatment
- Sleep & Performance (Lab & Field)
- Genomics

# What's New in 2022

## Ukraine Response



On February 24th, 2022, Russia launched an invasion of Ukraine. The ensuing war resulted in countless casualties, displaced millions, and has led to widespread exposure to extreme and traumatic events. CSTS was sought out by colleagues within Ukraine and around the world to provide resources, consultation and education in support of communities to help protect mental health and foster resilience by addressing the unique effects of war on military and civilian populations. CSTS collaborated with American Psychiatric Association leadership to develop and disseminate the organization's global health statement and resource page in support of those affected by the war in Ukraine. (<https://www.psychiatry.org/news-room/news-releases/apa-statement-and-resources-on-the-mental-health-i>).

The Center rapidly developed and disseminated a just-in-time resource page (<https://www.cstsonline.org/resources/resource-master-list/war-in-ukraine-mental-health-resources>) that included mental health education fact sheets with evidence-based, actionable guidance for Service members, families, military and community leaders, as well as health-care providers and other global responders. CSTS developed pocket cards to provide quick actions to help calm acute stress reactions among military and civilians, as well as rapid implementation of key actions that foster Psychological First Aid (PFA).

The Center translated the resources into Ukrainian, Russian, and Polish to optimize their utility in the communities most heavily affected by the war and refugee displacement. CSTS disseminated these fact sheets and pocket cards to DoD and other federal agencies, and widely around the globe through NATO partner nations, the United Nations, the World Health Organization, and the Five Eyes international collaboration.

CSTS consultations included ongoing support to the President of the Association of Neuropsychologists of Ukraine (ANU), where Center Scientists assisted the ANU with obtaining information and medical screening materials to more effectively evaluate the impact of blast injuries and comorbid illnesses on Ukrainian military and civilians. CSTS collaborated with colleagues at the Harvard Global Mental Refugee Trauma Program and the Walter Reed Army Institute of Research (WRAIR) to provide ongoing weekly tele-consultation and peer support. The Center also provided support to Realis, a global mental healthcare organization that provided support within and around Ukraine to war-affected communities. CSTS Scientists shared evidence-based practices and optimal methods of adapting traditional mental health care to the setting of war.

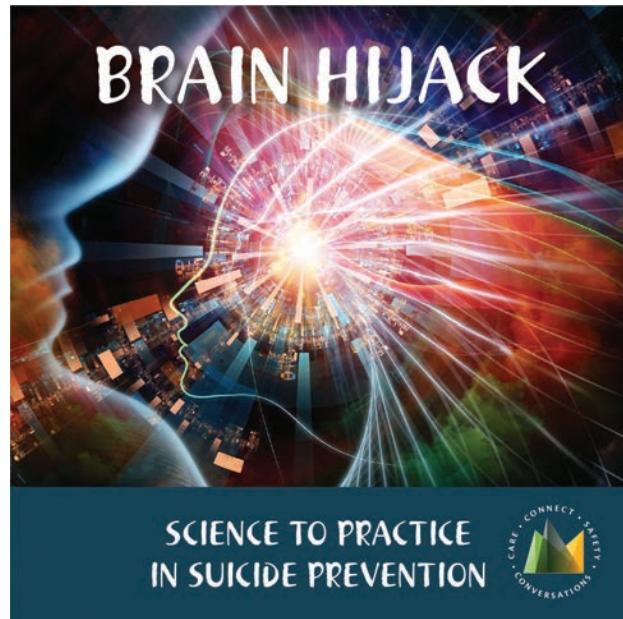


Colleagues of CSTS in Ukraine.

The Center Director played an integral role on the “International Consortium on Digital Psychological Aid for Ukraine,” which built the ‘digital stress buddy’ to engage with military and civilian community members who were encountering stressors and challenges related to the war in Ukraine. The digital stress buddy, which responded to user queries in multiple languages, directed users to timely and appropriate resources to address their unique mental and behavioral health challenges, using evidence-based principles and regional support resources. Moreover, in collaboration with our Five Eyes partners and fellow U.S. colleagues, the Center Director helped develop early response recommendations for NATO Service members supporting Ukraine (see Adler, Forbes, & Ursano, 2022).

Early in the war, the European College of Neuropsychopharmacology (ECNP) Traumatic Stress Network, comprised of long-time NATO colleagues, reached out to CSTS and requested support for a new education series called “Hot Topics,” that was rapidly developed to support dissemination of information about current events unfolding during the war in Ukraine and best practices to support mental health of military and civilian communities. Center leadership delivered talks on the impact of war on communities, evidence-based interventions, and leadership actions to protect health. These talks became part of an online education series, ultimately reaching thousands of mental health professionals and community lay people who were offering aid to those affected by the war. (<https://www.youtube.com/playlist?list=PLG-gouusCzgnWPBApVxogTR59qH2oQwqIs>).

The Defense Institute for Medical Operations and the University of New Mexico’s Project ECHO requested support from Center Scientists in developing the Armed Conflict Trauma Training (ACTT) program to bring basic principles of trauma care to non-emergency trained health care workers in Ukraine. CSTS helped in developing and delivering the content for a 16-module course and a mental health trauma lecture that follows the World Health Organization and International Confederation of the Red Cross Basic Emergency Care content. This online lecture series was made available to all health care workers in Ukraine and was widely disseminated through global outreach. ([https://www.youtube.com/playlist?list=PLM3v2ae2FB\\_xGA9dOP9LQ9vIsQ0e\\_xCQv](https://www.youtube.com/playlist?list=PLM3v2ae2FB_xGA9dOP9LQ9vIsQ0e_xCQv)).



## Suicide Prevention Program

During 2022, CSTS established the Suicide Prevention Program (SPP) (<https://www.cstsonline.org/suicide-prevention-program/overview>), in partnership with other DoD and academic partners. Informed by CSTS research findings from the STARRS project, the SPP translates science into actionable, evidence-based resources for military and non-military populations to reduce suicidal behavior and promote protective environments.

### *SPP aims to:*

- Collaborate with military and non-military communities to address suicide and related risk factors
- Leverage existing promising practices and data-informed interventions to enhance synergy of effort
- Develop data-informed practices, action tools, and resources for pre-, during, and post-suicide events
- Ensure development for, dissemination to, and evaluation of at-risk and hard-to-reach populations

The 12 SPP projects are summarized below and can be found here: <https://www.cstsonline.org/suicide-prevention-program/projects>

- ***Family Health & Safety to Prevent Suicidality:*** This project creates and evaluates educational materials for health care providers to: (1) advance understanding of families with members who are at risk of suicide; and (2) inform providers about available prevention and intervention services to reduce suicide risk in vulnerable families.
- ***Mental Push-Ups: Mindfulness in the Military Application:*** In partnership with the WRAIR this project adapts evidence-informed mindfulness techniques into an easily accessible mobile app to encourage daily engagement and practice of mindfulness. The mobile app is contextualized for the military as a prevention tool and for improving mental health and wellness.
- ***Sustaining Resilience in Battle:*** In partnership with WRAIR, this project produces videos that model resiliency skills and techniques in realistic battle scenarios. The videos demonstrate five key areas: (1) What's Important Now; (2) Deliberate Breathing; (3) Acceptance; (4) Grounding; and (5) Self-talk. The videos incorporate positive psychology skills to manage real time extreme stress and ultimately protect from negative health outcomes following combat.
- ***Project Safeguard:*** With our National Guard (NG) partners, Project Safeguard develops a training model for the NG on lethal means and voluntary reductions in firearm access during at-risk periods. Peer-to-peer counseling incorporates principles of motivational interviewing to encourage secure storage of personal firearms to decrease the risk of death by suicide or other means.
- ***Essentials of Ethical Research with Participants at Risk for Suicide:*** This project designs and deploys a robust e-learning curriculum to educate researchers within diverse settings on the topic of suicide risk determination and management. The course improves knowledge on how to identify and address suicidal risk identi-

fied during human subjects research.

- ***Let's Talk About Your Guns:*** This project develops a podcast series that connects listeners with experts on secure firearm storage. The aim of the podcast series is to strengthen the communication skills and confidence of healthcare providers, military leaders, family members, and peers to enable conversations with Service members about safely storing their personal firearms to prevent death and injury.
- ***Psychiatry Electronic Modules:*** This project builds and deploys self-learning electronic modules for early in training medical personnel. eModules provide training on suicide risk assessment and related risk factors for suicide, including body dysmorphic disorder and eating disorders.
- ***Bereavement Adaptation: Learning And Navigating Coping Essentials (BALANCE):*** This project creates an interactive tool for bereaved individuals to learn about and practice effective coping strategies. This user-friendly platform allows bereaved individuals to: (1) inventory current coping skills; (2) learn about various coping strategies and their possible effects; (3) practice skills to manage ineffective coping; and (4) expand current coping skills in order to increase sense of control over ability to cope.
- ***The Military Survivor Family Safety Toolkit:*** This toolkit promotes positive family safety practices for military family members who lost a loved one. The Military Survivor Family Safety Toolkit supports peer-to-peer discussions around family health and safety, well-being, potential harmful behaviors, and suicidality.
- ***Finding the Words:*** This project develops a series of video simulations to demonstrate and teach skills in help-seeking and combat barriers to care. The videos build confidence in key stakeholders to select and deliver the best words to encourage people to seek behavioral health care or other support services.
- ***Brain Hijack:*** This series of podcasts provides information for military and nonmilitary communities regarding drivers of suicide risk and

presents a public health approach to action. This series features expert recommendations for special populations and communities at large.

- **Supporting Our Shipmates: Gatekeeper Trainer Project:** In partnership with the U.S. Coast Guard, this project facilitates a LivingWorks Training for Trainers (T4T) mentoring model within the U.S. Coast Guard and conducts evaluation on the impact of mentoring on trainer candidates' willingness and readiness to provide interventions to those having thoughts of suicide.

During 2022, SPP developed and delivered education and leadership products including fact sheets: *Suicide Prevention Strategies for Leaders*, *Leader Action Checklist: Preventing & Responding to Suicide Events*, and the *Firearm Leadership to Reduce Risk of Suicide and Harm*.

## COVID-19 Response

The Center supports and expands the DoD's COVID-19 pandemic response. CSTS Scientists and staff developed and maintained key collaborations with the National Guard Bureau (NGB) and hospital and community agencies within New York City. The Center is part of the national action to develop and disseminate COVID-19 knowledge products including fact sheets, pocket cards, and infographics on important health topics such 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 assisted USU leadership in assessing the impact of COVID-19 on the USU workforce and

students through the USU Resilience Operational Assessment. Ongoing activities have included supporting the NGB in the development a rapid public health surveillance assessment to inform leadership and provide action-oriented recommendations related to stressors, resilience factors, and behavioral health responses. CSTS scientists developed training materials to reduce distress and increase resilience in NG personnel activated in response to COVID-19 including those tasked to handle the remains of the dead. CSTS continues to collaborate with the NGB and the NG with education, consultation, and ongoing surveillance. CSTS Scientists were also requested as consultants in the development of a survey that was administered to a sample of National Institute of Occupational Safety and Health (NIOSH) personnel who deployed in support of NIOSH, Center for Disease Control (CDC), and Health and Human Services (HHS) efforts to respond to the COVID-19 pandemic.

## Research Sync

In 2022, the USU Department of Psychiatry initiated a monthly "Research Sync" meeting to connect researchers from within and outside of USU, and between clinical and pre-clinical researchers. This venue allows local and global faculty who are interested in research to engage in a scientific discourse. In 2022, scientists from academia, military, and industry presented on topics such as biomarker development, the use of psychedelics in active duty populations, and vagal nerve stimulation. In 2023, CSTS is looking to expand the reach of this forum as a supplement to the CSTS annual Amygdala, Stress, and PTSD Conference.



A CSTS meeting during the COVID-19 pandemic.

# Research

CSTS has a broad range of research projects and programs, including epidemiological, clinical, and laboratory research designed to support the Military Health System in its efforts to promote military readiness for both peacetime and wartime, and to deliver integrated, affordable, effective, and high-quality health services. CSTS research encompasses investigations ranging from the causes of suicide in Service members, to the psychological responses to trauma and disasters, to the symptomatology and treatment of PTSD and the neurobiology of these disease processes.

## 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)*



Study to Assess Risk and Resilience in Servicemembers - Longitudinal Study

Since 2009, CSTS has been at the forefront of research designed to help the Army and DoD address the long-standing problem of suicide among active duty Soldiers. The research programs, called Army STARRS (2009-2015) and STARRS-LS (2016 onward), apply state-of-the-art machine learning techniques and predictive analytics to better understand and predict suicide and suicide-related behavior. Both Army STARRS and STARRS-LS 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 is comprised of a series of distinct but integrated studies, including large, representative samples of Soldiers and targeted cohort studies,

designed to comprehensively examine the mental health and resilience of active duty Soldiers, including Regular Army, Army National Guard, and activated Army Reserve. These studies included the Historical Administrative Data Study (HADS), which uses a vast range of existing Army/DoD administrative data for all Soldiers (more than 1.6 million) on active duty from 2004-2009. Army STARRS also involved collecting data directly from a combined total of more than 100,000 active duty Soldiers throughout the U.S. and overseas. The research included administering questionnaires, conducting neurocognitive tests, collecting blood samples, and performing a broad range of data and genetic analyses.

Under STARRS-LS, the research team has continued and enhanced the Army STARRS research by expanding the sample size, extending the follow-up, further developing the STARRS platforms and systems, and conducting additional data analyses of Army STARRS and STARRS-LS data. STARRS-LS expanded the size and extended the duration of the HADS cohort by including additional Soldiers and obtaining an additional twelve years of Army/DoD administrative data for the period of 2010-2021. This study now includes all active duty Soldiers (more than 3 million) across the eighteen-year period of 2004-2021. For the STARRS-LS longitudinal cohort, the research team has been locating, re-contacting and collecting survey data every two years from a representative sample of approximately 15,000 Army STARRS participants. A total of four survey waves will be collected from this cohort over an eight-year period.

Since the survey data collection waves began during the COVID-19 pandemic, the research team designed and added a COVID-19 section that included 22 questions about the respondents' experiences during the pandemic and the impact it had on them. This offers a unique opportunity to assess and compare mental health and behavioral health prior to and after the onset of COVID-19, therefore examining the effects of the pandemic in a well-characterized, representative sample of Soldiers.

The Army/DoD recently added the Veterans Administration (VA) as a STARRS-LS partner. Over the long duration of the follow-up period, a majority of the participants have now separated from the Army and transitioned to civilian life. The STARRS research team has been collaborating with VA scientists on subgroups and outcomes of importance to the VA. During 2022, the Army and DoD continued to use STARRS findings and knowledge to develop products such as reports, publications, leadership tools and risk mitigation strategies. The STARRS studies have informed the present VA suicide outreach program for post-hospitalization intervention. The STARRS research team is also one of the leaders in the nation at demonstrating the value of machine learning and predictive analytic models as clinical care tools.

Throughout 2022, the research team published scientifically important and potentially actionable findings for the Army/DoD. In addition, the team has continued to brief the research progress and findings to senior Army/DoD leaders. As of the end of 2022, the research team had 115 STARRS publications in high-impact, peer-reviewed scientific journals. A summary of all the STARRS publications can be found on the CSTS website at: ([https://www.cstsonline.org/assets/media/documents/Army\\_STARRS\\_Fact\\_Sheet\\_V6\\_I2\\_20220906.pdf](https://www.cstsonline.org/assets/media/documents/Army_STARRS_Fact_Sheet_V6_I2_20220906.pdf)).

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

U.S. Army MA Soldiers recover, identify, and evacuate the remains of the dead from warzones, disasters, and other sites. MA Soldiers experience direct exposure to death and the dead as well as deployment-related stress and work in combat and other extreme environments, which increase their risk for trauma-related distress and disorders. This longitudinal research study examines the individual, unit, and family stressors, risk factors, and resiliency of MA Soldiers. Questionnaires are group-administered to MA detachments approximately one week before and after deployment. Data are collected on factors such as PTSD, depression, distress (e.g., anger, hostility, somatization), substance use, and

instrumental and emotional support. Soldiers also have the option to donate saliva samples, which will be analyzed for potential DNA- and RNA-related biomarkers of stress and resiliency.

In 2022, Reserve MA Soldiers from the 387th Quartermaster (QM) Company (CO) (Costa Mesa, California) and 246th QM CO (Mayaguez, Puerto Rico) and active-duty MA Soldiers from the 54th QM CO participated in the study by completing deployment-related questionnaires. In total, 187 questionnaires were collected in 2022. Overall, the study questionnaire has been administered 81 times and 3,880 questionnaires have been collected since the study began in 2005. Data analyses in 2022 included an examination of traumatic exposures within and across deployments and PTSD and depression symptoms and probable disorder. Manuscripts addressing these topics are now in progress. In addition, poster presentations on traumatic exposures, stressors of humanitarian versus war deployments, and the MA-STAR (Mortuary Affairs-Select, Train, Assist, and Reset) Pocket Card supervisor support tool were presented at local and national scientific conferences. Study findings inform the education and training of Soldiers and other groups for deployment and work with human remains.

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

Troop Education for Army Morale (TEAM) is an



*Dr. Biggs and members of the CSTS Research Team at the 54th QM CO for data collection.*

innovative stress management and resilience-building early intervention. It was designed to improve post-deployment readjustment in U.S. Army mortuary affairs (MA) Soldiers, a group at high risk for psychological distress due to their exposure to human remains and the combat environment. The TEAM intervention is based on the five evidence-informed principles of PFA: safety, calming, connectedness, self-efficacy, and hope/optimism. TEAM is 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. Soldiers who attended more workshops reported fewer symptoms and were more likely to rate TEAM as helpful. During the COVID-19 pandemic, TEAM intervention materials were adapted for an online format using video conferencing and sharing materials electronically when individuals are not able to meet in person. The online 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 online adaptation of TEAM broadened the application of the intervention for use in a variety of military and civilian populations, including medical personnel, police, firefighters, disaster workers, mortuary personnel, and others who work with the dead.

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

The Daily Diary Study research is designed to improve our understanding of the day-to-day changes in post-traumatic stress symptoms of U.S. military Service members. The study uses a novel EMA methodology coupled with portable electronic assessment devices to track symptoms in real time. Study participants completed symptom assessments four times daily for 15 consecutive days using a

sophisticated software application that was developed specifically 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 wear a wrist actigraph to objectively measure sleep and complement self-reports of sleep during the 15-day daily diary assessment period. Participants also had the option to donate saliva and/or blood samples for genetic analysis to identify potential biomarkers and gene-environment interactions that may distinguish and/or mediate stress responses and resilience to stress-related disorders. In total, 183 subjects have been recruited since the study began. Importantly, this study collected data on daily suicidal ideation, which is rare among EMA studies.

Data analyses in 2022 included examinations of day-to-day variation in suicidal ideation as well as within-day variation in post-traumatic stress symptoms. Study findings on daily variation in suicidal ideation were disseminated in a poster presentation at a scientific conference and a manuscript for publication in a scientific journal is underway. In addition, a poster describing barriers to seeking health care was presented at a scientific conference in 2022. The Daily Diary Study represents the cutting-edge in psychological assessment methodology, measures, equipment, technology, and research design to better understand post-traumatic stress symptoms and improve the well-being of Service members.

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

Firearm suicides are the 10th leading cause of death in the U.S., reaching epidemic proportions in the last decade. CSTS Scientists, and collaborators from Harvard University and University of South Florida, were awarded a two-year R01 grant from the CDC to study firearm behavioral practices and suicide risk in U.S. Army Service members. The study objective is to develop an understanding of Service members' firearm behavioral practices and suicidal behaviors, and to identify actionable targets for suicide intervention using data from both a case-control psychological autopsy study and a large, longitudinal sample from the Army STARRS and STARRS-LS

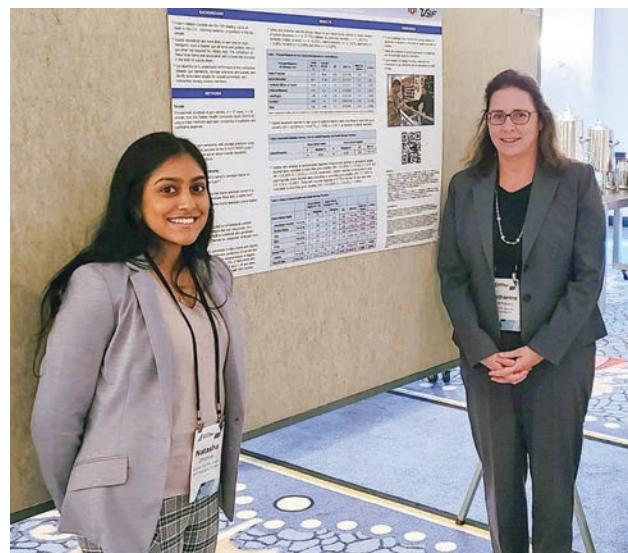
research projects, respectively.

An in-depth analysis of the interactions among personality characteristics, reasons for gun ownership, gun use and storage practices, and local gun laws will identify potential medical, psychosocial, public policy, and command interventions to mitigate the relationship of firearm ownership to suicide. The broader impact of this study will enhance our understanding of risk and protective factors of firearm-related violence. This study examines factors related to suicide in a controlled setting among a population of men and women in the age range for which suicide is most prevalent in the general population, and provides opportunities for new insights that can assist the military in suicide prevention, and can be applied more generally to civilian society.

In 2022, CSTS and Harvard scientists presented at the inaugural National Research Conference on Firearm Injury Prevention in Washington, D.C. to disseminate research findings from this study. Key findings presented focused on unsafe storage practices and suicide risk, and the need to develop interventions focused on gun ownership for safety and protection, unsafe storage practices, and suicide risk. In the year ahead, we intend to focus on dissemination of findings and to conduct longitudinal analyses of Soldiers' experiences through their military careers and civilian life, to identify changes in behavioral risk factors specifically related to changes in local gun laws, as these may be associated with suicide.

### Toward Personalized Care for Insomnia: Machine Learning Algorithms to Predict Response to Insomnia Therapy

Insomnia is prevalent among U.S. Army Soldiers, especially those with combat exposure. Insomnia affects performance and well-being in the immediate term and is associated with a wide range of other negative consequences in the longer term, including depression, hospitalizations, disability, and substantially decreased life expectancy. Moreover, sleep disorders are among the long-term sequelae of



*Dr. Dempsey and Research Assistant Ms. Dhanraj presenting a poster at the National Conference on Firearm Injury Prevention.*

COVID-19 and an effect of the social isolation, disruptions in daily routines, and other stressors that have occurred in response to the pandemic. No treatment for insomnia is universally effective, and while certain pharmacologic and behavioral therapies may treat insomnia effectively for some individuals, there is little basis for identifying those individuals before initiating therapy.

The Center led a research effort to address this knowledge gap. In collaboration with Harvard Medical School, our research team is developing a strategy to predict the likelihood that a patient will respond to a therapy for insomnia before initiating that therapy. Starting with a consolidated administrative data system developed as part of the Army STARRS, the team built an observational longitudinal dataset simulating a clinical trial. The sample represented in this constructed dataset comprised nearly 5,000 U.S. Army Soldiers diagnosed with an ICD-9/-10 sleep disorder, treated with an insomnia medication, and assessed before and 6-12 weeks after initiating treatment. Using this dataset, the team developed a machine learning model that improves the ability to identify individuals likely to respond to pharmacologic treatment for insomnia. Next, the team will build a parallel observational longitudinal dataset to develop a machine learning model that predicts response to Cognitive Behavior Thera-

py for Insomnia (CBT-I). Finally, the research will expand the set of potential predictors, using clinical interview and polysomnography data from the Sleep Disorders Center at the Walter Reed National Military Medical Center (WRNMMC) to predict response to insomnia therapy.

By allowing health care providers to inform patients of the likelihood they will respond to a therapeutic approach before a therapy is prescribed, the models developed in this research will enhance clinical decision-making. Improving clinical decisions will help reduce negative sequelae of insomnia and avoid adverse consequences of therapy when that therapy is likely to be ineffective for an individual. The results of this collaborative research will constitute an important step toward personalized treatment planning for Soldiers as well as civilians with insomnia.

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

### *National Guard and Reserve Longitudinal Study*

Conducted in collaboration with Dr. Sandro Galea at Boston University, the Mental Health and Service Utilization among Reserve and NG Forces study addresses the epidemiology and trajectory of mental health problems, deployment stress, health risk behaviors, and health care utilization over a four-year period among Reserve Component (RC) members. Using a representative national cohort of 2,003 RC members, CSTS has been actively analyzing this comprehensive dataset. In 2022, the Center examined a variety of adversities faced by RC members who transitioned out of the service and the association among transition, adversities and suicide ideation. Five types of adversities were identified: health, job/employment, interpersonal, financial, and healthcare access adversities. Compared to those who stayed in the military, those who left the military were more likely to report financial and health care access problems. Further, among those who left the military, female Service members were four times more likely to experience interpersonal adversity. Army and Marine Service members were

five to six times more likely to experience job/employment and financial adversities compared to their counterparts who had not left the military. Transitioning out of service and adversities both increased the risk for suicide ideation. These results highlight that transition from military to civilian life is a critical period for interventions to address the unique needs of the RC's Citizen-Soldier.

### *New York National Guard (NYNG) Warfighter Readiness and Resilience Assessment*

The U.S. NG served as a critical component 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 and preparing for subsequent disasters. To address the immediate need for information on force health and readiness, CSTS collaborated with the NYNG to develop a rapid public health surveillance assessment, which was completed by almost 4,000 NYNG Service members between August and December 2020. The assessment identified stressors and COVID-19-related concerns, resilience factors, and psychological and behavioral health responses among NG personnel during the COVID-19 pandemic. Based on this assessment, Center Scientists have identified pandemic-related stressors and experiences, protective factors, and psychological and behavioral responses among Guard members who did and did not activate in response to the pandemic.

In 2022, Center Scientists began a series of examinations that identified: (1) the relationship of COVID-19-related work tasks that were associated with high stress activations to post-activation PTSD; (2) the association of unit cohesion and leadership support with PTSD, clinically significant anxiety and depression symptoms, and anger; and (3) COVID-19-related concerns, strategies to help manage stress, the extent of sleep difficulties, and increased substance use, including alcohol, tobacco, and caffeine/energy drink consumption during the pandemic. Study findings will inform recommendations for leadership to promote mental and behavioral health and readiness among NG personnel during and following disaster response.



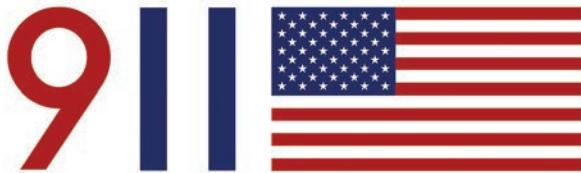
## RESEARCH IN THE CHILD AND FAMILY PROGRAM (CFP)

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. Although military children and families possess unique strengths, they can be affected by combat-related illness and injury, bereavement, child maltreatment, and family violence. Currently, there are five CFP project areas: bereavement, child maltreatment, combat-injured families, family violence, and suicide prevention. In addition to CSTS-based work, the CFP maintains collaborative relationships with other departments at USU, 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. CFP's pioneering research is also translated into actionable and educational materials for military and government stakeholders, clinicians, and community leaders. For example, one recent collaborative CFP and USU medical student Capstone project this past year examined the intersection of suicide risk for military LGBTQ+ children, and results were presented at the American Academy of Child and Adolescent Psychiatry annual meeting. In addition, CFP consults with military and government leadership, informs national media outlets, and conducts research that promote a deeper understanding of children in the U.S. and throughout the world.

## Bereavement

### *Grief and Health-Related Quality of Life in World Trade Center 9/11 Survivors Study*

In late 2022, the CFP received funding from the CDC to examine outcomes associated with trauma and bereavement in 9/11 survivors, in collaboration with colleagues at Columbia University, the World Trade Center Health Registry (WTCHR) and Voices Center of Resilience. Despite 9/11 survivor's high rates of losses on and after 9/11, minimal research has focused on the examination of grief responses and their effects on mental health in this population. Using existing and newly-collected data, we will examine the complex inter-relationships of bereavement burden and physical and mental health burden in order to better inform WTCHR programming.



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

The NMFBS is 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 is to examine how psychological, physical, and behavioral outcomes of bereavement are influenced by the experiences of military family members. Findings have informed development of diagnostic criteria for a condition of impairing grief. CSTS partnered with colleagues at Columbia University, New York University, University of Pittsburgh, and UCSD to develop a proposal for criteria for prolonged grief disorder, a new diagnosis included in the Diagnostic and Statistical Manual of Mental Disorders (DSM). A recent publication by CSTS Scientists reported increased rates of both ill-defined conditions and mental health diagnoses and healthcare utilization following bereavement. These findings suggest a need for proactive health monitoring of military widows

to identify and treat mental health conditions and recognize manifestations of physical symptoms.

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

An online program that addresses grief adaptation may be a helpful resource for bereaved military family members. CFP formed a partnership with the Center for Prolonged 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. Results indicated that there were small, but statistically significant, improvements in grief and in functional impairment among those in the high grief group. These results indicate that a novel modality, requiring little oversight or cost, can markedly increase the ability to reach bereaved family members.



The logo for the Stepping Forward in Grief study features a circular arrangement of stones, with the text "Stepping Forward in Grief" curved along the top and "Uniformed Services University • Columbia University" curved along the bottom.

### *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 following a terrorism-related death. The team published two manuscripts. The first manuscript identified three groups of bereaved family members that 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 post-traumatic stress, but not grief severity. Results from this publication were also described on the Interna-

tional Society for Traumatic Stress Studies' (ISTSS) Trauma Blog and were used to develop an interactive fact sheet for health care providers about death notification within health care 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 (i.e., hopelessness and reasons for living), specific coping strategies, and outcomes (i.e., grief, depression, suicidal ideation). This information will identify actionable targets for intervention programs. A related publication from this study used data from the 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. More recent analyses resulted in two scientific poster presentations; one was about predictors of suicidal ideation and the second described a comparison of two commonly-used indices of suicidal ideation.



### *Disenfranchised Grief*

Through its collaborations with Sons and Daughters in Touch (SDIT), an organization of children whose fathers died or were MIA in the Vietnam War, CFP noted the consistency with which this population felt their loss was unacknowledged or rejected. This phenomenon is consistent with the concept of disenfranchised grief (DG), which refers to the expe-

riences of bereaved persons whose grief was not or could not be openly acknowledged, publicly mourned, or socially supported by others. In response to this, particularly in the context of the COVID-19 pandemic, CFP is conducting research on DG, which includes developing a measure of DG. CFP is refining and will test 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 area of the CFP involves the identification of risk factors for child maltreatment in military families in order to inform prevention and intervention strategies that promote military family health, well-being, and resilience. CFP's work has primarily focused on child neglect, the child maltreatment type most commonly reported in the U.S. and most frequently associated with child fatality. The aim of this work was to identify factors that increase risk of child neglect by examining characteristics of substantiated child neglect cases in families of U.S. Army Service members. These data have led to multiple publications in high-impact scientific journals (*Child Maltreatment, Military Medicine*), research presentations at scientific conferences and fact sheets for professional and lay audiences. A new analysis of these data, published this year in *Child Abuse & Neglect*, focused on identifying the types of neglect and abuse that are likely to occur concomitantly and associated risk factors. Recent analyses examining child protective actions in substantiated child neglect incidents involving different neglect types will be presented at an upcoming scientific meeting. This collective work advances the understanding of the phenomenology of child neglect types and the characteristics of families at-risk for particular classes of co-occurring neglect.

CFP Scientists also conducted 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. 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 risk of substantiated child maltreatment incidents. In Phase II, survival analyses were conducted to investigate the contribution of Service member socio-demographic characteristics, family characteristics, military characteristics, and family life events to the timing of the first incident of substantiated child maltreatment. Results inform DoD's child maltreatment prevention efforts. A report summarizing our findings was written in collaboration with the Office of Military Community and Family Policy.

### **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. A recent publication in *Depression and Anxiety* described the impact of combat injury and military deployment on mental health symptoms in a sample of military wives. The aim of CFP's work in this area is to help us better understand the impact of combat injury on Service members and their families and inform interventions that more effectively address their needs.

### **Family Violence**

In 2022, CSTS focused on supporting the Army Office of the Deputy Chief of Staff (DCS) G-9's response to problematic sexual behavior in children and youth (PSB-CY), and reviewing family violence-related deaths in the Army, including suicides, of children and adults. The Center's approach has two components: the design and production of resources, including fact sheets describing the DoD's approach to PSB-CY and producing monthly reports

for Army DCS based on data received from Army installations. The Center participated in the annual Headquarters Department of the Army (HQDA) Army Family Fatality Review Board (FRB) and drafted a report that summarized the characteristics of child abuse and intimate partner violence-related fatalities including recommendations to prevent these fatalities.

Also in 2022, the Center redesigned the formats for two regular CSTS publications, *Research Review (RR)* and *Joining Forces Joining Families (JFJF)*. These publications report research-based information for the Army Family Advocacy Program (FAP) community, with interpretations that are useful for their work. CSTS is currently reviewing literature on nonfatal firearm violence and discussing contributing factors, such as coercive control as a method of domestic violence and the safe storage of firearms.

CSTS continued to provide the FAP with quarterly statistical data monitoring of installation-level FAP report changes throughout 2022. These Briefing Books are specific to 40 different Army installations and geographic areas with comparisons of installation/area-level data to the entire Army. Data reported included the number of incidents of abuse (physical, emotional and sexual) and neglect of children. Data on adults are provided by the Defense Manpower Data Center.

## Suicide Prevention in Families

In support of the Center's SPP established in 2022, the CFP is developing three specific projects:



Family Health & Safety to Prevent Suicidality, Bereavement Adaptation: Learning And Navigating Coping Essentials (BALANCE), and The Military Survivor Family Safety Toolkit. Each of these projects is briefly described above in the SPP section.

## RESEARCH IN NEUROSCIENCE AND NEUROBIOLOGY

### Laboratory Research in Neuroscience and Neurobiology

#### *Genetics and Biomarkers*

Until recently, an overwhelming amount of work on PTSD was conducted exclusively on male Service members. This has led to a lack of understanding of sex-related differences in the disorder. The Center's work focuses on understanding where sex-related differences arise and where they do not, and how the Center can use this understanding to help affected Service members. In 2022, CSTS examined the sex-related difference in mitochondrial DNA copy numbers between male and female Service members with or without PTSD using conventional real-time polymerase chain reaction (PCR) and droplet digital PCR, which provides absolute quantification of DNA. CSTS data suggest that mitochondrial function may be gender-dependent in individuals with PTSD. Glucocorticoid and/or estrogen may play an important role in the biology of the sex-related difference in PTSD.

#### *Chronobiology, Light, and Sleep Lab*



Staff testing study equipment in the Chronobiology, Light, and Sleep Lab.

From basic science experiments to randomized clinical trials and implementation studies, the Chronobiology, Light, and Sleep Lab research program focuses on sleep, circadian rhythms, and the physiological effects of light, with the ultimate goal of maximizing human health and well-being. Specific work in 2022 aimed to better understand the neural mechanisms underlying the modulation of the physiological effects of light, including circadian resetting, neuroendocrine regulation, acute alerting properties, and mood enhancement, along with the practical application of those findings.

In a multi-phase effort, the kinetics of the alerting response to light are being rigorously characterized via a highly controlled laboratory study that varies the intensity and duration of photic exposure while holding the dose constant in a portable light device. In parallel to determining an optimal photic dosing configuration, an overlapping feasibility study will employ the same light devices to identify the various barriers and facilitators to implementation, allowing for refinement of hardware, usage guidelines, and other factors that may impact uptake and efficacy. In combination, those findings will serve to inform direct translational work wherein light treatment will be used to increase performance in an operational context.

In a separate study, two distinct spectrally-engineered lighting technologies have been developed and tested for increasing alertness, performance, and sleep in Service members who necessarily work rotating nightshift schedules on a high-security watch floor. Analyses reveal reductions in errors related to sustained attention, increases in alertness, improvements in quality of life, and overall satisfaction with the intervention conditions. Preliminary results were presented at professional conferences, and manuscript preparation is currently underway. In addition, discussions with leadership are ongoing for potential implementation of related technologies on a larger scale.

The successful transition of new, evidence-based lighting applications in domestic and workplace

settings will require a well-designed educational component that increases investment and facilitates adoption of interventions that target sleep, circadian health, and other physiological effects of light. To that end, an original education program, Circadian, Light, and Sleep Skills (CLASS), was initially created for undergraduate students and subsequently tailored for military (CLASS-M) and shipboard Service members (CLASS-SM). The efficacy of CLASS-SM was studied in crew members on three U.S. Navy ships during a period of two to four months at sea. Longitudinal data demonstrated that participation in CLASS-SM, on its own, resulted in improvements in sleep quality, which also led to better mental health outcomes. More detailed findings were included in publications this year in *Sleep Health* and the *International Journal of Environmental Research and Public Health*. Additionally, progress has been made in transitioning these education programs for dissemination at scale, in collaboration with the University of California, San Diego Center for Circadian Biology (CCB) and the USU Consortium for Health and Military Performance (CHAMP).

Finally, in 2022 the lab also teamed up with colleagues on three major collaborative projects. One study that is being conducted with Captain Rachel Lee, who leads the vaccination program at WRNMMC, is examining the effects of melatonin supplementation on vaccination efficacy. Another collaboration, led by Dr. Dayna Johnson at Emory University, will assess sleep, circadian rhythms and cardiometabolic health in African Americans. Finally, Dr. Gena Glickman at CSTS has joined several colleagues from the Max Plank Institute for Biological Cybernetics, Monash University, University of Basel, Eindhoven University, and University of Colorado Boulder, to develop a novel, self-reported and psychometrically validated inventory to capture light exposure-related behavior, the Light Exposure Behavior Assessment (LEBA). Preliminary results of the LEBA were reported at multiple professional conferences, and an associated manuscript is currently in preparation.

## Clinical Research in Neuroscience and Neurobiology

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

The Center conducted a study of riluzole augmentation for treatment of veterans who experienced continued PTSD symptoms despite treatment with evidence-based medications for PTSD. This study was funded by the Army Military and Operational Medical Readiness Program, and enrolled participants at WRNMMC and the Syracuse Veterans Affairs Medical Center from 2014 to 2017. The key findings of the study were that there was greater improvement in hyperarousal symptoms, such as exaggerated startle responses and hypervigilance, with riluzole treatment compared to placebo. In 2022, the Center continued analysis of proton magnetic resonance spectroscopy (1H-MRS) of the amygdala and anterior cingulate cortex before and after treatment as a potential biomarker of illness and treatment response. CSTS Scientists, in collaboration with researchers at Brigham and Women's Hospital, identified discernible changes in brain metabolites in the areas of interest which are associated with changes in PTSD symptoms. The Center is currently preparing these findings 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. Sleep disturbance and associated fatigue represent a threat to readiness. In 2022, CSTS completed a pilot trial of Nightmare Deconstruction and Reprocessing (NDR), an exposure-based psychotherapy for trauma-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 thoughts and feelings in order to facilitate reconsolidation of trauma memories. Initial results suggest that NDR offers benefit for patients with trauma-re-

lated nightmares. Full findings of the study are still being reviewed and prepared for publication. In addition to assessing nightmare and insomnia severity, suicidality, and PTSD symptoms, the study evaluated multiple potential biomarkers of treatment response. The study team collected genetic and inflammatory biomarkers at multiple points in treatment as potential indicators of treatment response. Investigators also collected continuous physiologic indicators of stress, such as heart rate variability and skin conductance, using wearable technology. Preliminary findings show changes in physiologic measures in response to NDR, and these findings are currently in preparation for publication. Findings from this study are contributing to the design of a full-scale randomized, controlled trial to demonstrate efficacy and validate biomarkers. An unanticipated benefit of this study was the development of remote monitoring and assessment procedures. Initially implemented in response to the COVID-19 pandemic, study investigators developed and implemented remote study intervention and assessment processes, enabling the study to proceed almost entirely virtually. These processes will be implemented in future studies to reduce cost and expand available participant pools. This study was closed to enrollment in 2022.

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

In 2014, a consortium led by the VA National Center for PTSD and co-founded by CSTS Scientists established the first human tissue biorepository — or “Brain Bank” — dedicated to examining the impact



of trauma and stress on human body tissues, with the objectives of identifying biomarkers of susceptibility and resilience to trauma, and assisting in targeting new treatments. The Brain Bank collects, processes, and stores clinical and biological information, and distributes this to investigators nationwide to afford researchers the opportunity to examine the molecular, morphological, and biochemical effects of traumatic stress on the brain, generate proposed mechanisms of PTSD, develop pharmacological interventions, and study biomarkers and endophenotypes.

Since its inception, the Brain Bank has acquired tissue from existing collections and also enrolled donors through collaborating institutions. Living persons can enroll to serve as future tissue donors and, furthermore, provide comprehensive longitudinal assessment data via clinical interview from the time of enrollment until the time of their death, when their tissue is donated to the Brain Bank.

In 2022, the Brain Bank obtained 25 tissue donations and enrolled 25 additional future donors. To date, the Brain Bank has obtained a total of 339 tissue donations and enrolled a total of 258 additional future donors. CSTS Scientists continued to serve on the Brain Bank's Steering Committee, Tissue Access Committee, and Diagnostic Assessment Core, and have collaborated with other Brain Bank Investigators on several manuscripts. In 2022, with COVID-19 movement restrictions easing, CSTS opened a recruitment site at the Armed Forces Retirement Home in Washington, D.C. While precautions are still in place there, gatherings at this location once again allow visitors, including representatives from CSTS who provide information on the Brain Bank. CSTS is now identifying and assisting veterans at this site who are interested in supporting the Brain Bank by becoming future tissue donors and providing their physical and mental health data. CSTS also began the process of establishing a new recruitment and enrollment site on the campus of Joint Base San Antonio.

## RESEARCH ON DISASTERS AND TERRORISM

### Florida Department of Health Response to Multiple Hurricanes

In 2022, CSTS Scientists continued to examine psychological and behavioral responses following natural disasters, including psychological distress, posttraumatic disorders, health risk behaviors, and functional/occupational impairment. *In particular, the Center examined predictive factors that influence recovery and resilience following disaster exposure, which can be targeted for preventive interventions in first responders who are exposed to multiple disasters. This work is particularly important globally, as the world experienced a wide range of disasters during 2022, including the COVID-19 pandemic, Hurricane Ian in the southeastern United States, extreme heatwaves and severe drought in Europe, the Middle East, Africa, and Asia, historic flooding in Pakistan and the United States, wildfires in the western United States, super Typhoon Hinnamnor in Japan, and multiple tornadoes in the midwestern United States.*

During 2022, Center Scientists identified factors that are important to recovery from multiple hurricane exposure by examining the time to recovery and behavioral responses in Florida Department of Health workers who were both first responders to, and were personally affected by, an unprecedented series of hurricanes that occurred in 2004 and 2005. CSTS examined pre-hurricane individual and interpersonal factors that were associated with time to recovery following the 2005 hurricanes. Importantly, less social support from respondents' spouses, friends, and family, more work presenteeism (i.e., reduction in work performance and productivity at work), higher levels of personal injury/damage as a result of the hurricanes, and higher emotional response during the hurricanes were related to a longer time to recovery following the hurricanes. This research suggests the importance of social support, work performance, and peri-traumatic factors, such as initial 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 peri-traumatic responses.

# Education and Training

An essential element of the Center's work is education and training. 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 health care personnel and community leaders at the local, state, and federal levels, as well as national, global, and private sector settings. The Center sponsors conferences, symposia, seminars, and forums on numerous aspects of trauma, including disasters, terrorism, and war. CSTS advances military and disaster psychiatry through consultation, training, outreach, presentations, and participation in conferences, workshops, and collaborations throughout the U.S. and global community. The Center also expands knowledge and provides education through public health efforts and interventions before, during, and after numerous disaster events.

One of the Center's instrumental public health education tools is development and dissemination of educational materials to inform stakeholders,



*Dr. Biggs presenting a poster at the Military Health System Research Symposium.*

including: health care personnel, community and organizational leaders, responders and public health emergency workers, families, teaching professionals, and policy makers. For nearly a quarter of a century, CSTS has created just-in-time, customized, highly actionable, and easy-to-read educational fact sheets, flyers, pocket cards and other resources to aid national and global stakeholders in mitigating adverse effects of disasters by enhancing efforts at preparedness, response, and recovery.

As noted above, a primary focus at CSTS has been the war in Ukraine and ongoing efforts in support of the COVID-19 pandemic by providing educational resources to partners throughout the DoD, other Federal agencies, state and local agencies, professional associations, and international partners.

## DISASTER RESPONSE AND PUBLIC EDUCATION

Since its inception in 1987, the Center has provided disaster preparedness and response education and consultation in numerous forms and contexts. 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 telephonic, online, and video support to assist response and recovery efforts following numerous disaster events, which have impacted local, national, and global communities. Current and former CSTS personnel have been sought out to provide guidance on disaster preparedness, response, and recovery efforts because of the experience and subject-matter expertise obtained while working at the Center. The Center's Deputy Director also serves as Chair of the Disaster Committee for the American Psychiatric Association, the world's largest professional organizing body of psychiatrists.

As noted above, throughout 2022, the Center provided consultation and education in response to the war in Ukraine, COVID-19 pandemic, and other converging disasters. Though much of the world has

made efforts to begin returning to aspects of normalcy, the global COVID-19 pandemic continued to sicken millions and kill hundreds of thousands in the United States alone. Healthcare systems around the world experienced massive surges in care demand, the uncertainty of new variants rapidly spreading around the world, and the stresses of a heavily strained workforce. CSTS has been sought out by numerous healthcare systems, professional associations, and other organizations across the United States to provide ongoing consultation and education to healthcare workers and leaders on adapting principles of disaster response in healthcare environments. An important aspect of this work involved education on adapting military Combat and Operational Stress Control principles for civilian workplaces to enhance well-being and promote operational and sustainment throughout the global public health emergency.

The Center also supported response efforts to a range of climate-related disasters, including Hurricane Ian, Hurricane Fiona, and the massive floods across the Central states, which particularly devastated the state of Kentucky. In response to these events, the Center developed and disseminated just-in-time education fact sheets and distributed them to stakeholders involved in disaster response, including the National Association of State Mental Health Program Directors, the Office of the Assistant Secretary for Preparedness and Response, as well as national medical organizations providing local response support, such as the American Psychiatric Association. The Center also developed a resource page and worked with partner organizations to support military and civilian communities in the wake of Hurricane Ian.

During the summer of 2022, there were three mass violence events over a period of five weeks, gripping the nation and requiring significant mental health response to support affected communities. CSTS provided consultation to local and national organizations, as well as educational resources, to support community mental health in response to the shootings at a supermarket in Buffalo, New York, the parade in Highland Park, Illinois, and Robb Elementary School in Uvalde, Texas. These events each in-

volved unique issues, such as racially-motivated violence and the death of children, for which the Center provided tailored information and consultation in support of community response and recovery.

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

The Neuroscience and Behavior Module is an eight-week, annual, required, multidisciplinary course for the first-year USU School of Medicine students. The module teaches medical students the principles of neuroscience through integrated content across a range of disciplines. With a focus on effective management of a variety of neurologic and psychiatric conditions, students learn to recognize, describe, and diagnose common neuroscience-related medical conditions. Through simulated patient experiences, effective, safe, and patient-centered clinical skills are developed and practiced, including the performance of neurologic and mental status examinations. Topics related to military medicine, medical history, and health systems science are integrated throughout the module. The goal is to foster a robust and well-rounded education for future military medical officers.

In 2022, the University continued to provide distance and hybrid learning, in addition to in-person classes and simulations. The Neuroscience module continued to be highly regarded by students and faculty alike as one of the best modules in the pre-clerkship curriculum, pioneering new educational techniques and leading students to one of the highest passing rates in the pre-clerkship period while absorbing some of the most challenging material. As early as 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 2022 and 2023, the module continued to enhance online lecture delivery by improving and re-recording 20 (15%) of the 137 video lectures. In collaboration with the Dean's Office, the module also embedded questions (checks for understanding) into the content of 91 (66%) of the 137 video lectures using Panopto's

built-in quiz feature. Module instructors continued to fully participate in the expanded hybrid flipped classroom approach for weekly review sessions six times throughout the module. These flipped classrooms invited students to attend a case-based review that highlighted key learning from the week, invited their professors to rephrase important points from their lectures to illustrate case studies, and invited ongoing discussion between students and professors in the online chat.

These vignettes, collected from USU graduates and faculty, were intended to demonstrate the operational importance of the medical 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 continued to be carefully blueprinted, down to the objectives which are also mapped to the university objectives. Due to the intensive effort put into organizing the material to correlate structure and function with anatomy, basic science and clinical lectures, the class of 2025 suffered no failures during our 2022 module without compromising the integrity or complexity of the material.

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

CSTS Scientists provided 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 called 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, culminating in a mass casualty event. 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. Differentiating the



*Operation Bushmaster annual medical field training exercise.*

assessment, disposition, and treatment of psychiatric illnesses from 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 and leadership skills and understand COSC as part of their core military-unique curriculum. Since the advent of widespread vaccination among faculty, staff, and students, we have continued full-scale exercise operations and teaching.

## **EDUCATIONAL CONFERENCES**

### **Amygdala, Stress, and PTSD Conference**

In 2022, the 16th Annual Amygdala Conference: Stress and the Mind, sponsored by CSTS in collabor-

ration with the USU Department of Psychiatry, USU Neuroscience Program, USU Department of Family Medicine, and the WRNMMC Department of Psychiatry, continued in a virtual format. The Conference featured several world-renowned scientists, including Matthew K. Nock, Ph.D. (Harvard University), Danny G. Winder, Ph.D. (Vanderbilt University), Matthew Girgenti, Ph.D. (Yale University), Richard Bryant, Ph.D. (University of South Wales, Sydney), and Amy Adler, Ph.D. (Walter Reed Army Institute of Research).

## TRAINING TO SUPPORT RESEARCH

The Center trains and educates research support staff, such as Research Assistants (RAs). RAs support research efforts at CSTS, have the opportunity to be a team member on projects and learn by working with CSTS Scientists, biostatisticians, and program managers. The RAs conduct literature searches, participate in study recruitment and data collection, data entry and quality control, and develop tables and graphic representations of study findings. RAs also prepare summary reports of meetings. RAs acquire valuable research skills at CSTS, including poster development for research presentations, and present research findings to professionals, such as study collaborators and the general public. 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. RAs further their education by pursuing advanced degrees. Center RAs have engaged in graduate study 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, Florida State 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, coun-

seling, public health and social work

- Training positions at the NIMH and other institutes at the NIH
- Careers with the FBI

In 2022, CSTS developed and implemented a new series of within-center professional development workshops designed to educate and facilitate discussions among the Center staff on topics critical to success, such as workplace communication, military culture, professionalism, and conducting applied research in DoD settings. We anticipate holding quarterly professional development workshops moving forward.

## DISSEMINATION AND IMPLEMENTATION OF HEALTH AND RESEARCH KNOWLEDGE

### Fact Sheets and Infographics

Fact sheets are a long-standing and globally lauded communication tool of CSTS. They are actionable, easy to understand, and topic-focused education resources developed using expert knowledge, which communicate essential behavioral health content on difficult and/or crisis-related issues. Fact sheets and infographics address the needs of a broad range of stakeholders and partners, including responders and emergency workers, health care providers, community leaders, family members, and policy makers. CSTS fact sheets, which are developed, updated, and maintained in an online repository, address a wide range of issues in disaster preparedness and response, such as climate-related and other natural disasters, pandemics, terrorism, and war; risk and crisis communication; elements of crisis leadership; health risk education; and family health behaviors. CSTS fact sheets and infographics provide readers with resources tailored to the unique aspects of disaster events that address critical contextual factors for various communities during any given disaster. The Center develops and rapidly disseminates fact sheets in real time, following major disasters and traumatic events such as hurricanes and wildfires, public health threats, mass shootings, and war.

In 2022, the Center developed 15 fact sheets and two pocket cards addressing mental health aspects of the war in Ukraine and its impact on military personnel, children and families, aid workers, refugees, and community and military leaders. These fact sheets addressed unique issues, including: talking with children about war, caring for Service members injured in war, protecting mental health of military and community members, managing the emotional reaction to human remains exposure, grief and other crisis leadership actions, and reintegrating into a community after military service. These fact sheets continued to serve as essential education resources to support global mental health response to the war in Ukraine for the United Nations, NATO ally nations, the Five Eyes ministries, and numerous Non-Governmental Organizations (NGOs) around the globe.

**CENTER FOR THE STUDY OF TRAUMATIC STRESS (CSTS) | Department of Psychiatry | Uniformed Services University | www.CSTSonline.org**

## LEADER ACTION CHECKLIST

### Preventing & Responding to Suicide Events

**Early Engagement**

- Get to know your unit personally through one-on-one meetings and unit social events
- Engage with people early when you think there is a problem and follow up regularly
- Model strong self-care (e.g., sleep, nutrition, stress management, time off)
- Identify and address unit stressors (organizational, relationship, financial, legal, etc.)
- Keep units informed of decisions that may impact them
- Encourage participation in unit planning and develop a strong mentoring system
- Have activities that promote unit cohesion and encourage peer support
- Ensure access to resources to improve stress and performance (fitness, sleep, nutrition, relaxation)
- Eliminate policies and procedures that stigmatize or create barriers to help-seeking
- Create a culture that encourages people to seek help early before problems worsen
- Create connections to chaplains and behavioral health and request prevention outreach
- Talk about safely storing firearms and other methods of harm (e.g., pills, poisons)

**Responding to Suicide Ideation or Attempt**

- Tell the person you are there to help
- Ensure immediate safety: Calmly remove any means that could be used for self-injury in a crisis
- Directly ask the service member if they have suicidal thoughts: "Are you thinking of killing yourself?"
- Do not leave the service member experiencing a crisis alone
- If time permits, consult with behavioral healthcare, other healthcare provider, or chaplain
- For immediate evaluation, escort service member to the emergency room, behavioral health, or chaplain
- Share details about the situation with only those who need to know

<https://www.cstsonline.org/suicide-prevention-program/>

**Center for the Study of Traumatic Stress**  
Advancing psychological Health and Resilience through Trauma Research, Education, and Consultation

**WHAT'S NEW?**

**ARMY STARS&LS VOLUME 7 ISSUE 1, UPDATED APRIL 3, 2023**  
The Army STARS&LS project is an ongoing continuous summary of Army STARS and STARS&LS publications. STARS&STARS LS (2009 - present) is the largest and most comprehensive research project of mental health among U.S. Army Soldiers ever conducted. The project was designed to examine a broad range of risk and resilience (protective) factors across a complex set of outcomes including mental health, physical health, and social outcomes. Army STARS scientists created a series of large and extensive databases with the potential to achieve groundbreaking results. These databases allow scientists to investigate a diverse combination of factors from demographic, psychological, biological, neurological, behavioral, and social domains with the goal of generating actionable findings for the Army. The project was designed using an iterative approach to refine the research questions and analyses available over the course of the project. The research team shared preliminary findings, as they became available, with senior Army leadership so the Army could apply them to its ongoing health promotion, risk reductions, and suicide prevention efforts. The work is continuing under the STARS Longitudinal Study (STARS-LS) which runs from 2013 to 2023.

## Website

The CSTS website is a primary tool that is used to further the goal of disseminating relevant and timely information to a wide range of stakeholders ([www.CSTSonline.org](http://www.CSTSonline.org)). 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 2022, the CSTS website saw 46,900 users from 174 countries around the world. On average, 129 users visited the site daily throughout 2022. Of the 46,900 users, 31,422 users (67%) were from the U.S. The top five countries each saw more than 440 users visit our website in 2022.

The most viewed section in 2022, other than the main page, was the Disaster Event page: 'War in Ukraine Mental Health Resources'. That page saw a total of 4,853 users in 2022 with an average length of time on the page of two minutes and 24 seconds. This page also provided resources in other languages, including French, Japanese, Polish, Ukrainian and Russian. The War in Ukraine Mental Health Re-

sources Ukrainian language page saw a total of 1,864 users in 2022.

SPP was newly added to the website in 2022. Its creation began in February and the official launch was in September. It saw 1,243 users during its first year. A podcast page, which had 809 users, was created that will house “Brain Hijack” and “Let’s Talk about Your Guns.” Three “Let’s Talk about Your Guns” podcasts were made available in 2022.

## Social Media

In 2022, the Center continued to grow its online presence through the use of social media. Social media resources allowed for the timely dissemination

of relevant content to CSTS partners and the public. CSTS social media engaged users from 10 different countries across the globe and gained new followers on both Facebook and Twitter. The Center is currently developing its first Center procedural document for submitting social media requests, synchronized with USU. Moving forward, the Center is exploring new ways to increase its social media presence in 2023 across multiple platforms. CSTS encourages people to visit and follow our postings via Twitter and Facebook to stay up to date on new activities and publications. “Like” CSTS on Facebook and follow CSTS on Twitter @CSTS\_USU.

## INTERVIEW WITH COLONEL (RETIRED) JEFFREY L. THOMAS

COL (Retired) Jeffrey Thomas, Ph.D. joined CSTS in August of 2022 as the Executive Director for Center/Program Operations. We asked Dr. Thomas about his background and experience, and about what led him to CSTS:

### What was your background and experience before joining CSTS?

I retired from a 28½ year Army career this past summer. While on active duty, I was an Army Research Psychologist and much of my career focused on conducting behavioral health research with Soldiers. Behavioral health issues have always been of great consequence to DoD because these issues have tremendous impact on Soldiers' health, family, readiness, and performance. My Ph.D. is in social and organizational psychology. My background enabled me to consider, develop and offer evidence-based behavioral health solutions to support and sustain health and readiness. My culminating assignments were as the Center Director for Military Psychiatry and Neuroscience at the Walter Reed Army Institute of Research (WRAIR) and as the Research Psychology consultant to the Army Surgeon General.

### What attracted you to CSTS?

CSTS has a reputation as a high-performing and professional research center with a national and international impact. The psychiatry and psychology worlds are not that big in DoD, so I had long been familiar with many of the key leaders at CSTS and the USU Department of Psychiatry. In my previous roles at WRAIR as the Department Chief for Military Psychiatry, overseas Commander of the U.S. Army Medical Research Unit in Europe, and as a Center Director, I had been in many professional meetings with CSTS Scientists. The Centers' research



capabilities and competencies were always impressive, state of the art, quick-responding, and highly relevant. Moreover, the ability of USU and CSTS to conduct research that supports not only Service members but also the Nation attracted me to the group. It's been an honor to join the team and support all the Center's research initiatives.

### What are your roles and responsibilities at CSTS?

My primary responsibilities include directing Center operations to maximize Center resources effectively and efficiently, such as personnel, finances, logistics, planning and forecasting, while supporting the CSTS science, education, and consultation missions. I also provide guidance to Center leaders and program leads on conducting research in DoD, identifying strategic research opportunities, and navigating the military's organizational cultures. I am also involved in the tremendous scope and complexities of the STARRS studies and I advise on how best to plan, resource, execute and forecast. In addition, I serve as the senior Henry Jackson Foundation employee in the Center, and as such, perform supervisory duties for about 50 HJF employees.

### Would you expand on your previous statement that you saw a tremendous opportunity at CSTS?

Dr. Ursano and his team have built an internationally renowned center. CSTS has been involved in providing research, training, education and consultation to every disaster, war and trauma faced by our Service members and citizens since its inception. I am excited to be a part of these accomplishments where I can work to sustain it and guide it towards continued success.

# Consultations

Since its inception, consultation has been, and remains, a core function of the Center. It is a primary mechanism through which CSTS shares research findings and applies the deep and broad experience of CSTS Scientists and leadership. These consultations serve as a valuable mechanism to ensure that CSTS staff are aware of, and responsive to, those who face challenges and opportunities related to trauma of many types. The Center developed and maintained partnerships 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. In addition to these many long-standing organizational relationships, the Center is continuously increasing its consultative activities with new partners as opportunities emerge and new needs develop.

COVID-19 and the war in Ukraine created important areas for CSTS consultations in 2022. Even as cases and deaths from COVID-19 declined, the residual trauma and grief remain and CSTS's work in this area continues and adjusts. The war in Ukraine created an ongoing threat to global health security, resulting in the need for consultation, education, and other work to support mental health and well-being in affected communities around the world.

New and existing consultative relationships have allowed CSTS to facilitate rapid, high quality, and creative contributions in a wide variety of stress and trauma-related topics. The following are examples of some long-standing CSTS consultations as well as some new ones in 2022:

## U.S. GOVERNMENT

### Department of Defense

Many types of collaboration throughout DoD are in the DNA of CSTS. The consultation is steady and ongoing.

CSTS continues to be represented on the Navy Culture of Excellence working group, established by

the Chief of Naval Operations to approach mental health and substance abuse in the Navy with a primary prevention model. The group has created the Commanders' Risk Mitigation Dashboard as a tool for fleet leaders to better understand the readiness of their commands according to metrics derived from the signature behaviors. A CSTS psychiatrist co-chaired Operational Virtual Mental Health, an ongoing project with the United States Navy Bureau of Medicine and Surgery (BUMED). The group identifies information from the Navy facilities that have implemented virtual mental health, investigated platforms which might be feasible, and determined cost savings. The group's findings were presented to the Secretary of the Navy (SECNAV). In addition, CSTS has been the psychiatry representative to the Neuromuscular Subcommittee for the Navy, with the mission of improving female Service member retention and evaluation. CSTS is working with the Defense Health Agency (DHA) Tele-Behavioral Health (TBH) workgroup, to develop policies.

### *Military Mortuary Affairs (MA)*

CSTS remains a global leader in the field of mortuary affairs and exposure to human remains, a common and often overlooked aspect of disasters and war. CSTS Scientists have had a long relationship with Military MA. This group experiences very specialized types of stressors in both the nature and environments of their work. Throughout its history, CSTS has focused on the special needs of military management of death and the dead. This continuity has allowed CSTS to conduct research, provide guidance and training, and provide ongoing consultation. During 2022, a senior CSTS Scientist participated in, and provided consultation to, a wide variety of DoD elements operating and influencing military MA. In addition, special consultation was provided in the areas of contaminated remains as MA develops a resilience training module in this topic area. CSTS provided information on stress, resiliency, and behavioral health support for trained and untrained

personnel who conduct MA operations and behavioral and psychological responses to the chemical, biological, radiological, nuclear, and explosives (CBRNE) environment.

### ***United States Coast Guard (USCG)***

In a collaboration that began in 2021 and continues today, CSTS has been working with USCG psychiatric leadership with efforts to prepare USCG members to manage unique exposures during activation and how to support Service members and their families following return from activations. A particular challenge has been working with migrants crossing the U.S. border, including issues of violence toward women and children creating unique exposures for USCG members working to care for victims of violence who are entering the United States.

### ***Defense Institute of Medical Operations (DIMO)***

CSTS Scientists served as Assistant Team Leads for a DIMO mission in Mexico City, Mexico, overseeing a global health course entitled “Fundamentals of Military and Disaster Mental Health,” training more than 50 psychologists, psychiatrists and medical personnel. The course was presided over by the Mexican Army Surgeon General. A CSTS Scientist traveled to N’Djamena, Chad as the DIMO Team Lead in support of a global collaboration of psychologists assembled from Japan, Germany, and Washington State and conducted a course entitled “Mental Health Following Disasters and Trauma.”

### ***Department of Health and Human Services (DHHS)***

CSTS has had a long and productive relationship with the Substance Abuse and Mental Health Services Administration (SAMHSA). CSTS is currently working toward broadening its relationship with several of SAMHSA’s programs covering a variety of topic areas of mutual interest and concern. During 2022, through the *Community of Practice* group, CSTS consulted with leaders in SAMHSA’s recently established Regional Office located in the ten DHHS Regions, highlighting state and local behavioral health issues, opportunities, and challenges.

### ***Agency for International Development (USAID)***

CSTS continued to provide ongoing consultation with USAID to enhance their ability to deal with critical incidents (especially deaths) involving US-aid workers and contractors in the field. Following an orientation to existing practices and documents, options for modifying and enhancing both resources and practices are currently being explored. USAID staff continued consulting with CSTS in the adaptation of military and other disaster principles to protect the workforce.

### ***Department of Justice***

In 2022, the CSTS provided subject-matter expertise to the Executive Office of the Office for States Attorneys to address requirements within Section 4 on “Mental Health and Well-Being of Law Enforcement” within the Executive Order on Advancing Effective, Accountable Policing and Criminal Justice Practices to Enhance Public Trust and Public Safety. CSTS provided consultation on both suicide prevention and methods for adapting principles and practices to optimize well-being during times of crisis and high stress and facilitate development of a well-being program to protect the health of law enforcement officers around the country.

### ***Immigration and Customs Enforcement (ICE)***

The Resiliency leadership at ICE contacted CSTS to assist with reviewing and researching the effectiveness of their current programs and practices designed to protect the mental health of agents, analysts, and other personnel exposed to child exploitation material in the process of their investigations. This resulted in a multi-year research collaboration involving qualitative and quantitative assessments of the work force in a multi-wave study. Results will inform leaders on modification of policies and procedures in order to reduce risk and optimize well-being for personnel facing unique exposures to graphic and violent material. This includes the development of educational resources providing actionable recommendations for personnel, leaders, and families to further protect health.

## **PROFESSIONAL ORGANIZATIONS**

### **American Psychiatric Association (APA)**

The relationship of CSTS and APA is strong and enduring. CSTS assisted in the initiation of APA's efforts in disaster psychiatry by establishing the Committee on the Psychiatric Dimensions of Disaster in 1992. During 2022, the Center continued to be actively involved in this and other APA activities to educate and train health professionals in disaster and preventive psychiatry. In addition, CSTS consulted with the Public Health Psychiatry sub-committee of the APA's Task Force on Social Determinants of Health to foster Public Health Psychiatry on training programs and professional practice. CSTS provided guidance to the APA Office of Legal Counsel to the Board of Trustees considering DSM-6, on the Conflict-of-Interest Guidelines used for the DSM-5 Task Force, Workgroups, and Consultant members.

### **American Association for the Advancement of Science (AAAS)**

CSTS consulted with Section J (Psychology) of the AAAS as a Member-at-Large of the Section J Steering Group. The meeting focused on AAAS initiatives to promote public engagement with science generally and the use of science in policy decisions.

### **National Association of State Mental Health Program Directors (NASMHPD)**

The relationship between CSTS and NASMHPD has been one of our longest (more than two decades) and most productive. The relationship allows NASMHPD and its members ready access to CSTS consultation and materials. The relationship also allows CSTS to stay current on issues facing the country's public mental health system, its innovations, and its challenges. CSTS authored an article for the NASMHPD annual Technical Assistance Center on Climate-Related Disasters to better inform state Directors on the impact, risk, and interventions needed to address mental health effects of these events. In addition, a CSTS Scientist spoke at the NASMHPD annual Director's conference, providing expert knowledge and education

on climate-related and other disasters and guidance to states on how to further protect community health, particularly in marginalized groups in the wake of these events.

### **Vibrant Emotional Health**

CSTS provided consultation to a group headed by Vibrant Emotional Health and the Group for the Advancement of Psychiatry. This group considered revisions to the classic phases of disaster model to a represent the impact of successive overlapping disasters and to account for underlying stresses within communities. The result has been the development of the "Chronic Cyclical Disaster Model," which is scheduled for presentations at multiple meetings in 2023.

### **Sesame Workshop**

CSTS provided consultation to Sesame Workshop related to supporting socioemotional development in children. This was attended by Dr. Jeanette Betancourt, Senior Vice President for U.S. Social Impact at Sesame Workshop.

## **STATE AGENCIES**

### **California**

A CSTS Associate Director consulted with the California Department of Health concerning the behavioral health issues being experienced by case finders and contact tracers throughout the state. The consultation resulted in a presentation to, and discussion with, 440 COVID-19 responders across the state. The presentation was entitled "Disaster Behavioral Health and COVID-19: Applied History & Novel Challenges." Limited ongoing consultation has continued to address the needs of this often-overlooked group of public health workers. CSTS remains prepared to provide ongoing support as needed.

### **Colorado**

At the request of the Colorado Association of Local Public Health Officials (CALPHO), a CSTS Associate Director provided consultation regarding the special stressors experienced by local health authorities in Colorado during the prolonged COVID-19 pandemic, as well as other types of public health

emergencies. The consultation resulted in facilitating two meetings with the membership, representing approximately 30 cities/counties in Colorado, focused on the stresses of public health leadership in many types of crisis situations.

## Texas

The CSTS Deputy Director and a CSTS Associate Director were asked by NASMHPD to assist the Texas State Behavioral Health Division of Health and Human Services through consultation regarding community mental health and recovery following mass shootings. The consultation involved sharing concepts for addressing community stress across a continuum, systems-level challenges with community mental health in disasters, and sharing CSTS resources in response to the Robb Elementary School shootings and the Safe School/Healthy Students Program report to assist with their efforts to support children, families and school personnel impacted by the shooting.

## Maryland

The CSTS Deputy Director was sought out by the Maryland State Department of Health to speak with health care workers and leaders on challenges of sustainment and recovery during the COVID-19 global pandemic and other disasters. He presented and

### Small Investments/Large Benefits

From time to time, a consultative opportunity surfaces that requires little ongoing effort and pays big dividends for both CSTS and others involved. Such was the case with the *Community of Practice* group. Originally established to share COVID-related challenges being experienced by several Federal entities, it matured into an active group that collaborates on resource sharing, problem-solving and early identification of shared interagency challenges and solutions. This group was started by leaders at the DHHS Assistant Secretary for Emergency Response (ASPR).



discussed at the “Helping the Helpers and Those Who Serve” webinar series, MED CHI (Maryland State Medical Society) and the Behavioral Health Administration as part of the Maryland Department of Health.

## GLOBAL CONSULTATIONS

Since its beginning, CSTS has been part of a global community of individuals and organizations addressing trauma in its many forms. The following are examples of CSTS international activities in 2022:

### International Ministerial Five Eyes Alliance

CSTS, in its ongoing collaboration with the Five Eyes Alliance Advisory Group on Mental Health (consisting of the United States, United Kingdom, Australia, New Zealand and Canada), coauthored multiple publications on Service member and family well-being, including one on research priorities on moral injury, optimizing pathways to mental health care across the military career life cycles. The publications included two commentaries highlighting key issues related to the mental health consequences of war to aid resilience among international and U.S. forces in support of populations at risk during the war in Ukraine.

### Disaster Psychiatry Canada

CSTS provided consultation and training during the Disaster Psychiatry Canada and Canada Psychiatric Association sponsored training course, “Psychiatric Dimensions of Disasters: 5th Annual CME Training Course.” The CSTS Director moderated roundtables and the CSTS Deputy Director presented on the global mental health impacts of COVID-19,

lessons learned from military practices to foster resilience, and the application of these to support community well-being during the War in Ukraine.

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

CSTS presented at a keynote session during the annual IIMHL conference, which brings together senior leaders in mental health and substance use from 16 partner nations. One of the other three global hubs that were part of the conference was hosted by Jacinda Ardern, the Prime Minister of New Zealand. Collaborations focused on leadership in disasters, highlighting the impact and response to the Manchester bombing in the UK.



*Dr. Morganstein presenting at the International Initiative on Mental Health Leadership (IIMHL) conference.*

### **World Psychiatric Association (WPA)**

CSTS assisted with the WPA position statement on "Mental Health in the Workplace" to provide global guidance on actions recommended for governments, organizations, leaders, and health care workers on the importance of protecting mental health in the workplace to enhance well-being of workers and global economic productivity.

### **European College of Neuropharmacology (ECNP)**

The Chair of the Department of Psychiatry, the CSTS Director, and the CSTS Deputy Director participated in a ECNP Traumatic Stress Network Hot Topics meeting that focused on psychological first aid for the military and actions for leaders to support community well-being during times of war. These meetings involved didactic education and case-based learning, as well as audience engagement, to address current and evolving issues of concern for Service members and the broader community.

### **Norway**

Scientists from CSTS met with military mental health leaders in the Norwegian military, and colleagues from WRAIR, to discuss issues of military readiness, the impact of various exposures on psychological health outcomes, and different research activities. The group explored shared interests in exposure to death and dying, as well as facets of preparedness that impact well-being for Service members and others. CSTS shared resources related to supporting leaders in war, terrorism, and other disasters, as well as a current resource page with translated materials to support families, health care and aid workers, and community leaders involved in work in Ukraine. Opportunities for future collaborations were explored.

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(Names in bold text are CSTS personnel)

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- Taylor, C.T., Campbell-Sills, L., Kessler, R.C., Sun, X., Nock, M.K., **Ursano, R.J., Jain, S., & Stein, M.B.** (2022). Social network size and personality traits independently and prospectively predict distress disorders and suicidal behavior in U.S. Army soldiers. *Psychological Medicine*, 1–10. Advance online publication.
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- Wang, J., Naifeh, J.A., Mash, H.B.H., Morganstein, J.C., Fullerton, C.S., Cozza, S.J., Stein, M.B., & Ursano, R.J.** (2022). Parental suicide attempt and subsequent risk of pre-enlistment suicide attempt among male and female new soldiers in the U.S. Army. *Suicide & Life-Threatening behavior*, 52(1), 59–68. <https://doi.org/10.1111/sltb.12772>
- Wang, J., Ursano, R.J., Gifford, R.K., Dinh, H., Weinberg, A., Cohen, G.H., Sampson, L., Galea, S., & Fullerton, C.S.** (2022). Suicide ideation and social support trajectories in National Guard and Reserve servicemembers. *Psychiatry*, 1–13.
- West, J.C., Walsh, A.K., & Morganstein, J.C.** (2022). Just-in-time adaptive interventions for suicide: The right idea at the right time. *Psychiatry*. 85(4), 347-353.
- West, J.C., Morganstein, J.C., & Benedek, D.M.** (2021). Fourteen years later: Hobfoll and colleagues five principles of psychological first aid through the lens of the COVID-19 global pandemic. *Psychiatry*, 84(4), 373-377.

## BOOK

The Textbook of Disaster Psychiatry 2nd Edition, edited by **Dr. Robert J. Ursano, Dr. Carol S. Fullerton**, Dr. Lars Weisaeth and Dr.

Beverley Raphael, was translated into Japanese by Dr. Jun Shigemura. Dr. Shigemura was a former CSTS International Fellow (2003–2005) and is now a Professor for the Faculty of Health Sciences at Mejiro University in Saitama, Japan. The translated

edition is now available in print.

Link to Japanese version: <https://www.seishinshobo.co.jp/book/b594884.html>

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## BOOK CHAPTER

**Regier, D.A.** Classification of Mood Disorders, in Nemeroff CB, Rasgon N, Schatzberg AF, Strakowski SM (eds). *The American Psychiatric Association Publishing Textbook of Mood Disorders*, 2nd Edition, APA Publishing, Washington, DC (2022) pp 15-30.



# Presentations, Interviews and Briefings, Awards and Appointments

## PRESENTATIONS

(Names in bold text are CSTS personnel)

Angkaw, A.C., **Cozza, S.J.**, Detlefsen, E.G., Mehaffey, E.P., & Reynolds III, C.F. (2022, May). *Literature in madness*. Virtual forum presentation for the University of California, San Diego.

**Biggs, Q.M.** (2022, April). *Depression in U.S. Army Mortuary Affairs Soldiers*. Oral presentation at the Mortuary Affairs Connect semi-annual worldwide mortuary affairs community meeting, virtual.

**Biggs, Q.M., Morganstein, J.C., Mullins-Hussain, B., Petrini, J.M., McCarroll, J.E., Fullerton, C.S., Ursano, R.J.** (2022, September). *Leadership tools to foster resilience and readiness in service members working with human remains during COVID-19 and other disasters: Turning evidence into action with the MA-STAR Pocket Card*. Poster presentation at the Military Health System Research Symposium, Kissimmee, FL.

**Biggs, Q.M., Mullins-Hussain, B., Petrini, J.M., Thomas, A., Steward, A.E., Wang, L., Fullerton, C.S., & Ursano, R.J.** (2022, April). *Potentially-traumatic exposures in Middle East deployed and non-deployed U.S. Army Mortuary Affairs Specialist Soldiers*. Poster presentation (virtual) at the 16th Annual Amygdala, Stress, and PTSD Conference: Cells, Circuits, Sensors, and Stress, USU, Bethesda, MD.

**Biggs, Q.M., Wang, J., Petrini, J.M., Jefferies, J., Thomas, A., Blumhorst, A., Weingrad, A., Fullerton, C.S., Amin, R., & Ursano, R.J.** (2022, April). *Perceived barriers to seeking mental health care in military Service members with and without post-traumatic stress disorder*. Poster presentation (virtual) at the 16th Annual Amygdala, Stress, and PTSD Conference: Cells, Circuits, Sensors, and Stress, USU, Bethesda, MD.

Brenner, G., **West, J.C.**, Naturale, A., & Koyfman, S. (2022, June). *The chronic disaster model*. Presentation at Bridging the Gap: A symposium on Disaster Behavioral Health Access for All, virtual.

**Cozza, S.J.** (2022, September). *Grief and substance use-related deaths*. Presentation at the National Capital Region Pain Initiative's Annual Substance Use Disorder Symposium.

**Cozza, S.J.** (2022, July). *Military family safety and safety promotion*. Presented at the Military Child Education Coalition's Global Summit, National Child Traumatic Stress Network.

**Cozza, S.J.** (2022, April). *Minefields in the vast emptiness*. Presentation at the Lincoln Ideas Forum: Grief and Loss.

**Cozza, S.J.** (2022, January). *Risk and resilience: Military connected children and families*. Virtual presentation as part of the symposium entitled Child Maltreatment in Military Families: Research, Training and Building Partnerships for a Coordinated Community Response at the 37th Annual San Diego International Conference on Child and Family Maltreatment.

**Cozza, S.J., Leskin, G.A., & Ogle, C.M.** (2022, January). *Child maltreatment in military families: Research, training, and building partnerships for a coordinated community response*. Symposium presentation at the 37th Annual San Diego International Conference on Child and Family Maltreatment.

**Cozza, S.J. & Walsh, T.R.** (2022, June) *Helping children manage stress in the midst of a crisis / Talking to children about war*. Virtual presentation to Ukrainian providers and parents from refugee camps.

CrossBear, S., Higgins, L., & **Cozza, S.J.** (2022, October). *My child is suicidal and I don't know how to help*. Panelist presentation for the Arizona State University and Mental Health America "I Don't Know How" Series.

**Dempsey, C.L., Benedek, D.M., West, J.C., Nock, M.K., Zuromski, K.L., Georg, M.W., Ao, J., Weinberg, A., Mullins-Hussain, B., Bossarte, R.M., & Ursano, R.** (2022, March). *Principal reasons for gun ownership and suicide risk in U.S. Army soldiers and veterans*. Poster presentation at the Anxiety and Depression Association of America Conference, Denver, CO.

- Dempsey, C.L., Benedek, D.M., West, J.C., Nock, M.K., Zuromski, K. L., Ao, J., Georg, M. W., Probe, D., Blumhorst, A., Bossarte, R.M., & Ursano, R.J.** (2022, August). *Firearm behavioral practices and suicide attempt and ideation in U.S. Army soldiers and veterans*. Poster presentation at the American Psychological Association Convention, Minneapolis, MN.
- Dempsey, C.L., Benedek, D.M., West, J.C., Nock, M.K., Zuromski, K.L., Georg, M.W., Ao, J., Probe, D., Blumhorst, A., Dhanraj, N., Bossarte, R.M., & Ursano, R.J.** (2022, September). *Weapon storage practices, reasons for gun ownership and suicide risk in U.S. Army soldiers and veterans*. Poster presentation at the Military Health System Research Symposium, Kissimmee, FL.
- Dempsey, C.L., Benedek, D.M., West, J.C., Nock, M.K., Zuromski, K., Georg, M.W., Ao, J., Bossarte, R.M., & Ursano, R.J.** (2022, Nov.). *Reasons for gun ownership and suicide risk in Servicemembers: An actionable target for intervention*. Presented at the Association for Behavioral and Cognitive Therapies Convention. New York, NY.
- Dempsey, C.L., Benedek, D.M., West, J.C., Nock, M.K., Zuromski, K.L., Bossarte, R.M., Probe, D.M., Georg, M.W., Ao, J., Blumhorst, A., Dhanraj, N. & Ursano, R.J.** (2022, November). *Gun ownership, storage practices and suicide risk in U.S. Army active-duty Service members*. Presented at the National Research Conference on Firearm Injury Prevention, Omni Shoreham Hotel, Washington, D.C.
- Fisher, J.E., Blumhorst, A.L., Zhou, J., Ogle, C.M., Zuleta, R.F., Fullerton, C.S., Ursano, R.J., & Cozza, S.J.** (2022, April). *Predictive validity of item 9 of the Patient Health Questionnaire in a bereaved sample: Comparison to the Beck Scale for Suicide Ideation*. Virtual poster presentation at the 16th Annual Amygdala, Stress, and PTSD Conference: Stress and the Mind.
- Fisher, J.E., Ogle, C. M., Zhou, J., Zuleta, R.F., & Cozza, S.J.** (2022, November). *Mechanisms of suicidal ideation in a military-bereaved sample*. International Society for Traumatic Stress Studies 38th Annual Meeting, Atlanta, GA.
- Fisher, J.E., Walsh, T.R., Ogle, C.M., Zuleta, R.F., Morganstein, J., & Cozza, S.J.** (2022, May). *Enhancing effective coping as a suicide prevention strategy: A virtual program for bereaved family members*. Presented at the annual conference of the Association for Psychological Science, Chicago, IL.
- Gabbay, F.H., Kessler, R.C., Sampson, N.A., Collen, J.F., Williams, S.G., Robertson, B.D., Ao, J., Georg, M.W., & Capaldi, V.F.** (2022, September). *Variation in individual responses to insomnia treatments: Building a longitudinal dataset to identify predictors in improving sleep in the DoD: Investigations in operational, therapeutic, and biomarker strategies*. Poster presented at the 2022 Military Health System Research Symposium, Kissimmee, FL.
- Hisle-Gorman, E., Cozza, S.J.** (2022, April). The partnership for military child health research symposium. Symposium presentation for the Month of the Military Child, Department of Pediatrics, Uniformed Services University.
- Hu, X.Z., Ursano, R.J., Benedek, D.M., Li, X.X., & Zhang, L.** (2022, December). *The association of p11 with the depressive severity in Service Members*. Poster presentation at the USUHS Neuroscience Program Thirty-Second Winter Symposium & Poster Show, Bethesda, MD.
- Kim, S.Y., Soumoff, A.A., Raiciulescu S., Kemezis, P.A., Spinks, E.A., Ursano, R.J., Benedek, D.M., & Choi, K.H.** (2022, December). *Association of Mild Traumatic Brain Injury and Neuropsychiatric Symptoms in Wounded Military Service Members* [Poster presentation]. USUHS Neuroscience Program Thirty-Second Winter Symposium & Poster Show, Bethesda, MD.
- Kumer, K., & Cleaves, E.S.** (2022, June). *Lessons from the Front: Teaching Psychological First Aid and Disaster Preparedness in Medical Schools*. Presented at the Association of Directors of Medical Student Education in Psychiatry Conference.
- Mash, H.B.H., Fullerton, C.S., Morganstein, J.C., Dinh, H.M., & Ursano, R.J.** (2022, April). *Responding to the COVID-19 pandemic: Work productivity and psychological responses in activated New York National Guard service members*. Poster presented at the virtual 16th Annual Amygdala, Stress, and PTSD Conference: Cells, Circuits, Sensors, and Stress, USU, Bethesda, MD.
- Morganstein, J.C., Farley, H., Dyrbye, L. Ripp, J.** (2022, January). *Reconsidering priorities and*

- practical strategies for addressing clinician well-being in Omicron's wake.* STEPS Forward webinar, American Medical Association, Virtual.
- Morganstein, J.C., Meyer, E.G., Capaldi, V.,** Millegan, J. (2022, Mar). *Careers in military psychiatry: Paths less taken.* Panel presentation to Society for Uniformed Services Psychiatrists District Branch, American Psychiatric Association.
- Morganstein, J.C.** (2022, April). *Finding structure in chaos: Fostering resilience and operational sustainment in the healthcare workforce through crisis leadership in COVID-19 & beyond.* Presented at the 2022 Physician Business Leadership Certification Program, Iowa Hospital Association.
- Morganstein, J.C.** (2022, April). *Healing our workforce & creating the workplace of the future.* Fireside Chat at the Annual Board of Directors Retreat, Christiana Care, Wilmington, DE.
- Morganstein, J.C.** (2022, November). *Preparing for the next pandemic & other disasters to protect mental health, foster resilience, and enhance sustainment: What have we learned from COVID-19.* Virtual presentation at the Education Series, Saint Luke Institute.
- Morganstein, J.C.** (2022, December). *Protecting community mental health and fostering resilience in climate-related disasters and beyond.* Virtual presentation at the Annual Meeting, American Geophysical Union.
- Morganstein, J.C.** (2022, May). *Protecting mental health: COVID-19 and beyond.* Webinar at STEPS Forward, American Medical Association.
- Morganstein, J.C.** (2022, May). *What does history teach us about the mental health impacts of disasters.* Keynote at Center for Workplace Mental Health, American Psychiatric Association Foundation, New Orleans, LA.
- Morganstein, J.C.** (2022, June). *Applying principles of disaster mental health to foster well-resilience in survivors and workers during the war in Ukraine and beyond.* Presented to the International Psycho-Oncology Society.
- Morganstein, J.C.** (2022, June). *Protecting mental health in COVID-19, war, and beyond.* Webinar presented at the "Psychiatric Dimensions of Disaster" annual conference, Disaster Psychiatry Canada, Ontario Medical Association, & University of Toronto.
- Morganstein, J.C.** (2022, June). *Principles of crisis leadership and disaster mental health to foster resilience and operational sustainment in the healthcare workforce during Covid-19 & beyond.* Presented at the 2022 Leaders Lecture Series, Greater New York Hospital Association.
- Morganstein, J.C.** (2022, July). *Climate-Related disasters and public mental health: Impacts, risks, and interventions to protect workers and others.* Annual Meeting, National Association of State Mental Health Program Directors, Arlington, VA.
- Morganstein, J.C.** (2022, July). *Finding structure in chaos: Enhancing well-being and operational sustainment for healthcare workers in COVID-19 and beyond.* Presented at the "Helping the Helpers and Those Who Serve" webinar series, MED CHI and the Behavioral Health Administration, Maryland Department of Health.
- Morganstein, J.C.** (2022, July). *Leadership actions to protect military and civilians in war and other disasters.* Presented at the virtual conference "Cognitive Neuroscience and Clinical Neuropsychology: The Beginning of a New Path in Ukraine," Association of Neuropsychologists of Ukraine.
- Morganstein, J.C.** (2022, July). *Leadership behaviors in war and disasters for civilian and military populations to foster action, sustainment, and recovery.* Presented in the series "HOT TOPICS in Dark Times," Traumatic Stress Network, European College of Neuropsychopharmacology.
- Morganstein, J.C.** (2022, July). *What does history teach us about the impact of disasters.* Corporate Alliance, American Psychiatric Association Foundation.
- Morganstein, J.C.** (2022, August). *Protecting mental health & fostering resilience in mass violence and other disasters.* Presented to the Department of Behavioral Health, North Shore Healthcare System.
- Morganstein, J.C., Toukolehoto, O., Meyer, E.G., & West, J.C.** (2022, May). *Military Support for the U.S. Health System During COVID-19: A framework to enhance workforce well-being and sustainment in future disasters.* Committee on Psychiatric Dimensions of Disasters, APA Annual Meeting on Demand, New Orleans, LA.
- Morganstein, J.C., & West, J.C.** (2022, May). *Disasters and mental health: Helping your patients deal with adverse effects of climate change,*

- pandemics, and mass violence part 1. Disasters.* Committee on Psychiatric Dimensions of Disasters, APA Annual Meeting on Demand, New Orleans, LA.
- Morganstein, J.C., West, J.C., & Winakor, J.S.** (2022, May). *Disasters and mental health: Helping your patients deal with adverse effects of climate change, pandemics, and mass violence part 2. Disasters.* Committee on Psychiatric Dimensions of Disasters, APA Annual Meeting on Demand, New Orleans, LA.
- Nevo, O.N., Ogle, C.M., Fisher, J.E., Zuleta, R.F., Klein, D.A., & Cozza, S.J.** (2022, October). *Intersecting stressors among sexual and gender minority youth and military-connected youth.* American Academy of Child and Adolescent Psychiatry 69th Annual Meeting, Toronto, Canada.
- Ogle, C.M.** (2022, October). *Child maltreatment in military families.* Presentation to the National Child Traumatic Stress Network Military and Veteran Families and Children Collaborative Group.
- Ogle, C.M., Fisher, J.E., Walsh, T.R., Zhou, J., & Cozza, S.J.** (2022, May). *Risk factors for childhood exposure to domestic violence.* Presented at the annual conference of the Association for Psychological Science, Chicago, IL.
- Ogle, C.M., Weingrad, A.B., Zuleta, R.F., Fisher, J.E., Walsh, T.R., & Cozza, S.J.** (2022, April). *A conceptual model of family safety to inform future research and prevention efforts.* Virtual poster presentation at the 16th Annual Amygdala, Stress, and PTSD Conference: Stress and the Mind.
- Ogle, C.M., Zhou, J.** (2022, April). *Risk factors associated with latent classes of child neglect.* Virtual poster presentation at the 16th Annual Amygdala, Stress, and PTSD Conference: Stress and the Mind.
- Spangler, P.T., Dempsey, C.L., Nissan, D., Phares, A., West, J., Willing, M., & Winslow, B.** (2022, September). *Nightmare deconstruction and reprocessing: final pilot results of a treatment for trauma-related nightmares and insomnia.* Poster presentation at the Military Health System Research Symposium, Kissimmee, FL.
- Spangler, P., Benedek, D., Bolis, M., Dempsey, C.L., Hillman, K., Kwasinski, R., Phares, A., West, J., Winslow, B.** (2022, November). *Nightmare deconstruction and reprocessing: Proof of concept*
- of a novel treatment for ptsd-related nightmares and insomnia.* Poster presented at the International Society for Traumatic Stress Studies, 38th Annual Meeting, Atlanta, GA.
- Ursano, R.J.** (2022, January). *What PTSD as a disorder teaches us about the brain and psychotherapy treatment.* Presented at the International Psychotherapy Institute's (IPI) Master Speaker Series, Washington, DC.
- Ursano, R.J.** (2022, June). *International roundtable.* Invited moderator at the Psychiatric Dimensions of Disasters: 5th Annual CME Training Course, Disaster Psychiatry Canada, virtual.
- Ursano, R.J.** (2022, August). *Disaster psychiatry and behavioral health: From hurricanes and earthquakes, to war and terrorism...to COVID-19.* Invited (virtual) plenary talk. 2022 Annual Meeting of the American College of Psychiatrists, Naples, FL.
- Ursano, R.J.** (2022, October). *Thinking from the big data perspective. opportunities, challenges, and limitations for military mental health care ref suicide and other [Virtual presentation].* Personalized Medicine in Mental Health and Performance: North Atlantic Treaty Organization Human Factors and Medicine (HFM) Meeting #5, University of Melbourne, Carlton, Melbourne, Australia.
- Ursano, R.J., Benedek, D. M. & Vermetten, E.** (2022, March). *Hot topics Q&A.* Virtual roundtable presentation/discussion at the ECNP Traumatic Stress Network Meeting.
- Walsh, A.K., Weingrad, A.B., Morganstein, J.C., Heintz Morrissey, B., Fullerton, C.S., Petrini, J.M., Ursano, R.J.** (2022, April). *Translating brain trauma: A practical approach to suicide prevention [Poster Presentation].* Amygdala, Stress, and PTSD: Cells, Circuits, Sensors, and Stress, Virtual Conference.
- Weingrad, A.B., Walsh, A.K., Morganstein, J.C., Heintz Morrissey, B., Fullerton, C.S., Petrini, J.M., Ursano, R.J.** (2022, May). *A public health approach to suicide prevention using the Haddon matrix conceptual framework.* Poster Presentation at USU Research Days, Bethesda, MD.
- West, J.C. & Benedek, D.M.** (2022, April). *Resiliency in mass casualty events: Application of military combat and operational stress control.* Presentation at the Hardwiring Resiliency Conference, Boston, MA.
- West, J.C.** (2022, June). *Maintaining therapeutic alliance in treatment resistant depression.*

Presentation at WRNMMC Artiss Symposium, Bethesda, MD.

- West, J.C.** (2022, September). *Tough conversations: Talking to patients about firearms and risk.* Oral presentation at the Southern Psychiatric Association and Maryland Psychiatric Society Annual Meeting, Baltimore, MD.
- Zuromski, K. L., **Dempsey, C.L.**, (Co-Chairs), Betz, E., Anestis, M.D., Mattson, S. (Presenters), Bryan, C. (Discussant; 2022, Nov). *Addressing the firearm suicide epidemic in the U.S. military: Opportunities for behavioral science to make an impact.* Symposium conducted at the Association for Behavioral and Cognitive Therapies Convention. New York, NY.

## INTERVIEWS AND BRIEFINGS

Dr. Morganstein was interviewed in his USU capacity by a reporter with the American Association of Medical Colleges about the resources developed by CSTS in support of mental health during the war in Ukraine. The discussion involved an understanding of important and evolving issues related to mental health during a war and armed conflict, including the need for easy-to-use and actionable resources that are culturally sensitive and address current and evolving challenges for affected families, healthcare and aid workers, military personnel, and leaders.

Dr. Benedek and Dr. Dempsey were interviewed by the Public Health Reporter from The Trace about the CDC-funded study: Firearms and Behavioral Practices and Suicide Risk in U.S. Army Soldiers and Veterans.

Dr. S. Cozza and Dr. Ogle briefed the Office of Military Community & Family Policy (MC&FP) on their study, Child Maltreatment in DoD Families: A Population Study to Inform Prevention Efforts.

Dr. S. Cozza and Dr. Ogle briefed Thomas Constable, the Principal Deputy Assistant Secretary of Defense for Readiness, on the results of the Child Maltreatment in DoD Families Study. Representatives from the Office of Military Community & Family Policy were also in attendance. The purpose of the briefing was to determine whether the research findings should be transmitted to Congress, and if so, the most appropriate format for submission.

Dr. Morrissey led a briefing at the National Guard Headquarters to NGB J1 Warrior Resilience & Fitness Director and his team for Project SafeGuard, a National Guard peer-to-peer lethal means counseling project supported by CSTS Suicide Prevention Program. The purpose of the brief was to provide an in-progress review for state participation, implementation and evaluation recommendations. The meeting resulted in a request for a Project SafeGuard executive training for senior NG leaders.

## AWARDS AND APPOINTMENTS

Dr. S. Cozza was acknowledged for his contributions in advancing the science of Prolonged Grief Disorder in a *JAMA Psychiatry* viewpoint article, "Prolonged Grief Disorder Diagnostic Criteria—Helping Those With Maladaptive Grief Responses," by Dr. Prigerson, et al.

Dr. S. Cozza and Dr. Fisher received the Notice of Award from the CDC for their project, Grief and health-related quality of life in WTCHR Survivors: Associations with bereavement, trauma exposures, and mental and physical health conditions.

Dr. S. Cozza was selected to join the Five Eyes Mental Health Research and Innovation Collaborative (MHRIC). The Five Eyes MHRIC is led by Phoenix Australia and the Canadian Institute for Military and Veteran Health Research (CIMVHR) and is a collaboration of 11 centers of expertise in military and Veteran mental health from the United States, United Kingdom, New Zealand, Canada and Australia.

Dr. Thomas was appointed as Research Professor of Psychiatry at USU.

Dr. A. Walsh was invited to be a journal reviewer for *Military Behavioral Health*.

Dr. Mash was invited to serve as an Academic Editor for *PLOS ONE*.

CSTS won a 2022 American Graphic Design Award for the SP website. The American Graphic Design Awards are a national competition with more than 10,000 entries. The immediate benefit is to the faculty, researchers, and staff working on SPP. It is a recognition of their hard work under tight deadlines. For funders, it is a validation of the program, its purpose, and a statement about the strong design of the website that features the messaging "Care, Connect, Safety, Conversations." (<https://www.cstsonline.org/suicide-prevention-program/>)

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AWARDS	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
Family Violence and Trauma Project	IMCOM
Central Nervous System Correlates Study	MOMRP
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 Servicemembers with Posttraumatic Stress Disorder-Related Sleep Disturbances: Use of Large Datasets to Improve Treatment Selection over the Military Lifecycle	USAMRMC
Center for the Study of Traumatic Stress (CSTS) Program	DHP
Grief and Health-Related Quality Of Life In WTCHR Survivors: Associations With Bereavement, Trauma Exposures, and Mental and Physical Health Conditions	CDC
Identifying Motivations for Service Members and Veterans Owning Firearms, Storing Them in Unsafe Conditions and Using Them to Hurt Others or Themselves	CDC
Suicide Prevention Program (SPP)	DHP
Responder Organizations & COVID: Coping with Trauma & Promoting Resilience. A Survey of NIOSH COVID-19 Responders	NIOSH

# Partnerships

The Center has worked with organizations in the public and private sectors through research partnerships, project collaborations, consultations and trainings. CSTS would like to acknowledge and thank our partners and collaborators listed below:

American Academy of Child and Adolescent Psychiatry  
American Association for the Advancement of Science (AAAS)  
American Gold Star Mothers  
American Psychiatric Association  
American Psychological Association  
Architect of the Capitol  
Armed Forces Retirement Home  
Broad Institute  
The Carter Center  
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Center for Health Care Research  
Medical University of South Carolina  
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National Association of State Mental Health Program Directors  
National Center for Post-Traumatic Stress Disorder of the Department of Veterans Affairs  
National Child Traumatic Stress Network  
National Committee for Employer Support of the Guard and Reserve  
National Fallen Firefighters Foundation  
National Institute for Occupational Safety and Health (NIOSH)  
National Institute of Mental Health (NIMH)  
National Institutes of Health  
National Military Family Association  
The National Association for PTSD  
The National Association of State Mental Health Program Directors  
National Intrepid Center of Excellence  
National Military Family Association  
Norwegian Military  
Rockefeller University  
Rutgers University Cell & DNA Repository  
Rutgers University School of Social Work  
Sesame Workshop  
Stanford University  
State of California  
State of Colorado  
State of Texas  
State of Maryland

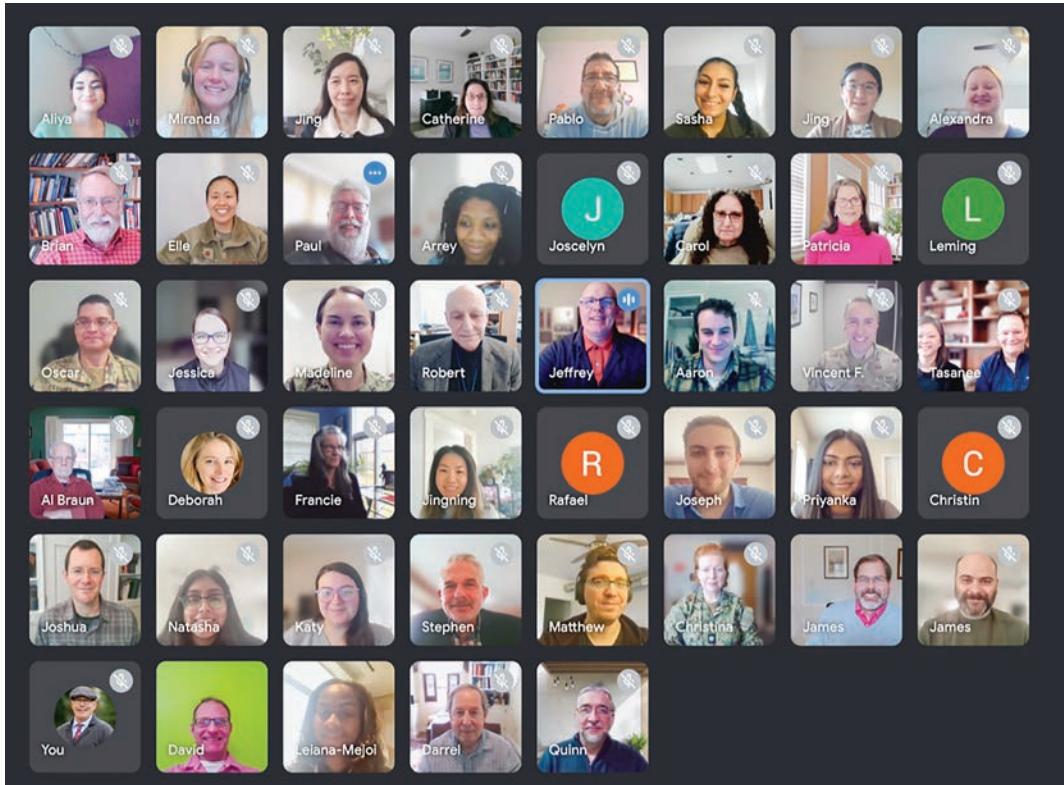
Substance Abuse and Mental Health Services Administration (SAMSHA)  
Syracuse University and Syracuse VA Medical Center  
The Alfred P. Sloan Foundation  
Tragedy Assistance Program for Survivors  
Tulane School of Social Work  
Uniformed Services University  
Union Pacific Railroad  
U.S. Agency for International Development (USAID)  
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 & Development Command

U.S. Coast Guard  
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. Postal Service  
University of California, Los Angeles  
University of California, San Diego  
University of Michigan  
University of Pennsylvania  
University of Pittsburgh  
University of Virginia  
University of Virginia's Critical Incident Analysis Group (CIAG)

University of Washington  
Veterans Administration Medical Center of D.C.  
Vibrant Emotional Health  
Walter Reed Army Institute of Research  
Walter Reed National Military Medical Center  
World Psychiatric Association (WPA)  
Wright State University  
Yale University  
Yale School of Medicine and VA  
Connecticut Healthcare System  
Yellow Ribbon Reintegration Program  
Zero to Three



*Operation Bushmaster: Mass casualty scenario — medical evacuation.*



The CSTS team participates in a virtual noon “check-in” meeting every workday for updates, discussions, presentations and guest speakers.

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