## The National Center for PTSD: **Responding to COVID-19**

Fiscal Year 2021 Annual Report





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The National Center for PTSD has been a center of excellence for education and research on PTSD treatment within VA for over 30 years.

## Acronyms Used in the Text

**CAP** Consortium to Alleviate PTSD

**CAPS-5** Clinician-Administered PTSD Scale for DSM-5

**CBT** Cognitive-Behavioral Therapy

**CoE** Center of Excellence

**COVID-19** Coronavirus Disease 2019

**CPT** Cognitive Processing Therapy

**CSP** Cooperative Studies Program

**CVT** Clinical Video Teleconferencing

**DoD** Department of Defense

**DSM-5** Diagnostic and Statistical Manual of Mental Disorders-Fifth Edition

**EBPs** Evidence-Based Psychotherapies

**FY** Fiscal Year IPV Intimate Partner Violence

**JIF** Joint Incentive Fund

LIGHT Longitudinal Investigation of Gender, Health, and Trauma

**mHealth** Mobile Health

**MST** Military Sexual Trauma

NCPTSD National Center for PTSD

**NHRVS** National Health and Resilience in Veterans Study

**OMHSP** Office of Mental Health and Suicide Prevention

**PBI Network** Practice-Based Implementation Network

**PE** Prolonged Exposure

PTSD Posttraumatic Stress Disorder PTSD-Repository

PTSD Trials Standardized Database Repository

**STAIR** Skills Training in Affective and Interpersonal Regulation

**STRONG STAR** 

South Texas Research Organizational Network Guiding Studies on Trauma and Resilience

**TBI** Traumatic Brain Injury

VA Department of Veterans Affairs

VA CRAFT Community Reinforcement and Family Training

**VHA** Veterans Health Administration

webSTAIR Web-Based Skills Training in Affective and Interpersonal Regulation

**WET** Written Exposure Therapy

**WoVeN** Women Veterans Network

# From the Executive Director



Paula P. Schnurr, PhD

When National Center for PTSD staff went home in March 2020 because of the COVID-19 pandemic, we never dreamed that many of us would still be home nearly two years later. The story of the pandemic has been one of grief and isolation, but it has also been one of perseverance, resilience and discovery, and that is a story we tell in this report.

The National Center responded rapidly and nimbly to the demands for both research and education. We had to determine the information needs of Veterans, the VA and the field, and figure out what research should be done and what could be accomplished in the short and long term. I continue to be impressed by how our team of experts collaborated internally and externally to meet the needs of all our stakeholders and move the traumatic stress field forward.

While COVID-19 continued to be a dominant theme in 2021, our usual work in research, education, communication and outreach for Veterans with PTSD continued. I am particularly proud of our work immediately after the Afghanistan withdrawal—helping the VA respond in real time to the needs of all Veterans. It was challenging but so gratifying and appreciated by Veterans and clinicians alike.

Looking ahead, one of our priorities is to improve psychotherapy outcomes because they are the most effective treatments available. While these therapies work well, we want them to be even more effective, especially for Veterans. Precision medicine (the study of individual factors in treatment response) is one potential mechanism for better understanding and improving individual psychotherapy outcomes. To that end, we are conducting a review of NCPTSD's Precision Medicine portfolio, which will help position us as leaders in the field of individualized PTSD treatments.

Although this is a report on activities in fiscal year (FY) 2021, I want to close by talking about an important change that took place in FY 2022. Dr. Matthew Friedman, founding Executive Director of the National Center for PTSD, formally retired from this role in 2015. We are fortunate that he has continued to work with us part-time since then and has led the successful effort to develop our National PTSD Brain Bank into a productive and innovative research program. In December 2021, as we prepared this report, Matt announced his full retirement as of the end of March 2022. Although I knew this day would come, it is hard to imagine a National Center without Matt. I have to remind myself that he will still be with us, in the programs he built and in the way he touched so many of us. Thank you, Matt.

Best wishes for a healthy and safe year.

Paula P. Schnurr, PhD Executive Director

## The National Center for PTSD: Responding to COVID-19

As COVID-19 evolved from a few isolated cases to a worldwide pandemic, institutions and individuals had to make important decisions quickly, but with limited information. The National Center for PTSD also faced unique challenges in determining how to respond to COVID-19.

As part of VA, the National Center is a Veteran-serving institution. Augmenting the primary Veteran focus, the fourth mission of VA is to "improve the Nation's preparedness for response to war, terrorism, national emergencies, and natural disasters ... [and] to support national, state, and local emergency management, public health, safety and homeland security efforts." The NCPTSD has a long history of supporting responses to disasters and other urgent crises, both within and outside of VA—hurricanes, domestic terrorism, earthquakes, school shootings, wildfires, and more.

Answering the call this time was different. The scale was unprecedented—COVID-19 is a global pandemic. It was clear that COVID-19 was going to have serious implications for Veterans with PTSD. Face-to-face mental health care was suddenly no longer the norm. Amid this global crisis, could clinicians treat Veterans with PTSD effectively? How could PTSD treatment be best delivered via telephone or video? How would Veterans with PTSD respond to both the anxiety and unknowns that came with the COVID-19 pandemic and the physical and social isolation that came with social distancing?

While urgent decisions were being made on the ground, clinicians were simultaneously learning and disseminating information to Veterans. The days and weeks of spring 2020 turned into months, then a year, and as we draft this report, two years. As the timeline and scope of the COVID-19 pandemic changed, the National Center's response to the pandemic expanded from an urgent, disaster-response model to a longer term, broader set of educational, clinical, and scientific initiatives. We are in uncharted territory, but at every step, the response to the COVID-19 pandemic has been guided by the National Center's 30-plus-year history as leaders in PTSD research, clinical education, telehealth, and disaster response.

### Outreach and education

As the pandemic reached the United States in early 2020, care at VA medical centers shifted to telephone or virtual care when possible. This left some Veterans engaged in PTSD treatment unable to attend in-person sessions. Providers had to figure out how to best care for Veterans remotely. Treatments like Prolonged Exposure had an added challenge as some require Veterans to go out in the world and spend time with people, like visiting a store at a busy time. With the lockdown and physical distancing, these activities were no longer viewed as safe.



Jessica Hamblen, PhD, Deputy Director for Education, said, "Although no one could have been ready for this challenge, the National Center for PTSD's existing educational programs allowed us to respond quickly both through information disseminated on our website that is visited by 8 million

Jessica Hamblen, PhD

people a year and through our PTSD Consultation and Mentoring Programs." The first questions the National Center received from clinicians were whether and how to continue with trauma-focused PTSD treatment.

Flexibility was critical. As the pandemic grew into a national crisis in the second week of March 2020, the Consultation Program cancelled the planned content for a lecture the following week and instead invited a panel of expert clinicians to speak about helping Veterans cope with PTSD during the pandemic. The world was changing so quickly that just days before the lecture, Consultation Program staff had to rewrite parts of the lecture. The day of the lecture, the team had to update it yet again. "We were running on adrenaline and putting in a lot of hours, but it felt so important, and in a time of crisis like that, I think those of us who do this work like trying to be part of the solution and helping in some small way," says Sonya Norman, PhD, Director of the NCPTSD Consultation Program. Subsequent COVID-19-focused lectures included self-care for mental health care providers, intimate partner violence during the pandemic, and expert guidance on providing PTSD treatment via telehealth.

The National Center also supported VA's specialized PTSD clinical teams through our Mentoring Program to faciliate the switch to care via telehealth. The Consultation and Mentoring programs provided direct links to clinicians in the field, and NCPTSD produced <u>fact sheets</u> to address the challenges they were facing, such as working with patients who were uncomfortable wearing masks.

Responding to current events moved to another level with the August 2021 withdrawal of U.S. troops from Afghanistan. Within days of the withdrawal of troops, the National Center team developed materials and disseminated information for Veterans and for clinicians treating Veterans who served in Afghanistan and earlier conflicts.

Meanwhile, NCPTSD's Mobile Mental Health Program began working on the COVID Coach app—designed for everyone, including Veterans and service members—to support self-care, stress management, and overall mental health during the pandemic. COVID Coach was released at the end of April 2020 and was downloaded over 200,000 times in the first year.

## Research response to COVID-19

While the education arm of the National Center was working to inform clinicians, policy makers, and the public about best practices and ways to cope with the stress of the pandemic, the research arm was working to fill in the many unknowns. "We were working both sides—educating and trying to do the research to inform the education," says Paula Schnurr, PhD, Executive Director of the National Center.



The COVID-19 pandemic brought new experiences, including drive-by testing, to many people.

As researchers were confronted with urgent questions about the mental and physical health implications of the pandemic, they were also learning to conduct research in a world that had shifted to largely virtual almost overnight. This presented a wide range of challenges, from obtaining informed consent to changing an intervention from in-person to remote halfway through a study. Researchers with active studies had to find other ways to continue to provide study interventions and collect data.

In March 2020, staff investigator Johanna Thompson-Hollands, PhD, was nearly done with collecting data for her VA Career Development Award study on a family intervention to reduce dropout during PTSD treatment. At the beginning of the pandemic, all her participants had finished the study intervention, but she was still collecting follow-up data. Here, the NCPTSD's history as a leader in PTSD assessment came in handy. Reflecting on transitioning her study to virtual, Dr. Thompson-Hollands said, "We were very lucky because the National Center had this wonderful assessment core that had been running out of the Behavioral Sciences Division for years." Brian Marx, PhD, Deputy Director of the Behavioral Sciences Division, and his colleagues developed a system to conduct assessment by telephone in 2009, and many NCPTSD studies were already employing remote assessment before the pandemic. "There were safety and scheduling procedures already in place. If we had been depending on in-person assessments and had no infrastructure to pivot in that way, it would have been a lot more chaotic," said Dr. Thompson-Hollands.

Other researchers needed to completely redesign studies when the pandemic hit. Staff investigators Nick Livingston, PhD and Jillian Shipherd, PhD, at the Behavioral Sciences Division were co-leading a study examining the intersection of trauma and minority stressors among transgender and gender-diverse individuals. "It was a very interactive, in-person proposal and research design—we had submitted it for IRB approval, and then we had to pull it and redo the whole design to make it virtual," says Dr. Livingston. In addition to figuring out the mechanics of running a research study remotely, ongoing studies shifted focus and added questions to understand the links between COVID-19 and PTSD in Veteran populations. Veterans are, on average, older than non-Veterans, and are at greater risk of physical health problems and have higher rates of trauma exposure and mental and physical health difficulties. Two ongoing longitudinal studies—The National Health and Resilience in Veterans Study (NHRVS) and the Longitudinal Investigation of Gender Health and Trauma (LIGHT) provided a unique opportunity to understand the impact of COVID-19 on Veterans.

The goal of clinical and implementation research has always been to change practice and policy in the real world. The urgency of the COVID-19 pandemic accelerated this translation, and the real-time implications of research findings changed the way investigators thought about the audience for their work. "COVID-19 impacted my micro versus macro lens about research," added Dr. Livingston. "I'm not a policy researcher, but it became clear that there was a need to really think about macro-level things because there was so much big picture stuff happening all at once."

### Supporting health care workers

As the pandemic and its effects continued, it became clear that health care workers on the front lines of emergency rooms and ICUs would need ongoing support. These workers were struggling with difficult



Patricia Watson, PhD

choices and too many unknowns about the thennew virus. Who gets the hospital bed? Who gets the ventilator? Who gets admitted? Is my family safe from infection when I get home from a shift in the ICU?

In the early days of the pandemic, Dr. Patricia Watson, NCPTSD's Senior Education Specialist, led a webinar on Stress First

Aid for VA health care workers. Over 1,300 participants tuned in. "There was this great need of people all over the world feeling like they didn't know what to do. 'I'm so anxious, I don't quite know what to do for myself and for my co-workers." The National Center recognized

#### National Health and Resilience in Veterans Study (NHRVS)

In the fall of 2019, before the first documented COVID-19 cases appeared in the United States, the National Center had initiated a survey of more than 3,000 Veterans as the latest wave of the NHRVS. As a result, we had a rare "pre-pandemic" baseline cohort from



which to capture data on the mental health of Veterans before the pandemic. The initial plan was to follow up with Veterans in two or three years, but the research team rapidly modified the NHRVS study design to capture how the pandemic affected the health of Veterans nationally.

"Our study is the only one, to my knowledge, to have pre- and peri-pandemic data in a nationally representative sample of Veterans," says Dr. Robert Pietrzak, investigator at the Clinical Neurosciences Division. "Most of the work on this topic is based on convenience samples recruited from the Internet. In contrast, our data were drawn from a Census-based, pre-existing, nationally representative probability sample of U.S. households, so the demographic composition of our sample allows us to generalize results to the entire U.S. population of Veterans."



#### Longitudinal Investigation of Gender Health and Trauma (LIGHT)

LIGHT is an ongoing longitudinal study of Veterans that includes large numbers of women, individuals in high crime communities, and racial and ethnic minorities. By including larger numbers of these often under-represented groups, the study can measure the impact of community and gun violence on mental health and health care utilization.

This study explores potential risk (including perceived discrimination and race-based stress) and resilience factors like social support that may influence these associations. In the past year, investigators added two assessments of COVID-19 exposure and response to assess the impact of the pandemic on Veterans.

the need for resources in this population and created content on <u>its website</u> specifically for health care workers coping with the pandemic.

The Stress First Aid model was developed to help workers in high stress jobs such as military personnel, firefighters, first responders, probation officers, and others. According to this model, stress reactions occur on a continuum. Early awareness and response can reduce the likelihood of severe or long-term problems. The model can also be a tool for an organization's leaders to have larger conversations about the organization as a whole: "Our entire team is on the orange. What do we need to do differently?"

"It doesn't have to be super complicated," says Dr. Watson of her Stress First Aid program. "It doesn't have to be a fancy program that takes 30 minutes a day. It is the simple interactions that they have with people. Even a one-minute, 'I've been thinking about you, how are you doing?' Over time, those add up and help people feel like they're not alone. And it is meant to be used in high stress jobs all the time."

In April 2020, National Center researchers joined a team surveying 3,000 frontline workers providing care during the first surge of the pandemic in New York City at Mount Sinai Hospital. In this large sample, over a third experienced symptoms of COVID-19-related PTSD, depression, or anxiety. Health care workers faced infection, worries about infecting their family, and a shortage of personal protective equipment and other resources needed to safely treat the influx of COVID patients.

In addition to directing the NCPTSD Consultation Program, Dr. Norman is a researcher and clinician working to treat Veterans with PTSD. Her pre-pandemic work on moral injury provided another way to understand the stress health care workers were under. Moral injury is the lasting psychological, spiritual, behavioral, or social impact that can result from difficult experiences and lead to feelings of moral distress like guilt, shame, and anger. Traditionally, it has been studied in the context of combat, but she realized it could be translated to understand the stressors of health care workers during the pandemic.

Understanding the challenges facing health care workers was important, but even more crucial was developing solutions to those problems. From data collected as part of the Mount Sinai survey, Dr. Norman and Dr. Pietrzak collaborated on research that found that reducing burnout and increasing support from hospital leadership appeared to help reduce the risk of developing more severe disorders in this population and others working during the crisis. "These themes resonate with workers," says Dr. Pietrzak. "They resonate with Veterans. We need to do both. It's like a psychological shield in a way, to manage the distress, but also to build the strengths."



#### **Seven Cs of Stress First Aid**

- 1. Check: Assess: observe and listen
- 2. Coordinate: Get help, refer as needed
- 3. Cover: Get to safety ASAP
- 4. Calm: Relax, slow down, refocus
- 5. Connect: Get support from others
- 6. Competence: Restore effectiveness
- 7. Confidence: Restore self-esteem and hope

Ongoing work at the National Center underscores how clinical research works hand in hand with guickly evolving on-the-ground information to fill in knowledge gaps. Dr. Norman is leading a study testing her Trauma Informed Guilt Reduction therapy for guilt, shame, and moral injury resulting from trauma for pandemic-related guilt in military Veterans, including many health care workers. Along with Dr. Carmen McLean, Dr. Norman developed a new scale to measure moral injury in non-combat contexts-the first of its kind. Dr. Watson and Dr. McLean are working on a study of Stress First Aid in health care workers. Dr. Shannon Wiltsey Stirman and Dr. Debra Kaysen from the Dissemination and Training division are developing and testing a web-based intervention for health care workers that assesses individual needs and guides people through evidence-based activities to help them cope with the challenges of COVID-19.

## Pandemic stress, traumatic stress

While National Center researchers, educators, and communications staff were working to understand and support Veterans and health care workers cope with mental health responses to the pandemic, theoretical issues emerged. The field, including many National Center researchers, sought to understand how the COVID-19 pandemic fit into a shared understanding of traumatic stress.

"PTSD" is often used colloquially to describe normal responses to stressful situations—for example, the quarantines, isolation, job loss, and financial hardships that accompanied the pandemic. However, PTSD has a technical definition: to receive a PTSD diagnosis, a person must have experienced or witnessed actual or threatened death, serious injury, or sexual violence—a "Criterion A event." Someone could have the symptoms that fit within a PTSD diagnosis—nightmares, sleep issues, avoidance issues—without having an experience that qualifies as "traumatic." This is what sets PTSD apart from other disorders—the idea that symptoms are caused by what we refer to as a trauma, according to Dr. Marx, an expert in PTSD diagnosis and assessment.

There is no question that COVID-19 was distressing and very disruptive to most everyone around the planet, according to Dr. Marx. Yet for a COVID-19 exposure to qualify as traumatic, a person's experience with the disease would need to include something that fits under the Criterion A definition—perhaps disease symptoms that require hospitalization, ICU treatment, or the need for a ventilator to save one's life. A working group of investigators across the center developed a survey instrument to assess COVID-19 exposure and help researchers understand which pandemic-related experiences might count as "traumatic."

Counting COVID-19 automatically as a cause of PTSD increases the risk that more people receive a PTSD diagnosis when they have another mental health issue like anxiety or chronic stress, says Dr. Marx. Sticking to the definition helps ensure that people get the right diagnosis and the right treatment.

## Strength and resilience

With over 200 million people infected globally and 4.8 million COVID-19-related deaths (as of the end of the reporting period for this report), and challenges like quarantine, isolation, and unemployment, it's not surprising that nearly all the research on the mental health impact of the pandemic has focused on negative outcomes such as depression, anxiety, and PTSD. However, posttraumatic growth—the positive, meaningful psychological changes that a person can experience because of struggling with traumatic and stressful life events—is also possible.

"It turns out the picture emerging from our work is not exclusively doom and gloom," says Dr. Pietrzak. In fact, papers published by Dr. Pietrzak's group using data from the NHRVS study described above found that 43% of Veterans reported posttraumatic growth—most notably in greater appreciation of life and improved interpersonal relationships. The number was even higher, at 72%, among Veterans with pandemic-related PTSD symptoms. In the Mount Sinai health care worker cohort, 77% of frontline health care workers experienced at least moderate posttraumatic growth, most notably in greater appreciation of life (67%), improved relationships (49%), and greater personal strength (44%) because of their pandemic-related experiences. His group also found that suicidal thoughts decreased during the pandemic in this group of Veterans. Work continues to increase understanding of the mental health implications of the pandemic on Veterans, and of factors that might inspire resilience in the face of social and medical stressors.

"Sometimes you need to be sufficiently shaken by an experience and even experience symptoms of PTSD to begin to process it at a deeper level and ultimately be able to grow from it," adds Dr. Pietrzak. "The saying, 'Grow through what you go through' captures the essence of posttraumatic growth."



At the beginning of the pandemic, many therapy sessions moved to virtual appointments.

### Looking to the future

The National Center for PTSD has been a center of excellence for education and research on PTSD treatment within VA for over 30 years. In many ways, the COVID-19 pandemic has been a test of our ability to respond in real time to crises. The Center has served as a national resource for mental health care via telehealth, driven unexpected research learning opportunities, and created a springboard to a richer understanding of PTSD, trauma, and resilience in the Veteran community and beyond. "What we did was practical, it met a need, and it was also forward thinking because it set us up to better meet the needs of Veterans, the VA, providers, and the public around significant stressors," says Dr. Schnurr.

## Major Research Initiatives in Fiscal Year 2021

The National Center's research spans a range of investigative levels, from large longitudinal survey studies (LIGHT and NHRVS as examples detailed in the introductory section of this report, as well as <u>Project VALOR</u> and the <u>Neurocognition</u> <u>Deployment Health Study [NDHS]</u>), to molecular and genetic investigations of the biology of PTSD, to research exploring barriers and best practices in the implementation of evidence-based PTSD treatments. In addition, FY 2021 included a new wave of research investigating the impacts of COVID-19 on the mental health of Veterans, including newly funded studies and modifications of ongoing research (see the introductory narrative to this report for a detailed description of the National Center's COVID-19 research efforts).

During FY 2021, researchers at the National Center led 133 funded studies, including research undertaken in collaboration with partner organizations in the government, academic institutions, and international agencies. Investigators published 296 peer-reviewed journal articles, book chapters, and books, and had an additional 219 in-press and advance online publications (see appendices C–G for a full list of grants, publications, and scientific presentations in FY 2021).

The National Center's research and educational activities are driven by five operational priorities: Biomarkers, Treatment, Care Delivery, Implementation, and PTSD and Suicide. The following narrative highlights some of the FY 2021 research initiatives undertaken to address these five operational priorities. (Appendix B contains a more comprehensive listing of research projects conducted by investigators at each of the National Center's seven divisions.)

## Biomarkers

The National Center is a leader in the study of biomarkers for PTSD. This priority aims to establish reliable and valid biomarkers to aid in predicting who will develop PTSD, diagnosing PTSD, predicting treatment outcome, and measuring treatment response. The biomarker work underway at NCPTSD includes neuroimaging work, animal models of PTSD, and collaborations with large, multi-site consortia including the Million Veteran Program (MVP) and VA National PTSD Brain Bank. The VA National PTSD Brain Bank studies postmortem brain tissue of individuals with PTSD and major depressive disorder (MDD), and of healthy control donors to characterize gene expression associated with trauma, stress, and suicide. At the end of FY 2021, the VA National PTSD Brain Bank had 203 living donors and approximately 323 frozen brain hemispheres (roughly one-third each from donors with PTSD, donors with major depression, and healthy controls), and is collaborating with <u>PinkConcussions</u> and the <u>Vietnam</u> <u>Era Twin Registry</u> to link with future donors. In FY 2021, researchers investigated the role of neuropeptides, gene expression, and inflammation in PTSD using brains acquired from the VA National PTSD Brain Bank.

The MVP is a national program conducted by VA's Office of Research and Development to understand how genes, lifestyle, and military exposures affect health and illness. Since launching in 2011, over 870,000 Veterans have enrolled in MVP, one of the world's largest programs on genetics and health. Several National Center researchers collaborate with the MVP, and FY 2021 publications utilized MVP data, including a pioneering genome-wide association study (GWAS) analysis of 250,000 U.S. Veterans from the MVP to identify genetic risk factors relevant to three PTSD symptom clusters-re-experiencing, hyperarousal, and avoidance-as well as total symptom score and diagnosis. In addition, an FY 2021 Nature Neuroscience publication by National Center investigators combined MVP genomics data with specimens from the VA National PTSD Brain Bank Data. This publication identified genetic risk factors for PTSD, including gender differences that might help to explain the higher rate of PTSD in women than men.

## Treatment efficiency, effectiveness, and engagement

The National Center has long been a leader in developing and refining evidence-based psychotherapies (EBPs) for PTSD. These efforts include maximizing treatment efficiency and effectiveness, developing strategies to enhance the effectiveness of existing treatments including strategies to enhance treatment response in partial responders, and developing more effective treatments. In addition, this priority focuses on treatment engagement, developing strategies to enhance engagement in treatment.

Many research studies across the National Center focus on ways to augment Prolonged Exposure (PE) and Cognitive Processing Therapy (CPT)—the two EBPs for PTSD that have been nationally disseminated across VA. FY 2021 work to improve treatment outcome in PTSD included comparing massed or intensive formats with traditional once a week delivery, targeting provider fidelity to protocol through expert consultation and virtual training models, and tailoring treatments to comorbidities such as Traumatic Brain Injury (TBI) and other individual circumstances.

Two studies funded by VA's Cooperative Studies Program (CSP) investigated the effectiveness of treatment for PTSD. CSP #2016, the National Adaptive Trial for PTSD Related Insomnia, is currently being conducted at 34 VA Medical Centers and compares three commonly prescribed pharmacotherapies for insomnia: trazodone, gabapentin, and eszopiclone. A paper reporting results from CSP #591, Comparative Effectiveness Research in Veterans with PTSD, which compared PE with CPT in 916 male and female Veterans with PTSD, was submitted in FY 2021. Data from CSP #591 will help clinicians and patients understand which treatment might work best for which Veterans and explore the effect on outcomes of patient preference regarding treatment selection.

National Center's researchers also conduct research aimed at developing and implementing new treatments for PTSD. In FY 2021, research into new PTSD treatments included testing the efficacy of Trauma-Informed Guilt Reduction (TrIGR) in Veterans and health care workers affected by the COVID-19 pandemic. TrIGR was developed by National Center investigators to treat trauma-related guilt that commonly co-occurs with PTSD. Another psychotherapy developed by the National Center, Written Exposure Therapy (WET), is a brief five-session treatment for PTSD. In FY 2021. Center investigators demonstrated that WET was non-inferior to CPT in service members, and ongoing work is comparing WET with PE. In addition to psychotherapies like WET and TrIGR. National Center investigators conducted research aimed at identifying new medications for PTSD. Preliminary work published in FY 2021 used retrospective medical record analysis of Veterans treated for PTSD in VA and found that

several antivirals used to treat Hepatitis C were associated with improvement in PTSD symptoms. In the coming year, this work will be expanded to test and better understand the association of these medications with PTSD symptom improvement.

## Care delivery, models of care, and system factors

The National Center is interested in the ways to increase access to effective psychotherapies for PTSD. Digital strategies, such as mobile apps and social media, can be leveraged to disseminate interventions widely, with little to no therapist involvement. The National Center is a leader in the development of mobile apps for PTSD and general mental health and wellness. In FY 2021, this work included research to understand the usage and efficacy of widely used apps such as Mindfulness Coach, Insomnia Coach, COVID Coach, and PTSD Coach.



The COVID Coach app was created to help individuals manage their response to the pandemic and learn about associated resources.

Technology-based versions of EBPs for PTSD are another avenue for increasing access to effective PTSD care. Center investigators who developed an asynchronous text messaging-based version of CPT for PTSD published preliminary results in FY 2021 showing comparable completion rates to telehealth and face-to-face CPT, and some reduction in PTSD symptoms. Ongoing work is continuing to test the efficacy of this novel approach to delivering CPT. (See the <u>FY 2020 Annual Report</u> for a full description of how the National Center has leveraged web and telehealth technology to increase access to PTSD treatment).

The Modeling to Learn initiative trains frontline staff in participatory systems dynamics modeling, a collaborative quality improvement approach in which stakeholders identify specific system problems and use

#### **Measuring PTSD**

Accurately diagnosing PTSD is an important focus of NCPTSD's research portfolio-this is an important area of study because accurate measurement and diagnosis are important for research and for clinical care.

In FY 2021, National Center investigators published foundational data to advance knowledge about PTSD assessment. One study evaluated the possibility of shortening the Structured Clinical Interview for the Diagnostic and Statistical Manual of Mental Disorders, fifth edition (SCID-5) PTSD module using machine learning, finding that up to six items could be removed from the assessment and maintain diagnostic accuracy. An ongoing study aims to validate the CAPS-5 in an active-duty sample. Another study developed and validated reliable and clinically significant change values for the CAPS-5 and PTSD Checklist for DSM-5, which can help patients and providers benchmark whether treatment response is meaningful. NCPTSD researchers also validated the cutoff score for the Primary Care Screen for PTSD for DSM-5 (PC-PTSD-5), designed to be used in primary care and other screening settings. Results indicated that a cutoff of 4 had high levels of overall diagnostic accuracy across men and women.



computer modeling to compare the likely outcomes of different potential solutions, and select an optimal solution for implementation. Modeling to Learn was recently updated to address factors related to COVID-19. Two randomized trials are now underway, testing whether Modeling to Learn is superior to other quality improvement approaches in increasing the number of VA patients who receive EBPs and pharmacotherapies for mental and addictive disorders.

## Implementation

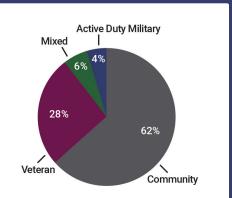
In addition to developing and optimizing effective treatments for PTSD, the National Center conducts research identifying actionable items and developing an implementation strategy around them, as well as developing methods for obtaining systematic feedback from the field.

Building on the treatment development work described above, investigators have also been evaluating training models for WET that include learning collaborative models to support clinic leaders in addressing implementation challenges.

Other FY 2021 implementation work at the National Center focuses on enhancing the implementation of EBPs for PTSD within the VA health care system. These studies compare strategies for enhancing EBP delivery, test whether tailored delivery and facilitator support increase EBP use over standard provider training and study the effectiveness of different virtual training models and remote video supervision on therapist competence and treatment delivery.

#### PTSD Trials Standardized Database Repository

The PTSD Trials Standardized Database Repository (PTSD-Repository) is a web-based platform that hosts data from randomized controlled trials (RCTs) of PTSD treatment. It brings together variables from 389 published studies on a wide range of treatments. The PTSD-Repository allows users to access information in a variety of ways. At the most basic level, users can read data stories on important topics. They can also interact with visualizations or create their own charts, graphs, maps, and other ways to "see" data. This year the database expanded the number of PTSD RCTs included and also began including data from studies that intentionally target both PTSD and substance use, conditions that often co-occur. Outcome measures were expanded to include information on suicide, and risk of bias ratings were added for all RCTs. New data stories and visualizations were created, along with a treatment coding guide to help users understand the data that the site makes available.



The PTSD-Repository allows users to visualize data from RCTs of PTSD treatments. A chart created from the PTSD-Repository shows the number of RCTs that have studied different populations.

## PTSD and suicide

PTSD and Suicide was added as an operational priority in FY 2017. Although research on this topic was already part of the National Center's portfolio, formalizing this work as an operational priority helped to support the ongoing work and encourage the initiation of new work investigating the relationship between PTSD and suicide, and develop strategies to predict and prevent suicide among individuals with PTSD.

One major component of the National Center's work on PTSD and suicide is understanding the risk factors for suicide in Veterans with PTSD. This work includes in-home monitoring of sleep, neuroimaging correlates of suicide attempt history, and patterns of suicidal ideation after discharge from psychiatric hospitalization. Another major component focuses on treatments for suicide prevention. In FY 2021, National Center investigators collaborated to test a modified version of WET with a sample of Army soldiers and Veterans with PTSD symptoms who were hospitalized for suicide risk. The study seeks to determine whether treating PTSD symptoms reduces the likelihood of future suicidal behavior. Finally, overlapping with the "system factors" operational priority, National Center staff have developed modeling tools that clinic teams can use to optimize and allocate staff resources, which have been utilized to help teams ensure effective management of Veteran patients at high risk for suicide without compromising overall access to or quality of care.

NCPTSD also leveraged data from the ongoing longitudinal NHRVS study, which surveyed a nationally representative sample of more than 4,000 Veterans, to better understand PTSD and suicide in the Veteran population both before and during the COVID-19 pandemic. Investigators found that both PTSD symptoms and suicidal thoughts and behaviors are prevalent among U.S. Veterans and signal a need for enhanced suicide prevention and outreach efforts to engage suicidal Veterans in mental health treatment. During the COVID-19 pandemic, prevalence of suicidal thinking decreased from 10.6% to 7.8%. Veterans who reported having been infected with COVID-19 were more than twice as likely as those without infection to develop suicidal thinking, thus underscoring the importance of COVID-19 infection as a potential risk factor for suicide in U.S. Veterans.



## Promoting PTSD Education: Training, Dissemination, and Communication

The National Center for PTSD's portfolio of educational offerings spans a range of audiences and channels. Fiscal year (FY) 2021 began with the first-ever meeting of the National Center for PTSD Expert Education Panel (EEP).

Designed as a forum to gain insights from colleagues across the Office of Mental Health and Suicide Prevention (OMHSP) and other offices within Veterans Health Administration (VHA), this meeting focused on strategic planning for the PTSD Consultation Program and PTSD Mentoring Program. The insights gained from the meeting informed both programs' work throughout the year. Whether we were delivering training for providers, developing apps for the public or working to raise awareness, we continued to innovate and to refine existing products and programs. As always, our depth of knowledge and ability to pivot meant that when crises and current events demanded expertise in traumatic stress, we were able to respond nimbly.

### PTSD awareness

The website AboutFace is a cornerstone of NCPTSD's efforts to raise awareness of the value of PTSD treatment. This year, filming Veterans for video segments was challenging because of the coronavirus pandemic. Nevertheless, we were able to create new content through a combination of remote and in-person filming. Also this year, AboutFace began an ambitious effort to redesign the site to enhance user experience. With this redesign, AboutFace will now provide a guided experience for the Veterans, family members and providers who access the site. Users will also be able to take deep dives into the topics that pique their interest via improved access to in-depth multimedia features. At crucial stages, Veteran input will be solicited to ensure that the redesigned site meets user needs.

After more than a year of lockdown and social isolation, what better way to raise awareness about PTSD than by asking friends and neighbors to join together for a virtual walk? This year, NCPTSD asked the public to commit to 27 minutes of walking—or running, or any physical activity!—in honor of PTSD Awareness Day on June 27. Hundreds of participants signed up and shared their efforts on social media for the world to see. We also gave the public and providers a host of ideas for raising PTSD awareness, including sponsoring a virtual PTSD Awareness Month event, spreading the word about resources on the NCPTSD website, organizing a community forum and posting on social media and blogs.

NCPTSD's collection of <u>animated explainer videos</u> continues to grow. This year saw the debut of a fourminute video on <u>Cognitive-Behavioral Conjoint Therapy</u> (<u>CBCT</u>) for <u>PTSD</u>. Perhaps fittingly, the video for Written Exposure Therapy (WET)—a brief five-session treatment—will clock in at just under two minutes. It will be completed and posted on the website next year.



The AboutFace website features Veterans telling their stories about PTSD and PTSD treatment.



The June 2021 PTSD Awareness campaign included a virtual walk.

## Support for providers in the field

Since its creation in 2011, the <u>PTSD Consultation</u> <u>Program</u> has offered free one-on-one consultation to providers treating Veterans with PTSD. From facilitating access to patient education materials or online courses to answering complex questions about diagnosis, assessment and treatment, NCPTSD's cadre of expert consultants works with providers across the country both in VA and in the community—to help them deliver evidence-based care to Veterans. This year the program responded to 2,100 consultation requests.

The PTSD Consultation Program Lecture Series continued to offer providers free seminars in important topics in PTSD treatment. Each lecture features one or more experts who—in line with the Consultation Program's practice—ground practical clinical guidance in scientific research. Building on work begun in 2020, the lecture series also devoted a session to provider selfcare and continued to explore issues of race and trauma. Each lecture in the series is first presented live and is then made available on the NCPTSD website so that providers can have on-demand access. Free continuing education credits are available for a range of disciplines.

The PTSD Consultation Program also collaborated with VA's Suicide Risk Management Consultation Program and the external <u>Center for Deployment Psychology</u> to provide training in the assessment of PTSD and suicide risk for community mental health providers who treat Veterans. Expert clinicians from all three programs offered three two-day trainings that covered military culture and PTSD assessment. More than 100 providers participated in the trainings and received free continuing education credits. Plans are underway to increase the capacity of these trainings next year.



PTSD Coach was first released in 2011 and is now the most popular VA mental health app. PTSD Coach can be used to learn about PTSD, track and manage symptoms, and connect with resources.

#### The Principles of Specialty Care



PTSD specialty care teams and specialists offer **time-limited** specialty care focused specifically on **reduction of PTSD symptoms**.



PTSD specialty care teams and specialists prioritize the offering of **evidence-based treatments for PTSD** recommended by the VA/DoD Clinical Practice Guidelines.



There should be **minimal barriers** to admission for PCTs if Veteran needs treatment. PTSD specialty care must have the ability to treat **complex presentations and comorbidities**.



PCTs follow principles of **team-based care**.

PTSD specialty care teams and specialists incorporate **measurement-based care** into all services.

The Dissemination and Training Division's Practice-Based Implementation (PBI) Network continued its Tech into Care initiative. By equipping VA and community providers with tools and training, the initiative integrates apps and online courses into Veteran care. This year we launched a section of the website that streamlines access to all the project resources, including videos, courses, patient handouts and provider guides. Included among these resources are the project's first Spanish-language demonstration videos for PTSD Coach and COVID Coach. All videos are also available in a YouTube playlist. Specific to VA, a Joint Incentive Fund-supported quality improvement project has established mHealth Specialists-an internal champion-in each Veterans Integrated Service Network. In concert with mHealth Ambassadors across VA, they focus on the use of technology tools to reduce Veteran suicide risk and improve coping. The PBI Network continued to offer two lecture series, one that is open to everyone and another that is available only to VA providers. Attendance at both increased this fiscal year.

One of the core tenets of the PTSD Mentoring Program is collaboration—both with the field and with researchers. Working with investigators at the <u>Center</u> for Care Delivery and Outcomes Research (CCDOR), the program piloted implementation facilitation (IF) at seven sites. IF was deployed to help site champions and mentor facilitators implement all the principles of PTSD specialty care in six locations. Another site in the pilot program used the model to implement massed delivery of evidence-based practices (EBPs). Six mentors who attended the IF training but did not have time to fully implement the model piloted facilitation through a learning collaborative.

While continuing to consult with PTSD specialty care sites nationwide, the Mentoring Program also partnered with the mental health metrics groups to pilot new Strategic Analytics for Improvement and Learning Value Model (SAIL) metrics for PTSD. Rounding out its collaborative work, they continued to work closely with the VHA Northeast Program Evaluation Center (NEPEC) to track outpatient specialty care, including identification of PTSD specialists and OMHSP leadership to ensure alignment with priorities. The program also made further enhancements to its PTSD Clinic Dashboard and launched a new, extensive online toolkit for program managers.

The Executive Division continued its Office of Rural Health-supported IF at six VA medical centers across the country. By looking at contextual factors present in each site, IF helps sites expand the use of PTSD care that aligns with the VA/DoD Clinical Practice Guideline. Sites appreciate and benefit from the technical support they receive. One of the sites, originally a low adopter of evidence-based treatment (EBT), emerged as a national leader in EBT reach by the end of the year. The Office of Rural Health has also funded a project at the Behavioral Science Division that will develop, evaluate and disseminate educational materials for providers serving medically ill rural Veterans with PTSD within the Home-Based Primary Care environment. This year, the same team released a series of videos for medical providers working with patients with PTSD at the end of life.

The revamped <u>Community Provider Toolkit</u> launched this year. With a human-centered design approach that was refined through close work with stakeholders, the toolkit provides streamlined access to curated tools for community providers who treat Veterans. In addition to including sections on mental health topics of particular relevance for Veterans, the site features information on assessing for and understanding military experience, as well as guidance on helping Veterans access VA benefits.



Responses to stress can range from green (optimal) to red (severe) as shown in the Stress Continuum.

Beginning last year, when the coronavirus pandemic first began to devastate the nation, medical and mental health providers across VA began to ask for help dealing with their own and their colleagues' stress reactions. As part of NCPTSD's response to the crisis, we developed and disseminated materials on Stress First Aid (SFA). This framework is a flexible, evidenceinformed model designed to improve recovery from stressful situations that was originally designed for the military and first responders. NCPTSD created a <u>dedicated section of the website</u> that was expanded this year with manuals, a workbook and handouts for providers. More resources, including video vignettes that show how the model can be applied in practice, will continue to be added.

## Self-help and treatment companion resources

The mobile app <u>Beyond MST</u> launched this year. Developed by the Women's Health Sciences Division in collaboration with the Dissemination and Training Division, the app offers information and resources

to help survivors cope with challenges related to military sexual trauma (MST) and to improve their health, relationships and quality of life. Though not a substitute for professional care, the app's self-help tools offer a safe, secure way for users to create self-care plans that promote physical and emotional wellbeing, reduce distress and track progress toward recovery goals. The app was designed for Veterans of all genders and backgrounds and should



also prove helpful for people coping with the emotional effects of unwanted sexual experiences in non-military contexts. Now that the app is available, the team is working to get it into the hands of people who will benefit from it. To overcome shame and stigma around sexual assault that might slow the app's uptake, the developers are marketing it widely through podcasts and presentations to target audiences.

Also in the technology realm, the Behavioral Science Division continues its work to host a provider-facilitated version of the <u>VetChange</u> program on the VA network. With provider-facilitated VetChange, users can collaborate with their health care team on the progress of their treatment goals as they track alcohol consumption and engage with tools that help them deal with cravings, stress and other symptoms. Transitioning the provider-facilitated VetChange from a research project to a VA server will allow it to become more integrated into care for Veterans who are concerned about their drinking.

The Women Veterans Network (WoVeN), established by the Women's Health Science Division in 2017, is now active in more than 200 cities, with nearly 4,000 Veterans enrolled. WoVeN is a peer support network specifically designed to meet the needs of women Veterans. It not only provides robust programming and strong social support for its members, but is also evidence based, maintains a component of ongoing consultation and support for peer leaders to foster program fidelity, and includes a research component designed to assess the efficacy of the program across a number of outcomes. This year the network piloted BRIDGES (Building Reintegration from Dreams and Goals to Execution and Success), a program for service members transitioning to civilian life. BRIDGES pairs guides from WoVeN with women whose military careers are nearing their end to create teams of "battle buddies." Their mission? To navigate together the transition from military service to civilian success.

## Educational resources for professionals

NCPTSD has a long tradition of providing <u>free online</u> <u>courses for providers</u>. Central to that effort has been the PTSD 101 series. This year, we pivoted to a new model of course development. Presentations from the live PTSD Consultation Program Lecture Series are rapidly made available as enduring continuing education courses. With the assistance of our partners at Employee Education Services, we are able to offer free continuing education credits to VA staff and non-VA learners alike, all with only a couple of months' delay. This innovation allows us to post 12 one-hour courses each fiscal year, rather than only four to six. This year we added a second virtual patient to the Clinician-Administered PTSD Scale for DSM-5 (CAPS-5) Training Simulator, our interactive online course that helps learners improve their skills in administering the gold-standard PTSD assessment. We have grouped both virtual patient courses, along with a traditional didactic course on the measure, into an easy-to-access training curriculum that provides free continuing education credits to learners in VA and in the community. Development of an additional virtual patient—with the most challenging presentation of the three—is currently underway. It will be added to the curriculum next year.

Addressing many of the issues covered in the Community Provider Toolkit, but also intended for VA providers, the podcast *Caring for Those Who Have Served* was released this year. In six episodes, experts from across VA offer key insights into providing behavioral health care in a Veteran-centric way. Next year NCPTSD plans to debut a second podcast; it will focus on the use of technology to support Veterans with PTSD and related concerns.

### Online communication resources

In FY 2021, the Resource Center staff continued to develop its new content management system to streamline the indexing and publishing of records to <u>PTSDpubs</u>, the Center's online database of PTSD and traumatic stress literature. PTSDpubs currently holds nearly 65,000 records. In FY 2022, the auto-tagging capability of the database's semantic artificial intelligence platform, PoolParty, will be fully implemented, resulting in greater indexing precision and an enhanced retrieval experience for users. The Resource Center plans to focus FY 2022 on targeted outreach to new users and potential integration with other NCPTSD products, such as the PTSD-Repository.

#### **Resources Help Veterans Deal with Powerful Emotions**

The end of the fiscal year coincided with the end of American military operations in Afghanistan. Sonya Norman, director of the PTSD Consultation Program, and Jennifer Vasterling, an NCPTSD-affiliated investigator, were featured in a <u>four-part series on Afghanistan in the VAntage Point blog</u>. Both spoke about signs Veterans should be on the lookout for as they sought to reconcile their service with the changing situation in Afghanistan and stressed the need for Veterans to get help if they found themselves struggling. We also

developed two online articles—<u>one for Veterans</u> and <u>one for providers</u>—focused on how to cope with the powerful emotions that the end of American operations in Afghanistan might engender.



As the nation continues to grapple with issues of racial injustice and disparities, NCPTSD has developed provider- and public-focused resources situated at the intersection of race and

trauma. The Consultation Program presented four lectures for providers, ranging <u>from cultural considerations</u> in treating Latinx patients with trauma histories to helping providers respond appropriately if their patients express sociocultural views that the providers find troubling or offensive. For the public, we posted <u>an article on</u> <u>racial trauma</u> that describes its scope and impact while offering ways to cope with it on a personal level.

## About the National Center for PTSD

### History

The National Center for PTSD was created in 1989 within VA in response to a Congressional mandate (PL 98-528) to address the needs of Veterans and other trauma survivors with PTSD. The National Center was developed with the ultimate purpose of improving the well-being, status, and understanding of Veterans in American society.

The mandate called for a Center of Excellence (CoE) that would set the agenda for research and education on PTSD without direct responsibility for patient care. Convinced that no single VA site could adequately serve this unique mission, VA initially established the National Center as a consortium of five Divisions.

## Organization

The National Center now consists of seven VA academic CoEs across the United States, with headquarters in White River Junction, Vermont. Two Divisions are in Boston, Massachusetts; two in West Haven, Connecticut; one in Palo Alto, California; and one in Honolulu, Hawaii. Each contributes to the overall NCPTSD mission through specific areas of focus.

The National Center for PTSD is an integral and valued component of VA's OMHSP, which is part of VHA. OMHSP and NCPTSD receive budget support from VA, although NCPTSD also leverages this support through successful competition for extramural research funding.



#### **Quick Facts**



The National Center for PTSD was formed in 1989.



It has seven Divisions across the United States, each with a distinct area of focus.



The National Center for PTSD manages the largest PTSD brain bank in the world.

## Leadership in 2021



Paula P. Schnurr, PhD Executive Director, Executive Division,

White River Junction, VT Professor of Psychiatry, Geisel School of Medicine at Dartmouth



Matthew J. Friedman, MD, PhD

Senior Advisor and founding Executive Director, Executive Division, White River Junction, VT

Professor of Psychiatry and of Pharmacology and Toxicology, Geisel School of Medicine at Dartmouth



Jessica L. Hamblen, PhD

Deputy for Education, Executive Division, White River Junction, VT

Associate Professor of Psychiatry, Geisel School of Medicine at Dartmouth



Paul E. Holtzheimer. MD

Deputy for Research, Executive **Division**, White River Junction, VT

Associate Professor of Psychiatry, Geisel School of Medicine at Dartmouth



**Terence M. Keane, PhD Division Director, Behavioral Science** 

**Division**, Boston, MA Professor of Psychiatry and Assistant

School of Medicine

Dean for Research, Boston University



John H. Krystal, MD

Division Director, Clinical Neurosciences Division, West Haven, CT

Robert L. McNeil, Jr. Professor of Translational Research and Chairman of the Department of Psychiatry, Yale University School of Medicine



Craig S. Rosen, PhD Division Director, Dissemination and Training Division, Menlo Park, CA

Professor of Psychiatry and Behavioral Sciences, Stanford University School of Medicine



Rani A. Hoff, PhD, MPH **Division Director, Evaluation** Division, West Haven, CT

Professor of Psychiatry, Yale University School of Medicine



Tara E. Galovski, PhD Division Director, Women's Health Sciences Division, Boston, MA

Associate Professor of Psychiatry, Boston University School of Medicine

## Fiscal Year 2021 Expert Panels

## **Expert Scientific Panel**

#### Chair: Thomas C. Neylan, MD

San Francisco VA Medical Center; University of San Francisco School of Medicine

## Col. Dave Benedek, MD, MC, USA

Uniformed Services, University of the Health Sciences

#### Susan E. Borja, PhD National Institute of Mental Health

**John Fortney, PhD** University of Washington

#### Sandro Galea, MD, DrPH Boston University School of Health

#### JoAnn Kirchner, MD

VA Mental Health Quality Enhancement Research Initiative, Central Arkansas Veterans Healthcare System; University of Arkansas for Medical Sciences

**Candice Monson, PhD, C. Psych.** Ryerson University

Alan L. Peterson, PhD, ABPP University of Texas Health Science Center

Kerry Ressler, MD, PhD McLean Hospital, Harvard Medical School

### Barbara O. Rothbaum, PhD, ABPP

Emory University School of Medicine

#### Brett Rusch, MD

White River Junction VA Medical Center; Geisel School of Medicine at Dartmouth

#### Elizabeth Yano, PhD, MSPH

VA Greater LA Healthcare System; UCLA Fielding School of Public Health

#### Ex-Officio: Theresa Gleason, PhD

VA Clinical Science Research & Development

## **Expert Education Panel**

#### Elizabeth Brill, MD, MBA

Office of Community Care, Department of Veterans Affairs

#### **Claire Collie, PhD**

Office of Mental Health and Suicide Prevention, Department of Veterans Affairs

#### **Chris Crowe, PhD**

Office of Mental Health and Suicide Prevention, Department of Veterans Affairs

#### Steve Holliday, PhD

VISN 17 Mental Health, Department of Veterans Affairs

#### Aimee Johnson, LCSW

Office of Mental Health and Suicide Prevention, Department of Veterans Affairs

#### Joseph Liberto, MD

Office of Mental Health and Suicide Prevention, Department of Veterans Affairs

#### Matt Miller, PhD, MPH

Office of Mental Health and Suicide Prevention, Department of Veterans Affairs

#### Stacey Pollack, PhD

Office of Mental Health and Suicide Prevention, Department of Veterans Affairs

#### Andrew Pomerantz, MD

Office of Mental Health and Suicide Prevention, Department of Veterans Affairs

#### Sandra Resnick, PhD

VA Northeast Program Evaluation Center, Yale University School of Medicine

#### **Clifford Smith, MD**

Office of Mental Health and Suicide Prevention, Department of Veterans Affairs

#### Kendra Weaver, PsyD

Office of Mental Health and Suicide Prevention, Department of Veterans Affairs

## Appendix A: Acronyms Used in Appendix B

#### **Army STARRS**

Army Study to Assess Risk and Resilience in Servicemembers

**bCBCT** Brief Cognitive-Behavioral Conjoint Therapy

**BEAMS** Boston Early Adversity and Mortality Study

BMI Body Mass Index

**BRIDGES** Building Re-Integration Dreams and Goals to Execution and Success

**BSD** Behavioral Science Division

**CAP** Consortium to Alleviate PTSD

**CAPS-5** Clinician Administered PTSD Scale for DSM-5

**CBCT** Cognitive-Behavioral Conjoint Therapy

**CBT** Cognitive-Behavioral Therapy

**CBT-I** Cognitive-Behavioral Therapy for Insomnia

#### **CERV-PTSD**

Comparative Effectiveness Research for Veterans with PTSD

**CMARRS** Center for Mobile Applications Research Resources and Services

**CND** Clinical Neurosciences Division

**CoE** Center of Excellence

**CPG** Clinical Practice Guidelines

**CPT** Cognitive Processing Therapy

**COVID-19** Coronavirus Disease 2019

**CRAFT** Community Reinforcement and Family Training

**CSP** Cooperative Studies Program

**DBS** Deep Brain Stimulation

**DNA** Deoxyribonucleic Acid

**EBP** Evidence-Based Psychotherapy **EBT** Evidence-Based Treatment

**EEG** Electroencephalogram

**EMA** Ecological Momentary Assessment

**ENIGMA** Enhancing Neuroimaging Genetics through Meta-Analysis

**fMRI** Functional Magnetic Resonance Imaging

**FY** Fiscal Year

**GABA** Gamma-aminobutyric Acid

**GWAS** Genome-wide Association Studies

**GWS** Genome-wide Significance

**Hitop** Hierarchical Taxonomy of Psychopathology

IOP Intensive Outpatient Program

IPV Intimate Partner Violence LATR Later Adulthood Trauma Reengagemen

LC Learning Collaborative

**LGBT** Lesbian, Gay, Bisexual, and Transgender

**LIGHT** Longitudinal Investigation of Gender, Health, and Trauma

MAVERIC Massachusetts Veteran Epidemiology Research and Information Center

MBC Measurement-Based Care

MDD Major Depressive Disorder

mRNA Messenger RNA

MRI Magnetic Resonance Imaging

MST Military Sexual Trauma

**MVP** Million Veteran Program

NCPS National Center for Patient Safety

**NDHS** Neurocognition Deployment Health Study

**NEPEC** Northeast Program Evaluation Center

NHRVS National Health and Resilience in Veterans Study

**NPY** Neuropeptide Y **OMHSP** Office of Mental Health and Suicide Prevention

PCL-5 PTSD Checklist

PC-PTSD-5 Primary Care Screen for PTSD

PCT PTSD Clinical Team

**PE** Prolonged Exposure

**PET** Positron Emission Tomography

**PHQ-9** Patient Health Questionnaire

**PID** Pacific Islands Division

**PRS** Polygenic Risk Score

PTSD Posttraumatic Stress Disorder

**PTSD-Repository** PTSD Trials Standardized Database Repository

RCT Randomized Controlled Trial

**RDoC** Research Domain Criteria

**REACH VET** Recovery Engagement and Coordination for Health – Veterans Enhanced Treatment

**RISE** Recovering from IPV through Strength and Empowerment

**RNA** Ribonucleic Acid

**RRTP** Residential Rehabilitation Treatment Program **SCID-5** Structured Clinical Interview for DSM-5

**SERV** Survey of Returning Veterans

**SSRI** Selective Serotonin Reuptake Inhibitor

**STAIR** Skills Training in Affective and Interpersonal Regulation

**STRONG STAR** South Texas Research Organizational Network Guiding Studies on Trauma and Resilience

**TBI** Traumatic Brain Injury

**TMS** Transcranial Magnetic Stimulation

TRACTS

Translational Research Center for Traumatic Brain Injury and Stress Disorders

VA Department of Veterans Affairs

**Project VALOR** Veterans After-Discharge Longitudinal Registry

VHA Veterans Health Administration

**VNS** Vagus Nerve Stimulation

**VOA** Veterans Outcome Assessment

**WET** Written Exposure Therapy

WoVeN Women Veterans Network

## Appendix B: Research Narratives by Division

## **Behavioral Science Division**

The Behavioral Science Division (BSD) in Boston, Massachusetts, conducts research on life adjustment after military deployment and other traumatic stressors, methods to assess trauma and Posttraumatic Stress Disorder (PTSD), innovative approaches to clinical intervention and treatment delivery, and the potential neurobiological and genomic basis of PTSD and its comorbidities.

#### **Biomarkers**

The Division has an active portfolio of genetic and neuroimaging studies involving collaborations with investigators in the <u>Translational Research Center for</u> <u>Traumatic Brain Injury and Stress Disorders (TRACTS),</u> the <u>Department of Veterans Affairs (VA) National PTSD</u> <u>Brain Bank, the Psychiatric Genomics Consortium, and the PTSD Working Group of the ENIGMA (Enhancing Neuroimaging Genetics through Meta-Analysis) Consortium. During Fiscal Year (FY) 2021, Division investigators focused on the role of inflammation and oxidative stress in the biology of PTSD, and on the role of PTSD and other trauma-associated symptoms in accelerated aging.</u>

Ongoing studies that examine PTSD and blast-related TBI in Veterans of Iraq and Afghanistan war zones aim to clarify the relative contribution of mild TBI and psychiatric conditions to deficits in current functioning and health outcomes. Investigators are now in the process of expanding this work to an older longitudinal cohort to study how psychiatric stress, genetic risk, and peripheral biomarkers of inflammation are associated with subsequent health decline and neurodegeneration.

The biomarkers examined by Division studies include brain features measured by neuroimaging, peripheral markers of inflammation, and metabolic pathology, as well as specific genes, and polygenic risk scores. Also under investigation are epigenetic indicators drawn from both blood and post-mortem brain tissue, including epigenome-wide deoxyribonucleic acid (DNA) methylation levels and transcriptome-wide mRNA messenger ribonucleic acid (RNA, i.e., gene expression). Division members are also contributing to a <u>Million</u> <u>Veteran Program (MVP)</u> project to examine genetic risk variants for Alzheimer's disease and dementia and to evaluate how they interact with Veteran-relevant exposures such as TBI and combat to influence risk of dementia and early cognitive decline. In addition, this project examines how these same genetic markers and exposures interact to influence PTSD risk and symptoms in older Veterans.

During FY 2021, Division researchers continued to use functional and structural magnetic resonance imaging (MRI) to identify neural circuitry involved in PTSD. In collaboration with TRACTS, current studies are examining evidence for neuroimaging subtypes of PTSD. These studies revealed two such biotypes of PTSD characterized by neurocognitive and network-based connectivity abnormalities, which may be associated with greater chronicity of PTSD. Additional studies are examining how genetic risk moderates the relationship between TBI, inflammation, and neurocognitive dysfunction in trauma-exposed Veterans. Division researchers have also used magnetic resonance spectroscopy to examine neurodegeneration and neuroinflammation.

## Treatment efficiency, effectiveness, and engagement

The Division's pioneering research on treatments for PTSD is focused on overcoming barriers to seeking care, reducing dropout, and increasing the efficiency of care delivery. One example is the internet-based treatment <u>VetChange</u>, which was originally designed for Iraq and Afghanistan combat Veterans who report both risky use of alcohol and PTSD-related distress. The initial clinical trial produced evidence that VetChange was effective in reducing both drinking and PTSD symptoms. VetChange was subsequently modified to include mobile-device friendly features and was disseminated nationally; this later version, which is applicable to Veterans of all eras, has demonstrated successful nationwide reach and been shown to be effective as well.

A new and enhanced version of the <u>VetChange mobile</u> app was recently finalized and released, in conjunction with the Dissemination and Training Division, and is available for both Android and iOS devices. In addition, a major extension of the VetChange web intervention platform included a provider-facing dashboard, which allows for synchronous and virtual clinical care between providers and Veterans. Efforts are under way to secure Authority to Operate to make this intervention available to VA clinicians and patients.

Other Division efforts include developing and testing efficient, therapist-delivered interventions or treatment extenders, with the goals of finding approaches that require less professional staff time and that are easier for patients to complete. A prime example is Written Exposure Therapy (WET), a five-session exposure-based treatment for PTSD that has been shown to be highly effective with non-Veteran patients. A recent funded study was completed, and findings indicate that WET is non-inferior to Cognitive Processing Therapy (CPT) in the treatment of PTSD among men and women service members. An ongoing VA-funded study is directly comparing the treatment efficacies of WET and Prolonged Exposure (PE) among Veterans. An ongoing implementation study is examining real world treatment outcomes among Veterans treated by VA mental health providers who are trained to deliver WET. This implementation project is entering its fourth year. Given the high demand for training in the VA system and the positive results to date, VA Central Office is taking over the training effort. Division investigators are also involved in other studies comparing WET with medication and collaborative care to treat PTSD in both VA and non-VA primary care clinics. In another project, in collaboration with the South Texas Research Organizational Network Guiding Studies on Trauma and Resilience (STRONG STAR) Consortium, Division investigators are testing a modified version of WET for Suicide with a sample of Army soldiers and Veterans with PTSD symptoms who have been hospitalized for suicide risk. The study seeks to determine whether treating PTSD symptoms reduces the likelihood of future suicidal behavior.

Research on factors that link PTSD with aggression toward intimate partners has led to the development and evaluation of interventions that reduce or prevent aggression within at-risk military and Veteran families. Positive clinical trials have been published, and the interventions continue to be implemented/evaluated across the VA health care system and on one military installation. Separate funded pilot studies testing one of these programs in different underserved urban civilian settings have shown large effects in reducing intimate partner violence, and a recently funded study will entail a controlled trial of this program in a civilian Israeli sample. A new grant will also examine a motivational alcohol-focused intervention as a pre-group preparation for this program in VA to better address Veterans entering the program with alcohol use problems.

Division investigators recently completed multiple studies examining family involvement in Veterans' PTSD treatment. In a small randomized controlled trial, results showed that Veterans receiving CPT or PE without family involvement dropped out of treatment at a rate of 40%, but that the dropout rate in CPT/PE was only 20% when Veterans' family members received a brief manualized intervention focused on psychoeducation and basic skills. The intervention will soon be tested in a larger, two-site study. A second line of work focused on family involvement in treatment by examining systematic features that might make family inclusion more or less likely. Researchers conducted over 30 qualitative interviews with staff and administrators at VAs nationwide to identify their decision-making process and various barriers or facilitators for family involvement. Preliminary results suggest that one critical barrier is a lack of clinician expertise in couple or family-focused interventions.

As part of the Consortium to Alleviate PTSD (CAP). Division investigators contributed to several Randomized Controlled Trials (RCTs) on active-duty military and Veteran populations. In a study involving family members, a single-arm trial of Cognitive-Behavioral Conjoint Therapy (CBCT), a couples-based treatment was delivered in an intensive, multi-couple group version of CBCT in which the entire treatment protocol was delivered as a two-day weekend retreat. Significant reductions in both clinician-rated and self-reported PTSD symptoms as well as significant improvements in relationship satisfaction were reported. Focusing on PTSD comorbidities, a trial of comorbid sleep disorders and PTSD compared CPT with Cognitive-Behavioral Therapy for Insomnia (CBT-I), and forthcoming results will provide important information about the best way to combine these two treatments for maximum benefit. Likewise, examination of treatments for posttraumatic headache compared with treatment as usual with both CPT and Cognitive-Behavioral Therapy for Headache and found that both active treatments reduced PTSD symptoms on the PTSD Checklist for DSM-5 (PCL-5), but only Cognitive-Behavioral Therapy for Headache reduced headache disability symptoms.

Another CAP study involving Division investigators was a RCT evaluating ketamine for antidepressantresistant PTSD in 156 service members and Veterans randomized to 0.2 mg/kg ketamine, 0.5 mg/kg ketamine, or saline placebo delivered twice per week for four weeks. Preliminary results indicated that there were no statistically significant differences in reductions in PTSD among any of the treatment arms; however, there were significant reductions in depression with the higher dose of ketamine.

In the area of complementary interventions, Division investigators will participate in a multi-site trial comparing Transcendental Meditation with Present Centered Therapy for PTSD in a large funded RCT due to begin this winter. A continuing study examining the impact of two 12-week group treatments on chronic pain in Gulf War Illness was adapted to be a fully remote study, delivering synchronous video group interventions and allowing Gulf War Veterans from around the country to participate. A one-year pilot study is examining the same interventions for older, sedentary, trauma-exposed Veterans. In both studies, Tai Chi, a mind-body exercise that has been associated with physical and mental health benefits, is compared with a wellness promotion intervention that is based on an existing VA model of care entitled Whole Health.

Division investigators also are examining a developmental phenomenon termed later-adulthood trauma reengagement (LATR). It involves efforts by older combat Veterans to actively reengage with wartime memories with the aim of building coherence and finding meaning in past experiences. It is theorized that the LATR process has the potential to lead to either positive outcomes such as personal growth or negative outcomes such as increased PTSD symptoms. An ongoing study is examining the impact of a 10-week psychosocial discussion group for older combat Veterans who report experiences consistent with the LATR process. In addition, a group based on the LATR framework is being implemented and evaluated in the Geriatric Mental Health Clinic.

Division investigators continue to partner with researchers in the Women's Health Sciences Division to examine the effects of trauma and other high-impact stressors on PTSD and related sequalae such as substance use disorders among lesbian, gay, bisexual, and transgender (LGBT) Veterans. This research aims to develop and refine conceptual models of trauma, PTSD, and related impairment to inform research, treatment development, and treatment planning for LGBT Veterans.

## Care delivery, models of care, and system factors

Activities aimed at improving access to PTSD treatment include the completion of a pilot study examining the initial action taken after screening positive for PTSD in primary care. Results of this study show that more than 61% of Veterans who screened positive for PTSD had evidence that the screen resulted in an action taken toward VA-based mental healthcare, and that female Veterans, Black Veterans, and urban-dwelling Veterans were more likely to evidence an initial action toward VA mental healthcare. A multi-year follow-up project extending this work began in late 2021. Additionally, a review paper examining the spectrum of VA access interventions for Veterans with PTSD is in progress.

In collaboration with PTSD Clinical Team staff, investigators have continued program evaluation review of delivery of evidence-based treatments (EBTs). Investigators used the updated Framework for Reporting Adaptations and Modifications and reviewed records to identify modifications to EBTs and found that spreading session material over additional sessions and repeating sessions were the most common modifications utilized in this clinical setting.

#### PTSD and suicide

Division researchers are actively contributing to knowledge about PTSD and suicide, particularly in the domain of risk factors. Division researchers have identified neural correlates of functional connectivity markers of suicide attempt history, compared categorical and dimensional approaches to understanding the association between PTSD and future suicide attempts, and identified distinct trajectories of suicidal ideation following psychiatric hospitalization discharge that were differentially related to future suicide attempts. In collaboration with the Army Study to Assess Risk and Resilience in Servicemembers (Army STARRS), division researchers developed and tested an ensemble machine learning algorithm to predict suicide attempts among service members who recently left active-duty service, using administrative, survey, and geospatial data collected while on active duty (including data regarding PTSD). Collaboration with Clinical Neurosciences investigators examined associations between non-response to a question assessing lifetime self-injurious thoughts and behaviors and proxy variables of suicide risk, such as PTSD, among a nationally representative sample of Veterans. Other collaborations have examined the association between PTSD symptoms and psychiatric hospitalizations for suicide-related concerns, and have developed and tested an evidence-based suicide attempt risk checklist to aid clinicians in identifying those at risk for future suicide attempts. BSD investigators recently initiated a project to determine whether functional neuroimaging markers of past and current suicidal thoughts and behaviors can predict future suicidal behavior in Veterans with PTSD and started a funded project entitled, "Latent Profile-Based Psychopathology Phenotypes and Self-Injurious Thoughts and Behaviors," which is examining the intersection between permutations of PTSD and other psychiatric symptoms in the cross-sectional prediction of suicidal thoughts and behaviors.

One other project will be testing the feasibility and acceptability of Brief Cognitive-Behavioral Therapy for suicide prevention in a sample of Veterans hospitalized for suicide risk. In addition, experience sampling will be used to explore granular fluctuations in suicide risk and related risk factors (e.g., hopelessness) during and after treatment.

#### COVID-19

Division investigators developed a brief measure of biopsychosocial responses to the Coronavirus Disease 2019 (COVID-19) pandemic for use with Veterans with pre-existing trauma exposure and psychiatric symptoms. The measure is called the Rapid Assessment of COVID-19-related Experiences (RACE), and an initial psychometric evaluation of the measure and its association with pre-pandemic psychiatric symptoms is currently under review.

BSD investigators are collaborating with infectious disease and neuroimaging experts on a 'long-COVID' study designed to examine the long-term neurobiological and psychiatric sequalae of COVID-19. The goal of the project is to apply a multi-modal neuroimaging and biomarker assessment to patients with symptoms of long COVID to further characterize the inflammatory, neurological cerebrovascular, epigenetic, and structural brain alterations associated with long COVID.

Research led by Division investigators also seeks to examine the impacts of COVID-19 on patients with opioid and alcohol use disorders, and with respect to treatment access, retention, and patient outcomes. The data will represent Veteran (nationwide Veterans Health Administration (VHA) data) and non-Veteran patients (national commercial and Medicaid claims), as well as providers and opioid treatment policy makers. This research will spotlight healthcare access and treatment outcomes among patients with PTSD and other co-occurring psychiatric disorders, as well as other subgroups disproportionately impacted by COVID-19.

#### Other important research

The Division has a great deal of expertise in longitudinal, observational studies that inform the understanding of the course of PTSD and associated conditions over time. Division researchers are working on two large prospective cohort studies that collect information from strategically selected Veteran and service member groups. The first, Veterans After-Discharge Longitudinal Registry (Project VALOR), is working with a registry of 1,649 male and female combat Veterans who became users of VA services after 2002. The project collects data about health outcomes associated with PTSD. supplemented by clinical information from VA electronic medical records. DNA has now been extracted from previously collected saliva samples from almost 1,000 participants and those DNA have been sent to Massachusetts Institute of Technology's Broad Institute for phenotyping. Division researchers are also collaborating with VA Boston's Massachusetts Veterans Epidemiology Research and Information Center (MAVERIC) on a project examining the association between PTSD and cardiovascular disease risk factors using Project VALOR data and with colleagues at the

University of North Carolina to examine the associations among PTSD diagnostic status, healthcare cost, and service utilization.

The second large investigation, the Neurocognition Deployment Health Study (NDHS), began data collection at the outset of the Irag War in 2003. Military personnel were assessed before deployment and at several short- and long-term (funded as Cooperative Studies Program (CSP) #566) intervals afterward, making this the first prospective longitudinal study to address the psychological impact of war zone stress. The study design has allowed examination of long-term emotional and neuropsychological outcomes, as well as health-related quality of life and occupational functioning. The most recent papers have focused on long-term outcomes, examining bi-directional relationships between PTSD and neurocognitive functions. PTSD symptom and neurocognitive predictors of long-term functional outcomes, the long-term emotional outcomes of war-zone TBI, and associations among stress exposures and social support with a range of long-term mental health outcomes. An associated study has examined the adjustment of both partners and children of the service members and Veterans in the cohort. Findings to date have suggested relationships between service member/Veterans depression and both partner mental health, and dyadic relationship dysfunction. Several additional papers examining family outcomes are currently under review.

Led by Division investigators, the Boston Early Adversity and Mortality Study (BEAMS) augments existing records of three of the longest-running cohort studies of aging—the Veterans Affairs Normative Aging Study and the Grant and Glueck studies (together forming the Harvard Study of Adult Development)-with prospective early-life socioeconomic and environmental information gathered from multiple large-scale administrative databases. In the past year, Division investigators have successfully identified early-life records belonging to 10,276 siblings of the 2,961 cohort study participants. Efforts are underway to acquire later-life morbidity and mortality data for cohort participants and their siblings via additional data linkages, which will enable the study team to examine prospective associations linking early adversities in the socioeconomic, psychosocial, and environmental domains to later-life health and well-being.

Since 2014, Division staff have been consulting with researchers at Stony Brook University Medicine on their monitoring study of World Trade Center responders, examining the impact of traumatic exposure and PTSD symptoms on cognitive impairment.

Partnering with the TRACTS, division researchers will soon begin a five-year VA-funded project that aims to examine the longitudinal influence of lifestyle behaviors (e.g., physical activity and diet quality) on cardiovascular and metabolic disease among post-9/11 Veterans with PTSD. The goal of this research is to identify and quantify modifiable behaviors that may serve as intervention points to reduce the impact of PTSD on physical disease and disability.

Finally, Division investigators have made important contributions in the assessment and diagnosis of PTSD. Specifically, investigators have evaluated the Clinician Administered PTSD Scale for DSM-5 (CAPS-5) and Structured Clinical Interview for DSM-5 (SCID-5) PTSD module using item response theory among a large sample of Veterans, tested the diagnostic utility of an automated facial coding software program, and developed and validated reliable and clinically significant change values for the CAPS-5 and PCL-5. BSD researchers also validated the cutoff score for PTSD status according to DSM-5 criteria based on the most recent version of the Primary Care Screen for PTSD for DSM-5 (PC-PTSD-5) and published the primary paper. Results indicated that the PC-PTSD-5 had high levels of overall diagnostic accuracy across men and women, with a cut point of 4 ideally balancing false negatives and false positives for the overall sample and for men. For women, a cut point of 4 was associated with many false negatives; a cut point of 3 fit better, despite increasing the number of false positives. Another study co-led by a Division investigator aims to provide validation of CAPS-5 performance with a military sample. Finally, Division investigators have proposed a new measurement approach for posttraumatic psychopathology that would expand the assessment of trauma-related responses to include both adaptive and non-adaptive reactions to trauma exposure and would align the measurement approach with other dimensional models of psychopathology, such as Hierarchical Taxonomy of Psychopathology (HiTOP) and Research Doman Criteria (RDoC).

### **Clinical Neurosciences Division**

The Clinical Neurosciences Division (CND) in West Haven, Connecticut, focuses on research to establish novel treatments, uncover biomarkers of disease mechanisms related to traumatic stress, and investigate paradigms of risk and resilience. By leveraging an interdisciplinary approach that includes genetics, functional genomics, neuroimaging, treatment interventions, and epidemiologic studies, the CND maximizes efforts to translate discoveries into therapeutic targets for PTSD and associated comorbid conditions.

#### **Biomarkers**

Neurogenomics and neuroimaging guide biomarker development, including molecular, biochemical, structural, and functional approaches to investigate stress-related phenotypes and to better understand the sequence of pathological events associated with posttraumatic stress. Integrating multiple markers into a comprehensive panel, combined with behavioral data, enables faster identification of biomarkers, earlier detection of at-risk individuals, and informed decisions regarding treatment planning.

Genome-wide association studies (GWAS) are used to screen for genetic variations across large numbers of research participants with the goal of uncovering markers associated with complex disease. CND researchers conducted a pioneering GWAS analysis of 250,000 U.S. Veterans from the MVP to identify genetic risk factors relevant to three PTSD symptom clusters: reexperiencing, hyperarousal, and avoidance-as well as total symptom score and diagnosis. Genomic structural equation modeling was used to determine genetic relationships between PTSD and clinically comorbid phenotypes from the internalizing spectrum (i.e., major depressive disorder, anxiety, and neuroticism). This work, published in Nature Genetics, identified numerous risk variants for each trait studied, and showed a high level of genetic relatedness between them, including

genome-wide significance (GWS) associations with PTSD visible at the case-control level, and numerous GWS associations with various dimensions of symptom severity. These results help to illuminate the neurobiology of PTSD and begin to uncover new avenues for therapeutic development.

Using data from the National Health and Resilience in Veterans Study (NHRVS), which surveyed a nationally representative sample of U.S. Veterans, and the MVP, CND investigators found that polygenic risk scores (PRS) for PTSD were associated with greater severity of PTSD symptoms. This association was only observed among Veterans who reported having an insecure attachment style, characterized by an inability to form meaningful relationships with others. Enrichment analyses further revealed an interaction between attachment style and a variant mapping to the IGSF11 gene, which is implicated in regulating excitatory synaptic transmission and plasticity. A follow-up study examining the relationship between PRS for PTSD, a broader range of socialenvironmental variables, and the development of PTSD over a seven-year period is currently underway.

<u>The VA National PTSD Brain Bank</u> studies postmortem brain tissue of PTSD and major depressive disorder (MDD) donors to characterize gene expression associated with stress and suicide. This year, researchers evaluated the role of orexigenic neuropeptides in modulating negative affective states, specifically in the context of trauma exposure. One study employed a gene co-expression analysis strategy to uncover PTSD-specific networks containing appetitive neuropeptides. Three PTSD-associated modules containing appetitive peptides NPY, GHRL, and NPY2R were uncovered. Two modules, specific to females, were enriched for inflammatory response genes with markers for endothelial cells and neurons. To disentangle the effect that neuropeptides may have in PTSD, cohorts were stratified (PTSD and neurotypical controls) by normal and high body mass index (BMI) for each sex. Numerous differentially expressed genes were identified across comparisons, including cytokine IL1B, as a putative upstream regulator of transcription in males with a high BMI. Previous work has identified regulation of IL1B, a pro-inflammatory cytokine, as a peripheral marker in PTSD subjects. However, high BMI alone has not been shown to regulate IL1B levels in the human prefrontal cortex, suggesting a possible molecular intersection between PTSD and BMI in the human brain, and may also suggest further functional implications, as genetic variations in IL1B have been linked to risk of PTSD in males.

The CND uses multimodal neuroimaging, such as positron emission tomography (PET), magnetic resonance imaging (MRI), and spectroscopy, to investigate functional activation patterns, neurotransmitters, the structure of brain regions, brain network connections, and energy demands throughout the brain. This year, CND researchers addressed a knowledge gap in the PTSD literature, regarding whether observed brain alterations in patients are a consequence or predisposition to the disorder. Novel work done by CND researchers in an animal model of PTSD shows that the glutamatergic system (measured with PET technology) is altered as a function of stress-and specifically, animals who developed PTSD symptoms showed changes, whereas resilient animals did not. A second PET study examined the glutamatergic system but as a function of nicotine effects in individuals with PTSD. MDD. and controls. This work shows that nicotine affects the glutamatergic system in PTSD and controls only, but the effects are opposing in nature, suggesting that aberrant glutamatergic processes in the brains of individuals with PTSD may make them more susceptible to the effects of drugs.

Investigators also use electroencephalogram (EEG) to evaluate changes in electrical activity in the brain pre-/post-pharmacotherapy treatment. Using genomic data, CND researchers are working to establish an analytic biomarker pipeline to predict ketamine treatment response via EEG patterns, with promising results from validation samples.

Studies using MRI and computational modeling to examine PTSD-related brain dysfunction include: 1) a drug challenge to derive specific biomarkers of ketamine treatment via stimulation of the AMPAR neuroreceptor and to investigate how depression, PTSD, and suicidality are related to these biomarkers and how they cooccur; 2) a computational model to understand how cumulative stressful experiences may contribute to PTSD and to identify patient subgroups susceptible to PTSD; and 3) a study using novel pupillary biosensors to examine stress arousal via neuron firing in the locus coeruleus (i.e., the brain region that controls changes in the pupil of the eye).

#### **PTSD** and suicide

CND researchers are investigating the use of pharmacological agents that have an acute antidepressant effect as a strategy to prevent suicide among individuals with PTSD. This work includes several projects that evaluate the anti-suicidal properties of ketamine in both treatment-resistant PTSD and depression, and how neural alterations and changes in synaptic connectivity pre-/post-ketamine treatment may underlie behavioral changes. Other work includes investigation of suicide risk factors among Veterans in the general U.S. population, as well as those who undergo VA specialty care in PTSD clinical teams and PTSD residential treatment programs.

Using data from the 2019-2020 NHRVS, which surveyed a nationally representative sample of more than 4,000 U.S. Veterans, CND investigators found that the prevalence of suicidal ideation, plans, and attempts was 9.0%, 7.3%, and 3.0%, respectively. Younger age, PTSD, depression, and adverse childhood experiences were the strongest correlates of suicidal thoughts and behaviors. Results further revealed that only 35% of Veterans with current suicidal ideation were engaged in mental health treatment, and that suicidal Veterans who used VA health care were more than twice as likely as non-VA users to be engaged in treatment. Collectively, these findings suggest that suicidal thoughts and behaviors are prevalent among U.S. Veterans, particularly among younger Veterans, and signal a need for enhanced suicide prevention and outreach efforts to engage suicidal Veterans in mental health treatment.

Additional analyses of NHRVS prospective data, collected before and during the COVID-19 pandemic, revealed that the prevalence of suicidal thinking decreased from 10.6% to 7.8%. However, 2.6%, or approximately 475,000 nationally surveyed Veterans, developed suicidal thinking during the pandemic, and 0.3%, or approximately 55,000 surveyed Veterans, reported attempting suicide. Veterans who reported having been infected with COVID-19 were more than twice as likely as those without infection to develop suicidal thinking, thus underscoring COVID-19 infection as a potential risk factor for suicide in U.S. Veterans.

NHRVS researchers also found that more than 40% of U.S. Veterans reported experiencing positive psychological changes or post-traumatic growth during the pandemic, most notably a greater appreciation of

life and improved interpersonal relationships. Further, greater post-traumatic growth was associated with a 40% reduced likelihood of contemplating suicide, which suggests that interventions to help bolster post-traumatic growth may have utility in suicide prevention and treatment efforts.

## Treatment efficiency, effectiveness, and engagement

CND researchers work to identify treatment strategies and contextual factors to optimize the design, delivery, and patient engagement of PTSD-based care. As part of this work, investigators completed the largest known efficacy study of repeated doses of ketamine in Veterans and active-duty service members diagnosed with treatment-resistant PTSD. Results of this work are currently under review.

CND researchers are also conducting the following treatment-based trials: 1) a seven-day trial of prolonged exposure therapy (PE) enhanced with a single infusion of ketamine; 2) a project examining Mindfulness Based Stress Reduction for anger and aggression

in Veterans with PTSD; 3) a study examining nonsuicidal self-harm in PTSD using ecological momentary assessment (EMA); 4) a trial of buprenorphine and Cognitive Processing Therapy (CPT) for patients diagnosed with PTSD and opiate use disorder; 5) a study that examines the effect of written exposure therapy (WET) in Veterans diagnosed with PTSD and comorbid substance use disorder; and 6) studies of the neural and anti-suicidal effects of serotonin-releasing agent MDMA in individuals with PTSD and obsessive compulsive disorder.

CND is also leading Cooperative Studies Program (CSP) #2016 conducted at 34 VA Medical Centers. This VA Cooperative Study compares three commonly prescribed pharmacotherapies for insomnia: trazodone, gabapentin, and eszopiclone. Insomnia is among the most common (>80%) persisting symptoms of PTSD among patients who are actively engaged in other behavioral and pharmacologic treatments. Currently, there are no medications approved for the treatment of PTSD-related insomnia.

### **Dissemination and Training Division**

The Dissemination and Training Division in Palo Alto, California, conducts research on patient needs and preferences, implementation science, novel and adapted treatments that attend to patient preferences, and technology-based delivery of treatment.

## Treatment efficiency, effectiveness, and engagement

A key focus of Division researchers is increasing patient engagement in care. An ongoing study is developing a brief measure of patient characteristics associated with effective engagement in care, which will guide identification of the type and amount of service resources needed to engage Veterans. Work is in progress to study disparities in mental health risk factors and trajectories of recovery among racially and ethnically diverse patients hospitalized after sudden, severe illness or injury. Another study is assessing the accuracy of a screen for risk of PTSD and depression following sudden illness or injury across White, Black, Latinx, and Asian-American patients. A pilot study is exploring how Veterans' experiences of discrimination, harassment, or trauma related to their race/ethnicity, gender, or sexual orientation, during military service, impacts their identity as military Veterans and their engagement with mental health care.

Several ongoing studies are assessing the ability of telehealth and web- and mobile-based technologies to increase Veteran access to mental health care and to improve outcomes. While VA has long been a leader in telehealth, telemental health services to the home increased dramatically during the COVID-19 pandemic. A study underway compares two treatments delivered to women Veterans in their homes via video teleconference: Skills Training in Affective and Interpersonal Regulation (STAIR) and Present-Centered Therapy. The goals of the study are to assess the relative effectiveness of these treatments and to identify barriers and facilitators for using video-to-home delivery of treatment. Another study will compare an asynchronous messaging-based version of Cognitive Processing Therapy (CPT) for PTSD to messagingbased therapy as usual. It will also compare different strategies to increase engagement, including a unique incentive structure.

Additional studies are using online interventions to expand access to care and testing different kinds of coaching support to help users engage with these tools. A manuscript under review reports results of a pilot study using automated systems to recruit, screen, enroll, assess, and deliver a VA online version of <u>Problem Solving Therapy (Moving Forward)</u>, with and without peer support. In collaboration with researchers from the Philadelphia and Minneapolis VAs, the Division launched a study to test a web-based intervention developed by the National Center called Community Reinforcement and Family Training (VA CRAFT) for PTSD. This program is coupled with telephone coaching to help spouses and intimate partners of Veterans with untreated PTSD encourage their Veteran to seek mental health care.

A web-based version of PE therapy for PTSD, called Web-PE, is being tested among military personnel and Veterans who might not otherwise access traditional face-to-face care. One study is testing Web-PE delivered with therapist assistance; another is testing written and verbal forms of exposure treatment when delivered online with support from VA peer support specialists. A third study is testing effects of an exposure therapy app delivered with and without coaching support.

Division investigators are also studying other mobile mental health apps. A series of naturalistic studies are examining patterns in how users engage with some of our most widely used apps: <u>Mindfulness</u> <u>Coach</u>, <u>COVID Coach</u>, and <u>PTSD Coach</u>. A two-site clinical trial is testing the efficacy of PTSD Coach with clinician support compared against existing treatment for reducing PTSD symptoms in Veterans utilizing primary care services. A recently completed study tested a mobile cognitive control training program for the treatment of alcohol use disorder and PTSD to determine whether this intervention improved recovery outcomes.

A manuscript under review reports results of a pilot study of Insomnia Coach, an app intended for Veterans to self-manage insomnia symptoms. Division staff are collaborating on several studies assessing whether Mindfulness Coach helps Veterans with PTSD and other medical populations manage stress. A study is underway examining effects of COVID Coach, a recently released app designed to help improve selfcare and overall mental health during the pandemic. among VA health care providers. Another collaborative project is testing whether an app for tracking patient outcomes improves quality of care for Veterans who have both spinal cord injury and PTSD. Finally, the Division is helping advance the mobile and technology research of VA investigators around the nation through its Center for Mobile Applications Research Resources and Services (CMARRS).

#### Care delivery, models of care, and system factors

Division researchers recently published several papers related to the COVID-19 pandemic. These papers addressed the mental health effects of pandemics, approaches for treating pandemic-related moral distress, best practices for deciding when to use or not use trauma-focused psychotherapies for PTSD with people affected by the pandemic, lessons learned from VA's expansion of telemental health services in response to COVID-19, and how a psychotherapy training program was modified during the pandemic. NCPTSD staff also collaborated with colleagues at five VA medical centers to develop and pilot a brief multi-session program based on Stress First Aid for VHA staff. The program offers experiential exercises, group discussion, and goal setting, typically over eight 30-minute sessions. Pilot results suggest that the program improved participants' perceptions of co-worker and leadership support and increased their knowledge about how to support a colleague in distress.

One area of work that bridges systems of care and implementation science is Modeling to Learn. This initiative trains frontline staff in participatory systems dynamics modeling, a collaborative quality improvement approach in which stakeholders identify specific system problems, use computer modeling to compare the likely outcomes of different potential solutions, and then select an optimal solution to implement. Modeling to Learn was recently updated to address factors related to COVID-19. Two randomized trials are now underway testing whether Modeling to Learn is superior to other quality improvement approaches in increasing the number of VA patients who receive evidence-based psychotherapies and pharmacotherapies for mental and addictive disorders.

#### Implementation

A study is underway evaluating how to simplify assessment of the quality of delivery of cognitivebehavioral therapy (CBT) for PTSD, depression, and anxiety disorders. A second ongoing study is comparing two different strategies intended to enhance and sustain the delivery of CPT; one strategy emphasizes fidelity to the protocol through expert consultation and online resources, and the other focuses on using continuous guality-improvement strategies to improve fit and to address barriers to treatment delivery. Another trial is underway in eight military bases testing whether a tailored approach that includes a guide for matching solutions to local problems and support from an external facilitator (coach) increases the use of PE more than does standard provider training alone.

Investigators involved in the national rollout of PE are studying the effectiveness of different virtual training models on therapist delivery of the treatment. Researchers are also collaborating on evaluating how remote supervision via video (which has been widely adopted during the pandemic) impacts clinician trainees' development of competence. Investigators have also been evaluating training models for WET that include learning collaborative models to support clinic leaders in addressing implementation challenges. Another study compares methods of assessing treatment quality and fidelity, two important implementation outcomes for CBTs, including CPT, and is finding that more scalable models of fidelity assessment have good agreement with the more laborintensive observer method of assessing fidelity.

#### **PTSD** and suicide

Recent research has identified insomnia as a risk factor for suicide. Division investigators have developed innovative ways to accurately monitor sleep without requiring Veterans to come to a clinic-based sleep lab. A new study leverages this technology to conduct in- home sleep monitoring to detect suicide risk in Veterans who have other risk factors for suicide. The study has continued safely during the COVID-19 pandemic because patient recruitment and monitoring are done entirely remotely. Division staff have developed participatory system dynamics modeling tools that clinic teams can use to optimize and allocate staff resources to different clinical activities. These tools have been expanded and employed in suicide management to help teams ensure effective management of Veteran patients at high risk for suicide, without compromising overall access to or quality of care.

### **Evaluation Division**

The Evaluation Division in West Haven, Connecticut, supports the National Center's mission through a programmatic link with VA's <u>Northeast Program Evaluation Center (NEPEC)</u>. NEPEC has broad responsibilities within the VA Office of Mental Health and Suicide Prevention (OMHSP) to evaluate their treatment programs, including those for specialized treatment of PTSD. Researchers also work on independent research projects related to the treatment of PTSD.

## Treatment efficiency, effectiveness, and engagement

NEPEC monitors and assesses PTSD treatment at VA, including residential and outpatient specialty treatment programs and PTSD treatment by trained providers not working within one of the specialty programs. The Evaluation Division also monitors efforts to improve psychotropic medication prescribing practices at the VHA. This includes initiatives to reduce the use of antipsychotics to treat PTSD and the use of benzodiazepines without an appropriate diagnosis or medical indication.

Evaluation Division researchers completed an effectiveness comparison study between PTSD evidence-based psychotherapies (EBPs) delivered in a group versus individual format in the PTSD residential rehabilitation treatment program (RRTP). In addition, investigators extended NEPEC evaluation of PTSD treatment to one year post-PTSD RRTP discharge to demonstrate long-lasting positive effects of the residential program in improving PTSD symptomatology. Long-term evaluation of the PTSD outpatient treatment is now underway to better understand PTSD treatment in VHA.

FY 2021 publications from NEPEC investigators covered a wide range of topics under the umbrella of PTSD and PTSD treatment. A network analysis of PTSD and depressive symptoms in over 100,000 treatment-seeking Veterans underscored the centrality of intrusion symptoms in PTSD. Other publications explored binge drinking following residential PTSD treatment and early discontinuation of pharmacotherapy in Veterans with PTSD. Other data examined racial disparities in clinical outcomes for PTSD residential treatment in VA. Understanding and characterizing disparities in mental health care is an area of particular interest for NEPEC staff.

Other work used neuroimaging to better understand the neural mechanisms that underlie PTSD. Two publications explored the role of social connection on brain connectivity and activity in those with PTSD, using oxytocin and social working memory to better understand how PTSD impacts the social brain. Other neuroimaging work examined the role of the endocannabinoid system on PTSD using PET. Finally, Evaluation Division investigators continued collaborations with investigators from the Clinical Neurosciences Division and others using data from the NHRVS longitudinal study, looking at a wide variety of research questions, including sub-threshold PTSD, dissociative symptoms and PTSD risk, the role of cannabinoid receptors in PTSD symptoms, social anxiety disorder, and suicidal ideation.

Finally, at a systems level, the PTSD Evaluation team continued the transition from paper and pencil form collection to the utilization of new templates in the electronic medical records system in FY 2021. The new templates collect data from both the outpatient PTSD Clinical Teams (PCTs) and the PTSD Domiciliaries, reducing burden on both Veterans and providers. PTSD specialty programs (outpatient and residential) participate in Measurement Based Care (MBC) and led the adoption of this new initiative. This shared approach of consistent measure utilization across sites and programs enables enhanced evaluation; specifically, the PTSD Evaluation Team at NEPEC is in the process of creating a newly designed long-term evaluation of PTSD treatment and recovery that follows Veterans across multiple years.

## Care delivery, models of care, and system factors

In FY 2021, the Evaluation Division supported the MBC in Mental Health Initiative, which was formally launched by the OMHSP in June 2016. This initiative encourages the use of patient-reported information, collected as part of routine care, to inform clinical care and shared decision-making among clinicians and patients and to individualize ongoing treatment plans. Currently, every intensive substance abuse outpatient program and residential treatment program is required to implement MBC.

NEPEC staff also support the national Psychotropic Drug Safety Initiative, which plays a major role in the monitoring of PTSD pharmacotherapy throughout VHA. This study has been tracking data on changes in practice in prescribing for PTSD and has noted a continuing drop in the use of benzodiazepines among Veterans with PTSD. The Division continues its work with technical advisors at the PTSD Mentoring Program and at the OMHSP to provide technical assistance to this initiative. The Division also continues to respond to requests from specialized programs and staff in the field on policy, operations, handbook implementation, and the provision of evidence-based practices.

#### PTSD and suicide

The Evaluation Division has enhanced its evaluation and program monitoring products to better highlight suicide-related considerations. The system indicates whether a Veteran waiting to enter RRTP has a high risk flag or has a lifetime REACH VET (Recovery Engagement and Coordination for Health-Veteran Enhanced Treatment) status. This information is critical to determining priority RRTP admission status. The RRTP workload report also includes the prevalence of high risk flags in the six months preceding admission and the six months following discharge. We are also currently developing and testing revised Screening and Status update templates that will pull in risk information so that clinicians can easily view different aspects of risk, such as recent suicide attempt, current inpatient hospitalization, overdoses, etc. In PTSD outpatient treatment clinics, a new dashboard to track

all admissions to the PTSD clinical team was developed, and it was linked to the MBC patient health questionnaire (PHQ-9) measure to track any suicidal death or ideation in this population. Each PCT director who utilizes the PTSD Status Form template, which tracks MBC data at admission, has the capacity to pull its site data in real time and define the observed period they are interested in to best capture their site data. This dashboard allows for real-time and customizable data reports.

In addition, research published in FY 2021 by Evaluation Division staff explored suicide risk factors in Veterans. One publication used cross-sectional data from the Survey of Experiences of Returning Veterans (SERV) study (see below for more on SERV) to examine gender differences in suicidal ideation, finding no differences between men and women Veterans. Other ongoing work explores addressing suicidal ideation and behaviors in the context of EBPs for PTSD.

#### Other important research

The PTSD Evaluation team is currently analyzing Veterans Outcome Assessment (VOA) data to best model Veterans' experience when receiving PTSD specialty care. One aim of this project as it relates to PTSD is to determine which factors are associated with better long-term outcomes. Another aim is to identify those Veterans who do not get better during the course of treatment or who experience worsening of PTSD symptoms while undergoing care at VA. Data published in FY 2021 from VOA data helped to validate the PCL-5, a common PTSD assessment, across various health conditions and comorbidities.

Data analysis continues for the SERV study, which is a repeated panel study of gender differences in psychiatric status and functioning among Veterans of Iraq and Afghanistan. The study recruited 850 participants, with women making up more than 40% of the sample. Participants were interviewed at three-month intervals for at least a year with follow-up rates of 80%-85%, and a sizeable subset continued interviewing for up to three years. Twenty-three manuscripts have been published, are in press, or are under review, and analyses on a variety of topics are still underway.

### **Executive Division**

The Executive Division in White River Junction, Vermont, provides leadership, directs program planning, and promotes collaboration to facilitate optimal functioning of the other Divisions both individually and collectively. The Executive Division specializes in the development and evaluation of innovative and authoritative educational resources, in programs that disseminate and implement best management and clinical practices, and in the use of technologies to reach a broad range of users. The Executive Division also oversees the administration of VA's National PTSD Brain Bank.

#### **Biomarkers**

Dr. Matthew Friedman, Senior Advisor to the National Center, continues to coordinate the operations of VA's first <u>National PTSD Brain Bank</u>. The PTSD Brain Bank supports the Presidential Executive Order of August 2012 on deployment health by enabling VA to lead the nation in unique research that will facilitate deeper understanding of the causes and consequences of PTSD, and advances assessment and treatment techniques.

The VA National PTSD Brain Bank has seven parts, with facilities at five VA Medical Centers (Durham, North Carolina; Boston, Massachusetts; Waco, Texas; West Haven, Connecticut; and White River Junction, Vermont), the University of Miami, and the Uniformed Services University of the Health Sciences. The Clinical Neurosciences Division in West Haven is the primary data analysis site; ongoing research endeavors utilizing PTSD Brain Bank tissue are described in the Clinical Neurosciences Division narrative.

The VA National PTSD Brain Bank currently has 203 living donors and approximately 323 frozen hemispheres (roughly one-third each from donors with PTSD, donors with major depression, and healthy controls). The PTSD Brain Bank is collaborating with PinkConcussions and the Vietnam Era Twin Registry to encourage donations from women with traumatic brain injury and from Vietnam Veterans. The Brain Bank's intramural research program has made significant progress, with 17 published articles and seven active grants examining transcriptomic, synaptic, and neuroinflammatory alterations in key brain regions associated with PTSD.

The Biomarkers portfolio also includes examinations of biomarkers of treatment response and neuroimaging research. Transcranial magnetic stimulation (TMS) is a device-based, FDA-cleared intervention for depression that is being tested as a treatment for PTSD. Executive Division investigators are currently examining EEG and functional magnetic resonance imaging (fMRI) biomarkers of response to TMS among Veterans with treatment-resistant depression.

Investigators are also evaluating the utility of other neuromodulatory therapies in pre-clinical models of PTSD and shockwave-induced traumatic brain injury, including deep brain stimulation (DBS) and vagus nerve stimulation (VNS). DBS is an FDA-approved neuromodulatory treatment for movement disorders (Parkinson's disease, essential tremor, dystonia), epilepsy, and treatment-refractory obsessivecompulsive disorder, with ongoing research into the utility of DBS for PTSD and brain injury. Executive Division investigators are evaluating the utility of DBS for neuropsychiatric consequences of shockwaveinduced brain injury in rodents to inform clinical application. VNS is an FDA-approved treatment for epilepsy, depression, and migraine, with ongoing research for inflammatory conditions. Executive Division investigators are evaluating the utility of VNS for inflammatory-mediated neuropsychiatric consequences of PTSD and brain injury in rodent models, to inform future studies in Veterans.

In addition to neuromodulatory therapies, Executive Division investigators are also evaluating novel small

molecule therapies for immunomodulation, as immune dysfunction has been identified in PTSD and may mediate neuropsychiatric sequelae associated with brain injury. As part of this project, Executive Division investigators are characterizing neuroinflammatory consequences of shockwave-induced brain injury, including central nervous system barrier dysfunction that may perpetuate a chronic inflammatory state.

## Treatment efficiency, effectiveness, and engagement

During FY 2021, Comparative Effectiveness in Veterans with PTSD (CERV-PTSD), a groundbreaking study comparing PE and CPT at 17 VA facilities across the country, continued data analysis and submitted results for publication. This study, conducted through the VA's CSP, enrolled 916 Veterans with PTSD, making it the largest study of psychotherapy for PTSD to date. In FY 2021, Executive Division researchers, in collaboration with CSP, prepared the main results for publication and presented results at conferences. Many secondary manuscripts are in preparation examining the impact of treatment preference on treatment response and individual predictors of treatment response. CERV-PTSD findings will help VA leadership, clinicians, and Veterans make informed choices about the delivery of PTSD care in VA, and will also be broadly relevant to the scientific and clinical communities outside VA.

AboutFace, a public awareness campaign to help Veterans recognize PTSD and motivate them to seek treatment, is a long-standing highlight of the National Center's education and outreach portfolio. In addition, Executive Division researchers are conducting research on AboutFace, and how it can help get Veterans into treatment for PTSD. Recruitment is ongoing for a project in which investigators are examining the impact of AboutFace on treatment engagement and stigma among Veterans with PTSD. In addition, a new pilot study is underway to recruit Veterans from the community to use a modified version of AboutFace on the VetsPrevail platform. The AboutFace adaptation will offer a more structured and linear curriculum, and peer specialists will connect with Veteran participants as part of the program.

Treatments for conditions and symptoms that frequently co-occur with PTSD is an ongoing focus of research for many investigators. A trial evaluating the combination of topiramate and PE for co-occurring PTSD and alcohol use disorder is in its final year. An ongoing study is testing CBT-I versus sleep hygiene integrated with PE as a strategy for improving sleep problems in PTSD. Finally, ongoing work in sleep hygiene, insomnia, and obstructive sleep apnea continues to better understand the role of sleep in PTSD and substance use disorder treatment.

Ongoing work at the Executive Division is aimed at developing new treatments for PTSD and related conditions. A trial is underway to evaluate a brief protocol to reduce guilt and shame related to a traumatic event among Veterans of Iraq and Afghanistan, with 146 Veterans randomized. This study was extended into a pilot study on pandemic-related guilt. Other work uncovered a potential new medication for PTSD by retrospectively examining the medical records of Veterans with PTSD treated in VA: preliminary data published in FY 2021 found that several antivirals used to treat Hepatitis C were associated with improvement in PTSD symptoms. In the coming year, this work will be expanded to test and better understand the association of these medications with PTSD symptom improvement.

#### The PTSD Trials Standardized Database Repository

(PTSD-Repository), created in FY 2019 in collaboration with the Agency for Healthcare Research and Quality, is a large publicly available database of PTSD clinical trials. The data were abstracted from 318 published randomized controlled trials of PTSD interventions. Data are freely available to researchers, clinicians, and other stakeholders. This online repository can inform future study design and conduct and will aid researchers and policymakers in identifying important gaps in the research. See the inset in the Education Narrative for more detailed information about the PTSD-Repository.

## Care delivery, models of care, and system factors

Executive Division investigators are involved in several initiatives targeted at assessing models of care and improving evidence-based practice. Work published in FY 2021 used novel informatics and operational methods to compare the effectiveness of evidencebased antidepressants (fluoxetine, sertraline, paroxetine, and venlafaxine) in routine practice. This paper found no differences between the four evidence-based antidepressants commonly prescribed for PTSD, but suggested that concurrent psychotherapy may predict meaningful improvement, while high levels of physical disability may impair meaningful improvement.

Access to evidence-based treatments for Veterans with PTSD at rural facilities is a major continued area of focus. This work utilizes facilitation, academic detailing, and collaboration with the National Center's Mentoring Program. A key FY 2021 area of expansion includes the facilitation of a new Learning Collaborative (LC) within the Mentoring Program, including monthly LC calls alongside implementation support, resources, and data feedback. This program will be extended to all Mentors in FY 2022.

#### Implementation

The Executive Division continues to support quality improvement projects aimed at increasing access to effective treatments for PTSD within VA. In previous years, quality improvement projects established thresholds for high and low EBP reach (i.e., access to EBPs) and identified characteristics of PTSD Clinical Teams within VA contributing to higher reach. Investigators are in the middle of a five-year project to translate the findings of this series into practice through collaboration with the PTSD Mentoring Program. This program is sponsored by the Executive Division and serves as a dissemination network targeting best practices in the administration of PCTs. The success of this work is reflected in an increase in high reach PCTs, and a corresponding decrease in low reach PTSD Clinical Teams from FY 2020 to FY 2021.

The staff within the Executive Division are also studying the implementation of intensive models of PTSD care (defined as PTSD EBP protocol sessions three to five times per week, as compared with the more traditional once-per-week format) in four PTSD specialty programs. This work utilizes implementation facilitation to start new intensive outpatient programs (IOPs), and assesses the clinical innovations using the RE-AIM (reach, effectiveness, adoption, implementation, maintenance) evaluation framework.

#### PTSD and suicide

Executive Division researchers continue to advance the priority area of PTSD and suicide through collaborations with the National Center for Patient Safety (NCPS), OMHSP, and the Center of Excellence (CoE) for Prevention of Suicide. One project, based on previous work showing elevated risk of suicide during high-risk care transitions, is focused on developing and implementing an effective suicide prevention intervention for rural VA facilities to decrease suicide risk in Veterans living in rural settings, especially around the time of care transitions. Pilot data from this study were published in FY 2021, and further investigation into this intervention is planned for FY 2022. Other FY 2021 publications examined the relationship between electroconvulsive therapy and suicidal behavior and the role of environment on death by suicide.

## Pacific Islands Division

The Pacific Islands Division (PID) in Honolulu, Hawaii, was created to advance PTSD work in the Pacific Rim; to focus on improving access to care by increasing understanding of cultural attitudes and the bases of racial and ethnic disparities in treatment; and to evaluate the use of advanced technology, such as telemedicine, to reach out to Veterans who are otherwise unable to access adequate care.

## Treatment efficiency, effectiveness, and engagement

Much of the ongoing work at PID is aimed at evaluating different methods of delivering PTSD treatment and understanding response to EBPs for PTSD. Investigators completed a large trial that examines the clinical efficacy of brief Cognitive-Behavioral Conjoint Therapy (bCBCT) and compares home-based care to traditional office-based care. Three additional pilot projects tested Couple HOPES, a web-based version of CBCT with coaching, and bCBCT augmented with oxvtocin and MDMA, both drugs that are hypothesized to improve relational outcomes. PID Investigators are in the final stages of a trial in collaboration with the Dissemination and Training Division looking at home-based STAIR treatment for women Veterans who have experienced military sexual trauma (MST). Other ongoing multi-site collaborations include a trial comparing standard PE with PE incorporating a partner, and a comparative effectiveness trial of sequenced pharmacotherapy and psychotherapy in primary care. PID researchers are also collaborating on national studies looking at dropout from EBPs and social determinants of disparities in PTSD EBP care between African-American and White Veterans.

#### Other important research

Several ongoing studies examine the prevalence of PTSD, response to treatment, and presence of related mental health comorbidities in ethnic minority populations, as well as physical health correlates of PTSD treatment engagement and response. This work is aimed at developing a better understanding of the determinants of PTSD treatment response, with an ultimate goal of improving treatment response across racial/ethnic, social, and physical health lines.

An ongoing pilot study is aimed at developing an intervention to improve physical functioning in Veterans with PTSD, and another pilot study examines social determinant drivers of racial/ethnic disparities in cognitive decline and dementia among an aging population of Veterans with PTSD.

Finally, data analysis is ongoing for a project conducted in conjunction with the Military Family Research Institute at Purdue University examining sociocultural and community influences on mental health decisionmaking among male and female African-American, Asian-American, Latino, and non-Latino White Veterans who are starting PTSD care in a VA mental health clinic.

## Women's Health Sciences Division

The Women's Health Sciences Division in Boston, Massachusetts, specializes in the study of women Veterans and non-Veterans, with a particular focus on understanding sex and gender differences in trauma exposure and posttrauma psychopathology.

#### **Biomarkers**

Research on biomarkers includes studies aimed at explaining the basic biological processes underlying PTSD with particular relevance to women. One study is examining the role of neurobiological and psychosocial factors that affect negative pregnancy outcomes among women with PTSD. A second study, currently in the data analysis phase, is examining the neurobiology and psychophysiology of PTSD across the menstrual cycle. Recently published results reveal that higher plasma gamma-aminobutyric acid (GABA) levels are associated with greater PTSD dysphoria and avoidance symptom severity in women with PTSD. Efforts aimed at using biomarkers to improve PTSD treatment include an ongoing study investigating the impact of intravenous allopregnanolone, an anxiolytic metabolite of progesterone, on extinction retention and fear memory reconsolidation. Another ongoing study is investigating whether a specific electrophysiological response pattern to a series of loud tones is predictive of clinical responses to selective serotonin reuptake inhibitors (SSRIs). Investigators are also working on a series of studies looking into the role of progressive exercise training in reducing symptoms of comorbid chronic pain and PTSD, perhaps by improving participants' capacity to release pain- and stressreducing neurohormones such as allopregnanolone and neuropeptide Y (NPY) through achieving exercise maintenance.

Division researchers have also recently concluded a pioneering study in the area of head injury in women suffering from PTSD secondary to intimate partner violence (IPV). The aim is to understand the interactive biological and psychological mechanisms that underlie comorbid PTSD and TBI. Recently published results support the validation of the adaptation of the Boston Assessment of TBI-Lifetime to accurately diagnose TBIs in women with head injuries secondary to IPV (BAT-L/IPV). The BAT-L/IPV was instrumental in characterizing the complex clinical presentation of this study sample including high rates of lifetime trauma exposure, PTSD and comorbid disorders (80%), and both subconcussive head injuries (88.2%) and TBIs (52.9%). The results of the imaging study are under review, and investigators are in the process of analyzing data to identify sex differences across domains of measurement (psychiatric, psychosocial, neuropsychological, blood-based biomarkers, and imaging) by comparing this sample with comparable male samples.

#### **PTSD** and suicide

Division investigators are examining associations between trauma history, PTSD and suicidal behavior among Veterans in a secondary analysis of data from The Veterans Metrics Initiative Study, a longitudinal study of recently separated male and female Veterans. The aims of this investigation include identifying factors in place at the time of military separation as well as post-separation life circumstances (e.g., health, vocation, finances, and social relationships) as predictors of change in suicidal ideation during the first three years after leaving military service.

## Treatment efficiency, effectiveness, and engagement

With an aim of improving treatment efficiency. investigators are testing the efficacy of CPT delivered in a massed trial outpatient format with active-duty service members. Similarly, investigators recently completed a pilot study of this intensive outpatient format of CPT, delivered in one week, for female survivors of intimate partner violence with PTSD and traumatic brain injuries. Recently published results suggest that concurrent diagnoses of TBI did not impede recovery from PTSD through a course of CPT delivered once a week or in massed treatment format (12 sessions in one week). Additional efforts to improve the effectiveness of CPT include a large-scale study designed to test the impact of a case-formulation enhanced version of CPT on treatment adherence, functioning, and PTSD symptoms. Other intervention studies on traumatized populations include a 14-site comparative effectiveness study of trauma-focused versus non-trauma-focused therapy for the treatment of Veterans with PTSD and substance use disorders

The Division is also focused on intervention research among those who have not necessarily been diagnosed with PTSD. A recently funded study will examine whether pairing well-being assessment feedback with targeted resource recommendations is an effective strategy to promote Veterans' willingness to seek support for areas of reduced well-being as they transition from military service. Investigators also continue to test the effectiveness of a national network of peer-facilitated support groups for women Veterans, titled WoVeN: The Women Veterans Network, which is intended to increase social connections and support and to improve well-being. Recent efforts include a focus on the relative effectiveness of in-person groups, primarily conducted prior to the COVID-19 pandemic, compared with web-based groups, primarily conducted during the COVID-19 pandemic. Within the past year, investigators also piloted the expansion of peer-support services to women transitioning out of active-duty military service through the complementary Building Re-Integration Dreams and Goals to Execution and Success (BRIDGES) program.

# Care delivery, models of care and system factors

Relevant research within the Women's Health Sciences Division has focused on understanding Veterans' experiences at the time they separate from service and their implications for Veterans' service use. The <u>Veterans Metric Initiative Study</u> is a large-scale investigation of newly separated service members' reintegration experiences and use of transition programs, services, and supports. Comparisons between female and male Veterans suggest that female Veterans experience unique areas of risk, including greater likelihood of experiencing depression and anxiety, and greater declines in well-being in the first three years after military separation. A recent expansion of this study will allow for a gender-specific examination of the ways in which COVID-related stressors impact Veterans' subsequent life course trajectories. Investigators also continue to analyze data from a study of the effects of deployment stressors and resulting mental health conditions on Veterans' guality of life and health care needs. Recent findings indicate that deployment stressors (combat exposure and especially sexual harassment) and worsening post-deployment PTSD and depression symptoms predict declines in work, romantic relationships, and parental functioning in women Veterans. These effects, as well as bidirectional relationships between mental health symptoms and functional impairment, were found to persist over several years following military separation, underscoring the need for models of care that support a holistic approach to addressing mental health and functioning.

The Division's focus on care delivery also emphasizes care for conditions with particular relevance to women Veterans. Two ongoing studies are investigating VHA health care use related to eating disorders in a nationally representative sample of male and female Veterans and a large cohort of post-9/11 male and female Veterans. These investigations are also examining barriers to mental health care use, both in general and specifically related to eating disorders. A comparison of responses among participants who completed the surveys before and during the COVID-19 pandemic indicated that recently separated female Veterans who completed the survey during the pandemic reported higher alcohol use compared with women who completed the survey prior to the pandemic. Additional examinations of the impact of COVID-19 on mental health concerns among Veterans include a newly initiated follow-up study focused on the impact of the COVID-19 pandemic on respondents' mental health symptoms with a specific focus on eating disorders.

Other key work has focused on research with important subpopulations within the Veteran community. An ongoing longitudinal study (Longitudinal Investigation of Gender, Health and Trauma, LIGHT) in which investigators over-sampled for women, individuals in high crime communities, and racial and ethnic minority Veterans seeks to assess the impact of community and gun violence on trajectories of mental health and in health care utilization. This study includes a host of potential risk (including perceived discrimination and race-based stress) and resilience factors (e.g., social support) that may influence these associations. In the past year, investigators included two assessments of COVID exposure and COVID-related impacts on social determinants of health in this longitudinal study to assess the impact of the pandemic on Veterans. In terms of potential interventions to support Veterans of color, Division investigators recently completed a study examining the impact of a group intervention that aims to reduce the impact of race-based stressors on health through the provision of evidence-based content to enhance coping skills and social support. The health of older women Veterans is another area of focus, including a study examining the impact of military service and mental health, with a focus on PTSD and comorbidities, on later-life health in Vietnamera women Veterans. Current analyses are focused on cardiovascular and other chronic disease risks mong this population.

#### Implementation

The Division is also focused on implementation efforts associated with IPV screening and intervention. Investigators are evaluating a national rollout of IPV screening programs within women's health primary care clinics to determine implementation outcomes and the clinical effectiveness of IPV screening programs. In the area of IPV interventions, researchers completed data collection for an effectiveness-implementation clinical trial of a brief counseling intervention, Recovering from IPV through Strength and Empowerment (RISE), for women who are experiencing violence in their intimate relationships. This study incorporates a hybrid methodology to inform both the effectiveness of the intervention and expansion of the intervention throughout VA. A collaboration with the national VHA IPV Assistance Program resulted in development of practice-friendly, inclusive RISE interventions materials that were piloted with an array of social workers and mental health clinicians at three VA Medical Centers and implemented with Veterans of all gender identities.

Other implementation priorities among Division investigators include a focus on evidence-based practices for specific patient populations and settings, including an examination of WET, a brief PTSD treatment for pregnant women with comorbid PTSD and substance use disorder who are engaged in prenatal care within a high-risk obstetrical and addiction recovery program; the project is using a hybrid effectiveness implementation design.

# Appendix C: Fiscal Year 2021 Funding

#### VA Cooperative Studies Program (CSP)

Principal Investigator	Research Title	Years	Current Funding	Total Funding
<b>Krystal</b> (Holtzheimer – Site PI)	CSP #2016: National Adaptive Trial for PTSD Related Insomnia (NAP)	2018-2024	\$6,100,692	\$24,467,860
Schnurr, Chard, & Ruzek (Marx & Maieritsch - Site Pls)	CSP #591: Comparative Effectiveness Research in Veterans with PTSD (CERV-PTSD)	2013-2021	\$60,111	\$9,048,760

### **Other VA Sources**

Principal Investigator	Research Title	Funding Source	Years	Current Funding	Total Funding
Averill	Structural and Functional Correlates of Suicidality in Veterans with PTSD	CDA	2019- 2023	\$199,205	\$1,680,000
Barnes ( <b>Walser</b> – Site PI)	Thriving in the Midst of Moral Pain: The Acceptability and Feasibility of Acceptance and Commitment Therapy for Moral Injury (ACT-MI) Among Warzone Veterans	RR&D	2019- 2022	\$156,243	\$587,469
Bernardy	Expanding Rural Access to Effective PTSD Care through Outreach	ORH	2021- 2022	\$380,000	\$760,000
Bernardy	PTSD Facilitation to Vermont & New Hampshire Community Providers	ORH	2021- 2022	\$41,500	\$83,000
Bovin	Understanding Pathways to Care for Veterans who Screen Positive for PTSD: The PTSD Access To Healthcare (PATH) Study	HSR&D	2021- 2025	\$0	\$1,176,594

Principal Investigator	Research Title	Funding Source	Years	Current Funding	Total Funding
Cloitre	Connecting Women to Care: Home- based Psychotherapy for Women with MST Living in Rural Areas	HSR&D	2018- 2022	\$241,497	\$1,095,979
Colvonen	The Impact of Integrated CBT-I and PE on Sleep and PTSD Outcomes	CDA	2017- 2021	\$180,000	\$950,687
Esterman	Defining Biotypes of PTSD With Resting- State Connectivity	CSR&D	2018- 2022	\$314,193	\$1,008,084
Esterman & Lee, D.	Identifying Neural Fingerprints of Suicidality	RR&D	2021- 2023	\$99,873	\$201,324
Galovski & Kehle- Forbes	Personalizing Cognitive Processing Therapy with a Case Formulation Approach to Intentionally Target Impairment in Psychosocial Functioning Associated with PTSD	RR&D	2020- 2024	\$258,000	\$1,194,890.00
Girgenti	Single Cell Molecular Mechanisms in PTSD and Suicide	CDA	2019- 2021	\$128,475	\$263,886.00
(Grubaugh & <b>Hamblen)</b>	A Randomized Controlled Trial of AboutFace: A Novel Video Storytelling Resource to Improve Access, Engagement, and Utilization of Mental Health Treatment among Veterans with PTSD	HSR&D	2018- 2022	\$216,735	\$1,001,900
Hallenbeck	Remote Monitoring of PTSD and MDD Symptoms in VA Mental Health Care	HSR&D	2022- 2022	\$0	\$12,470
Holtzheimer	Assessing an EEG Biomarker of Response to Transcranial Magnetic Stimulation for Major Depression	CSR&D	2020- 2025	\$160,208	\$5,429,619
lverson	Addressing Intimate Partner Violence Among Women Veterans: Evaluating the Impact and Effectiveness of VHA's Response	HSR&D	2020- 2023	\$297,935	\$1,099,580
lverson	Recovering from Intimate Partner Violence Through Strengths and Empowerment (RISE): Tailoring and Evaluating a Patient-Centered Counseling Intervention for Women Veterans	HSR&D	2018- 2021	\$192,000	\$975,643.00
lverson	Increasing Reach of Evidence-Based Psychotherapies in CBOCs: Identifying Needs and Strategies for Scale Out	HSR&D	2020- 2022	\$0	\$98,534.00
Kachadourian	Mindfulness Treatment for Anger in Veterans with PTSD	CDA	2017- 2021	\$129,304	\$732,428
Kimerling	Development of a Patient-Reported Measure to Assess Healthcare Engagement	HSR&D	2018- 2022	\$200,453	\$960,248

Principal Investigator	Research Title	Funding Source	Years	Current Funding	Total Funding
Kuhn	A Randomized Controlled Trial of Coaching into Care with VA-CRAFT to Promote Veteran Engagement in PTSD Care	HSR&D	2020- 2024	\$269,161	\$1,193,618
Kuhn	An RCT of a Primary Care-Based PTSD Intervention: Clinician-Supported PTSD Coach	HSR&D	2017- 2021	\$72,089	\$1,226,772
Kuhn & Owen	Mobile Apps Research Resources and Services	HSR&D	2018- 2021	\$218,694	\$614,864
Logue	Early Cognitive Impairment as a Function of Alzheimer's Disease and Trauma	BLR&D	2019- 2022	\$199,509	\$296,877
McClendon	Talking about Racism: Evaluation of a Group Intervention to Reduce Race- based Stress among Veterans of Color	CDA	2020- 2022	\$80,653	\$178,478
McClendon	Assessing an Electronic Self- Administered Method for Collecting Self-Reported Race and Ethnicity Data in VA Medical Centers	HSR&D	2021- 2021	\$63,105	\$63,105
Miller	Magnetic Resonance Spectroscopy and Genetic Analysis of Oxidative Stress in OEF/OIF Veterans with PTSD and TBI	CSR&D	2018- 2022	\$165,000	\$645,000
Mitchell	Eating Disorders among Veterans: Risk, Resilience, and Service Use	HSR&D	2019- 2021	\$53,389	\$543,819
Niles	Novel Interventions for Gulf War Veterans' Illnesses	CSR&D	2016- 2021	\$155,737	\$1,664,578
Niles	Barriers to CPAP Use in Veterans with Comorbid OSA and PTSD	RR&D	2021- 2022	\$10,413	\$17,850
Noller	Neuromodulation to Alter Acute Inflammation and Neuropsychiatric Deficits Following Traumatic Brain Injury	CDA	2021- 2023	\$94,673	\$183,623
Norman	Topiramate and Prolonged Exposure for Alcohol Use Disorder and PTSD	RR&D	2018- 2022	\$149,648	\$927,733
Oslin ( <b>Gelernter</b> – Site PI)	Precision Medicine in Mental Health Care (PRIME Care)	HSR&D	2017- 2022	\$523,650	\$11,306,320
Petrakis	Optimal Treatment of Veterans with PTSD and Comorbid OUD	CSR&D	2018- 2023	\$150,000	\$750,000
Pineles	An Electrophysiological Predictor of SSRI Response in Veterans with PTSD	CSR&D	2019- 2023	\$163,238	\$599,531
Pless Kaiser	Improving Psychosocial Functioning in Older Veterans with PTSD	CDA	2017- 2022	\$200,660	\$942,679
Ranganathan	VA Precision Medicine in Mental Health Care (PRIME Care)	PRIME	2017- 2022	\$82,067	\$329,363

Principal Investigator	Research Title	Funding Source	Years	Current Funding	Total Funding
Scioli	Understanding VA Treatment Carriers for Women Veterans with Fibromyalgia: What Do Women Veterans Want and Need?	VACO	2020- 2021	\$0	\$30,000
Shiner	Patient Safety Center of Inquiry: Prevention of Suicide	NCPS	2019- 2022	\$246,163	\$536,107
Shiner	An Ecological Approach to Understanding Rural Veteran Suicide	ORH	2020- 2021	\$258,257	\$516,716
Shiner	Suicide Prevention in Rural Veterans During High-Risk Care Transition Scenarios	ORH	2020- 2023	\$566,214	\$2,215,257
Sloan	An Efficient Exposure-Based Treatment for PTSD Compared to Prolonged Exposure: A Noninferiority Trial	CSR&D	2019- 2023	\$414,987	\$1,762,404
Smith	Long-Term Health Impact of Vietnam Era Service: Examining Gender Differences in Risk of Mortality and Chronic Disease	CSR&D	2022- 2024	\$0	\$383,456
Sullivan	Neural Metabolic Stress in mTBI and PTSD	CDA	2018- 2023	\$211,837	\$877,915
Taft	Strength at Home Implementation and Evaluation	VACO IPV Program	2021- 2022	\$309,128	\$309,128
Thompson-Hollands	An Adjunctive Family Intervention for Individual PTSD Treatment	CDA	2017- 2021	\$141,824	\$743,010
Thompson-Hollands	Reaping the Wisdom of Positive Deviants to Increase the Reach of Family Involvement in PTSD Treatment	HSR&D	2020- 2021	\$94,717	\$103,328
Vogt	Measurement-Based Transition Assistance (MBTA): Evaluating the Promise of a Web-Based Approach to Promote Veterans' Support Seeking	HSR&D	2020- 2022	\$150,915	\$195,515
Vogt	Risk and Resilience Factors Related to Suicidal Ideation during Transition from Military to Civilian Life: Secondary Analyses of the TVMI Cohort Study	HSR&D	2020- 2022	\$171,752	\$356,266
Vogt	Development and Validation of Well- Being Indicators for Use in Evaluating VA Whole Health Care	Center for Evaluating Patient Centered Care in VA/QUERI Partnered Evaluation Initiative	2020- 2021	\$154,767	\$178,693
Whitworth	Impact of Lifestyle on Cardiovascular and Metabolic Risk Factors in Trauma Exposed Post-9/11 Veterans	CDA	2021- 2027	\$0	\$932,820

Principal Investigator	Research Title	Funding Source	Years	Current Funding	Total Funding
Wielgosz, <b>Kuhn</b> , <b>Owen</b>	Mobile App Analytics to Guide Treatment Engagement Interventions for PTSD	HSR&D	2021- 2021	\$10,000	\$10,000
Wielgosz, <b>Kuhn</b> , <b>Owen</b> , Blonigen, <b>Jaworski</b>	Piloting Analytics to Guide Enhanced Mobile Health Engagement for Veterans with PTSD	HSR&D	2021- 2021	\$13,465	\$13,465
Wolf	Presidential Early Career Awards for Scientists and Engineers Funding	CSR&D	2016- 2021	\$25,000	\$125,000
Zimmerman	Participatory System Dynamics vs. Usual Quality Improvement: Is Staff Use of Simulation an Effective, Scalable and Affordable Way to Improve Timely Veteran Access to High-quality Mental Health Care?	HSR&D	2020- 2023	\$290,631	\$1,198,168

BLR&D Biomedical Laboratory Research & Development Service; CBOC Community-Based Outpatient Clinic; CBT-I Cognitive-Behavioral Therapy for Insomnia; CDA Career Development Award; CSR&D Clinical Science Research and Development Service; CPAP Continuous Positive Airway Pressure; EEG Electroencephalography; HSR&D Health Services Research and Development Service; IPV Intimate Partner Violence; MDD Major Depressive Disorder; MST Military Sexual Trauma; mTBI Mild Traumatic Brain Injury; NCPS National Center for Patient Safety; NCPTSD National Center for PTSD; OEF/OIF Operation Enduring Freedom/Operation Iraqi Freedom; OSA Obstructive Sleep Apnea; OUD Opiate Use Disorder; ORH Office of Rural Health; PE Prolonged Exposure; PI Principal Investigator; PTSD Posttraumatic Stress Disorder; QUERI Quality Enhancement Research Initiative; RCT Randomized Controlled Trial; RR&D Rehabilitation Research and Development Service; SSRI Selective Serotonin Reuptake Inhibitor; TBI Traumatic Brain Injury; TVMI The Veterans Metric Initiative; VACO VA Central Office; VA Department of Veterans Affairs; VA CRAFT Community Reinforcement and Family Training; VHA Veterans Health Administration

#### National Institutes of Health (NIH)

Principal Investigator	Research Title	Funding Source	Years	Current Funding	Total Funding
Abdallah	Glial and Synaptic Functions in Major Depression	NIMH	2017- 2022	\$130,963	\$2,493,229
Agarwal & Gelernter	Psychiatric Genomics Consortium: Find Actionable Variation	PGC	2016- 2021	\$186,497	\$932,488
Bohnert ( <b>Kuhn</b> – Site PI)	Testing a PTSD m-Health Intervention to Improve Alcohol Treatment Outcomes	NIAAA	2020- 2025	\$0	\$3,043,387
Carlson	Development of a Risk Factor Screen for Mental Health Problems after Sudden Illness or Injury	NIMHD	2018- 2022	\$610,092	\$2,277,710
Cosgrove, Pietrzak & Esterlis	Imaging Microglial Activation in PTSD using PET	NIMH	2017- 2022	\$449,732	\$825,495
Davis	Dysregulation in mGluR5 as a Marker of BPD and Suicide Related Endophenotypes	NIH K	2018- 2023	\$196,696	\$983,483

Principal Investigator	Research Title	Funding Source	Years	Current Funding	Total Funding
Dileone ( <b>Duman</b> Pl FY17-19)	Role of GABA Interneurons in Rapid Antidepressant Actions of NMDA Receptor Blockade	NIMH	2017- 2022	\$510,206	\$2,340,351
Esterlis & Pietrzak	Depression and Accelerated Brain Aging: A PET Imaging Study	NIMH	2018- 2023	\$1,159,114	\$4,051,532
Esterlis	In Vivo Imaging of a Neural Marker of Suicidal Behavior in Bipolar Disorder	NIMH	2018- 2023	\$0	\$3,935,570
Feder & Pietrzak	Neuroimaging of Resilience in World Trade Center Responders: A Focus on Emotional Processing, Reward and Social Cognition	CDC/ NIOSH	2017- 2021	\$599,086	\$2,398,856
Gradus & Shiner	Identification of Novel Agents to Treat PTSD using Clinical Data	NIMH	2020- 2024	\$335,663	\$2,468,676
Gradus	Characterizing Trauma Outcomes: From Pre-Trauma Risk to Post-Trauma Sequelae	NIMH	2017- 2021	\$31,000	\$1,303,518
Hayes ( <b>Miller</b> – Site Pl)	Neuroimaging and Molecular Markers of AD and Neurodegenerative Disease after Concussion	NIA	2019- 2024	\$245,187	\$1,205,642
Кауе	Determining the Role of Noradrenergic Heterogeneity in Innate Threat Response	NIH K	2020- 2025	\$194,940	\$974,700
Kelmendi	The Neural Correlates of the Effects of Psilocybin in OCD: Randomized Controlled Study	NIH K	2020- 2024	\$100,000	\$778,392
Lee, L.	Boston Early Adversity and Mortality Study (BEAMS): Linking Administrative Data to Long-term Longitudinal Studies	NIA	2019- 2024	\$696,953	\$3,528,185
Levy	Individual Differences in Decision Making Under Uncertainty	NIMH	2019- 2024	\$693,080	\$3,337,954
Morey ( <b>Logue</b> , Site Pl)	Trauma and Genomics Modulate Brain Structure across Common Psychiatric Disorders	NIMH	2017- 2021	\$300,755	\$1,323,479
Nillni	PTSD-Related Neurobiological Mediators of Negative Pregnancy Outcomes	NIH K	2017- 2021	\$153,933	\$615,735
Owen	Development of a Mobile Mindfulness Intervention for Alcohol Use Disorder and PTSD Among OEF/OIF Veterans	NIAAA	2021- 2024	\$259,782	\$1,039,078
Ranganathan	Multimodal Imaging of Recovery from Cannabis Dependence	NIDA	2016- 2021	\$448,267	\$1,756,541
Ranganathan	Effect of Cannabidiol on Microglial Activation and Central Pain Sensitization	NIMH	2019- 2021	\$150,000	\$275,000

Principal Investigator	Research Title	Funding Source	Years	Current Funding	Total Funding
Rasmusson	Facilitation of Reconsolidation Blockade and Extinction Retention in PTSD by Intravenous Allopregnanolone	NIMH	2021- 2025	\$603,175	\$3,809,704
Scioli	Neurobiological Mediators of Self- Regulatory and Reward-Based Motivational Predictors of Exercise Maintenance in Chronic Pain and PTSD	NCCIH	2018- 2021	\$175,243	\$346,500
Sloan	Delivering Written Exposure Therapy for PTSD in Underserved Primary Care Settings	NIMH	2021- 2026	\$1,034,438	\$5,413,984
Smith, <b>Logue</b> , Uddin & Nievergelt	The Impact of Traumatic Stress on the Methylome: Implications for PTSD	NIMH	2020- 2025	\$713,989	\$3,589,840
Smith, Brian & <b>Krystal</b>	Yale Clinical and Translational Science Award (CTSA)	NIMH	2016- 2021	\$8,657,777	\$44,547,83
Smith, S. ( <b>Kuhn –</b> Site PI)	A SMART Design to Facilitate PTSD Symptom Management Strategies among Cancer Survivors	NCI	2020- 2025	\$300,000	\$2,342,355
Stockman ( <b>Cloitre</b> – Site PI)	Addressing Trauma from Interpersonal Violence through a Web-based Peer Navigation-Social Support Intervention to Improve ART Adherence among Women	NIMH	2021- 2026	\$798,490	\$3,992,450
Williams ( <b>Holtzheimer</b> – Site Pl)	Mechanistic Circuit Markers of Transcranial Magnetic Stimulation Outcomes in Pharmacoresistant Depression	NIMH	2020- 2024	\$499,203	\$1,996,000
Wiltsey Stirman	Evaluating Effectiveness and Engagement Strategies for Asynchronous Texting Based Trauma Focused Therapy for PTSD	NIMH	2021- 2024	\$806,007	\$2,510,190
Wiltsey Stirman	Leveraging Routine Clinical Materials and Mobile Technology to Assess CBT Quality	NIMH	2017- 2021	\$556,814	\$2,607,817
Wiltsey Stirman	Improving and Sustaining CPT for PTSD in Mental Health Systems	NIMH	2016- 2021	\$0	\$1,615,257
Wolf	Longitudinal Neurometabolic Outcomes of Traumatic Stress-Related Accelerated Cellular Aging	NIA	2020- 2025	\$423,508	\$1,694,033
Wolf	Neurobiological Correlates of Accelerated Cellular Aging	NIA	2019- 2022	\$157,500	\$346,500
Woodward & Khan	In-Home Sleep Monitoring to Detect Suicide Risk in Veterans	NIMH	2020- 2022	\$53,802	\$416,632

Principal Investigator	Research Title	Funding Source	Years	Current Funding	Total Funding
Zimmerman	Participatory System Dynamics vs. Audit and Feedback: A Cluster Randomized Trial of Mechanisms of Implementation Change to Expand Reach of Evidence-based Addiction and Mental Health Care	NIDA	2019- 2023	\$572,087	\$2,864,531

AD Alzheimer's Disease; ART Antiretroviral Therapy; BPD Borderline Personality Disorder; CBT Cognitive-Behavioral Therapy; CDC Centers for Disease Control and Prevention; CPT Cognitive Processing Therapy; K Career Development Award; m-Health Mobile Health; GABA Gamma Aminobutyric Acid; NCCIH National Center for Complementary and Integrative Health; NCI National Cancer Institute; mGluR5 Metabotropic Glutamate Receptor 5; NIA National Institute on Aging; NIAAA National Institute on Alcohol Abuse and Alcoholism; NIDA National Institute on Drug Abuse; NIH National Institutes of Health; NIMH National Institute of Mental Health; NIMHD National Institute on Minority Health and Health Disparities; NIOSH National Institute for Occupational Safety and Health; NMDA N-methyl-D-aspartate; OCD Obsessive Compulsive Disorder; OEF/OIF Operation Enduring Freedom/Operation Iraqi Freedom; PGC Psychiatric Genomics Consortium; PET Positron Emission Tomography; PTSD Posttraumatic Stress Disorder; SMART Sequential Multiple Assignment Randomized Trial

## Department of Defense (DoD)

Principal Investigator	Research Title	Years	Current Funding	Total Funding
Marx	Decreasing Suicide Risk among Service Members with Posttraumatic Stress	2019- 2021	\$635,195	\$1,269,741
McLean & Rosen	Targeted Strategies to Accelerate Evidence-Based Psychotherapies Implementation in Military Settings	2017- 2021	\$1,708,067	\$8,608,151
Mitchell	Eating Disorders in Veterans: Prevalence, Comorbidity, Risk, and Healthcare Use	2018- 2021	\$139,561	\$1,463,890
Norman (Wachen – Site PI)	Trauma Informed Guilt Reduction (TrIGR) Therapy for Guilt, Shame, and Moral Injury Resulting from Trauma: Rationale, Design, and Methodology of a Two-site RCT	2021- 2022	\$525,696	\$2,725,000
<b>Petrakis, Krystal</b> & Yoon	Effect of Sublingual Formulation of Dexmedetomidine HCI (BXCL501) on Ethanol in Heavy Drinkers with PTSD – Alcohol Interaction Study	2021- 2022	\$238,720	\$341,196
Shiner	Comparative Effectiveness of Psychotropic Medications for PTSD in Clinical Practice	2017- 2022	\$0	\$1,160,375
Sloan	Enhancing Treatment Engagement and Retention	2016- 2021	\$60,000	\$2,500,000
Wachen	Massed Cognitive Processing Therapy for Combat-related PTSD	2017- 2021	\$657,533	\$3,282,395
Lee, D. & Stanley	Latent Profile-Based Psychopathology Phenotypes and Self-Injurious Thoughts and Behaviors: An Examination of the Military Suicide Research Consortium Common Data Elements	2021- 2022	\$122,754	\$122,754
Taft	Strength at Home Couples Program: Examining Sexual Aggression	2020- 2022	\$137,075	\$274,149

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## Other Non-VA Sources

Principal Investigator	Research Title	Funding Source	Years	Current Funding	Total Funding
Bredemeier ( <b>McLean</b> – Site PI)	A Comparison of Prolonged Exposure Therapy, Pharmacotherapy, and Their Combination for PTSD: What Works Best and For Whom	PCORI	2021- 2025	\$224,434	\$905,205
Cloitre	Trauma-Focused Care in LGBTQ+ Communities: Building Capacity for Research	PCORI	2021- 2023	\$125,000	\$250,000
Colvonen	Examining OSA Screening on a SARRTP SUD and PTSD Residential Treatment Unit	Academic Senate Grant	2019- 2021	\$0	\$10,000
Davis	Dysregulation in Kappa Opioid Receptor as a Marker of BPD and Suicide Related Endophenotypes	Robert Leet and Clara Guthrie Patterson Trust	2021- 2022	\$22,500	\$45,000
Galovski & Street	Women Veterans Network (WoVeN) Continued Expansion	Bob Woodruff Foundation	2022- 2022	\$0	\$123,700
Galovski & Street	Women Veterans Network (WoVeN)	Bob Woodruff Foundation	2020- 2021	\$118,628	\$179,740
Galovski & Street	Women Veterans Network (WoVeN)	May & Stanley Smith Charitable Trust	2021- 2022	\$12,500	\$50,000
Galovski & Street	Core Support - Women Veterans Network (WoVeN)	Oak Foundation	2020- 2022	\$100,000	\$200,000
Galovski & Street	Building Re-Integration from Dreams and Goals to Execution and Success (BRIDGES)	Walmart Foundation	2020- 2021	\$50,000	\$99,777
Gilbar & <b>Taft</b>	Social Information Processing and Intimate Partner Violence	United States-Israel Binational Science Foundation	2021- 2025	\$54,000	\$216,000
Girgenti	Sex-specific Molecular Mechanisms in PTSD	Brain and Behavior Research Foundation	2020- 2022	\$35,000	\$70,000
Harpaz-Rotem	Enhancing Prolonged Exposure Therapy with Ketamine	American Brain Society	2020- 2025	\$6,000	\$50,000
Kachadourian	Non-Suicidal Self Injury in Military Veterans with PTSD: An Ecological Momentary Assessment Study	Yale Center for Clinical Investigation	2020- 2022	\$20,000	\$40,000

Principal Investigator	Research Title	Funding Source	Years	Current Funding	Total Funding
Кауе	Circuit of Mechanisms of a Pupillary Biomarker for Stress- Induced Hyperarousal	Brain and Behavior Research Foundation	2019- 2021	\$35,000	\$70,000
Kehle-Forbes	Comparative Effectiveness of Trauma-focused and Non-trauma- focused Treatment Strategies for PTSD Among Those with Co- occurring SUD (COMPASS)	PCORI	2020- 2024	\$1,492,240	\$6,117,941
Livingston, & Weisberg	Impact of COVID-19-related Medication-assisted Treatment Policy Changes on Patients with Opioid Use Disorders	PCORI	2020- 2022	\$1,129,612	\$2,494,203
McCaslin	Development of a Provider Tool to Increase Culturally Competent and Patient-Centered Care: The Military Culture and Experience Index (MCEI)	Ci2i - HSR&D Center of Excellence, VA Palo Alto HCS	2021- 2022	\$20,379	\$20,379
McLean	An Efficient 2-Day Treatment for Posttraumatic Injury for Firefighters	FEMA	2021- 2024	\$469,456	\$1,499,997
Nillni	A Pragmatic Effectiveness Trial of a Brief Exposure Therapy for PTSD on Substance Use and Mental Health Morbidity and Mortality During the Perinatal Period	Grayken Center for Addiction	2019- 2021	\$75,000	\$150,000
Okamura ( <b>Zimmerman</b> – Site PI)	Participatory System Dynamics Modeling	SAMHSA	2020- 2024	\$449,016	\$1,868,991
Pless Kaiser, Niles & Mori	A Randomized Pilot Trial of Tai Chi Compared to Wellness Education for Older Veterans	Boston Roybal Center (Center grant funded by NIA)	2019- 2021	\$15,000	\$26,000
Sanacora	Electroconvulsive Therapy Versus Ketamine for Severe Resistant Depression	PCORI	2017- 2021	\$0	\$1,500,000
Sareen ( <b>Pietrzak</b> – Site PI)	Defining the Longitudinal Course, Outcomes, and Treatment Needs of Vulnerable Canadians with PTSD	Canadian Institutes of Health Research	2015- 2022	\$340,868	\$2,386,073
Sippel	Social Approach and Avoidance in PTSD: Implications for Social Functioning	Gary Tucker Junior Investigator Research Award	2019- 2021	\$0	\$39,922
Taft	Implementation of VA Rollout of Strength at Home	Bob Woodruff Foundation	2020- 2021	\$165,110	\$165,110

Principal Investigator	Research Title	Funding Source	Years	Current Funding	Total Funding
Taft	Strength at Home: Promoting healthy relationships, healing trauma, breaking the cycle of violence	Mother Cabrini Health Foundation	2020- 2021	\$185,463	\$185,463
Wiltsey Stirman	Gavin Farrell Foundation CPT Training Initiative	Gavin Farrell Foundation	2019- 2030	\$64,090	\$64,090
Wiltsey Stirman & Kaysen	A Web-Based Intervention for Healthcare Workers Impacted by COVID-19	Huang Family Foundation	2020- 2021	\$1,000,000	\$1,300,000
Wiltsey Stirman & Kaysen	Adaptive Digital Mental Health Tools to Improve COVID-19 Mental Health Among Healthcare Workers	The Jen-Hsun and Lori Huang Family Foundation Digital Mental Health Platform Fund	2020- 2021	\$500,000	\$1,000,000
Wolf	The Utility of MMPI-2 RF in Informing VA Pain Clinic Care	University of Minnesota Press, Test Division	2016- 2022	\$0	\$24,000

BPD Borderline Personality Disorder; COVID-19 Coronavirus Disease 2019; Ci2i Center for Innovation to Implementation; CPT Cognitive Processing Therapy; HCS Health Care System; HSR&D Health Services Research and Development; FEMA Federal Emergency Management Agency; LGBTQ Lesbian Gay Bisexual Transgender Queer; MMPI-2 RF Minnesota Multiphasic Personality Inventory-2 Restructured Form; NIA National Institute on Aging; OSA Obstructive Sleep Apnea; PCORI Patient-Centered Outcomes Research Institute; PTSD Posttraumatic Stress Disorder; SAMHSA Substance Abuse and Mental Health Services Administration; SARRTP Substance Abuse Recovery and Rehabilitation Treatment Program; SUD Substance Use Disorder; VA Department of Veterans Affairs

### **Projects Pending Funding**

Principal Investigator	Research Title	Funding Source	Years	Total Funding
Bean & <b>Scioli</b>	The VA REAP Center for Rehabilitative Care: Optimizing Mobility, the Mind and Motivation	VA RR&D	2021- 2025	\$1,570,721
Beidas & <b>Wiltsey</b> Stirman	LOCI-LO as a Strategy to Implement a Learning Mental Health System	NIH NIMH	2020- 2021	\$4,176,868
Colvonen	Examining Early Intervention OSA PAP Treatment on Long-Term Outcomes in Veterans with SUD/PTSD in a Residential Treatment Program	VA RR&D	2022- 2027	\$1,378,409
Driesen, Krystal & Heider	AMPA Receptor Components of the Antidepressant Response to Ketamine in Humans	NIH NIMH	2022- 2027	\$2,498,524
Forbush ( <b>Mitchell</b> – Site PI)	Integrative Therapy for Veterans with Eating Disorders and Trauma (iVET)	DoD	2022- 2026	\$1,162,190
Girgenti	A Multimodal Genomic Atlas of Human Brain Cell Types in Stress Disorders	NIH NIMH	2022- 2027	\$1,805,037

Principal Investigator	Research Title	Funding Source	Years	Total Funding
Hollifield ( <b>Holtzheimer</b> – Site Pl)	Efficacy and Safety of Stellate Ganglion Block for PTSD in Veterans	VA CSR&D	2022- 2025	\$355,962
Кауе	SCREAM: A Platform for Decomposing Stress into Circuit Programs	NIH DP2	2021- 2026	\$1,500,000
Kehle-Forbes	Empowering Veterans to Self-Manage PTSD Symptoms Following Completion of Trauma- Focused Therapy	VA HSR&D	2022- 2025	\$496,816
Mitchell	Assessment of Eating Disorder and Comorbidity Risk and Resilience in a Nationally Representative Sample of Recent Military Enlistees	DoD	2022- 2026	\$673,823
Mitchell	The Impact of Trained Provider Teams on Diagnosis and Treatment of Eating Disorders in the Veterans Healthcare Administration	DoD	2022- 2025	\$600,957
Niles	Feasibility of Remote-Delivery Interventions: Tai Chi and Wellness for PTSD and Pain in Veterans	NCCIH	2022- 2025	\$612,213
Nillni	A Non-Inferiority Trial Testing Delivery of Written Exposure Therapy by Community Health Workers for Treatment of PTSD During Pregnancy	NICHD	2021- 2026	\$2,831,419
Norman	Massed Prolonged Exposure for PTSD in Residential SUD Treatment	NIH NIDA	2020- 2025	\$3,129,750
Pineles & Pace- Schott	Circadian Influence on Fear Extinction Resulting from Prolonged Exposure Therapy for PTSD	NIH NIMH	2022- 2024	\$275,000
<b>Pless Kaiser, Spiro</b> & Moye	Improving Psychosocial Functioning in Older Veterans with PTSD: A Multi-Site RCT	VA RR&D	2021- 2025	\$1,199,702
Sripada ( <b>Kuhn</b> – Site PI)	Testing Adaptive Interventions to Improve PTSD Treatment Outcomes in Federally Qualified Health Centers	NIH NIMH	2022- 2026	\$2,500,000
Rutledge ( <b>Niles</b> – Site PI)	A Phase 3 Clinical Trial on Transcendental Meditation and PTSD, Suicide and Substance Use in Veterans	David Lynch Foundation	2022- 2024	\$435,428
Shiner	Real World Effectiveness of Long-Acting Injectable versus Oral Naltrexone for Co-occurring PTSD and Alcohol Use Disorder	DoD	2022- 2024	\$611,046
Sippel	A Test of Oxytocin as an Enhancer of Couples Therapy for PTSD: Effects on Social Functioning	VA CDA	2021- 2026	\$888,380
Smith & Elbogen ( <b>Kuhn</b> – Site PI)	Integrating Technological Approaches for Pain Management in Adult Survivors of Childhood Cancer	NCI	2021- 2026	\$3,100,860
Spoont	Social Determinant Contributions to PTSD Treatment Outcome Disparities: A Prospective, Multilevel Evaluation	VA HSR&D	2020- 2024	\$1,199,956

Principal Investigator	Research Title	Funding Source	Years	Total Funding
Taft	Adjunctive Motivational Alcohol Intervention to Prevent IPV	VA CSR&D	2021- 2025	\$1,304,582
Thompson- Hollands	Family Involvement in Treatment for PTSD (FIT- PTSD): A Brief, Feasible Method for Enhancing Outcomes, Retention and Engagement	VA CSR&D	2022- 2026	\$1,098,623
Wolf	Traumatic Stress and Signatures of Accelerated Cellular Aging Across Time	VA CSR&D	2022- 2024	\$584,804
Zimmerman	Participatory System Dynamics Versus Usual VA Strategies for Implementing Integrated, Equitable, Pain, Addiction and Mental Health Care	NIH HEAL Initiative: IMPOWR	2021- 2026	

AMPA α-amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid; BLR&D Biomedical Laboratory Research and Development Service; CDA Career Development Award; CSR&D Clinical Science Research and Development Service; DoD Department of Defense; DP2 Director's New Innovator Award; EMA Ecological Momentary Assessment; HEAL Helping to End Addiction Long-Term; HSR&D Health Services Research and Development Service; IPV Intimate Partner Violence; IMPOWER Integrative Management of Chronic Pain and OUD for Whole Recovery; LOCI-LO Leadership and Organizational Change for Implementation for Learning Organizations; MDD Major Depressive Disorder; NCCIH National Center for Complementary and Integrative Health; NCI National Cancer Institute; NICHD National Institute of Child Health and Human Development; NIDA National Institute on Drug Abuse; NIH National Institutes of Health; NIMH National Institute of Mental Health; OSA Obstructive Sleep Apnea; PAP Positive Airway Pressure; PI Principal Investigator; PTSD Posttraumatic Stress Disorder; RCT Randomized Controlled Trial; REAP Research Enhancement Award Program; RR&D Rehabilitation Research and Development Service; SCREAM Stress Circuit Response and Epigenetic Activity Modeling; SUD Substance Use Disorder; TBI Traumatic Brain Injury; VA Veterans Affairs

# Appendix D: Publications by National Center Staff

- Abdallah, C., Ahn, K. H., Averill, L., Nemati, S., Averill, C. L., Fouda, S., Ranganathan, M., Morgan, P. T., D'Souza, D., Mathalon, D. H., Krystal, J. H., & Driesen, N. R. (2021). A robust and reproducible connectome fingerprint of ketamine is highly associated with the connectomic signature of antidepressants. *Neuropsychopharmacology*, 46, 478-485. doi:10.1038/s41386-020-00864-9
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# Appendix E: In-Press Publications by National Center Staff

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- 203. Tsai, J., **Pietrzak, R. H.**, & Szymkowiak, D. (2021). The problem of veteran homelessness: An update for the new decade. *American Journal of Preventive Medicine*. Advance online publication. doi:10.1016/j. amepre.2020.12.012
- 204. Tyler, H., Fina., B. A., Marx, B. P., Young-McCaughan, S., Sloan, D. M., Kaplan, A. M., Green, V. R., Blankenship, A., Bryan, C. J., Peterson, A. L., & STRONG STAR Consortium (in press). Written Exposure Therapy for suicide in a psychiatric inpatient unit: A case series. *Cognitive and Behavioral Practice*.
- 205. Vasterling, J. J., Jacob, S., & Rasmusson, A. M. (in press). PTSD. In J. M. Silver, T. W. McAllister, & D. B. Archiniegas (Eds.), *APA textbook of traumatic brain injury (3rd ed.)*. Arlington, VA: American Psychiatric Publishing.
- 206. Walser, R. D., & McGee-Vincent, P. (in press). How to develop your abilities as an ACT therapist. In P. Lucena-Santos, S. A. Carvalho, J. Pinto-Gouveia, M. S. Oliveira, & J. Pistorello (Eds.), Manual prático internacional de Terapia de Aceitação e Compromisso [International practical handbook of Acceptance and Commitment Therapy]. Novo Hamburgo, RS: Sinopsys.
- 207. Wang, J., Zhao, H., & Girgenti, M. J. (2021). Posttraumatic stress disorder brain transcriptomics: Convergent genomic signatures across biological sex. *Biological Psychiatry*. Advance online publication. doi:10.1016/j.biopsych.2021.02.012
- 208. **Watson, P.** (in press). Application of the five elements framework to the Covid pandemic. *Psychiatry*.
- 209. **Watson, P.** (in press). Stress, PTSD and Covid-19: The utility of disaster mental health interventions during the Covid-19 pandemic. *Current Treatment Options in Psychiatry.*
- 210. Webb, R., & **Levy, I.** (in press). Assessing consumer demand with noisy neural measurements. *Journal of Economics*.
- 211. Weiss, J., Calvi, R., Naganawa, M., Toyonaga, T., Farhadian, S., Chintanaphol, M., Chiarella, J., Zheng, M., Ropchan, J., Huang, H., Pietrzak, R. H., Carson, R., & Spudich, S. (2021). Preliminary in vivo evidence of reduced synaptic density in HIV despite Antiretroviral Therapy. *Clinical Infectious Diseases*. Advance online publication. doi:10.1093/cid/ciab484

- Wells, S. Y., Walter, K. H., Dedert, E., Strasshofer, D., Schnitzer, J., Thorp, S., Morland, L. A., & Glassman, L. H. (in press). Do older veterans experience change in posttraumatic cognitions following treatment for posttraumatic stress disorder. *Psychological Trauma: Theory, Research, Practice, and Policy.*
- 213. Williams, L. M., Coman, J., Stetz, P., Walker, N., Kozel, F., George, M., Yoon, J., Hack, L., Madore, M., Lim, K., Philip, N., & Holtzheimer, P. E. (2021). Identifying response and predictive biomarkers for transcranial magnetic stimulation outcomes: Protocol and rationale for a mechanistic study of functional neuroimaging and behavioral biomarkers in veterans with pharmacoresistant depression. *BMC Psychiatry*. Advance online publication. doi:10.1186/s12888-020-03030-z
- 214. Williston, S. K., Kruepke, M., Grossman, D., Litwack, S., & Niles, B. L. (2021). Exploring modifications to individual trauma-focused PTSD treatments in a routine care setting: An examination of medical records at a Veterans Health Administration PTSD clinic. Cognitive and Behavioral Practice. Advance online publication. doi:10.1016/j.cbpra.2021.06.002
- 215. Williston, S., & Vogt, D. (2021). Mental health literacy in veterans: What do U.S. military veterans know about PTSD and its treatment? *Psychological Services*. Advance online publication. doi:10.1037/ ser0000501

- 216. Wiltsey Stirman, S. (in press). Implementation of evidence-based interventions. J. G. Beck & D. M. Sloan (Eds.), *The Oxford handbook of traumatic stress disorders, 2nd ed.* New York, NY: Oxford University Press.
- 217. Wohleb, E. S., & **Duman, R.** (in press). Disruption of mTORC1 signaling contributes to synaptic deficits caused by chronic stress: Reversal by rapid-acting antidepressants. *Neurobiology of Stress*.
- 218. Yang, M. S., Quach, L., Lee, L. O., Spiro, A., & Burr, J. A. (2020). Subjective well-being among male veterans in later life: The enduring effects of early life adversity. *Aging & Mental Health*. Advance online publication. doi:10.1080/13607863.2020.1842999
- 219. Yip, S., Lichenstein, S., Garrison, K., Averill, C. L., Viswanath, H., Salas, R., & Abdallah, C. (2021). Effects of smoking status and state on intrinsic connectivity. *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging*. Advance online publication. doi:10.1016/j.bpsc.2021.02.004

# Appendix F: Scientific Publications by National Center Staff

# Anxiety and Depression Association of America | Virtual March 2021

- 1. Blais, R., Creech, S. K., Sippel, L. M., **Spoont, M.**, & Stevens, S. Relationships can hurt or heal: Social-cognitive processes and outcomes among trauma-exposed individuals.
- La Bash, H., Aajmain, S., Liebman, R., Suvak, M., Cohen, Z. D., Shields, N., Lane, J., Masina, T., Monson, C. M., & Wiltsey-Stirman, S. The influence of patient characteristics, comorbidities, and therapist training strategy on PTSD symptom change in Cognitive Processing Therapy. In S. J. Youn (Chair), *Heterogeneity in effectiveness:* Examining the implementation of PTSD treatments in routine clinical care.
- 3. McLean, C. P. Repetitive negative thinking and suicidal ideation among active duty military personnel seeking treatment for PTSD.
- 4. Narine, K., Brown, L. A., Foa, E. B., Dondanville, K. A., Wright, E. C., Hall-Clark, B. N., Fina, B. A., Mintz, J., Young-McCaughan, S., Peterson, A. L., & McLean, C. P. Qualitative review of suicidal ideation in an open trial web-based prolonged exposure therapy.
- 5. **Sippel, L. M., Holtzheimer, P. E.**, Huckins, J. F., Collier, E., Feilong, M., Wheatley, T., & Meyer, M. L. Neurocognitive mechanisms of poor social connection in posttraumatic stress disorder: Evidence for abnormalities in social working memory. In L. M. Sippel (Chair), *Relationships can hurt or heal: Social-cognitive processes and outcomes among trauma-exposed individuals.*
- 6. Wieman, S. T., Arditte Hall, K. A., **Pineles, S. L.**, Pizzagalli, D. A., & Liverant, G. I. Diminished reward learning in veterans with co-occurring insomnia and depression. In K. A. Arditte Hall (Chair), *The nature, consequences, and treatment of sleep dysregulation in individuals with emotional disorders.*

# Association for Behavioral and Cognitive Therapies | Virtual November 2020

- 7. Archibald, E., Zelkowitz, R., Street, A. E., & Gradus, J. L. Examining posttraumatic stress disorder and parenting competence in a veteran sample: The moderating effect of gender.
- 8. Danitz, S. B., Shayani, D. R., & **Iverson, K. M.** Differential associations between physical, psychological, and sexual IPV on personal values, self-efficacy, empowerment, and PTSD symptoms in a sample of treatment-seeking women.
- 9. Dean, K., Lopresti, J., McClendon-Iacovino, J., Carter, S. E., & **Shipherd, J. C.** *Discrimination and mental health: Examining the impacts of a chronic stressor.*
- 10. Galovski, T. E. Intensive treatment model: Massed CPT with survivors of intimate partner violence. In J. Wachen (Chair), Intensive delivery of evidence-based treatment for PTSD across diverse contexts: Successes, challenges, and strategies for implementation.

- 11. Gorrell, S., Bufka, L., Pimentel, S., Rego, S., Seligman, L., & **Shipherd, J. C.** Moving forward in increasing equity and diversity in our ranks: A solution-focused approach.
- 12. Jaffe, A. E., Kaysen, D., **Smith, B. N., Galovski, T. E.**, & Resick, P. A. PTSD treatment for sexual assaults with and without substance-involvement. In A. R. Newins & L. Wilson (Chairs) *Assessing and addressing barriers to treatment among survivors of sexual assault*.
- 13. **McClendon, J.**, Perkins, D., Finley, E., Copeland, L., & **Vogt, D.** *Examining the role of discriminatory stress in moderating racial/ethnic differences in psychiatric symptom severity and use of mental health treatment.*
- 14. Pavlacic, J. M., Buchanan, E. M., **McCaslin, S. E.**, & Schulenberg, S. E. A systematic review of posttraumatic stress and resilience trajectories: Identifying covariates and predictors for future treatment of veterans and service members.
- 15. **Reuman, L.**, & **Thompson-Hollands, J.** Identifying female veterans beliefs and barriers regarding family involvement in PTSD treatment.
- 16. Schnurr, P. P., Chard, K. M., Ruzek, J. I., & Marx, B. P. Design and rationale. In P. P. Schnurr (Chair), Comparative effectiveness research in veterans with PTSD: A randomized clinical trial of Prolonged Exposure and Cognitive Processing Therapy, VA Cooperative Study #591.
- 17. Sloan, D. M. Current state of brief and intensive psychotherapy approaches. Panel Discussant.
- 18. **Stanley, I. H.**, Hom, M. A., Sachs-Ericsson, N. J., Gallyer, A. J., & Joiner, T. E. A pilot randomized clinical trial of a Lethal Means Safety Intervention for young adults with firearm familiarity at risk for suicide.
- 19. Stanton, A., Berke, D., Puckett, J., Ralston, A., & **Shipherd, J. C.** From risk to resilience: Enhancing our understanding of mental health disparities in transgender and gender diverse individuals [Webinar].
- 20. **Thompson-Hollands, J.**, & **Reuman, L.** (2020, November). Scaling the walls: A qualitative analysis of women veterans' willingness to involve loved ones in their PTSD treatment.
- 21. Wells, S. Y., Wilhite, E. R., **Kehle-Forbes, S.**, Dedert, E., Grubbs, K. M., Glassman, L. H., **Schnitzer, J.**, & Morland, L. A. Beyond symptom reduction: The impact of trauma-focused treatment on veterans' own therapy goals.

## International Society for Traumatic Stress Studies | Virtual November 2020

- 22. Angkaw, A., Larsen, S., McCarthy, E., Silva, M., Cuccurullo, L. J., McKee, T. A., Fielstein, E., & Norman, S. B. Consultation as best practice implementation strategy for PTSD evidence-based psychotherapy.
- 23. Bovin, M. J., Kimerling, R., Weathers, F. W., Prins, A., Marx, B. P., Post, E. P., & Schnurr, P. P. The diagnostic utility of a new four-item short form of the PCL-5. In D. J. Lee (Chair), Advancements in assessment of PTSD and related phenomena.
- 24. Cameron, D. C., **Hamblen, J. L.**, Hsu, F., Cheney, T., McDonagh, M., Carlson, K., & O'Neil, M. *Diagnostic instruments* used to diagnose posttraumatic stress disorder and measure symptom severity in randomized controlled trials.
- 25. Carpenter, J. K., Bragdon, L., & **Pineles, S. L.** Anxiety sensitivity as a moderator of the relationship between conditioned fear responses and PTSD symptoms.
- 26. **Colvonen, P.** Obstructive sleep apnea screening and treatment on a residential unit for veterans with PTSD and substance use disorder. In P. Colvonen (Chair), *The fragmented life: Examining the relationship between obstructive sleep apnea and posttraumatic stress disorder.*
- 27. **Cuccurullo, L. J.**, Bowen, M., McBain, S. A., Dondanville, K., & Thompson, K. Bringing research to rurality: Practical applications and lessons learned from implementing evidence-based care in rural areas. Panel discussion.
- 28. Cuccurullo, L. J., Breen, K., Bowen, M., & Bernardy, N. C. Changing the rural landscape: Understanding the contextual changes that increase evidence-based PTSD care at rural VAs.
- 29. Fein-Schaffer, D., Escarfulleri, S., Ryabchenko, K., Logue, M. W., Miller, M. W., & Wolf, E. J. Basic biological correlates of PTSD and common comorbidities.
- 30. **Galovski, T. E.** The development of an early warning system for determining the benefits (or diminishing returns) of increasing the length of treatment for PTSD. In K. Werner (Chair), *Personalized approaches to treating PTSD: Can we improve clinical outcomes of our evidence-based practices?*

- 31. Galovski, T. E. The impact of military trauma exposure on perinatal outcomes among female veterans. In Y. Nillni (Chair), *How does trauma impact perinatal health and what can we do about it?*
- 32. Galovski, T. E., & Sanders, W. Identifying parenting challenges among veterans: A longitudinal comparison of PTSD clusters, positive and negative parenting behaviors, and gender differences. Panel Discussion.
- 33. Harper, K. L., Moshier, S. J., Anderson, M. S., Wisco, B. E., Keane, T. M., & Marx, B. P. Discrepancies between electronic records and clinical interview diagnosis of PTSD: Differences in mental healthcare utilization.
- 34. Harper, K. L., Thompson-Hollands, J., Keane, T. M., & Marx, B. P. Mental health treatment utilization and relationship functioning among male and female OEF/OIF veterans.
- 35. **Healy, E.** Examining telemental health delivery in the VA CPT Training Program. In Healy, E. (Chair), *Reaching the hard-to-reach: Examining use of video telehealth to provide evidence-based psychotherapy for PTSD to veterans.*
- 36. Held, P., **Yamokoski, C. A.**, Rauch, S., & Rothbaum, B. *Intensive treatments for PTSD: A practical guide to delivering evidence-based PTSD treatments in 1-3 weeks*. Pre-meeting Institute.
- Holder, N., Shiner, B., Li, Y., Madden, E., Neylan, T. C., Seal, K. H., Lujan, C., Patterson, O., DuVall, S., & Maguen, S. Identifying the median effective dose of two evidence-based psychotherapies for posttraumatic stress disorder. In A. J. Khan (Chair), *Evidence based treatments for PTSD in VHA settings: Trends, dosing, and effectiveness.*
- 38. **Kehle-Forbes, S.**, Fleming, C., Ackland, P., Meis, L., Polusny, M., & Valenstein-Mah, H. Gender differences in therapy experiences contributing to Prolonged Exposure and Cognitive Processing Therapy non-completion.
- 39. Kehle-Forbes, S., Galovski, T. E., Possemato, K., & Polusny, M. Empowering veterans to step down their level of mental health care following completion of trauma-focused therapy.
- 40. Khan, A., Holder, N., Li, Y., **Shiner, B.**, Madden, E., Seal, K. H., Neylan, T. C., & Maguen, S. How do gender and military sexual trauma impact PTSD symptoms in Cognitive Processing Therapy and Prolonged Exposure? Evidence based treatments for PTSD in VHA settings. In A. J. Khan (Chair), *Evidence based treatments for PTSD in VHA settings: Trends, dosing, and effectiveness.*
- 41. Korsun, L., **Spiro, A.**, Moye, J., **Sloan, D. M., Cook, J.**, & **Pless Kaiser, A.** A group intervention to improve social functioning for older veterans with PTSD: Pilot group findings.
- 42. Lawrence, K. A., Vogt, D., & Smith, B. N. Longitudinal trajectories of suicide risk factors in recently returned women veterans.
- Lee, D. J., Ellickson-Larew, S. A., Bovin, M. J., Weathers, F. W., Schnurr, P. P., Sloan, D. M., Keane, T. M., & Marx, B. P. Item response theory analysis of the CAPS-5 and SCID-5 PTSD module among veterans. In D. J. Lee (Chair), Advancements in assessment of PTSD and related phenomena.
- Lee, D. J., Lee, L. O., Bovin, M. J., Moshier, S. J., Dutra, S. J., Kleiman, S., Vasterling, J. J., Keane, T. M., & Marx, B. P. The twenty-year course of posttraumatic stress disorder symptoms among veterans. In D. J. Lee (Chair), Longitudinal course of trauma-related sequelae.
- 45. Macia, K. S., Palmieri, P. A., Anglin, D. M., Murray, S. M., Barlow, M. R., Bass, J. K., Byllesby, B. M., & Carlson, E. B. The roles of individual- and community-level social and interpersonal factors in conferring vulnerability or resilience in trauma survivors. Panel discussant.
- 46. Mackintosh, M., Jamison, A. L., Juhasz, K. M., & McGee-Vincent, P. Increasing veterans use of mobile mental health apps via a facilitated implementation program targeting mental health and non-mental health staff.
- 47. **Pless Kaiser, A.**, Korsun, L., Etchin, A., O'Malley, K., Kemp, K., & Moye, J. *Identification of PTSD symptoms at end-of-life among veterans: Perspectives of VA and non-VA hospice and palliative care providers.*
- 48. **Reuman, L.**, & **Thompson-Hollands, J.** Identifying women veterans' beliefs and barriers regarding family involvement in PTSD treatment.
- 49. Sanders, W., Franz, M., Nillni, Y. I., Ohye, B., & Galovski, T. E. Identifying parenting challenges among veterans: A longitudinal comparison of PTSD clusters, positive and negative parenting behaviors, and gender differences. Flash talk.
- 50. Schnurr, P. P. Discussant. In M. O'Donnell (Chair), Advances in PTSD treatment.
- 51. Schnurr, P. P., Marx, B. P., Chard, K. M., & Ruzek, J. I. CERV-PTSD: VA Cooperative Study #591, a randomized clinical trial of Prolonged Exposure and Cognitive Processing Therapy in veterans: Design and rationale. In P. P. Schnurr (Chair), CERV-PTSD: VA Cooperative Study #591, a randomized clinical trial of Prolonged Exposure and Cognitive Processing Therapy in veterans.

- 52. Shayani, D. R., Danitz, S. B., & Iverson, K. M. Understanding the differential associations of IPV type on psychosocial functioning among women experiencing IPV.
- 53. Shayani, D. R., Danitz, S. B., Driscoll, M., & Iverson, K. M. Barriers and motivators of seeking counseling for IPV.
- 54. Shor, R., Borowski, S., Zelkowitz, R., Pineles, S. L., & Vogt, D. The transition to civilian life: Exploring the impact of comorbid PTSD, chronic pain, and sleep disturbance on suicidal ideation.
- 55. **Sippel, L. M., Holtzheimer, P. E.**, Collier, E., Wheatley, T., & Meyer, M. Social-cognitive mechanisms underpinning poor social connection in posttraumatic stress disorder.
- 56. **Sippel, L. M.**, Liebman, R., Ennis, N., Mattern, A., Schaefer, S., Rozek, D., & Monson, C. Social support from friends and family enhances trauma recovery: Longitudinal evidence from a recently trauma-exposed community sample.
- 57. Sloan, D. M. Item response theory analysis of the CAPS-5 and SCID-5 PTSD module among veterans.
- 58. **Sloan, D. M.** Negative posttraumatic cognition trajectories among individuals enrolled in psychosocial treatment for PTSD.
- 59. **Stanley, I. H.**, Hom, M. A., **Marx, B. P.**, & Reger, M. A. *PTSD and firearm ownership, access, and storage practices: A systematic review.*
- 60. Street, A. E. Stress disorders and risk of non-fatal suicide attempts in the Danish population.
- 61. Sullivan, D. R., Salat, D., Wolf, E. J., Logue, M. W., Fortier, C. B., Fonda, J. R., Milberg, W., McGlinchey, R., & Miller, M. W. Increased cerebral blood flow is associated with early life trauma and memory in post-9/11 veterans.
- 62. Vogt, D. Understanding barriers to and dropout from trauma-focused care for women veterans in VA.
- 63. Wachen, J. S., Yamokoski, C. A., Goetter, E., Morris, K., & Weaver, T. Intensive delivery of evidence-based treatment for PTSD across diverse contexts: Successes, challenges, and strategies for implementation.
- 64. Watson, P. Peer support and self-care model for those in high risk jobs. Pre-meeting.
- 65. **Watson, P.** How I now think differently about early intervention and prevention. In M. O'Donnell N. Kassam-Adams (Chair), *How I now think differently about early intervention and prevention.*
- 66. Whitworth, J., Nosrat, S., SantaBarbara, N., & Ciccolo, J. Exercise Interest and Participation Among Nontreatment-seeking Trauma-exposed Individuals with PTSD Symptoms.
- 67. Wolf, E. J., Logue, M. W., McGlinchey, R. E., Milberg, W. P., & Miller, M. W. The role of klotho in the PTSD to inflammation pathway.
- 68. Zelkowitz, R., Mitchell, K. S., Grossman, S., Nillni, Y. I., Gradus, J. L., & Galovski, T. E. Latent class analysis of self-directed violence and indirect self-harm behaviors: Gender differences and association with mental health symptoms. Discussant.

# Other

- 69. Abdallah, C. (2020, December). From regions to networks: Are we close to unraveling ketamine's mechanism of action? Presentation at NeuroImaging Labs, Medical University of Vienna, Vienna, Austria.
- 70. Borges, L. M., Barnes, S. M., **Norman, S. B.**, Nieuwsma, J., & Bahraini, N. H. (2021, May). Responding to moral distress and moral injury in the time of COVID-19: Intervention and prevention for providers, veterans, and service members. In Borges, L. M. (Chair), *Responding to moral distress and moral injury in the time of COVID-19: Intervention and prevention for providers, veterans, and service members.* VA/DoD Suicide Prevention Conference, Virtual.
- 71. Brady, J. E., Miller, C. J., Adjognon, O. L., Dichter, M. E., & **Iverson, K. M.** (2020, December). *An implementationoriented systematic review of screening for intimate partner violence in healthcare settings.* Poster presented at the Annual Conference on the Science of Dissemination and Implementation, Virtual Conference, Virtual.
- 72. Brinsley, J., Whitworth, J., Hall, K., Pebole, M., McKeon, G., Vancampfort, D., Steel, Z., & Rosenbaum, S. (2021, September). *Trauma-informed care and practice: Application and consideration for exercise and physical activity interventions*. Paper presentation at the 21st Australasian Conference on Traumatic Stress, Virtual.
- Bryant, W. T., McNulty, J. L., Livingston, N., Choate, K. T., & Ben-Porath, Y. S. (2021, June). Examination of the Minnesota Multiphasic Personality Inventory-3 (MMPI-3) in a transgender and gender diverse sample. Presentation at the 56th Annual Minnesota Multiphasic Personality Inventory Symposium, Virtual.

- 74. Bryant, W. T., Newberger, N. G., Hinds, Z., Herbitter, C., & **Livingston, N.** (2021, July). *Personality as a moderator of sexual and gender minority discrimination and within day anxious and depressed mood.* Poster presentation at the Association for Research in Personality 7th Biennial Conference, Virtual.
- 75. Buckholdt, K., Bruce, L., Noyes, K., **Taft, C. T.**, Creech, S. K., & Crocket, C. (2021, April). *Relationship health and safety for servicemembers and veterans: Promoting military-civilian community partnerships*. Presented at the Futures Without Violence National Conference on Health and Domestic Violence, Virtual.
- 76. Creech, S. K., Pearson, R., Saenz, J., Kelley, J., Roe, K., Braciszewski, J., Riggs, S., & **Taft, C. T.** (2021, April). Pilot findings from a trauma-informed parenting group intervention for veterans with PTSD symptoms and parent-child functioning difficulties. In M. R. Franz (Chair), *Parenting after trauma: Addressing the effects of PTSD on the family.* Symposium conducted at the Society for Research in Child Development, Virtual.
- 77. **Esterman, M.** (2021, April). Executive function subgroups of PTSD have differentiable functional connectivity and symptom chronicity. Biological Psychiatry, Virtual.
- 78. Esterman, M. (2021, March). Neurocognitive models of sustained attention [Webinar]. UCSF Neuroscape Center.
- 79. Franz, M. R., Sanders, W., **Nillni, Y. I., Vogt, D.**, & **Galovski, T. E.** (2021, April). PTSD and parental functioning the differential protective role of community engagement among black, white, and Hispanic veterans. In M. R. Franz (Chair), *Parenting after trauma: Addressing the effects of PTSD on the family.* Symposium conducted at the Society for Research in Child Development, Virtual.
- 80. **Galovski, T. E.** (2021, March). *Head injury and PTSD in survivors of intimate partner violence* [Webinar]. Pink Concussions webinar series.
- 81. Galovski, T. E. (2021, September). Prevalence, consequences, and care of veterans with military sexual trauma [Webinar]. VA HSR&D Cyberseminar.
- 82. Galovski, T. E., Street, A. E., Kelly, U. A., Bell, M. E., Lehavot, K., Creech, S. K., & Yano, E. M. (2021, September). Prevalence, consequences and care of veterans with military sexual trauma [Webinar]. Department of Defense Military Sexual Trauma Independent Review Committee.
- 83. Galovski, T. E., Street, A. E., Kelly, U. A., Creech, S. K., Lehavot, K., & Yano, E. M. (2021, April). Overview of the state of knowledge: VA military sexual trauma research [Webinar]. Briefing to the Independent Review Commission on Sexual Assault in the Military.
- 84. Geraci, J., Finley, E., Frankfurt, S., Seim, R. W., **Holtzheimer, P. E.**, & Goodman, M. (2021, May). The expiration term of service sponsorship program: An evidence-based approach to foster social support, mitigate stress, and prevent suicide for transitioning service members. Symposium presented at the annual Department of Defense/Department of Veteran Affairs Suicide Prevention Conference, Virtual.
- 85. **Heinz, A. J.** (2021, April). *Rising from the ashes: A digital mental health intervention to support students of California wildfires.* American Education Research Association, Virtual.
- 86. **Heinz, A. J.** (2021, April). COVID Coach: Creation and evaluation of a public mental health app for pandemic-related stress. In S. Seedat & M. Olff (Chair), *PTSD-focused eHealth interventions*. Symposium presented at the annual meeting of the World Congress of Biological Psychiatry, Virtual.
- 87. Hinds, Z., Herbitter, C., Bryant, W. T., & Livingston, N. (2021, August). *Hazardous substance use among LGBTQ+ adults: A deeper look into distal minority stress.* Poster presentation at the 129th Annual Convention of the American Psychological Association, Virtual.
- 88. Hoffmire, C., **Borowski, S.**, & **Vogt, D.** (2021, April). *Gender differences in trajectories of suicidal ideation following separation from military service: Findings from the Veterans Metrics Initiative Study* [Panel paper presentation]. Fifty-fourth Annual Conference of the American Association of Suicidology, Lake Buena Vista, FL.
- 89. Holtzheimer, P. E. (2020, December). *Deep brain stimulation for treatment-resistant depression: An update*. NYU Langone Health, New York City, NY.
- 90. Iverson, K. M. (2021, June). Implementation outcomes from the U.S. Department of Veterans Affairs intimate partner violence screening efforts, 2014-2020. AcademyHealth Annual Research Meeting, Virtual.
- 91. **Iverson, K. M.**, Brennan, L., Drummond, K. L., Brady, J. E., **Wiltsey Stirman, S.**, & Gutner, C. A. (2020, December). Increasing reach of evidence-based psychotherapies in community based outpatient clinics: Identifying clinician attitudes, practices and contextual factors for successful implementation. Poster presented at the Annual Conference on the Science of Dissemination and Implementation, Virtual.

- 92. **Kelmendi, B.** (2020, December). *Examining the effect of psilocybin in the treatment of refractory OCD.* Presentation at the American College of Neuropsychopharmacology, Virtual.
- 93. **Krystal, J. H.** (2021, June). *Rapid-acting antidepressants: New treatments, new hope, and new insights into the brain* [Webinar]. Virtual Keynote Address: Royal College of Psychiatrists.
- 94. **Krystal, J. H.** (2021, March). *Mechanisms of rapid antidepressant efficacy: Insights from ketamine, its isomers and metabolites.* Novel molecular targets for mood disorders and psychosis: A workshop. Forum on Neuroscience and Nervous System Disorders, National Academies of Science, Engineering, Virtual.
- 95. **Krystal, J. H.** (2021, May). *Discovery of fast-acting antidepressants: A paradigm shift for treatment resistant depression research and treatment.* Virtual "Master Class" Janssen Central Europe.
- 96. **Krystal, J. H.** (2021, May). *Psychedelics for the treatment of depression and psychiatric disorders* [Webinar]. New York Academy of Sciences (Moderator). Retrieved from New York, NY.
- 97. Lee, L. O. (2020, November). *Designs for life course studies*. Invited plenary session at the Workshop on Life Course Perspectives on Aging, Research Centers Collaborative Network, National Institute on Aging, Virtual.
- 98. Lee, L. O. (2020, November). Stress and resilience in the face of the COVID-19 pandemic: The role of optimism in health and well-being. Invited presentation at the First International Conference on Neuroscience and Well-being, INECO Foundation, Virtual.
- 99. Lee, L. O. (2020, November). Becoming more open: Increasing rigor and reproducibility of gerontological science. In Taylor, B. F. (Chair), *Becoming more open: Increasing rigor and reproducibility of gerontological science*. Symposium at the 72nd Annual Scientific Meeting of the Gerontological Society of America, Virtual.
- Lee, L. O., Antic, M., Dorame, A. N., Ferrie, J. P., Lopes, M., Waldinger, R. J., Spiro, A., & Mroczek, D. K. (2020, November). Applying administrative linkage to longitudinal aging studies: Boston early adversity and mortality study. 72nd Annual Scientific Meeting of the Gerontological Society of America, Virtual.
- 101. Livingston, N., Berke, D., Salomaa, A., Herbitter, C., Bryant, W. T., Ruben, M., Valentine, S., & Shipherd, J. C. (2021, August). Toward a unified model of trauma-minority stress for clinical conceptualization and care of TGD individuals: A dynamic network analysis. Presentation at the 129th Annual Convention of the American Psychological Association, Virtual.
- 102. Logue, M. W., Snijders, C., Maihofer, A., Rutten, B. P. F., Miller, M. W., Huber, B., Traumatic Stress Brain Study Group, Nievergelt, C., & Smith, A. K. (2021, April). *PTSD-associated variants and cross-tissue examination of DNA methylation*. Society of Biological Psychiatry, Virtual.
- 103. Mackintosh, M., Cha, N. M., & Morland, L. A. (2021, July). Impact of racial diversity on PTSD treatment. Presentation at the Sixth Biennial APA Division 45 Research Conference, Society for the Psychological Study of Culture, Ethnicity.
- 104. **Mackintosh, M.**, Schaper, K., Willis, E. A., & White, L. R. (2021, July). *Life-long effects of WWII military service of late-life social functioning*. Presentation at the Sixth Biennial APA Division 45 Research Conference, Society for the Psychological Study of Culture, Ethnicity.
- 105. **Miller, M. W.** (2021, August). *Recent developments in the identification of PTSD-related biomarkers*. VA Research Advisory Committee on Gulf War Veterans' Illnesses, Washington, D.C.
- 106. Mitchell, K. S., Masheb, R., Smith, B. N., Kehle-Forbes, S., Hardin, S., & Vogt, D. (2021, June). Eating disorder measures in a sample of military veterans: A focus on gender, age, and race/ethnicity. Presentation at the annual meeting of the Academy for Eating Disorders International Conference, Virtual.
- 107. Mitchell, K. S., Sienkiewicz, M., Vogt, D., Smith, B. N., Kehle-Forbes, S., & Cooper, Z. (2021, September). *Mental healthcare use among male and female veterans with eating disorders*. Poster presented at the meeting of the Eating Disorders Research Society, Virtual.
- 108. **Mitchell, K. S.**, Sighn, S., & Thompson-Brenner, H. (2020, October). *The impact of comorbid posttraumatic stress disorder on eating disorder treatment outcome.* Poster presented at the meeting of the Eating Disorder Research Society, Virtual.
- 109. Newberger, N., Schiavon, S., Enggasser, J., Brief, D., **Keane, T. M.**, & **Livingston, N.** (2021, August). *Reduction in PTSD improves satisfaction with life for veterans enrolled in a web-based intervention*. Poster presentation at the 129th Annual Convention of the American Psychological Association, Virtual.

- 110. Nia Bassir, A., D'Souza, D., Cosgrove, K., Pietrzak, R. H., & Harpaz-Rotem, I. (2021, June). Differential effects of childhood vs. adulthood trauma in cannabinoid receptor type 1(CB1R) availability in post-traumatic stress disorder (PTSD): A review of literature and a pilot positron emission tomography (PET) study. Presented for the American Society of Clinical Psychopharmacology [Paper presentation], Miami, FL.
- 111. **Nia Bassir, A.**, Edens, E., Walker, A., Hermes, G., & Hicks, A. (2020, December). *My brain seeking reward: Neuroscience applications in clinical practice* [Webinar]. Presentation for the American Academy of Addiction Psychiatry [Paper presentation].
- 112. Niles, B. L. (2021, March). Evidence for mind-body interventions for PTSD: Review and recommendations. Presentation at the Stanford Conference on Evidence Based Traditional Asian Medicine, Virtual Conference organized in Palo Alto, CA.
- 113. Nillni, Y. I., Fox, A. B., Paul, E., Vogt, D., & Galovski, T. E. (2020, October). The impact of military sexual trauma on perinatal outcomes among female veterans. In M. Bublitz (Chair), *Stress, trauma, and resilience across the perinatal period*. Symposium conducted at the International Marce Society for Perinatal Mental Health Biennial Meeting, Virtual.
- 114. Nillni, Y. I., Paul, E., & Valentine, S. (2020, October). Results from a pilot effectiveness-implementation trial of a brief exposure-based treatment for PTSD among pregnant women with comorbid PTSD and Substance Use Disorder. In Y. Nillni (Chair), *Trauma, PTSD and perinatal health: From identification of biomarkers to intervention.* Symposium conducted at the International Marce Society for Perinatal Mental Health Biennial Meeting, Virtual.
- 115. **Pineles, S. L.**, & Ivkovic, V. (2020, December). *The potential for ambulatory physiological and fNIRS recordings* to inform predictors and mechanisms of Prolonged Exposure Therapy. Center for Anxiety and Traumatic Stress Disorders, Massachusetts General Hospital, Boston, MA.
- 116. **Shiner, B.** (2021, September). *Comparative Effectiveness of Psychotropic Medications for PTSD in Clinical Practice*. Presentation at the Military Operational Medicine Research Program, Virtual.
- 117. **Sippel, L. M., Holtzheimer, P. E.**, Huckins, J. F., Collier, E., Feilong, M., Wheatley, T., & Meyer, M. L. (2021, April). *Neurocognitive mechanisms of poor social connection in posttraumatic stress disorder: Evidence for abnormalities in social working memory*. Annual meeting of the Society of Biological Psychiatry, Virtual.
- 118. **Sloan, D. M.** (2021, April). *Written Exposure Therapy: An evidence-based brief intervention for PTSD*. Presentation for the 12th Annual Psychiatry Update Conference; Treatment innovations for PTSD Veterans and first responders, Houston, TX.
- 119. **Street, A. E.** (2021, September). *Trauma and complex trauma among women veterans and service members* [Webinar]. Invited plenary speaker at the National VA/DoD Women's Mental Health Mini-Residency.
- 120. Street, A. E., & Helmuth, E. (2020, October). *How can we better serve the mental health needs of women veterans*? [Webinar]. Invited address for the Battlemind to Home Summit, sponsored by the Military Research Institute at Purdue University.
- 121. **Taft, C. T.** (2020, November). A pilot effectiveness trial of strength at home in a court-mandated civilian sample. In Molly Franz (Chair), *Extensions of Trauma-Informed Care to Diverse Populations*. Association for Behavioral and Couples Therapy, Philadelphia, PA.
- 122. **Taft, C. T.** (2020, October). *Reviewing the evidence for a trauma-informed IPV intervention: The strength at home program.* Talk presented at the 25th San Diego International Virtual Summit on Violence, Abuse & Trauma Across the Lifespan, Virtually.
- 123. **Taft, C. T.** (2021, April). *Strength at Home: Reducing veterans using violence*. Presented at the 5th Annual Understanding the Needs of Veterans in the Legal System, Virtual.
- 124. **Taft, C. T.** (2021, April). *Trauma-informed clinical strategies for IPV: An introduction to the Strength at Home Program.* Presented at the18th Annual Hawaii International Virtual Summit, Honolulu, HI.
- 125. **Taft, C. T.** (2021, April). Taft, C.T. (2021, April). Relationship health and safety for servicemembers and veterans: Promoting military-civilian community partnerships. In LeAnn Bruce (Chair), *Relationship health and safety for servicemembers and veterans: Promoting military-civilian community partnerships*. Symposium at the 9th Futures Without Violence National Conference on Health and Domestic Violence, San Francisco, CA.
- 126. **Taft, C. T.**, Rothman, E. (2021, August). Does Strength at Home for couples prevent sexual aggression in returning veterans? In Casey Taft (Chair), *Does Strength at Home for Couples Prevent Sexual Aggression in Returning Veterans*? Symposium at the 26th International Conference and Summit on Violence, Abuse, and Trauma Across the Lifespan, San Diego, CA.

- 127. **Thompson-Hollands, J.**, & **Reuman, L.** (2021, April). *Better understanding, better communication, and also accountability: Women veterans' beliefs regarding family involvement in VA mental health treatment* [Webinar]. Presented for the national VA Advanced Family Topics Cyberseminar.
- 128. **Vogt, D.** (2021, June). *Psychosocial functioning of veterans and other populations*. Enhancing Well-Being Measurement in Health Research, Clinical Care, and Population Health Promotion Forum.
- 129. Vogt, D. (2021, May). Veterans' readjustment during the transition from military service to civilian life: Key research findings and implications for intervention and case management [Webinar]. Presented for the Post 9/11 Military2VA Case Management Virtual Training Conference, VA Office of Care Management and Social Work.
- 130. Whitworth, J., Katz, D., Brown, E., Milberg, W., & Fortier, C. (2021, September). PTSD, Physical Activity, and Cardiometabolic Health among US Military Veterans. In Grace McKeon (Chair), *Physical Activity and Trauma Exposed Populations*. Symposium conducted at the Twenty First Australasian Conference on Traumatic Stress, Virtual.
- 131. Wielgosz, J., Zulman, D., Rosen, C. S., Blonigen, D., Hallenbeck, H. W., & Kuhn, E. R. (2021, July). Influence of mHealth usage patterns on patient retention and symptoms among individuals using a Veterans Affairs PTSD App. Academy Health Annual Research Meeting, Virtual.
- 132. Wolfe, H. L., Reisman, J. I., Yoon, S., Blosnich, J. R., **Shipherd, J. C.**, Vimalanada, V. G., Rao, S. R., Hashemi, L., Berlowitz, D., Goodman, M., **Livingston, N.**, Reece, S., & Jasuja, G. K. (2021, June). *Validating data-driven methods to identify transgender patients in the Veterans Health Administration*. Poster presentation at the Academy Health Annual Research Meeting, Virtual.
- 133. Wong, D. H., Vimalananda, V., Reisman, J. I., Rao, S. R., **Shipherd, J. C.**, Wolfe, H. L., Blosnich, J. R., **Livingston, N.**, & Jasuja, G. K. (2021, March). *Patient characteristics associated with the receipt of hormone therapy among transgender patients in the Veterans Health Administration*. Presentation at the Annual Endocrine Society Meeting, Virtual.
- 134. Wray, L. O., Vest, B., **Brady, C. B.**, Vair, C. L., & McCarten, J. R. (2020, November). *Outcomes of Primary Care for People with Dementia: What's Important.* GSA 2020 Annual Scientific Meeting, Online.
- 135. Zelkowitz, R. (2021, June). Longitudinal associations of trauma exposure with disordered eating: Lessons from the Great Smoky Mountains Study: Invited talk to the Academy of Eating Disorders Special Interest Group on Trauma and Eating Disorders. Academy of Eating Disorders, Trauma and Eating Disorders Special Interest Group, Virtual Presentation.
- 136. Zhao, X., Logue, M. W., Huber, B., Zhou, Z., Research Group, B., Miller, M. W., & Wolf, E. J. (2020, October). *Gene* expression correlates of advanced epigenetic age and psychopathology in postmortem cortical tissue. Poster Presentation at the Annual Meeting of the American Society of Human Genetics Annual Meeting, Virtual.
- 137. Zimmerman, L. E. (2020, October). *Our 'platypus problem:' A team PSD conversation with WUNDIR about modeling to learn*. Washington University Network for Dissemination and Implementation Research (WUNDIR), Institute for Public Health at Washington University, St. Louis, MO.
- 138. Zimmerman, L. E. (2021, February). *Participatory system dynamics methods "nerd out"*. Washington University in St. Louis (WUSTL) Brown School of Public Health, Center for Population Health Systems Science, St. Louis, MO.
- 139. Zimmerman, L. E. (2021, January). Participatory system dynamics vs. usual quality improvement: Is staff use of simulation an effective, scalable and affordable way to improve timely veteran access to high-quality mental health care? University of Michigan, VA Ann Arbor Center for Clinical Management Research, Program on Access, Community Care, and Specialty Care Services (ProACCeSS) seminar series, Ann Arbor, MI.
- 140. Zimmerman, L. E. (2021, June). *Modeling to learn: Test. Don't guess.* Keynote at the Dynamic and Interactive Data Visualization Workshop hosted National Institute of Mental Health (NIMH), Bethesda, MD.

# Appendix G: Education Presentations by National Center Staff

## International Society of Traumatic Stress Studies | Virtual | November 2020

- 1. Hien, D., Kassam-Adams, N., **Hamblen, J. L.**, Wright, S., O'Neil, M., **Norman, S. B.**, Morgan-Lopez, A., Seedat, S., Sijbrandij, M., & Karyotaki, R. *To share or not to share? Advancing knowledge on health disparities in traumatic stress and addictions through FAIR data.* Panel presentation.
- 2. Maguen, S., Madden, E., Holder, N., Li, Y., Seal, K. H., Neylan, T. C., Lujan, C., Patterson, O. V., DuVall, S., & **Shiner, B.** How do gender and military sexual trauma impact PTSD symptoms in Cognitive Processing Therapy and Prolonged Exposure. In A. J. Khan (Chair), *Evidence Based Treatments for PTSD in VHA Settings: Trends, Dosing, and Effectiveness.*
- 3. Schnurr, P. P., Lunney, C. A., Walser, R. D., & Lang, A. J. A Comparison of Acceptance and Commitment Therapy and Present-Centered Therapy for PTSD.
- 4. Simpson, T. L., Bedard-Gilligan, M., Ojalehto, H., Stappenbeck, C., Cadigan, J., & **Kaysen, D. L.** Project BRITE: Results of a pilot randomized controlled trial testing one session Cognitive Processing Therapy for PTSD and alcohol misuse as an early intervention following sexual assault.
- 5. Watson, P., Norman, S. B., & Hamblen, J. L. Adapting and disseminating self-care and peer support guidance for health care providers during the Covid-19 pandemic. Panel presentation.

# Association for Contextual Behavioral Science World Conference | Virtual | June 2021

- 6. Lasprugato, L., Skinta, M., **Walser, R. D.**, Olaz, F., & Tirch, D. Variation with vignettes: Responding to clinical presentations from the perspectives of ACT, FAP, RFT, and CFT. Panel presentation.
- 7. **Walser, R. D.** *Life from the feet up: Supporting client change through ACT process and therapeutic relationship.* Pre-conference workshop.
- 8. **Walser, R. D.**, & McConnell, M. *The ACT therapeutic relationship: Creating healthy alliances and repairing ruptures.* Workshop.
- 9. Walser, R. D., & Westrup, D. Rapid role-play: Flexibly integrating the ACT core processes into therapy. Workshop.
- 10. **Walser, R. D.**, Morris, M., Payne, J., Scarlet, J., & Westrup, D. *ACT in the treatment of trauma: Clinical panel on emotional processing, recovery, and growth.* Panel presentation.
- 11. Weinstein J., Kroska, E., Strosahl, K., Barnes, S., & Walser, R. D. Integrating CBS principles into suicide prevention and intervention. Panel presentation.

# U.S. Department of Veterans Affairs

- 12. Avery, T., & Becket-Davenport, C. M. (2021, February). Free, discreet, accessible: VA's mobile mental health apps in care [Webinar]. Presented for Division 18 VA Section.
- 13. Becket-Davenport, C. M. (2021, April). *Mobile mental health apps presentation* [Webinar]. Presented for National Veterans Mental Health Coalition.
- 14. Becket-Davenport, C. M. (2021, April). Overview of VA mobile mental health apps [Webinar]. Presented to the Veterans Mental Health Council National Call.
- 15. Becket-Davenport, C. M. (2021, July). *Mobile mental health apps overview* [Webinar]. National Military to VA Program Manager and VISN POC Call.
- 16. **Bosch, J. O.** (2020, October). *Overview of VA mobile mental health apps* [Webinar]. 2020 Virtual Colorado VA Community MH Super Summit.
- 17. Bosch, J. O., Becket-Davenport, C. M., & Avery, T. (2021, June). *Implementation facilitation: Mobile mental health apps* [Webinar]. QUERI Implementation Facilitation Learning Collaborative.
- 18. **Bosch, J. O., Becket-Davenport, C. M., Avery, T., Juhasz, K. M.**, & **McGee-Vincent, P.** (2021, May). *Suicide prevention in the digital age: Using a mobile app to create a safety plan* [Webinar]. 2021 DoD/VA Suicide Prevention Conference: Making Every Connection Count.
- Bovin, M. J. (2021, April). Diagnostic accuracy and acceptability of the PC-PTSD-5 among U.S. veterans [Webinar]. Presented for the Primary Care – Mental Health Integration (PC-MHI) Monthly Education Conference Call Series.
- 20. Cuccurullo, L. J. (2021, July). Supporting your measurement-based case implementation plan: Addressing common pitfalls. PTSD Measurement Based Care Community of Practice, virtual.
- 21. Iverson, K. M. (2020, October). Implications of Covid-19 for intimate partner violence screening, assessment, and intervention [Webinar]. Presented for the VISN 2 IPV Summit.
- 22. **Iverson, K. M.** (2021, April). An overview of research findings and clinical programming in the Veterans Health Administration. VA Advisory Committee on Women Veterans, virtual.
- 23. **Iverson, K. M.** (2021, March). *Implementing assessment and intervention for intimate partner violence experience* [Webinar]. Presented for Rural Mental Health Telemedicine Clinicians.
- 24. **Jamison, A. L.** (2021, September). Integrating VA mobile mental health apps into care. In T. S. Quang (Chair), *Digital health.* Symposium conducted at the Association of VA Hematology/Oncology Annual Conference, Denver, CO.
- 25. Juhasz, K. M. (2021, June). *The digital safety plan and PTSD Consultation Program* [Webinar]. Community Engagement and Partnership Coordinators (CEPC) Community of Practice.
- 26. Juhasz, K. M., & Avery, T. (2021, February). *Mobile mental health apps: Sharing self-care tools for everyone* [Webinar]. Presented for the VALNET (VA Library Network) Series.
- 27. Kauth, M. R., & **Shipherd, J. C.** (2020, December). *Brief overview of the VHA LGBT health program with a focus on sexual health* [Webinar]. VA HIV PrEP Affinity Groups.
- 28. Larsen, S., & Cuccurullo, L. J. (2020, December). *Treating PTSD in the context of suicidality*. Virtual Presentation for the VA Suicide Risk Management Consultation Program.
- 29. Lee, L. O. (2021, June). *Optimism and lifespan health*. Invited talk at the VA Boston Mental Health Grand Rounds, virtual.
- 30. Livingston, N. (2021, April). *Clinical considerations for treating PTSD and co-occurring minority stress among LGBTQ individuals*. Invited nationwide webinar, VISN 20 Northwest Mental Illness Research, Education and Clinical Center (MIRECC).
- 31. **Livingston, N.** (2021, March). Considerations and recommendations for trauma and minority stress conceptualization and treatment among sexual and gender minority individuals. Invited training lecture, VA Greater Los Angeles Healthcare System, virtual.
- 32. Matteo, R. (2021, July). Social determinants of health [Webinar]. Presented for the Ci2i DEI Internship Program, VA Palo Alto Health Care System.
- 33. **McGee-Vincent, P.** (2021, August). *Expanding the reach of VA mobile mental health apps* [Webinar]. PBI Network CE Lecture Series. Retrieved from <u>https://www.ptsd.va.gov/professional/tech-care/tech\_lectures.asp</u>.

- 34. **Prins, A.,** Vinatierie, T., & Casillas, A. (2020, October). *Student veteran challenges and triumphs in the classroom* [Webinar]. Office of Mental Health and Suicide Prevention, VITAL Program.
- 35. Schnurr, P. P. (2021, May). National Center for PTSD: Driving world-class research and education on PTSD. IDGA VA Healthcare 2021 Summit, virtual.
- 36. **Shipherd, J. C.**, & Kauth, M. R. (2021, August). *Improving the patient experience for LGBTQ+ veterans* [Webinar]. Presentation at VA Patient Experience Symposium, virtual.
- 37. Street, A. E., & Skidmore, C. (2021, January). Beyond MST: A new mental health and recovery app for veterans who experienced military sexual trauma [Webinar]. Practice-Based Implementation Network CE Lecture Series.
- 38. **Street, A. E.**, & **Skidmore, C.** (2021, January). *Beyond MST: A new mental health and recovery app for veterans who experienced military sexual trauma* [Webinar]. National Military Sexual Trauma Support Team's Teleconference Training Series, Department of Veterans Affairs.
- 39. **Vogt, D.** (2021, April). *Twenty years studying women veterans at VA Boston: Lessons learned* [Webinar]. Presented at the VA VISN 1 CDA Recipient Seminar Series.
- 40. Weinstein, J., Kroska, E., & **Walser, R. D.** (2021, September). *The empowerment plan: Enhancing the safety plan with Acceptance and Commitment Therapy as a contextual behavioral approach to repertoire expansion* [Webinar]. Presented for the Clinical Practice Guidelines for Suicide Prevention Webinar Series. Retrieved from <a href="https://t.co/s0Qm62oxq3?amp=1">https://t.co/s0Qm62oxq3?amp=1</a>.

## Other

- 41. **Becket-Davenport, C. M.** (2021, July). *COVID Coach* [Webinar]. Military OneSource. Retrieved from <u>https://www.facebook.com/military.1source/videos/193537506055738/?\_so\_=channel\_tab&\_rv\_=latest\_videos\_card</u>.
- 42. **Becket-Davenport, C. M.,** & Baer, A. (2021, March). *Integrating technology into your work with veterans* [Webinar]. Presented to the Veterans Mental Health Coalition of NYC.
- 43. Blosnich, J. R., Boyer, T., Wolfe, H. L., **Shipherd, J. C.**, & Kauth, M. (2021, June). *Exploring VA veteran and provider perspectives of transgender and gender diverse healthcare and health services research* [Webinar]. HSR&D Cyberseminar series.
- 44. **Bosch, J. O.** (2021, September). *Integration of mobile mental health apps along the continuum of care* [Webinar]. CE presentation for the San Diego Psychological Association.
- 45. **Bosch, J. O.**, & **Becket-Davenport, C. M.** (2021, August). *Bridging the gap: Leveraging technology to enhance mental health care* [Webinar]. CE Workshop for the APA annual convention.
- 46. **Cuccurullo, L. J.** (2020, December). *Discussing the ethics of shared decision making and evidence-based psychotherapy for PTSD*. Presentation for the University of Tulsa Supervisory Conference, virtual.
- 47. **Cuccurullo, L. J.** (2021, July). Actualizing a good death for our nation's heroes: Effective management of PTSD under hospice care. Plenary Session for the Louisiana-Mississippi Hospice and Palliative Care Organization, virtual.
- 48. **Cuccurullo, L. J.** (2021, June). Assessing and treating PTSD in veterans and service members. Center Pointe Behavioral Health System, virtual.
- 49. Galovski, T. E. (2020, October). WoVeN: Women veterans network. Invited podcast guest, Sisters-In-Service podcast series, virtual.
- 50. Galovski, T. E. (2021, April). Enhancing outreach to the women veteran community. Move United, Online Educational Tool.
- 51. **Galovski, T. E.** (2021, January). *Cognitive Processing Therapy and the treatment of PTSD*. A two-day workshop for Texas community mental health service providers, virtual.
- 52. **Galovski, T. E.** (2021, May). *The voice of women veterans* [Webinar]. In the Science Museum of Virginia's Lunch Break Science series, Mind Matters.
- 53. Galovski, T. E. (2021, September). The intersection of suicide and PTSD. Dell Technologies, virtual.
- 54. Galovski, T. E., & Street, A. E. (2021, September). *PTSD awareness and suicide prevention* [Webinar]. Invited panel presentation for the Dell Technology Employee Awareness Webinar.

- 55. **Juhasz, K. M.** (2020, November). Mobile mental health apps from the VA and DoD. In S. Schueller (Chair), *Mobile apps for mental health: Understanding technologies for use and application in cognitive and behavioral therapies.* ABCT 54th Annual Convention, virtual.
- 56. Juhasz, K. M. (2021, June). PTSD family coach [Webinar]. Military OneSource.
- 57. Juhasz, K. M., & Becket-Davenport, C. M. (2021, March). COVID Coach: A free mobile app for self-care [Webinar]. Presented for the Coast Guard Wellness Wednesday Series.
- Kauth, M. R., & Shipherd, J. C. (2020, November). Meeting the education needs of providers at the Veterans Health Administration [Webinar]. World Professional Association for Transgender Health's 26th Scientific Symposium.
- 59. **Krystal, J. H.** (2021, April). *Rapid acting antidepressants: From discovery to treatments*. Grand Rounds. Department of Psychiatry, Northwestern Feinberg School of Medicine, Chicago, IL.
- 60. **Krystal, J. H.** (2021, June). (Virtual): *Rapid-acting antidepressants from discovery to treatment*. Medical Neuroscience Cluster Seminar, University of Vienna, virtual.
- 61. **Krystal, J. H.** (2021, May). Olecular and cellular perspectives on PTSD and its treatment. Inaugural Peter M Silberfarb Lecturer, Department of Psychiatry, Dartmouth Medical School, Hanover, NH.
- 62. Livingston, N. (2021, August). Prevalence and clinical presentation of SUD and OUD. Invited lecture for the Health Resources & Services Administration Summer Training Institute in Addiction Treatment, William James College, Boston, MA.
- 63. **McCaslin, S. E.** (2021, June). *Resources to support screening for military experience*. Presentation at the Governor's Challenge to Prevent Suicide Among Service Members, Veterans, and their Families Virtual Policy Academy Meeting.
- 64. **McGee-Vincent, P.** (2021, June). Safety planning with PTSD Coach [Live webinar]. Breakout session for SAMHSA's Governor's Challenge to Prevent Suicide Among Service Members, Veterans, and their Families Virtual Policy Academy Meeting.
- 65. McGee-Vincent, P. (2021, September). VA mental health and technology [Webinar]. AMVETS. Retrieved from https://youtu.be/T4zVLyXGuno.
- 66. McLean, C. P. (2021, February). Veteran health and well-being: Digital tools. George W. Bush Institute's Military Service Initiative, Stand-To 2021: A National Veterans Convening, virtual.
- 67. Merrick, C., & Bovin, M. J. (2021, April). Introducing the clinician-administered PTSD scale for DSM-5 (CAPS-5) training simulator [Webinar]. Presented to the Practice-Based Implementation (PBI) Network Monthly CE Lecture Series.
- 68. O'Neil, M., Cameron, D., **Norman, S. B.**, & **Hamblen, J. L.** (2020, October). *Development of a publicly available database of randomized controlled trials for posttraumatic stress disorder*. Paper presented for the 97th Annual Meeting of the American Congress of Rehabilitation Medicine, virtual.
- 69. **Petrakis, I.** (2020, October). *A tale of multimorbidity: PTSD & substance use disorder (SUD).* Psychiatry Grand Rounds, Dartmouth-Hitchcock Medical Center, Hanover, NH.
- 70. **Pineles, S. L.** (2021, May). Capitalizing on findings from laboratory-based research to enhance PTSD clinical care [Webinar]. Nova Southeastern University, Clinical Psychology Department. Fort Lauderdale, FL.
- 71. Schnurr, P. P. (2021, June). PTSD: Posttraumatic stress disorder. Presented at Spotify Veterans Meeting, virtual.
- 72. **Shipherd, J. C.** (2020, December). *Transgender veteran care: What every mental health provider needs to know* [Webinar]. Boston University School of Medicine Grand Rounds.
- 73. **Shipherd, J. C.** (2020, November). Creating a safe and welcoming environment for TGNB patients: A training curriculum for healthcare security personnel [Webinar]. World Professional Association for Transgender Health's 26th Scientific Symposium.
- 74. **Sloan, D. M.** (2020, December). *Brief treatment for PTSD: Written Exposure Therapy for PTSD* [Webinar]. Presented for the Anxiety and Depression Association of America.
- 75. **Sloan, D. M.** (2021, March). A brief PTSD treatment approach for mental health professionals. Presented for the Department of Psychiatry and Behavioral Science's Virginia Tarlow Grand Rounds lecture series. Northwestern University Medical School, Chicago, IL.

- 76. Sloan, D. M. (2021, March). Written Exposure Therapy for PTSD. Presented for the Mt. Sinai Medical Center workshop, New York, NY.
- 77. Sloan, D. M., & Marx, B. P. (2021, April). Written Exposure Therapy: A brief PTSD treatment approach for mental health providers. Presented for the Walter Reed Medical Center Workshop, Bethesda, MD.
- 78. Sloan, D. M., & Marx, B. P. (2021, May). Written Exposure Therapy (WET) for PTSD: A brief evidence-based treatment for reduced dropouts and improved outcomes in fewer sessions [Webinar]. Presentation workshop for the PESI. Retrieved from https://catalog.pesi.com/item/78928?\_gl=1\*4iwy59\*\_ga\*MTA5MTQ4MjU0My4xNjE5MDk0ODkz\*\_ga\_JGEX25L44L\*MTYx0TA5NDg5Mi4xLjEuMTYx0TA5NDkxMC40Mg..& ga=2.110720325.1559747953.1619094893-1091482543.1619094893.
- 79. **Stanley, I. H.** (2021, January). *Suicide prevention among U.S. veterans*. Presentation at American Foundation for Suicide Prevention Research Connection Event, Madison, WI (virtual).
- Sullivan, D. R. (2020, October). Posttraumatic stress disorder (PTSD). Presentation as a Guest Lecture for BN775 A1 Human Neuropsychology I (Fall 2020), Graduate Medical Sciences, Boston University School of Medicine, Boston, MA.
- 81. **Vogt, D.** (2020, December). *Measurement of veteran well-being: U.S. veteran well-being promotion efforts* [Webinar]. Five Eyes International Veterans Research Network.
- 82. Wachen, J. S., Morris, K., Wright, E., Yamokoski, C. A., & Galovski, T. E. (2020, November). Intensive delivery of evidence-based treatment for PTSD across diverse contexts: Successes, challenges, and strategies for implementation. Clinical Round Table at ABCT, virtual.
- 83. Walser, R. D. (2021, April). *Dissemination of evidence-based psychotherapy: A case example of Acceptance and Commitment Therapy* (Keynote). Presented at the Evidence-Based Psychotherapy Conference Center for Deployment Psychology, Bethesda, MD.
- 84. **Walser, R. D.** (2021, April). *Maintaining momentum with training and treatment in turbulent times*. Presented at the Evidence-Based Psychotherapy Conference Center for Deployment Psychology, Bethesda, MD.
- 85. Walser, R. D., & Borges, L. M. (2021, May). Commit and ACT: The fallout of moral injury [Webinar]. PRAXIS.
- 86. Zimmerman, L. E., & Rust, T. (2020, December). *Introduction to participatory system dynamics for implementation science*. Program Committee Workshop, Academy Health Annual Dissemination and Implementation Science Meeting, Washington DC.

# **Appendix H: Editorial Board Activities**

Administration and Policy in Mental Health Services and Mental Health Services Research Wiltsey Stirman

American College of

Neuropsychopharmacology Sanacora (Associate Editor)

Annals of LGBTQ Public and Population Health Livingston

Asian Biomedicine (Research, Reviews and News) Gelernter

**The Behavior Therapist** Wiltsey Stirman (Associate Editor)

**Behavior Therapy** Sloan (Editor), Thompson-Hollands, Wiltsey Stirman

Behaviour Research and Therapy Sloan

**Biological Psychiatry** Gelernter, Krystal (Editor), Sanacora

Biological Psychiatry: Cognitive Neuroscience and Neuroimaging Sanacora

#### Brain Sciences Miller

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British Journal of Psychiatry Open Cloitre (Associate Editor)

**Cerebral Cortex** Esterman (Associate Editor)

Chinese Journal of Psychology Keane

#### **Chronic Stress**

Averill (Deputy Editor), Esterlis, Krystal (Associate Editor), Pietrzak, Rasmussen, Woodward

Clinical Psychology Review Pineles

Clinical Psychology: Science and Practice Marx

### **Cognitive and Behavioral Practice**

Livingston, McLean (Associate Editor), Norman, Shipherd, Wachen

**Community Mental Health Journal** Harpaz-Rotem

**Complex Psychiatry** Gelernter (Editor), Krystal

## **Contemporary Clinical Trials**

McLean, Schnurr, Wachen

## Current Treatment Options in Psychiatry

Sippel (Guest Co-Editor)

Depression and Anxiety Holtzheimer, Schnurr, Wolf

**Eating Behaviors** Mitchell (Associate Editor)

### Eating Disorders: The Journal of Treatment and Prevention Mitchell (Guest Editor)

**European Journal of Psychotraumatology** Cloitre (Associate Editor), Pineles

Frontiers in Health Services – Mental Health Services Sippel

International Journal of Emergency Mental Health Keane

Journal of Abnormal Psychology Miller (Associate Editor), Wolf

**Journal of Anxiety Disorders** McLean (Associate Editor), Pietrzak Journal of Clinical Psychology Sloan

**Journal of Consulting and Clinical Psychology** Marx, Sloan, Taft

Journal of Contemporary Psychotherapy Sloan

Journal of Depression and Anxiety Tiet

Journal of Family Psychology Taft

Journal of Family Violence Taft

Journal of General Internal Medicine

Galovski (Guest Editor)

Journal of Gerontology: Medical Sciences Esterman (Editor)

Journal of Neuroscience Levy (Associate Editor)

Journal of Obsessive-Compulsive and Related Disorders Thompson-Hollands

**Journal of Trauma and Dissociation** Barlow, Carlson, Marx

Journal of Traumatic Stress Galovski (Associate Editor), Miller, Sloan (Editor Elect), Wolf

Neuropsychology Vasterling

Neuropsychopharmacology Gelernter (Associate Editor) **Psychiatric Genetics** Gelernter

**Psychological Assessment** Mitchell, Vasterling

**Psychological Services** Norman

**Psychological Trauma: Theory, Research, Practice and Policy** Barlow, Carlson, Keane, Marx; Miller, Smith, Vogt, Wachen

**Psychology Injury and Law** Pietrzak, Wolf

Psychosomatic Medicine Sloan

Trauma, Violence & Abuse Iverson

### **Executive Division**

VA Medical Center (116D) 215 North Main Street White River Junction, VT 05009

### **Behavioral Science Division**

VA Boston Healthcare System (116B-2) 150 South Huntington Avenue Boston, MA 02130

#### **Clinical Neurosciences Division**

Psychiatry Service (116A) VA Medical Center 950 Campbell Avenue West Haven, CT 06516

#### Dissemination and Training Division

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#### **Evaluation Division (NEPEC)**

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#### Pacific Islands Division

3375 Koapaka Street Suite 1-560 Honolulu, HI 96819

#### Women's Health Sciences Division

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