# Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acronyms Used in the Text</td>
<td>3</td>
</tr>
<tr>
<td>From the Executive Director</td>
<td>5</td>
</tr>
<tr>
<td>Precision Medicine for PTSD: The Big Picture</td>
<td>6</td>
</tr>
<tr>
<td>Major Research Initiatives in 2022</td>
<td>12</td>
</tr>
<tr>
<td>Promoting PTSD Education: Training, Dissemination, and Communication</td>
<td>17</td>
</tr>
<tr>
<td>About the National Center for PTSD</td>
<td>22</td>
</tr>
<tr>
<td>Leadership in 2022</td>
<td>23</td>
</tr>
<tr>
<td>Appendix A: Acronyms Used in Appendix B</td>
<td>24</td>
</tr>
<tr>
<td>Appendix B: Research Narratives by Division</td>
<td>27</td>
</tr>
<tr>
<td>Appendix C: Fiscal Year 2022 Funding</td>
<td>45</td>
</tr>
<tr>
<td>Appendix D: Publications</td>
<td>57</td>
</tr>
<tr>
<td>Appendix E: Publications in Press</td>
<td>85</td>
</tr>
<tr>
<td>Appendix F: Scientific Presentations by National Center Staff</td>
<td>99</td>
</tr>
<tr>
<td>Appendix G: Education Presentations by National Center Staff</td>
<td>108</td>
</tr>
<tr>
<td>Appendix H: Editorial Board Activities</td>
<td>113</td>
</tr>
</tbody>
</table>
## Acronyms Used in the Text

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>BRIDGES</td>
<td>Building Re-Integration from Dreams and Goals to Execution and Success</td>
</tr>
<tr>
<td>CAPS-5</td>
<td>Clinician Administered PTSD Scale for DSM-5</td>
</tr>
<tr>
<td>CBT</td>
<td>Cognitive Behavioral Therapy</td>
</tr>
<tr>
<td>CDC</td>
<td>Centers for Disease Control and Prevention</td>
</tr>
<tr>
<td>CHIIPS</td>
<td>Center for Harmonizing and Improving Interventions to Prevent Suicide</td>
</tr>
<tr>
<td>CPT</td>
<td>Cognitive Processing Therapy</td>
</tr>
<tr>
<td>DNA</td>
<td>Deoxyribonucleic Acid</td>
</tr>
<tr>
<td>DoD</td>
<td>Department of Defense</td>
</tr>
<tr>
<td>DSM-5</td>
<td>Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition</td>
</tr>
<tr>
<td>EEG</td>
<td>Electroencephalogram</td>
</tr>
<tr>
<td>EHR</td>
<td>Electronic Health Record</td>
</tr>
<tr>
<td>EMDR</td>
<td>Eye Movement Desensitization and Reprocessing</td>
</tr>
<tr>
<td>FY</td>
<td>Fiscal Year</td>
</tr>
<tr>
<td>IPV</td>
<td>Intimate Partner Violence</td>
</tr>
<tr>
<td>MD</td>
<td>Medical Doctor</td>
</tr>
<tr>
<td>MOUD</td>
<td>Medication for Opioid Use Disorder</td>
</tr>
<tr>
<td>MRI</td>
<td>Magnetic Resonance Imaging</td>
</tr>
<tr>
<td>MST</td>
<td>Military Sexual Trauma</td>
</tr>
<tr>
<td>MVP</td>
<td>Million Veteran Program</td>
</tr>
<tr>
<td>NHRVS</td>
<td>National Health and Resilience in Veterans Study</td>
</tr>
<tr>
<td>OUD</td>
<td>Opioid Use Disorder</td>
</tr>
<tr>
<td>PAI</td>
<td>Personalized Advantage Index</td>
</tr>
<tr>
<td>PE</td>
<td>Prolonged Exposure</td>
</tr>
<tr>
<td>PET</td>
<td>Positron Emission Tomography</td>
</tr>
<tr>
<td>TRACTS</td>
<td>Translational Research Center for Traumatic Brain Injury and Stress Disorders</td>
</tr>
<tr>
<td>PTSD-Repository</td>
<td>PTSD Trials Standardized Database</td>
</tr>
<tr>
<td>RISE</td>
<td>Recovering from IPV through Strength and Empowerment</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Definition</td>
</tr>
<tr>
<td>--------------</td>
<td>------------</td>
</tr>
<tr>
<td>SP-CRC</td>
<td>Suicide Prevention Clinical Resource Center</td>
</tr>
<tr>
<td>STRONG STAR</td>
<td>South Texas Research Organizational Network Guiding Studies on Trauma and Resilience</td>
</tr>
<tr>
<td>TIC</td>
<td>Tech into Care</td>
</tr>
<tr>
<td>TMS</td>
<td>Transcranial Magnetic Stimulation</td>
</tr>
<tr>
<td>VA</td>
<td>Department of Veterans Affairs</td>
</tr>
<tr>
<td>VHA</td>
<td>Veterans Health Administration</td>
</tr>
<tr>
<td>VISN</td>
<td>Veterans Integrated Service Network</td>
</tr>
<tr>
<td>WET</td>
<td>Written Exposure Therapy</td>
</tr>
</tbody>
</table>
From the Executive Director

About 80% of Veterans make dramatic improvements with the treatments available today. But what if we could better that number? That is the goal of Precision Medicine for the treatment of PTSD—finding the right treatment for the right individual at the right time, to improve treatment outcomes for all patients.

While maintaining our work across operational priorities, from biomarkers to implementation, the NCPTSD elevated its interest in Precision Medicine for PTSD. Our current work establishes the building blocks of a research program to advance knowledge about a Precision Medicine framework for treating PTSD. The initiative is no doubt a challenging endeavor, but there is an immense opportunity to improve clinical outcomes for all patients. You can read more about our work on page 6.

In parallel, we continued our focus on equity and inclusivity in research, education, and work culture. We have created Spanish versions of web pages and podcasts, completed research exploring disparities and differences in VA mental health care, and have many other ongoing education, research, and work culture efforts to ensure that NCPTSD’s work is equitable and inclusive. This work will surely continue into 2023 and beyond.

I’d also like to take this opportunity to formally thank Dr. Matthew Friedman, founding Executive Director of the National Center for PTSD, for his tireless and generous work. Recognized as a world leader in clinical research and treatment of PTSD, Matt originally retired from the NCPTSD in 2015, though he continued working with us part time until March of 2022. I can’t imagine a National Center without Matt, but he taught us to persevere, and persevere we will. Thank you, Matt, for everything you’ve done over the years. Your legacy will continue, I’m sure.

In other news, I’m sad to report that we lost a dear member of the NCPTSD family, Dr. Steve Southwick, one of the world’s leading experts on psychological traumatization and human resilience. A longtime senior investigator with NCPTSD, Steve passed away in April 2022. His humor, kindness, and selflessness will be greatly missed by all of us at NCPTSD.

As always, we’ve learned a lot this year. And we’ve taken that knowledge and put it to work successfully, treating the thousands of Veterans who count on us to provide them relief from the effects of PTSD.

Paula P. Schnurr, PhD
Executive Director
Precision Medicine for PTSD: The Big Picture

Since its establishment in 1989, the National Center for PTSD has been at the forefront of research and education on PTSD treatment, and on underlying psychological and biological factors of PTSD. In just over three decades, effective treatments for PTSD have been developed and disseminated within and outside of VA. This progress is remarkable, but there is still room to improve PTSD treatment outcomes. In pursuit of this goal, the National Center is turning toward a new goal: Precision Medicine for PTSD.

John Krystal, MD, Director of NCPTSD's Clinical Neurosciences Division, explains Precision Medicine: “Precision Medicine involves the identification of predictive markers of any kind—molecular, brain imaging, biochemical, clinical, cognitive markers—that can inform the types of treatments that are likely to work most effectively for groups of patients.” Simply stated, it’s finding the right treatment for the right individual at the right time.

“We know a fair amount about predictors—how likely a patient is to respond to treatment, regardless of the treatment,” Schnurr continues, “but we know close to nothing about what treatment is best for any given individual.”

To illustrate, let’s say a single mother with three children and two jobs gets assigned a PTSD treatment that involves daily homework. That treatment might not be effective for her, because doing homework takes time that the patient doesn’t have. After evaluating her social circumstances and preferences, we might suggest a treatment that does not require homework to be effective. This process is called shared decision making (see sidebar, page 7).

But, in the future, when we know more about how the effective treatments for PTSD work, we might be able to test for certain physiologic or genetic markers, or understand that certain symptoms improve after specific treatments, or know that women do particularly well in a certain treatment. A clinician could then use this information to decide which PTSD treatment is right for an individual patient.

The National Center for PTSD is taking a particular interest in Precision Medicine for PTSD because some people aren’t responding—or aren’t responding enough—to available treatments, says Paula Schnurr, PhD, Executive Director of the National Center. “There’s a need to improve treatment outcomes for PTSD. We need to make people better, and we need to make them well. Precision Medicine is a strategy that can help us do that.”

Top 3 Things to Know about Precision Medicine for PTSD

1. There are effective treatments for PTSD, but there is room for improvement.
2. The goal of Precision Medicine is to get the right treatment, to the right patient, at the right time.
3. Precision Medicine for PTSD will be a long-term endeavor, requiring many researchers from across the spectrum of research—from genetics to clinical research to digital specialists.
What Treatments Do We Have Now?

Individual, manualized trauma-focused psychotherapy is recommended as the first-line treatment for PTSD by the VA/DoD. Trauma-focused psychotherapy means that the details of the traumatic event are a focus of the therapy. The most effective trauma-focused psychotherapies for PTSD include Prolonged Exposure (PE), Cognitive Processing Therapy (CPT), and Eye Movement Desensitization and Reprocessing (EMDR). There is also evidence to support the use of medications such as paroxetine, sertraline, and venlafaxine for PTSD, as well as select non-trauma-focused psychotherapy.

The way in which a patient is matched with a treatment varies. In some cases, it has to do with what is available—in other words, what treatments a provider or clinic offers. In other cases, the provider may offer the treatment that they think is best for the patient. In the ideal case, shared decision making occurs. Sonya Norman, PhD, Director of the PTSD Consultation Program, explains.

“We’ll educate the patient about the different effective treatment options and have an informed discussion about what makes sense to them,” she said.

That includes understanding the patient’s values, preferences, and goals, as well as what works with the individual’s schedule. Shared decision making helps the patient invest in their own treatment. The PTSD Decision Aid, developed by the National Center for PTSD, is a tool to help patients understand evidence-based PTSD treatments, as well as their own priorities about treatment.

No matter how we get there, people being treated for PTSD deserve improved outcomes. With our current best treatments, more than half of people improve to the point where they are no longer diagnosed with PTSD, Norman says. “They feel better, their symptoms are less distressing to them, they’re doing better in their job, and they’re having healthy relationships. Treatment sets them on a path to a better quality of life.”

Where We Are Now

To date, there have been many studies done that aim to understand what treatments work best for whom—but they’re relatively small and not necessarily connected. But that’s changing, thanks to the National Center and its diverse group of investigators.

Rather than create more and more interventions, the focus needs to be on how to improve upon and tailor what already exists to make those interventions more effective. Schnurr says the National Center’s main research priority is to design trials aimed at assessing differential treatment response. Its secondary priority is to reanalyze existing data. “Creating a large dataset will allow more sophisticated analyses,” she said. Right now, there isn’t sufficient data to guide individualized treatment selection, which is one of the factors that makes Precision Medicine such an important topic in terms of PTSD.

Brian Marx, PhD, Deputy Director of the Behavioral Science Division, says the National Center is focused on exploring which studies have been done in Precision Medicine for PTSD specifically, then identifying gaps in the findings and a plan to address those gaps.

“We are actively figuring out what the agenda is, where we need to go from here, what studies need to be done, how we pool our resources, and how we create datasets that help us move the field forward in a revolutionary kind of way,” he said.

Despite these promising building blocks, developing Precision Medicine for PTSD does come with challenges.
Precision Medicine Has Its Challenges

PTSD (and other mental health disorders) is not like cancer; there’s no biopsy to confirm its presence. “A lot of these symptoms are variations of a normal response to experiences,” said Paul Holtzheimer, MD, Deputy Director for Research. “It’s normal to have certain biological and psychological reactions. It’s normal to feel grief when somebody dies. What’s abnormal is when it doesn’t go away.”

Going forward, an accurate assessment of PTSD will be key to understanding which treatments are effective for which patients. PTSD is currently best diagnosed through structured clinical interviews such as the Clinician Administered PTSD Scale for DSM-5 (CAPS-5), which relies on clinician judgment. The CAPS-5 is an effective diagnostic tool, but the field is seeking out more biologic signatures of PTSD.

“The assessment, and how we actually assay these various components, whether they’re chemicals, brain waves, whatever, has to improve tremendously to get a more meaningful signal,” leading to more accurate diagnosis, said Holtzheimer.

These challenges mean that Precision Medicine for PTSD is a complicated endeavor. However, the potential eventual gains are great. Having a better understanding of which treatments are likely to work best for an individual patient means that more patients will receive effective PTSD treatment and relief from their symptoms.

The field of Precision Medicine and PTSD is so new that researchers would admit that they don’t know a lot about it. But that’s changing.
“We can grow neurons derived from people with PTSD and grow these neurons from stem cells, which we can collect in the blood from people with PTSD,” he said. This is just one of the dozens of studies that are currently taking place at the National Center.

Big data is not limited to genetic studies. Schnurr recently completed a study of over 900 Veterans with PTSD, with the goal of better understanding which individuals might be best served by Cognitive Processing Therapy (CPT) and which would be better served by Prolonged Exposure (PE). Those analyses, which utilize a novel analytic technique called the Personalized Advantage Index (PAI), are underway. Built on prior work done by Schnurr and Shannon Wiltsey Stirman, PhD, the PAI is a prognostic index that can shed light on which patients are likely to do better in one treatment versus another.

Often, very large sample sizes are needed in order to have something significant to say. Even the largest psychotherapy trials to date (such as Schnurr’s CPT vs. PE trial) are small, relative to what is needed to perform the kind of analyses needed for Precision Medicine.

Researchers believe big data will help them learn how to choose and tailor treatments for people with PTSD. “We know that people who are more symptomatic may impact the outcome of treatment, but we don’t know anything about how to match people to the various treatments that are available,” Marx said.

The power of digital

Precision Medicine for PTSD isn’t limited to large-scale genetic studies like MVP or to psychotherapy trials. Thanks to more than a dozen mobile apps developed by the National Center, we have digital mental health interventions that can be responsive to where the patient is.

“Thanks to smartphones and wearables, as well as the internet, we could gather moment-to-moment data that can be used to discover patient characteristics,” said Eric Kuhn, PhD, investigator at NCPTSD’s Dissemination and Training Division. “We can develop dynamic, personalized interventions in the real world, where people are in need. We can actually be out there in the hands of our patients with powerful interventions that are truly personalized to what that person is experiencing in that moment and what they need.”
For example, the PTSD Coach app has tools for users to screen for PTSD symptoms, learn to handle stress symptoms in the moment, and connect them with more support as needed. These apps provide a low-resource way to provide care to patients who may benefit from a lighter touch. Digital mental health has the potential to vastly expand the potential reach of evidence-based care for PTSD.

“We do not have the resources to deal with everybody in the same way—nor should we,” Marx said. “Some people need more assistance, more services, and more intensive care than others. It makes sense to get the services to the people that need those services—the care they need in order to address their specific concerns. It’s what confronts mental health in general.”

**Looking to the Future**

Precision Medicine clearly has a lot of promise, but the field of Precision Medicine for PTSD is still at an early stage. “A lot will be determined by what we learn in the present,” Marx said. And while the National Center doesn’t yet have the data itself, “we are doing a really good job in terms of figuring out how to pool datasets together, create a huge data repository, and produce a set of common data elements that all the investigators in the Center can use in order to provide the opportunity to collect the necessary data,” he said.

**Designing new studies**

Investigators are working on new studies that help predict up front which patients can benefit from which treatments. Dr. Holtzheimer, for instance, is currently working on two complementary studies that use imaging to try to identify brain activity patterns that predict who will respond to transcranial magnetic stimulation (TMS) for patients with depression, many of whom also have PTSD.

The National Center is leveraging a VA-wide program that helps set up TMS clinics that make it possible to collect multiple sessions of EEG and MRI, at baseline, then after several treatments, and at the end point. This allows investigators to look at early changes in brain activity that may predict eventual response.

“This is related to Precision Medicine because the goal is to identify actual biological predictors for who will respond to relatively novel, niche treatment that’s different than medication and different than psychotherapy,” Holtzheimer said.

**Positioned for success**

A focused mission, a multidisciplinary research program, organization around translation from science to clinical practice, strong partnerships within and beyond the VA, and unique resources including the National PTSD Brain Bank all uniquely position the National Center to contribute to the investigation of Precision Medicine approaches for the treatment of PTSD.

The National Center has investigators focused on treatment of PTSD as well as on the development of new or better treatments, whether they be biological, psychological, or other approaches. “We have an infrastructure in place that will let us look for potential markers—biological, clinical, and sociological,” Holtzheimer said.

Research at NCPTSD spans from basic bench science to applied clinical and implementation science, and everything in between.
“We’re the world leader in PTSD and the science of PTSD,” Kuhn said. “We have an incredibly talented, world-class workforce, sustained resources, multidisciplinary research programs—all divisions are working on this. We’re in the game of trying to translate science into practice. We have really strong academic partners. We’re uniquely positioned to advance this field. I think we’ve demonstrated as a Center that we can rise to the challenges.”

The National Center is committed to learning how to best use Precision Medicine for PTSD. “The desire to be able to predict up front who needs what, and which patient is more likely to benefit from a certain combination of individual treatments,” said Holtzheimer, “that’s our ultimate goal.”

---

**Getting help**

If you are experiencing symptoms of PTSD, here is a list of resources that may be helpful:

- [https://www.ptsd.va.gov/](https://www.ptsd.va.gov/)
- [https://www.ptsd.va.gov/understand_tx/tx_basics.asp](https://www.ptsd.va.gov/understand_tx/tx_basics.asp)
- [https://www.veteranscrisisline.net/](https://www.veteranscrisisline.net/)

---

**Where to find us**

Keep in touch with the National Center for PTSD on our [website](https://www.ptsd.va.gov/) and social media:

- [https://twitter.com/VA_PTSD_Info](https://twitter.com/VA_PTSD_Info)
- [https://www.facebook.com/VAPTSD/](https://www.facebook.com/VAPTSD/)
- [https://www.instagram.com/stepupforptsd/](https://www.instagram.com/stepupforptsd/)
Major Research Initiatives in 2022

National Center researchers work across the scientific spectrum, from examining the genetic and molecular underpinnings of PTSD to system-level implementation work. Fiscal year (FY) 2022 brought new advances across this spectrum and in each of NCPTSD’s operational priorities. In addition, much of the work detailed below represents the base of the pyramid that will inform Precision Medicine for PTSD—understanding which treatments work best for which patients.

During FY 2022, researchers at the National Center led 158 funded studies, including research undertaken in collaboration with partner organizations in the government, academic institutions, and international agencies. Investigators published 590 peer-reviewed journal articles, book chapters, and books (see appendices C–G for a full list of grants, publications, and scientific presentations in FY 2022).

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 2022 research initiatives undertaken to address these five operational priorities. (Appendix C contains a more comprehensive listing of research projects conducted by investigators at each of the National Center’s six divisions.)

Biomarkers

Work taking place under the Biomarkers Operational Priority aims to establish reliable and valid biomarkers to aid in predicting who develops PTSD, diagnosing PTSD, predicting treatment outcome, and measuring treatment response. Neurogenomics and neuroimaging guide biomarker development, including molecular, biochemical, structural, and functional approaches to better understand the sequence of pathological events associated with posttraumatic stress and PTSD treatment.

The VA National PTSD Brain Bank primarily studies gene expression in postmortem brain tissue of PTSD and major depressive disorder donors; this work aims to identify biomarkers and potential novel pharmacologic targets. 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, and differences in biological sex and body mass index were discovered.

Neuroimaging is another pillar of NCPTSD’s biomarkers work—using functional and structural magnetic resonance imaging, spectroscopy, and PET to understand the neural circuitry and activity involved in PTSD. In collaboration with the Translational Research Center for Traumatic Brain Injury and Stress Disorders (TRACTS), ongoing studies suggest distinct biotypes of PTSD characterized...
Major Research Initiatives in 2022

by neurocognitive and network-based connectivity abnormalities, which may be associated with greater chronicity of PTSD. Center researchers have also used magnetic resonance spectroscopy to examine neurodegeneration and neuroinflammation. Novel work in an animal model of PTSD shows that the glutamatergic system (measured with PET technology) is altered as a function of stress—specifically, animals who developed PTSD symptoms showed changes in the glutamatergic system, whereas resilient animals did not, addressing a knowledge gap in the PTSD literature regarding whether observed brain alterations in patients are a consequence of or predisposition to the disorder.

NCPTSD researchers also contribute to several large-scale genomic research programs. Data from the Million Veteran Program (MVP) have been paired with data from survey studies that provide longitudinal information to provide rich data on the biomarkers for PTSD. Using data from the National Health and Resilience in Veterans Study (NHRVS), which surveyed a nationally representative sample of 4,000 U.S. Veterans in the MVP, investigators found that polygenic risk scores for PTSD were associated with greater severity of PTSD symptoms. NHRVS data also showed that PTSD was linked to a two-fold greater likelihood of accelerated epigenetic aging.

Biomarkers can also be leveraged to better understand the mechanisms of effective PTSD treatments. A recently launched study is examining whether Prolonged Exposure (PE) is more efficacious during the morning hours when endogenous cortisol levels are at their highest, compared with later in the day when cortisol levels are relatively low. Another ongoing study uses electroencephalogram (EEG) markers to predict response to transcranial magnetic stimulation treatment in depression and PTSD. Also, researchers are using genomic data to establish an analytic biomarker pipeline to predict ketamine treatment response via EEG patterns.

Treatment Engagement, Efficiency, and Effectiveness

Several lines of work at the Center aim to increase the efficiency and effectiveness of existing PTSD treatments, and to develop strategies to enhance engagement in treatment. Several large-scale studies focus on the real-world effectiveness of PTSD treatments. CSP #591, conducted at 17 VA Medical Centers, published results showing that PE and Cognitive Processing Therapy (CPT) were both effective for PTSD in Veterans. Ongoing secondary analyses are examining which patients do best in PE and in CPT. CSP #2016 is being conducted at 34 VA Medical Centers and compares three commonly prescribed pharmacotherapies for insomnia: trazodone, gabapentin, and eszopiclone.

Other recently published work using large-scale medical record data, in conjunction with the Northeast Program Evaluation Center, has provided information about the relative effectiveness of PTSD treatments and treatment response patterns in VA PTSD specialty and residential care. This body of work supports existing evidence that first-line psychotherapies for PTSD are generally effective for Veterans, but also shows that Black Veterans have (on average) worse outcomes in VA specialty care than White Veterans.

Multiple lines of research examine ways to make effective treatment more efficient—e.g., delivered in fewer sessions or over less time. Written Exposure Therapy (WET), developed by NCPTSD investigators, is a five-session exposure-based treatment for PTSD that has been shown to be highly effective with non-Veteran patients. A recent DoD-funded study found that WET was non-inferior to CPT in the treatment of PTSD in service members. An ongoing VA-funded study is directly comparing the treatment efficacies of WET and PE among Veterans. Two recent studies examine the effectiveness of massed or intensive versions of PE and CPT. Additional efforts to improve the effectiveness of CPT include an ongoing, large-scale
study designed to test the impact of a case formulation enhanced version of CPT on treatment adherence, functioning, and PTSD symptoms.

Digital technologies, including telehealth, mobile apps, text messaging, and websites, can increase the engagement of effective treatment and supportive care for PTSD and commonly comorbid conditions. One study will compare an asynchronous messaging-based version of CPT for PTSD to messaging-based therapy as usual. Center investigators are also involved in trials to understand the efficacy of mobile mental health apps. Also, a series of naturalistic studies are examining how users engage with some of our most widely used apps: Mindfulness Coach, COVID Coach, PTSD Coach, AIMS for Anger Management, and Beyond MST.

National Center research also targets the effectiveness of existing treatments by augmenting treatment with medication or psychotherapy. For example, studies are investigating ketamine plus PE, Cognitive Behavioral Therapy (CBT) for Insomnia, and CPT for Veterans with comorbid PTSD and insomnia, and buprenorphine plus CPT for patients diagnosed with PTSD and opiate use disorder.

**Care Delivery, Models of Care, and System Factors**

The Center continues to engage in research to ensure that Veterans with PTSD nationwide receive access to VA mental health care. An ongoing VA-funded study is using a mixed methods approach to understand which Veterans who screen positive for PTSD in VA primary care clinics do not access follow-up VA mental health care. Results of this project, which leverages the Veterans Health Administration (VHA) Electronic Health Record, can inform the development and implementation of targeted access interventions nationally.

Survey data indicate that Veterans with PTSD are interested in family involvement in their care, but investigators have found that the number of Veterans with PTSD who receive a family-inclusive visit during VA care is relatively small. Investigators recently published outcomes from a systems-focused project examining factors that contribute to or inhibit family-inclusive care. Many providers described incorporating families into Veterans’ care to provide psychoeducation, enhance the Veteran’s sense of social support and connection, and facilitate safety planning.

Additional activities include improving access to gold-standard medication for opioid use disorder (MOUD) and to counseling among VHA patients with opioid (OUD) and other co-occurring psychiatric disorders (e.g., PTSD). Ongoing analyses of VHA EHR and Commercial and Medicaid claims data highlight key gender and racial disparities regarding treatment utilization and health outcomes (e.g., opioid overdose), but also positive effects of receiving MOUD via telehealth and expansion of MOUD coverage among some existing patients, and other successes following VHA’s swift response during the COVID-19 pandemic.

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 potential solutions, and select an optimal solution to implement). The third major release, Modeling to Learn 3.0, was distributed nationally in 2022. Two randomized trials are underway, testing whether Modeling to Learn is superior to other quality improvement approaches in increasing the number of VA patients who receive evidence-based psychotherapy and pharmacotherapy for mental and addictive disorders.
Implementation

Facilitating implementation of best practices in PTSD care and studying barriers and facilitators of best practices is another Operational Priority. One study is underway evaluating how to simplify assessment of the quality of delivery of CBT for PTSD, depression, and anxiety disorders. A second 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 uses continuous quality improvement strategies to improve fit and to address barriers to treatment delivery. Another trial on eight U.S. military bases tested whether a tailored approach that includes a guide for matching solutions to local problems and support from an external facilitator increases the use of PE more than does standard provider training alone.

Following the WET treatment development efforts detailed above, an implementation study is examining real world treatment outcomes among Veterans treated by VA mental health providers who are trained to deliver WET. Center investigators are also involved in studies comparing WET with medication and collaborative care to treat PTSD in both VA and non-VA primary care clinics, and are studying the effectiveness of different virtual training models and implementation support approaches for therapist delivery of treatment in WET and PE. 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 labor-intensive observer method of assessing fidelity.

The Center also facilitates implementation efforts associated with Intimate Partner Violence (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. Findings from this trial demonstrated that a blended implementation facilitation strategy (an operations-funded external facilitator working for six months with a facility-funded internal facilitator) nearly tripled the reach of IPV screening programs in primary care compared with implementation as usual in VA care, resulting in a two-fold increase in IPV detection rates among patients. Researchers also published findings from a randomized clinical trial demonstrating the effectiveness of a brief counseling intervention, Recovering from IPV through Strength and Empowerment (RISE), for women who are experiencing violence in their intimate relationships. A collaboration with the national VHA IPV Assistance Program resulted in a rollout of RISE with IPV Assistance Program Coordinators across the country for implementation among Veterans of all gender identities. Published findings from an initial program evaluation support the effectiveness of RISE in routine VA care.

PTSD and Suicide

Research under the PTSD and Suicide Operational Priority aims to investigate the relationship between PTSD and suicide and develop strategies to predict and prevent suicide among individuals with PTSD. To support our efforts, BSD investigators received funding for a new suicide prevention clinical resource center (SP-CRC). This SP-CRC will serve suicide prevention investigators by providing highly critical research resources to facilitate programmatic and scientific needs. The mission of the new SP-CRC, called the Center for Harmonizing and Improving Interventions to Prevent Suicide (CHIPS), will be to advance a Precision Medicine approach to suicide prevention research.

Several lines of ongoing work examine risk factors for suicide. Center researchers have identified 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.
Recent research has identified insomnia as a risk factor for suicide, using newly developed innovative methods to accurately monitor sleep without requiring Veterans to come to a clinic-based sleep lab. A secondary analysis of data from The Veterans Metrics Initiative Study, a longitudinal study of recently discharged male and female Veterans, identified post-separation life circumstances (e.g., vocation, finances, and social relationships) as predictors of change in suicidal ideation during the first three years after leaving military service.

Other research explores interventions to reduce the risk of suicide. In collaboration with the STRONG STAR Consortium, Center investigators have completed a study in which they tested a modified version of WET with a sample of Army soldiers and Veterans with PTSD symptoms who were hospitalized for suicide risk. A related study was recently funded to evaluate the efficacy of WET for Suicide Prevention (WET-SP) in reducing the incidence and severity of self-injurious thoughts and behaviors. Another 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. Center researchers are also investigating the use of medications 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.

Other research examines the prevalence of suicidal thoughts and behavior. Several studies using data from the 2019–2020 NHRVS wave examined suicidality and posttraumatic growth in Veterans. Investigators found that younger age, PTSD, depression, and adverse childhood experiences were the strongest correlates of suicidal thoughts and behaviors. NHRVS researchers also found that greater posttraumatic growth was associated with a 40% reduced likelihood of contemplating suicide, which suggests that interventions to help bolster posttraumatic growth may have utility in suicide prevention and treatment efforts.

National Center researchers work to understand how best to implement effective treatments into real work settings.
Promoting PTSD Education: Training, Dissemination, and Communication

The National Center for PTSD’s educational mission is to improve PTSD outcomes by developing and disseminating authoritative, culturally competent, equity-informed programs and information on PTSD and related conditions. Our stakeholders, including Veterans and other trauma survivors, the professionals who care for them, and the family and friends in their personal orbit, rely on NCPTSD to create products and programs that are rooted in science. From web-based resources to apps and training, our offerings innovate as they inform.

PTSD Awareness and Public Education

This year’s PTSD Awareness Month campaign was our most ambitious effort yet. As in years past, we offered the public, providers, and medical centers an array of resources that could help them spread the word that PTSD treatment is available and that it works. This year, however, we also promoted June 27 as PTSD Screening Day. Thanks to an interactive version of the Primary Care PTSD Screen that we hosted on our website, Veterans and others who had experienced trauma could quickly learn whether symptoms that they have been experiencing following a trauma could be PTSD. Once they completed the screen, users received information about whether their screen was positive for PTSD or they just had a couple of symptoms, and next steps they could take. There were more than 30,000 visits to the screening page on the website, and more than 380,000 people viewed PTSD Screening Day promotions from agencies and organizations that partnered with NCPTSD. Thousands more participated in our Step Up for PTSD Awareness Virtual Walk, signed a pledge to help raise PTSD awareness, or attended one of 20 PTSD Awareness Month presentations. In the month of June, 3.1 million people watched or listened to media interviews by National Center for PTSD experts that aired nationwide.

Another cornerstone of our awareness efforts is the AboutFace website. This video gallery features hundreds of interviews with Veterans, family members, and clinicians delivering the message that PTSD treatment can turn lives around.

This year we continued an extensive redesign of the site that will allow visitors to access the content through a guided experience. With the continued ability to explore videos with robust search and filtering functions, plus a new, clearer path through the site, visitors will have more options for learning about PTSD treatment and experiencing compelling stories. We also continued to expand our featured topic pages on the site, developing the page “Race, Culture, and PTSD,” which focuses on how Veterans’ experiences of identity, bias, and discrimination intersect with trauma and PTSD. The revised site launches in FY 2023.
Promoting PTSD Education

For those who prefer their information on PTSD in bite-sized portions, the Dissemination and Training Division’s Tech into Care initiative (see Support for Providers in the Field, below) has developed a podcast called PTSD Bytes. Clocking in at under 15 minutes, each episode of PTSD Bytes features an expert or innovator discussing how technology can support people with PTSD or related mental health concerns. Topics have included PTSD and emotions, specific treatments, military sexual trauma (MST), and relationships. New episodes are released twice a month. Another podcast, Talking Later: Veterans’ Stories of Late-Life PTSD, focuses on recovery, resilience, and meaning-making in older Veterans who are grappling with PTSD in late life. Each episode starts with a Veteran’s life story, told in their own words, followed by discussion of what the story can teach listeners about late-life PTSD and related experiences. This podcast was developed by researchers at the Behavioral Science Division and the New England Geriatric Research Education and Clinical Center.

The National Center for PTSD website continues to be perhaps our most important vehicle for information dissemination, with 6.5 million visits to the site in FY 2022. For the most part, new and extensively revised articles posted on the site for the public focused on evidence-based treatments—including an article on recognizing good PTSD care—and helping family members whose loved ones need or are in PTSD treatment. We also created new articles on coping with current events, including the war in Ukraine and school shootings.

Staff at the Executive Division began laying the groundwork for a revision of our popular resource, the PTSD Treatment Decision Aid. Originally created in 2015 and updated two years later to reflect the 2017 VA/DoD Clinical Practice Guideline (CPG), the PTSD Treatment Decision Aid is an online resource that educates users on their PTSD treatment options and guides them through the process of making informed PTSD treatment decisions. Both Veterans and civilians can use the Decision Aid on their own, with loved ones, or with their providers as part of a shared decision-making process. The next revision of the website will be mobile-friendly and will incorporate new features that reflect updated treatment recommendations based on the 2023 CPG and changes in online technology. Redesign work will begin in earnest at the tail end of FY 2023.

Support for Providers in the Field

For more than 10 years, the PTSD Consultation Program, a program of NCPTSD’s Executive Division, has supported providers who treat Veterans with PTSD. Whether they are experienced clinicians well-versed in evidence-based treatment, new providers who are just beginning to serve Veterans, or somewhere in between, any medical or mental health professional can contact the PTSD Consultation Program for consultation on issues relating to care for Veterans with PTSD. This year, consultants responded to more than 2,100 requests on subjects as varied as disaster response, program development, diagnosis, and...
Promoting PTSD Education

In addition to the tailored consultation it provides on demand, the PTSD Consultation Program also distributes a [monthly newsletter] that features articles and links for providers. The program also continued its popular monthly lecture series. These online webinars attracted an average of more than 600 learners each month; the archived sessions continue to draw learners accessing the lectures on their own schedules.

In addition, the PTSD Consultation Program has continued its partnership with the [Center for Deployment Psychology] and [VA’s Suicide Risk Management Consultation Program], hosting trainings for rural community providers. This year, a total of 233 clinicians attended one of three live virtual sessions on military culture, suicide prevention, and PTSD assessment. The virtual format has allowed the trainings to reach more providers, drawing students from throughout the country who want to further their skills assessing and treating Veterans with PTSD.

With its focus on improving the reach of evidence-based PTSD treatment, supporting time-limited care, and making measurement-based care a standard practice throughout VA PTSD specialty care, the PTSD Mentoring Program had an active year. Staff worked closely with specialty care programs to identify areas of improvement and monitor progress on goals. In addition to providing standard levels of consultation (“Mentoring as Usual”), the program was able to offer more intensive levels of help across the nation. This included a continued effort to work with PTSD Clinical Teams (PCTs) to implement outpatient massed treatment programs. VISN mentors attended panels and flash talks that showcased PTSD Clinical Teams’ implementation work and best practices for clinical care and program management.

The [Tech into Care (TIC)] initiative, which operates out of the Dissemination and Training Division, facilitates the implementation of technology into PTSD clinical care for PTSD and other mental health concerns into care with minimal support from implementation facilitators. There are now 54 mobile health champions at 31 VA sites across the United States, with more than 1,200 VA staff trained on using NCPTSD apps and other technology in their work with Veterans. TIC continues to offer an [online lecture series] that is open to anyone interested in the intersection of technology and mental health care. The series offers free continuing education credits to learners. TIC also holds a monthly community of practice call for VA staff, addressing opportunities and barriers in implementation of mobile health.

Every year, thousands of providers turn to the NCPTSD website for access to assessment instruments for PTSD, trauma exposure, and other mental health concerns.

The Tech into Care program facilitates the implementation of technology into PTSD clinical care.
Self-Help and Treatment Companion Resources

Staff at the Behavioral Science Division are hard at work on their longstanding effort to have a provider-facilitated version of VetChange hosted on the VA network. VetChange is an intervention that addresses Veterans’ problematic drinking through a mix of online modules and provider assistance. By transitioning VetChange to a VA server, providers will be better able to integrate the program into care for Veterans who want to cut down on their drinking or stop drinking altogether.

The National Center for PTSD released PTSD Coach—VA’s first-ever app—in 2011. PTSD Coach made its debut in an era when owning a smartphone was hardly the norm. Fast-forward to today. NCPTSD continues to innovate, with the Dissemination and Training Division creating free, secure apps for an array of mental health and behavioral issues. Our current portfolio contains 16 apps that earn high user ratings in the app marketplaces and are featured in articles in the national press on a steady basis. Continuous improvement through ongoing user testing and programmatic enhancements keeps NCPTSD apps as cutting-edge today as the pioneering PTSD Coach was more than 10 years ago. Two completely new apps—Well Within (focused on women’s mental health) and Safety Plan—were in development in FY 2022, even as updates to existing apps were ongoing.

The Women Veterans Network (WoVeN) is now active in more than 200 cities with upwards of 4,000 women Veterans enrolled in the program to date. Staff at the Women’s Health Sciences Division established WoVeN to foster social support among women Veterans. Because of its peer-led structure, WoVeN thrives on the commitment of its members across the country. Members connect in person and online, creating a vibrant community for women Veterans of all eras and branches of service. An adaptation of WoVeN, called WoVeN in VA, is currently being piloted inside the VA health care system in collaboration with Women’s Mental Health and Peer Support Services. In addition to the work with Veterans, in FY 2022 WoVeN successfully completed a pilot of BRIDGES (Building Re-Integration from Dreams and Goals to Execution and Success), which pairs women about to transition out of military service with Veteran peers called “Guides.” These Guides provide ongoing support to women service members during the period of reintegration into civilian life.

Educational Resources for Professionals

This year saw the completion of the final course in the Clinician-Administered PTSD Scale for DSM-5 (CAPS-5) Training Curriculum. Staff at the Executive Division and the Behavioral Science Division have been collaborating...
for four years, developing virtual patient courses that complement a traditional didactic course. In FY 2022, a third and final virtual patient made his debut. Robert Sheridan, like the prior virtual patients, Anthony Price and Kathy McKenna, is a Veteran who experienced trauma during military service. Working with Robert gives learners an immersive experience in administering and scoring the gold standard PTSD assessment measure. This year we also redesigned the evaluations that learners receive at the end of each virtual patient course and made some adjustments to the program interface. As with our other education courses, free continuing education credits are available to providers in VA and the community who complete each training.

Our ongoing commitment to providing continuing education opportunities on a variety of important topics related to PTSD treatment is evident in the addition of 12 new one-hour lectures to our website. Covering topics as disparate as PTSD and eating disorders, cultural considerations in the treatment and assessment of insomnia, and supported employment for Veterans with PTSD, these lectures were each originally presented in the Consultation Program Lecture Series. NCPTSD courses offer free continuing education credits for both the live and on-demand versions of lectures, which is not always the case when Veterans Health Administration (VHA) program offices make live lectures available as enduring content. We know from our contact with VA providers that having the ability to earn continuing education credits on their own schedules is an investment that is worth making.

**PTSD–Repository**

The National Center for PTSD continues to expand the PTSD Trials Standardized Database Repository (PTSD-Repository), a web-based platform that hosts data from 389 randomized controlled trials (RCTs) of PTSD treatment. In 2022, the site began including standardized effect sizes and added a data story on medications. Efforts are underway to refine the categorization of treatment types so that users can work with the data in a more precise manner. Publicly available and free to use, the PTSD-Repository helps researchers, clinicians, Veterans, and family members better understand the treatment literature. The PTSD-Repository is included in [VA's Open Data Portal](https://data.va.gov), which provides public access to VA data.

**PTSDpubs**

In FY 2022, the Resource Center staff continued to develop its new content management system and to expand its indexing thesaurus, which will be updated in PTSDpubs in the first quarter of FY 2023. PTSDpubs currently holds nearly 67,000 records and remains the largest database of PTSD and traumatic stress literature in the world. Staff educated new PTSDpubs users through a national online training offered by the VA Library Network and will continue to make presentations to internal customers. During FY 2023, staff will focus on an overhaul of records templates and the implementation of auto-indexing capabilities.

---

**FY 2022 Communication Resources at a Glance**

| Website | 6,737,122 visits |
| Facebook | 162,536 followers and 184,582 likes |
| Twitter | 38,671 followers with 358,289 impressions |
| PTSD Research Quarterly | 68,571 subscribers |
| Clinician’s Trauma Update Online | 58,844 subscribers |
| PTSD Monthly Update Newsletter | 460,015 subscribers |
| Assessment Instruments | 693,739 assessments downloaded |
| Mobile Apps | 16 mobile apps; downloaded 604,727 times in FY 2022. |
| Professional Articles | 508,006 unique views of professional articles on the NCPTSD website |
| PTSDpubs articles | 67,907 PTSD- and trauma-research articles available on PTSDpubs |
| Educational items distributed free of charge | 994,440 items printed |
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 six 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; and one in Palo Alto, California. Each contributes to the overall NCPTSD mission through specific areas of focus. In fiscal year 2022, the National Center closed its Pacific Islands Division (PID) in Honolulu, HI, integrating PID’s cross-cultural mission and focus on racial and ethnic disparities in PTSD care, telehealth and virtual care, and cultural factors in PTSD treatment, into each of the remaining six Divisions.

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 six 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 2022

Paula P. Schnurr, PhD
Executive Director, Executive Division, White River Junction, VT
Professor of Psychiatry, 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 Dean for Research, Boston University School of Medicine

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
## Appendix A: Acronyms Used in Appendix B

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACT</td>
<td>Acceptance and Commitment Therapy</td>
</tr>
<tr>
<td>bCBCT</td>
<td>brief Cognitive-Behavioral Conjoint Therapy</td>
</tr>
<tr>
<td>BEAMS</td>
<td>Boston Early Adversity and Mortality Study</td>
</tr>
<tr>
<td>BMI</td>
<td>Body Mass Index</td>
</tr>
<tr>
<td>BRIDGES</td>
<td>Building Re-Integration from Dreams and Goals to Execution and Success</td>
</tr>
<tr>
<td>BSD</td>
<td>Behavioral Science Division</td>
</tr>
<tr>
<td>CAP</td>
<td>Consortium to Alleviate PTSD</td>
</tr>
<tr>
<td>CAPS-5</td>
<td>Clinician Administered PTSD Scale for DSM-5</td>
</tr>
<tr>
<td>CBT</td>
<td>Cognitive-Behavioral Therapy</td>
</tr>
<tr>
<td>CBT-I</td>
<td>Cognitive-Behavioral Therapy for Insomnia</td>
</tr>
<tr>
<td>CERV-PTSD</td>
<td>Comparative Effectiveness Research in Veterans with PTSD</td>
</tr>
<tr>
<td>CES</td>
<td>Cranial Electrotherapy Stimulation</td>
</tr>
<tr>
<td>CHIIPS</td>
<td>Center for Harmonizing and Improving Interventions to Prevent Suicide</td>
</tr>
<tr>
<td>CMARRS</td>
<td>Center for Mobile Applications Research Resources and Services</td>
</tr>
<tr>
<td>CND</td>
<td>Clinical Neurosciences Division</td>
</tr>
<tr>
<td>CoE</td>
<td>Center of Excellence</td>
</tr>
<tr>
<td>CPT</td>
<td>Cognitive Processing Therapy</td>
</tr>
<tr>
<td>COVID-19</td>
<td>Coronavirus Disease 2019</td>
</tr>
<tr>
<td>CRAFT</td>
<td>Community Reinforcement and Family Training</td>
</tr>
<tr>
<td>CSP</td>
<td>Cooperative Studies Program</td>
</tr>
<tr>
<td>DBS</td>
<td>Deep Brain Stimulation</td>
</tr>
<tr>
<td>DNA</td>
<td>Deoxyribonucleic Acid</td>
</tr>
<tr>
<td>DoD</td>
<td>Department of Defense</td>
</tr>
<tr>
<td>EBP</td>
<td>Evidence-Based Psychotherapy</td>
</tr>
<tr>
<td>Acronym</td>
<td>Definition</td>
</tr>
<tr>
<td>---------</td>
<td>------------</td>
</tr>
<tr>
<td>EEG</td>
<td>Electroencephalogram</td>
</tr>
<tr>
<td>EHR</td>
<td>Electronic Health Record</td>
</tr>
<tr>
<td>EMA</td>
<td>Ecological Momentary Assessment</td>
</tr>
<tr>
<td>ENIGMA</td>
<td>Enhancing Neuroimaging Genetics through Meta-Analysis</td>
</tr>
<tr>
<td>FY</td>
<td>Fiscal Year</td>
</tr>
<tr>
<td>GWAS</td>
<td>Genome-wide Association Studies</td>
</tr>
<tr>
<td>IOP</td>
<td>Intensive Outpatient Program</td>
</tr>
<tr>
<td>IPV</td>
<td>Intimate Partner Violence</td>
</tr>
<tr>
<td>LATR</td>
<td>Later Adulthood Trauma Reengagement</td>
</tr>
<tr>
<td>LC</td>
<td>Learning Collaborative</td>
</tr>
<tr>
<td>LGBT</td>
<td>Lesbian, Gay, Bisexual, and Transgender</td>
</tr>
<tr>
<td>LIGHT</td>
<td>Longitudinal Investigation of Gender, Health and Trauma</td>
</tr>
<tr>
<td>MAVERIC</td>
<td>Massachusetts Veterans Epidemiology Research and Information Center</td>
</tr>
<tr>
<td>MBC</td>
<td>Measurement-Based Care</td>
</tr>
<tr>
<td>MDD</td>
<td>Major Depressive Disorder</td>
</tr>
<tr>
<td>MDMA</td>
<td>3-4 methylenedioxyethamphetamine</td>
</tr>
<tr>
<td>MOUD</td>
<td>Medication for Opioid Use Disorder</td>
</tr>
<tr>
<td>MRI</td>
<td>Magnetic Resonance Imaging</td>
</tr>
<tr>
<td>mRNA</td>
<td>messenger Ribonucleic Acid</td>
</tr>
<tr>
<td>MST</td>
<td>Military Sexual Trauma</td>
</tr>
<tr>
<td>MVP</td>
<td>Million Veteran Program</td>
</tr>
<tr>
<td>NCPS</td>
<td>National Center for Patient Safety</td>
</tr>
<tr>
<td>NDHS</td>
<td>Neurocognition Deployment Health Study</td>
</tr>
<tr>
<td>NEPEC</td>
<td>Northeast Program Evaluation Center</td>
</tr>
<tr>
<td>NHRVS</td>
<td>National Health and Resilience in Veterans Study</td>
</tr>
<tr>
<td>NPY</td>
<td>Neuropeptide Y</td>
</tr>
<tr>
<td>OMHSP</td>
<td>Office of Mental Health and Suicide Prevention</td>
</tr>
<tr>
<td>ORH</td>
<td>Office of Rural Health</td>
</tr>
<tr>
<td>OUD</td>
<td>Opioid Use Disorder</td>
</tr>
<tr>
<td>PCL-5</td>
<td>PTSD Checklist for DSM-5</td>
</tr>
<tr>
<td>PE</td>
<td>Prolonged Exposure</td>
</tr>
<tr>
<td>PET</td>
<td>Positron Emission Tomography</td>
</tr>
<tr>
<td>Acronym</td>
<td>Definition</td>
</tr>
<tr>
<td>----------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>PGC</td>
<td>Psychiatric Genomics Consortium</td>
</tr>
<tr>
<td>PHQ-9</td>
<td>Patient Health Questionnaire</td>
</tr>
<tr>
<td>PRS</td>
<td>Polygenic Risk Score</td>
</tr>
<tr>
<td>PTSD</td>
<td>Posttraumatic Stress Disorder</td>
</tr>
<tr>
<td>RCT</td>
<td>Randomized Controlled Trial</td>
</tr>
<tr>
<td>REACH VET</td>
<td>Recovery Engagement and Coordination for Health – Veterans Enhanced Treatment</td>
</tr>
<tr>
<td>RISE</td>
<td>Recovering from IPV through Strength and Empowerment</td>
</tr>
<tr>
<td>RRTP</td>
<td>Residential Rehabilitation Treatment Program</td>
</tr>
<tr>
<td>SERV</td>
<td>Survey of Experiences of Returning Veterans</td>
</tr>
<tr>
<td>SP-CRC</td>
<td>Suicide Prevention Clinical Resource Center</td>
</tr>
<tr>
<td>SPRINT</td>
<td>Suicide Prevention Research Impact Network</td>
</tr>
<tr>
<td>SSRI</td>
<td>Selective Serotonin Reuptake Inhibitor</td>
</tr>
<tr>
<td>STAIR</td>
<td>Skills Training in Affective and Interpersonal Regulation</td>
</tr>
<tr>
<td>STARRS</td>
<td>Study to Assess Risk and Resilience in Servicemembers</td>
</tr>
<tr>
<td>STRONG STAR</td>
<td>South Texas Research Organizational Network Guiding Studies on Trauma and Resilience</td>
</tr>
<tr>
<td>TBI</td>
<td>Traumatic Brain Injury</td>
</tr>
<tr>
<td>TMS</td>
<td>Transcranial Magnetic Stimulation</td>
</tr>
<tr>
<td>TRACTS</td>
<td>Translational Research Center for Traumatic Brain Injury and Stress Disorders</td>
</tr>
<tr>
<td>VA</td>
<td>Department of Veterans Affairs</td>
</tr>
<tr>
<td>Project VALOR</td>
<td>Veterans After-Discharge Longitudinal Registry</td>
</tr>
<tr>
<td>VHA</td>
<td>Veterans Health Administration</td>
</tr>
<tr>
<td>VNS</td>
<td>Vagus Nerve Stimulation</td>
</tr>
<tr>
<td>VOA</td>
<td>Veterans Outcome Assessment</td>
</tr>
<tr>
<td>WET</td>
<td>Written Exposure Therapy</td>
</tr>
<tr>
<td>WoVeN</td>
<td>Women Veterans Network</td>
</tr>
</tbody>
</table>
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 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 Translational Research Center for Traumatic Brain Injury and Stress Disorders (TRACTS), the Department of Veterans Affairs (VA) National PTSD Brain Bank, the Psychiatric Genomics Consortium (PGC), and the PTSD Working Group of the ENIGMA (Enhancing Neuroimaging Genetics through Meta-Analysis) Consortium.

Ongoing studies that examine PTSD and blast-related traumatic brain injury (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 structural and functional brain features measured by neuroimaging, peripheral markers of inflammation, neuropathology, and metabolic pathology, including biomarkers obtained using Simoa® technology—which offers greater measurement sensitivity and precision relative to standard ELISA-based assays—as well as specific genes and polygenic risk scores. Also under investigation are epigenetic indicators drawn from both blood and postmortem brain tissue, including epigenome-wide deoxyribonucleic acid (DNA) methylation levels and transcriptome-wide messenger ribonucleic acid (mRNA) (i.e., gene expression).

Division members are also contributing to a Million Veteran Program (MVP) 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.

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. The studies also revealed impoverished recruitment of attention networks and hyper-recruitment of threat-related networks in 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 VetChange, 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-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 VetChange mobile app was released and is now being disseminated and used nationally on both Android and iOS devices. In addition, a major extension of the VetChange web intervention platform features a provider-facing dashboard, which allows for virtual and synchronous clinical care between providers and Veterans. Efforts are underway to secure Authority to Operate to make this intervention available to VA clinicians and patients. Recent accomplishments include completion of 508 testing and remediation; the team is currently implementing two-factor authentication for providers and patients to ensure secure access to the intervention prior to Authority to Operate review.

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. Findings from a recently completed Department of Defense (DoD)-funded study 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, and initial findings indicate non-inferiority of WET compared with PE. 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 fifth year. Given the high demand for training in the VA system and the positive results to date, VA Central Office has taken 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.

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 via VA Central Office funding and on one military installation through two separate DoD grants. 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 VA Merit 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 have launched a two-site randomized controlled trial (RCT) investigating the possible benefit of adding a brief family intervention for Veterans receiving individual CPT or PE. Pilot work indicated that adding this family intervention resulted in 50% less dropout from the Veterans’ individual CPT/PE. This larger trial will enroll 100 dyads (Veterans and their chosen adult family member) and randomize the family members to receive or not receive the brief intervention. All Veterans will be receiving CPT/PE for PTSD. Enrollment is underway for this trial.

As part of the Consortium to Alleviate PTSD (CAP), Division investigators contributed to several RCTs on active-duty military and Veteran populations. Focusing on PTSD comorbidities in Veterans, a double-blind RCT of doxazosin versus placebo for Veterans with co-occurring PTSD and alcohol use disorder revealed that both groups demonstrated statistically significant reductions in the primary outcomes of Clinician Administered PTSD Scale for DSM-5 (CAPS-5), PTSD Checklist for DSM-5 (PCL-5), percent drinking days, and percent heavy drinking. Contrary to hypotheses, however, no significant differences were
observed between groups on these variables. Another CAP study involving Division investigators was an RCT evaluating two forms of PE in military personnel: massed versus intensive outpatient. There were no significant differences between the treatment arms. Across groups, 61% achieved clinically significant reductions in clinician-assessed PTSD symptoms, 74% had self-reported PTSD symptom reductions at the one-month follow-up, and over 50% maintained PTSD diagnostic remission at six-month follow-up.

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 treatment as usual with both CPT and Cognitive-Behavioral Therapy for Headache and found that both active treatments reduced PTSD symptoms on the PCL-5, but only Cognitive-Behavioral Therapy for Headache reduced headache disability symptoms.

In the area of complementary interventions, 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 three-year development grant will examine similar interventions to Veterans with PTSD and chronic pain. 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.

Another study involving Division investigators was an RCT that examined the effectiveness of the Unified Protocol (UP) promising transdiagnostic treatment for emotional disorders. UP was compared with Present Centered Therapy in a pilot hybrid-1 effectiveness/pre-implementation study with trauma-exposed Veterans with one or more emotional disorder diagnoses presenting for routine care. Across the two conditions there were significant improvements with large effects, with the UP demonstrating the greatest change. Only the UP led to a decrease in the number of comorbid diagnoses.

Division investigators also are examining a developmental phenomenon termed later-adulthood trauma reengagement (LATR). It involves efforts by older combat Veterans to actively re-engage 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. In collaboration with the New England GRECC, Division researchers conducted an Office of Rural Health (ORH)-funded project that utilized focus groups with Home-Based Primary Care psychologists to better understand the unique presentations and challenges of treating PTSD in this population. Staff also recorded and disseminated Season 1 of a podcast called Talking Later: Veterans’ Stories of Late-Life PTSD. ORH-supported work in the upcoming fiscal year (FY) will involve modifying and evaluating an individualized version of the LATR protocol, writing up and submitting a manuscript based on the focus group findings, and disseminating Season 2 of the podcast.

Division investigators continue to partner with researchers in the Women’s Health Sciences Division, VINCI, Hunter College, and Boston Medical Center to examine the effects of trauma and other high-impact stressors on PTSD and related sequelae such as substance use disorders among lesbian, gay, bisexual, and transgender (LGBT) Veterans. Recent scholarship highlights interrelated psychiatric networks stemming from both criterion A trauma and non-criterion A trauma among transgender and gender-diverse individuals, as well as novel networks of preferred intervention strategies to address overlapping stressors and resulting symptoms. These interventions include the constituent parts of existing evidence-based treatments (e.g., CPT, PE, WET), but also novel intervention strategies, such as empowerment-based self-defense training, that both transgender individuals and providers who specialize in their care recommend to target trauma and minority stress. These data have also been used to support two recent CDA 2 submissions and a K23 proposal to NIMH, all to create adapted treatment to better target co-occurring PTSD and minority stress among LGBT Veterans.
The Division continues to engage in cutting-edge work to ensure that Veterans with PTSD nationwide receive access to VA mental health care. An ongoing VA-funded study is using a mixed methods approach to understand which Veterans who screen positive for PTSD in VA primary care clinics do not access follow-up VA mental health care, and the patient, provider, and system-level factors that may impede access. Results of this project, which leverages the Veterans Health Administration (VHA) Electronic Health Record (EHR), will directly inform the development and implementation of targeted access interventions nationally. This work builds on the results of a recently published VA-funded pilot study also spearheaded by Division investigators, which demonstrated 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 health care, and that certain Veteran subgroups were more likely to evidence an initial action toward VA mental health care than others.

Survey data indicate that Veterans with PTSD are interested in family involvement in their care, but Division investigators have found that the number of Veterans with PTSD who receive a family-inclusive visit in VA Medical Centers is relatively small. Investigators recently published outcomes from a systems-focused project examining factors that contribute to or inhibit the use of family-inclusive care. The research team 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. Results confirmed that VA clinicians believe that families can impact, and are impacted by, the course of Veterans’ PTSD. Many providers described incorporating families into Veterans’ care to provide psychoeducation, enhance the Veteran’s sense of social support and connection, and facilitate safety planning. Barriers to family-inclusive care included providers’ lack of formal training in couples or family therapy, as well as staffing issues that made scheduling additional clinical contacts challenging.

Additional activities include improving access to gold-standard medication for opioid use disorder (MOUD) and therapy/counseling among VHA patients with opioid (OUD) and other co-occurring psychiatric disorders (e.g., PTSD). Completion of quantitative analyses highlights negative effects of Coronavirus Disease 2019 (COVID-19) on treatment receipt among patients with OUD, despite telehealth expansion and federal and state policies expanding access to MOUD during the COVID-19 pandemic. Ongoing analyses of VHA EHR and Commercial and Medicaid claims data highlight key gender and racial disparities regarding treatment utilization and health outcomes (e.g., opioid overdose), but also positive effects of receiving MOUD via telehealth and expansion of MOUD coverage among some existing patients, and other successes following VHA’s swift response during the pandemic. Analysis of qualitative data from policymaker, provider, and patient interviews highlights the benefits of federal and state MOUD policy leniencies during the public health emergency, with implications for future policy and practice.

PTSD and Suicide

Division investigators received funding for a new suicide prevention clinical resource center (SP-CRC). This SP-CRC will serve suicide prevention investigators by providing highly critical research resources to facilitate programmatic and scientific needs. The mission of the new SP-CRC, called the Center for Harmonizing and Improving Interventions to Prevent Suicide (CHIIPS), will be to advance a Precision Medicine approach to suicide prevention research. CHIIPS content area hubs will include Predictive Analytics, Biomarkers, Identification, Screening, Assessment, Social Determinants/Disparities, Interventions, and Training and Education. By establishing a VA SP-CRC with an explicit focus on promoting Precision Medicine for suicide prevention, we will improve individual suicide prevention outcomes; address unsatisfactory response rates for standardized treatments; promote the incorporation of diverse patient presentations, characteristics, and needs into treatment plans and suicide prevention research; improve system and population-level outcomes; and increase efficient use of finite resources (staff, funds, infrastructure). CHIIPS will work closely with Health Services Research & Development’s Suicide Prevention Research Impact Network (SPRINT) investigators and hubs to optimize synergies and avoid duplication of effort between the two centers. CHIIPS’s goal is to enhance current SPRINT activities by leveraging their network and infrastructure to focus on Precision Medicine approaches. Together, SPRINT and CHIIPS will help VA Office of Research and Development build a
Precision Medicine suicide prevention research portfolio that will advance the state of the science and help VA achieve its mission of significantly reducing the number of Veteran suicides.

Division researchers are actively contributing to knowledge about PTSD and suicide, particularly in the domain of risk factors. Division researchers have identified 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. Collaboration with Army Study to Assess Risk and Resilience in Servicemembers (STARRS) 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 NCPTSD Clinical Neurosciences Division (CND) 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 developed and tested an evidence-based suicide attempt risk checklist to aid clinicians in identifying those at risk for future suicide attempts. BSD investigators completed a Military Suicide Research Consortium-funded project titled, “Latent Profile-Based Psychopathology Phenotypes and Self-Injurious Thoughts and Behaviors,” which examined the intersection between permutations of PTSD and other psychiatric symptoms in the cross-sectional prediction of suicidal thoughts and behaviors.

In another project, in collaboration with the South Texas Research Organizational Network Guiding Studies on Trauma and Resilience (STRONG STAR) Consortium, Division investigators have completed a study in which they tested a modified version of WET with a sample of Army soldiers and Veterans with PTSD symptoms who have been hospitalized for suicide risk. A related study was just funded by the Congressionally Directed Medical Research Program. The primary objective of this study is to evaluate the efficacy of Written Exposure Therapy for Suicide Prevention in reducing the incidence and severity of self-injurious thoughts and behaviors in active-duty military service members, Veterans, and adult military beneficiaries following a psychiatric hospitalization due to suicidal ideation, suicide plans, or a suicide attempt. 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.

Other Important Research

BSD investigators are collaborating with infectious disease and neuroimaging experts on a “long-COVID” study designed to examine the long-term neurobiological and psychiatric sequelae 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.

Ongoing work is examining telehealth delivery for patients with OUD and alcohol use disorders and other co-occurring disorders (e.g., PTSD). Recent analyses highlight the types of services that converted to telehealth delivery during the COVID-19 pandemic versus services that remained in person, and examine the impacts of receiving care via telehealth regarding subsequent risk of ED visits, inpatient hospitalizations, overdose, and death post-pandemic onset. These data already highlight positive effects of telehealth regarding utilization of therapy/counseling but also access to MOUD that would not have been possible without COVID-19-related telehealth expansion.

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, the 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 the 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.

The second large investigation, the Neurocognition Deployment Health Study (NDHS), began data collection at the outset of the Iraq 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 bidirectional 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/Veteran 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 prior years of the study, Division investigators successfully identified early-life records, such as birth certificates and military enrollment records, belonging to 10,146 siblings of 3,005 original cohort members. In the past year, with support from the National Institute on Aging, the study team has begun to create linkages between BEAMS and administrative databases at the Census Bureau, the Centers for Medicare and Medicaid Services, and the National Death Index. Upon completion of data linkage, the team will begin to examine prospective associations linking early adversities in the socioeconomic, psychosocial, and environmental domains to later-life health and well-being.

BSD investigators are examining the longitudinal impact of lifestyle behaviors (e.g., physical activity and diet quality) on risk for cardiovascular and metabolic disease and poor functioning among Veterans with PTSD. The goal is to identify and characterize behaviors that if modified would have beneficial effects on cardiometabolic risk profile, mental health, and physical functioning. Data are being collected in partnership with the TRACTS. Currently, this study is in its second year.

Division investigators are making important contributions in the assessment and diagnosis of PTSD. Specifically, investigators are evaluating a computer adaptive test for PTSD. BSD investigators have also revised and are now testing a revised version of the CAPS-5. This new, improved version has simplified formatting to improve visual flow; revised prompts to better guide interviewers and increase respondent comprehension; expanded rating options to capture more variability; has more explicit, detailed scoring guidelines embedded within each symptom item; and uses a frequency response card to reduce respondent burden and increase accuracy of responses. Another study co-led by Division investigators aims to provide validation of CAPS-5 performance with a military sample. Finally, Division investigators are serving as the PTSD assessment experts and leading the assessment core for a VA-funded cooperative study and a DoD-funded adaptive platform for a series of trials that will test several new therapeutics for PTSD.
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 associations with PTSD visible at the case-control level and numerous genome-wide 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 from 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, environmental factors, and the development of PTSD over a seven-year period was recently published. Results revealed a strong gene-by-environment interaction for the rs4702 variant of the FURIN gene with cumulative trauma burden, and that genes implicated in the PTSD PRS are perturbed by the drug doxylamine. NHRVS data are also being used to examine epigenetic correlates of PTSD. A recently published epigenome-wide association study observed an association between PTSD and CpG sites mapping to genes involved in immune function, transcription regulation, and axonal guidance. PTSD was also linked to a two-fold greater likelihood of accelerated epigenetic aging.

The VA National PTSD Brain Bank 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 \textit{IL1B}, a pro-inflammatory cytokine, as a peripheral marker in PTSD subjects. However, high BMI alone has not been shown to regulate \textit{IL1B} levels in the human prefrontal cortex, suggesting a possible molecular intersection between PTSD and BMI in the human brain, and may also imply further functional implications, as genetic variations in \textit{IL1B} has been linked to risk of PTSD in males.

Last year, our group published the largest genomics study of PTSD postmortem brain in \textit{Nature Neuroscience}. We examined the gene expression changes in four primary prefrontal cortical regions and identified gene expression changes related to GABAergic signaling, glucocorticoids, and inflammatory cytokines. We also identified sex-specific molecular pathologies differentiating males and females with PTSD, and identified genetic control of PTSD gene expression by identifying \textit{ELFN1} quantitative traits loci using the latest MVP GWAS for PTSD. Our work has moved toward single cell genomics of both the transcriptome and epigenome and has developed several tools that were recently published in the \textit{Journal of Computational Biology and Genes}.

The CND uses multimodal neuroimaging, such as positron emission tomography (PET), 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—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 co-occur; 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., this brain region controls changes in the pupil of the eye). Two recent publications utilizing MRI data—one in \textit{Neuropsychopharmacology}—highlight a potential higher stress-induced analgesia in PTSD where amygdala response to pain was lower in individuals with PTSD and was associated with emotional numbing symptoms. Lower amygdala reactivity to mild pain may contribute to the “all-or-none” reaction to stressful situations often observed in PTSD. A second paper published in \textit{Molecular Psychiatry}, in collaboration with investigators from Tel Aviv examining longitudinal volumetric changes in the hippocampus, suggests support to the “vulnerability trait” hypothesis, where lower initial volumes of specific hippocampus subregions are associated with non-remitting PTSD. The stable volume of all hippocampal and amygdala subregions over a year following a criterion A traumatic event does not support the idea of consequential, progressive, stress-related atrophy during the first critical year following trauma exposure.

\textbf{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 Veterans, developed suicidal thinking during the pandemic, and 0.3%, or approximately 55,000 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 the importance of 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 posttraumatic growth during the pandemic, most notably a greater appreciation of life and improved interpersonal relationships. Further, greater posttraumatic growth was associated with a 40% reduced likelihood of contemplating suicide, which suggests that interventions to help bolster posttraumatic growth may have utility in suicide prevention and treatment efforts. A three-year follow-up of this NHRVS cohort was recently completed, and studies evaluating pre-, peri-, and post-pandemic changes in PTSD and related outcomes are in progress.

### 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 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 non-suicidal self-harm in PTSD using ecological momentary assessment (EMA); 4) a trial of buprenorphine and CPT for patients diagnosed with PTSD and opiate use disorder; 5) a study that examines the effect of 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 3,4-methylenedioxyamphetamine (MDMA) in individuals with PTSD and obsessive compulsive disorder.

CND is also leading 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, innovations to improve treatment outcomes or efficiency, technology-based delivery of treatment, and strategies for promoting wider use of best practices.

Treatment Efficiency, Effectiveness, and Engagement

A key focus of Division researchers is increasing patient engagement in care. One area of research has been identifying people who are at high risk for mental health problems after trauma. Division researchers have developed tools for screening for mental health risk following sudden illness or injury. In a community sample, eight psychosocial risks accurately identified 80% of patients with elevated posttraumatic stress symptoms two months post-trauma. Among VA primary care patients, a 12-item screen correctly classified 86% of those who had elevated PTSD and/or depression symptoms (sensitivity) six months later, with good screening performance among members of ethnic/racial minority groups. Another study among racially and ethnically diverse patients hospitalized after sudden, severe illness or injury found that psychosocial risk factors largely explained racial/ethnic disparities in acute and longer-term posttraumatic stress symptoms.

Other studies are examining how to facilitate treatment engagement. Division investigators developed a brief measure of patient characteristics associated with effective engagement in care. This measure can help determine what types and amount of service resources are needed to engage Veterans. Another study on care for Veterans who screened positive for military sexual trauma (MST) found that most Veterans completed an initial appointment, but those with negative perceptions of care were less likely to complete three or more visits. 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.

VA has long been a leader in telehealth, and VA telemental health services to the home increased further 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 CPT for PTSD with messaging-based therapy as usual. It will also compare different strategies to increase engagement, including a unique incentive structure.

Additional studies are examining how online interventions can be combined with coaching and social support. 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 Problem Solving Therapy (Moving Forward), 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 VA Community Reinforcement and Family Training (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.

Researchers are examining how to make exposure therapy, one of our best PTSD treatments, more effective and more readily accessible. Two recently published meta-analyses examined the effects of exposure therapy for PTSD among community and military populations. Two studies tested digital delivery of exposure-based interventions among Veterans who might not otherwise access traditional face-to-face care. One study tested written and verbal forms of exposure treatment delivered online with support from VA peer support specialists. Another study tested effects of an exposure therapy app delivered with and without coaching support.

Division investigators are involved in several other trials of mobile mental health apps. One trial compares the outcomes of PTSD Coach with clinician support versus usual mental health treatment in reducing PTSD symptoms among Veterans treated in primary care. A recently completed study tested whether a mobile
cognitive control training program for the treatment of alcohol use disorder and PTSD improved recovery outcomes. A manuscript under review reports results of a pilot study of Insomnia Coach, an app to help Veterans self-manage insomnia symptoms. Another pilot study is assessing outcomes of the AIMS anger management app. Division staff are also collaborating on studies assessing whether Mindfulness Coach helps Veterans manage stress and recover from alcohol problems, and testing whether an app for tracking patient outcomes improves quality of care for Veterans who have both spinal cord injury and PTSD.

Division staff have developed procedures for collecting anonymous usage data from our apps while ensuring user privacy. These procedures can help us better understand how users experience our mental health apps in regular use, outside of clinical trials. A series of naturalistic studies are examining how users engage with some of our most widely used apps: Mindfulness Coach, COVID Coach, PTSD Coach, AIMS for Anger Management, and Beyond MST. The Division is helping to advance the mobile and technology research of VA investigators around the nation through its Center for Mobile Applications Research Resources and Services (CMARRS).

Division investigators are collaborating on several studies testing a mindfulness-based intervention, Acceptance and Commitment Therapy (ACT). These trials are assessing whether ACT improves functioning of Veterans who experienced moral injury, whether adding ACT to brief inpatient treatment can reduce Veterans’ suicidal behaviors after discharge, and whether an online version of ACT can help health care providers manage pandemic-related distress.

### Care Delivery, Models of Care, and System Factors

Division researchers are involved several other studies of stress related to the COVID-19 pandemic among health care workers. A recent paper identified risk and protective factors for burnout among VA mental health staff prior to and during the pandemic. A pilot study is examining effects of COVID Coach, an app designed to help improve self-care and overall mental health during the pandemic, among VA health care providers. 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 COVID-19 pandemic also led to the expansion of remote supervision (telesupervision) of clinical trainees in VA training programs. Division staff are collaborating on an ORH-funded project investigating the impact of telesupervision on training of psychology interns, especially in rural sites.

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. The third major release, Modeling to Learn 3.0, was released nationally in 2022. 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 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 quality 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. Based on initial results from that study, investigators proposed specific policy recommendations to enable wider use of evidence-based psychotherapies in military clinics.

Investigators involved in national rollouts of PE and WET are studying the effectiveness of different virtual training models and implementation support approaches on therapist delivery of the treatment. 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 labor-intensive 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.

Division staff also 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 to 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 [Northeast Program Evaluation Center (NEPEC)](https://www.va.gov/ncptsd/). 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 NCPTSD Evaluation Division continues to work closely with the NCPTSD mentoring team to address reporting and evaluation needs of VA PTSD treatment.

Other recently published work using large-scale medical record data, in conjunction with the NEPEC, has provided information about the relative effectiveness of PTSD treatments and treatment response patterns in VA PTSD specialty and residential care. This body of work supports existing evidence that first-line psychotherapies for PTSD (including PE and CPT) are generally effective and are associated with large improvements in PTSD for Veterans in residential programs. Additional findings include evidence that group CPT in VA residential care is as effective as individually delivered CPT.

The Evaluation Division also has a particular focus on barriers to effective PTSD treatment, and health disparities and differences in minoritized groups of Veterans. The effectiveness research above showed that Black Veterans have (on average) worse outcomes in VA specialty care than White Veterans. FY 2022 work from the Evaluation Division also shows differential outcomes of VA PTSD residential treatment between men and women Veterans. The Division has active projects examining gender, race, military sexual trauma, and treatment disparities in the context of VA residential and specialty outpatient treatment for PTSD.

Other work uses neuroimaging to better understand the neural mechanisms that underlie PTSD. One publication examined the effects of intranasal oxytocin on threat- and reward-related functional connectivity in men and women with childhood abuse-related PTSD, finding differential alterations in amygdala-insula connectivity in men and women who were exposed to childhood abuse.

Finally, Evaluation Division investigators continued collaborations with investigators from the Clinical Neurosciences Division and from outside NCPTSD using data from the NHRVS longitudinal study, looking at a wide variety of research questions, including PTSD symptom worsening, attachment style and PTSD risk, and the characteristics of PTSD symptoms and diagnosis in older U.S. Veterans.

---

**Care Delivery, Models of Care, and System Factors**

NEPEC staff 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.

In FY 2022, the Evaluation Division continued to support the Measurement-Based Care (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.

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 the Residential Rehabilitation Treatment Program (RRTP) has a high-risk flag or has a lifetime REACH VET (Recovery Engagement and Coordination for Health – Veterans 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 the PTSD outpatient treatment, 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 PTSD Clinical Team 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.

Other Important Research

Evaluation Division staff were integrally involved in the development of a Quick Guide to Race and Ethnicity Analyses for the OMHSP and are currently developing a dashboard for PTSD specialty clinics to access and visualize data about differences in care between Veterans of different races, to be deployed in FY 2023.

The PTSD Evaluation team is currently analyzing Veterans Outcome Assessment (VOA) data to best model Veterans’ experience when receiving PTSD specialty care to understand which demographic, clinical, and health care utilization 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 the VA.

Data analysis continues for the Survey of Experiences of Returning Veterans (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

Predictors of treatment response, aimed at understanding why a treatment works (or does not work) for a particular patient, are an important facet of Executive Division biomarkers 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 MRI predictive biomarkers of response to TMS among Veterans with treatment-resistant depression and PTSD.

The Executive Division continues to coordinate the operations of VA’s National PTSD Brain Bank. 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 advancing assessment and treatment techniques.

The VA National PTSD Brain Bank currently has over 200 living donors and approximately 330 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 TBI and Vietnam Veterans. The Brain Bank’s intramural research program has produced 18 published articles and has 7 active grants examining transcriptomic, synaptic, and neuroinflammatory alterations in key brain regions associated with PTSD.

Investigators are also evaluating the utility of other neuromodulatory therapies for PTSD and TBI in human and pre-clinical models, including deep brain stimulation (DBS), cranial electrotherapy stimulation (CES), 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 obsessive-compulsive 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 shockwave-induced brain injury in rodents to inform clinical application. A pilot study investigating CES for PTSD found some evidence of improvement in PTSD, and that the treatment did not have adverse effects. Follow-up work is planned for FY 2023 and beyond. VNS, an FDA-approved treatment for epilepsy, depression, and migraine, with ongoing research on the treatment of inflammatory conditions, is being evaluated for inflammatory-mediated neuropsychiatric consequences of PTSD and brain injury in rodent models.

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 2022, Comparative Effectiveness Research 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 2022, Executive Division researchers, in collaboration with CSP, published the main results showing that PE and CPT are both effective for Veterans with PTSD, and that PE has a slight advantage in rates of remission and loss of
diagnosis. These findings, along with ongoing secondary analyses examining predictors of PE and CPT treatment outcomes, 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.

Ongoing work at the Executive Division is aimed at developing new treatments for PTSD and related conditions. A trial to evaluate Trauma Informed Guilt Reduction, a six-session protocol to reduce guilt and shame related to a traumatic event, among Veterans of Iraq and Afghanistan showed that this intervention reduced PTSD symptoms more than non-specific supportive therapy. Other work explores a potential new medication for PTSD discovered by retrospectively examining the medical records of Veterans with PTSD treated in VA and finding that several antivirals used to treat Hepatitis C were associated with improvement in PTSD symptoms. Data published in FY 2022 compared specific antivirals and found that a combination of glecaprevir and pibrentasvir was more effective in reducing PTSD symptoms than other commonly prescribed antiviral combinations. Novel work in couples treatment for PTSD is testing a brief Cognitive-Behavioral Conjoint Therapy for PTSD (bCBCT) and exploring oxytocin as a treatment adjunct for bCBCT. Further research aimed at understanding the effectiveness of these novel interventions is planned for FY 2023 and beyond.

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 completed data collection. Another ongoing study is testing CBT for Insomnia versus sleep hygiene integrated with PE as a strategy for improving sleep problems in PTSD.

Finally, in addition to better understanding and maximizing PTSD treatment effectiveness, Executive Division investigators are also working on ways to better communicate the effectiveness of PTSD treatments with patients and providers. Work published in FY 2022 developed patient-friendly graphics that illustrate the effectiveness of several evidence-based treatments for PTSD, including PE, CPT, and medication.

---

### 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. 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. In FY 2022, a new Learning Collaborative (LC) within the Mentoring Program that includes monthly LC calls alongside implementation support, resources, and data feedback was extended to all Mentors. More information about the Mentoring Program can be found in the Education narrative on page 17.

### Implementation

The Executive Division continues to support quality improvement projects aimed at increasing access to effective treatments for PTSD within the VA. In previous years, quality improvement projects established thresholds for high and low evidence-based psychotherapy (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 PTSD Clinical Teams. The success of this work is reflected in an increase in high reach PTSD Clinical Teams, and a corresponding decrease in low reach PTSD Clinical Teams, from FY 2020 to the present.

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 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 key line of work focuses 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. Other work investigates the time after discharge from psychiatric care as a risk period for death by suicide. Several publications describing this risk period, and a new intervention that targets patients after psychiatric discharge, were published in FY 2022. Future work will build on this work and continue to test the effectiveness of intervention in this risk period.

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. A recently completed study is examining the role of neurobiological and psychosocial factors that affect negative pregnancy outcomes among women with PTSD. Results demonstrated that trauma-exposed women with any mental health condition (including PTSD) early in pregnancy were more likely to perceive their labor and delivery experience negatively and have increased depressive symptoms at six weeks postpartum compared with non-trauma-exposed healthy women. Trauma-exposed women with PTSD specifically were significantly more likely to have increased postpartum anxiety and an adverse baby outcome (e.g., preterm birth, low infant birthweight, NICU admission). Ongoing analyses are examining whether these differences are related to a deficiency in the capacity to synthesize pregnanolone and/or allopregnanolone (an anxiolytic metabolite of progesterone) in parallel with rising progesterone levels. 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 anxiety sensitivity moderated the relationship between conditioned physiological reactivity and PTSD symptoms among trauma-exposed women. Finally, investigators are examining methylation profiles of genes previously observed or posited to be associated with PTSD and dysregulated neurosteroid, neurotransmitter, and inflammatory factor profiles while accounting for environmental exposures such as tobacco dependence and alcohol use disorder in the large longitudinal TRACTS cohort.

Efforts aimed at using biomarkers to improve treatments for PTSD and related disorders include a recently launched study examining whether PE therapy is more efficacious during the morning hours when endogenous cortisol levels are at their highest as compared with later in the day when cortisol levels are relatively low. A separate effort involves an ongoing study actively recruiting participants to investigate the impact of IV allopregnanolone 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).

Division researchers have also concluded a pioneering study in 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 of the study describe the multi-method approach to examining the psychiatric and neurological consequences of IPV in this sample and identify the neural correlates of TBI in women survivors of intimate partner violence.
PTSD and Suicide

Division investigators are examining associations between trauma history, PTSD, and suicidal behavior among Veterans, particularly in regard to sex and gender differences. For example, the aims of a secondary analysis of data from The Veterans Metrics Initiative Study, a longitudinal study of recently separated male and female Veterans, include identifying initial post-separation life circumstances (e.g., vocation, finances, and social relationships) as predictors of change in suicidal ideation during the first three years after leaving military service. Findings suggest that Veterans’ initial well-being in each of these key life domains contributes to their risk for experiencing high-risk suicidal ideation trajectories, even after accounting for Veterans’ experiences of PTSD and broader mental health. In addition, Division researchers are examining gender differences in suicide risk and behavior among older Veterans using data from two large-scale VA cooperative studies of Vietnam-era Veterans.

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. Additional efforts to improve the effectiveness of CPT include an ongoing, 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.

A recently completed pilot study used a hybrid effectiveness implementation design to examine WET for pregnant women with comorbid PTSD and substance use disorder engaged in prenatal care within a high-risk obstetrical and addiction recovery program. Results indicate that WET is feasible and acceptable to both patients and providers in quantitative and qualitative analyses. Furthermore, PTSD symptoms, depression symptoms, and substance use cravings decreased from pre-intervention to post-intervention and were sustained at the six-month postpartum follow-up. Findings from this study have informed a large RCT on pregnant women with PTSD to examine the effectiveness of WET compared with a support intervention and the non-inferiority of delivery of WET by community health workers versus mental health clinicians.

The Division is also focused on intervention research among those who have not necessarily been diagnosed with PTSD. Ongoing work by Division investigators is examining whether pairing well-being assessment feedback with targeted resource recommendations, using a newly developed tool, is an effective strategy to promote Veterans’ willingness to seek support for areas of relatively poorer well-being as they transition from military service. Investigators also published a description of the development and initial program evaluation of an innovative national network of peer-facilitated support groups for women Veterans, WoVeN: The Women Veterans Network. WoVeN is intended to increase social connections and support and to improve well-being and quality of life among women Veterans. Ongoing efforts are evaluating the effectiveness of the program on these outcomes. Investigators also continued expanding WoVeN’s sister program, BRIDGES (Building Re-Integration from Dreams and Goals to Execution and Success), which aims to engage women transitioning out of active-duty military service in a broader social support network of women Veterans.

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. Investigators continue to analyze data from a study of the effects of deployment stressors and resulting mental health conditions on Veterans’ quality of life and health care needs. Recent findings indicate bi-directional relationships between mental health symptoms (PTSD and depression) and both psychosocial functioning (work, romantic relationships, and parenting) and physical health functioning, which 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 relevance to women Veterans.
Two studies are investigating VHA health care use related to eating disorders: a recently completed study with a nationally representative sample of male and female Veterans, and an ongoing study focused on 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. As part of this work, an examination of the impact of COVID-19 on mental health concerns among Veterans found that early pandemic depression, anxiety, stress, and PTSD symptoms were associated with peri-pandemic eating disorder diagnostic status.

Other key work has focused on research with important subpopulations within the Veteran community. A study examining a therapist-assisted self-management program for Veterans who successfully complete trauma-focused therapy (EMPOWER) was funded this year; the goal of the project is to improve Veteran outcomes while reducing mental health service utilization in moving toward an episodic model of care. An ongoing longitudinal study, the 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. Data from this study have demonstrated that perceived neighborhood danger is associated with increased depression and PTSD, and that interpersonal social support or neighborhood cohesion mitigated the effect of neighborhood danger on Veterans’ depression, but only among those without prior trauma. The health of older women Veterans is another area of focus, including a study examining gender differences in the impact of military service and mental health sequelae, with a focus on PTSD, depression, and their comorbidity, on later-life health in Vietnam-era Veterans. Current analyses are targeting cardiometabolic and other chronic disease risks among 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. Findings from this cluster-randomized, stepped-wedge, hybrid-II implementation-effectiveness trial demonstrate that a blended implementation facilitation strategy, consisting of an operations-funded external facilitator working for six months with a facility-funded internal facilitator, nearly tripled the reach of IPV screening programs in primary care compared with implementation as usual in VA. In turn, implementation facilitation was associated with a two-fold increase in IPV detection rates among the patient population and increased patients’ post-screening uptake of psychosocial services. In the area of IPV interventions, researchers published findings from a randomized clinical trial demonstrating the effectiveness of a brief counseling intervention, Recovering from IPV through Strength and Empowerment (RISE), for women who are experiencing violence in their intimate relationships. A collaboration with the national VHA IPV Assistance Program resulted in a rollout of RISE with IPV Assistance Program Coordinators across the country for implementation with Veterans of all gender identities. Published findings from an initial program evaluation support the effectiveness of RISE in routine VA care.
Appendix C: Fiscal Year 2022 Funding

VA Cooperative Studies Program (CSP)

<table>
<thead>
<tr>
<th>Principal Investigator</th>
<th>Research Title</th>
<th>Years</th>
<th>Current Funding</th>
<th>Total Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clark &amp; Bair (Scioli – Site PI)</td>
<td>Sequential and Comparative Evaluation of Pain Treatment Effectiveness Response: The SCEPTER Trial</td>
<td>2019-2025</td>
<td>$2,410,831</td>
<td>$3,500,000</td>
</tr>
</tbody>
</table>

Other VA Sources

<table>
<thead>
<tr>
<th>Principal Investigator</th>
<th>Research Title</th>
<th>Funding Source</th>
<th>Years</th>
<th>Current Funding</th>
<th>Total Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bean &amp; Scioli</td>
<td>The VA REAP Center for Rehabilitation Promoting Prevention and Improved Resilience</td>
<td>RR&amp;D</td>
<td>2021-2025</td>
<td>$440,000</td>
<td>$2,200,000</td>
</tr>
<tr>
<td>Borges (Walser – Site PI)</td>
<td>Acceptance and Commitment Therapy Training Program for Health Care Providers</td>
<td>OMHSP</td>
<td>2022-2024</td>
<td>$326,407</td>
<td>$1,018,337</td>
</tr>
<tr>
<td>Bovin</td>
<td>Understanding Pathways to Care for Veterans Who Screen Positive for PTSD: The PTSD Access To Healthcare Study</td>
<td>HSR&amp;D</td>
<td>2021-2025</td>
<td>$288,057</td>
<td>$1,074,207</td>
</tr>
<tr>
<td>Cloitre</td>
<td>Connecting Women to Care: Home-Based Psychotherapy for Women with MST Living in Rural Areas</td>
<td>HSR&amp;D</td>
<td>2018-2022</td>
<td>$241,497</td>
<td>$1,095,979</td>
</tr>
<tr>
<td>DiSano</td>
<td>Neuroinflammation and Neuropsychiatric Consequences of Brain Injury: Determining the Role of Central Nervous System Barrier Integrity in Mediating Outcomes</td>
<td>CDA</td>
<td>2021-2025</td>
<td>$92,834</td>
<td>$182,673</td>
</tr>
<tr>
<td>Principal Investigator</td>
<td>Research Title</td>
<td>Funding Source</td>
<td>Years</td>
<td>Current Funding</td>
<td>Total Funding</td>
</tr>
<tr>
<td>------------------------</td>
<td>-------------------------------------------------------------------------------</td>
<td>----------------</td>
<td>-----------</td>
<td>-----------------</td>
<td>---------------</td>
</tr>
<tr>
<td>Esterman</td>
<td>Defining Biotypes of PTSD with Resting-State Connectivity</td>
<td>CSR&amp;D</td>
<td>2018-2022</td>
<td>$324,822</td>
<td>$1,008,084</td>
</tr>
<tr>
<td>Esterman &amp; Lee, D.</td>
<td>Identifying Neural Fingerprints of Suicidality</td>
<td>RR&amp;D</td>
<td>2021-2023</td>
<td>$66,582</td>
<td>$201,324</td>
</tr>
<tr>
<td>Galovski &amp; Kehle-Forbes</td>
<td>Personalizing Cognitive Processing Therapy with a Case Formulation Approach to Intentionally Target Impairment in Psychosocial Functioning Associated with PTSD</td>
<td>RR&amp;D</td>
<td>2020-2024</td>
<td>$329,708</td>
<td>$1,194,890</td>
</tr>
<tr>
<td>Grubaugh &amp; Hamblen</td>
<td>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</td>
<td>HSR&amp;D</td>
<td>2018-2022</td>
<td>$216,735</td>
<td>$1,001,900</td>
</tr>
<tr>
<td>Hallenbeck</td>
<td>Remote Monitoring of PTSD and MDD Symptoms in VA Mental Health Care</td>
<td>HSR&amp;D</td>
<td>2022</td>
<td>$12,470</td>
<td>$12,470</td>
</tr>
<tr>
<td>Hallenbeck</td>
<td>Using Innovative mHealth Technology to Understand Real-World Psychosocial Functioning for Veterans with Comorbid PTSD and Depression Symptoms</td>
<td>VISN 21 Early Career Award Program</td>
<td>2023-2024</td>
<td>$0</td>
<td>$309,552</td>
</tr>
<tr>
<td>Hallenbeck</td>
<td>Active and Passive Monitoring of Symptoms of Posttraumatic Stress Disorder and Major Depressive Disorder and Psychosocial Functioning</td>
<td>RR&amp;D</td>
<td>2022</td>
<td>$17,920</td>
<td>$17,920</td>
</tr>
<tr>
<td>Hollifield (Holtzheimer – Site PI)</td>
<td>Efficacy and Safety of Stellate Ganglion Block for Posttraumatic Stress Disorder in Veterans</td>
<td>CSR&amp;D</td>
<td>2022-2025</td>
<td>$1,028,639</td>
<td>$3,964,679</td>
</tr>
<tr>
<td>Holtzheimer</td>
<td>Assessing an Electroencephalography Biomarker of Response to Transcranial Magnetic Stimulation for Major Depression</td>
<td>CSR&amp;D</td>
<td>2020-2025</td>
<td>$160,208</td>
<td>$5,429,619</td>
</tr>
<tr>
<td>Iverson</td>
<td>Addressing Intimate Partner Violence among Women Veterans: Evaluating the Impact and Effectiveness of VHA’s Response</td>
<td>HSR&amp;D</td>
<td>2020-2024</td>
<td>$329,000</td>
<td>$1,140,000</td>
</tr>
<tr>
<td>Jagger-Rickels</td>
<td>Identifying Neural Signatures of Current and Future Suicidal Thoughts and Behaviors</td>
<td>CDA</td>
<td>2022-2024</td>
<td>$36,492</td>
<td>$291,929</td>
</tr>
<tr>
<td>Kehle-Forbes</td>
<td>Empowering Veterans to Self-Manage PTSD Symptoms Following Completion of Trauma-Focused Therapy</td>
<td>HSR&amp;D</td>
<td>2023-2026</td>
<td>$0</td>
<td>$634,261</td>
</tr>
<tr>
<td>Kehle-Forbes &amp; Galovski</td>
<td>Empowering Veterans to Self-Manage PTSD Symptoms Following Completion of Trauma-Focused Therapy</td>
<td>HSR&amp;D</td>
<td>2022-2025</td>
<td>$0</td>
<td>$574,245</td>
</tr>
<tr>
<td>Kimerling</td>
<td>Development of a Patient-Reported Measure to Assess Healthcare Engagement</td>
<td>HSR&amp;D</td>
<td>2018-2023</td>
<td>$165,877</td>
<td>$941,352</td>
</tr>
<tr>
<td>Principal Investigator</td>
<td>Research Title</td>
<td>Funding Source</td>
<td>Years</td>
<td>Current Funding</td>
<td>Total Funding</td>
</tr>
<tr>
<td>------------------------</td>
<td>----------------</td>
<td>---------------</td>
<td>-------------</td>
<td>----------------</td>
<td>---------------</td>
</tr>
<tr>
<td>Kuhn</td>
<td>A Randomized Controlled Trial of Coaching Into Care with VA-CRAFT to Promote Veteran Engagement in PTSD Care</td>
<td>HSR&amp;D</td>
<td>2020-2024</td>
<td>$345,285</td>
<td>$1,193,618</td>
</tr>
<tr>
<td>Kuhn &amp; Owen</td>
<td>Mobile Apps Research Resources and Services</td>
<td>HSR&amp;D</td>
<td>2018-2022</td>
<td>$159,356</td>
<td>$754,220</td>
</tr>
<tr>
<td>Larsen</td>
<td>Identifying Best Practices in How to Offer an Evidence-Based Treatment: A Pilot Feasibility Trial</td>
<td>HSR&amp;D</td>
<td>2021-2022</td>
<td>$87,397</td>
<td>$87,397</td>
</tr>
<tr>
<td>Macia</td>
<td>Veteran Perspectives of a Trauma-Informed Intervention for VA Homeless Programs</td>
<td>HSR&amp;D</td>
<td>2022</td>
<td>$17,699</td>
<td>$17,699</td>
</tr>
<tr>
<td>Meshberg-Cohen</td>
<td>Written Exposure Therapy as a Brief Trauma Treatment for Veterans with Co-Occurring Substance Use Disorders and PTSD</td>
<td>CSR&amp;D</td>
<td>2022-2026</td>
<td>$227,079</td>
<td>$877,716</td>
</tr>
<tr>
<td>Miller</td>
<td>Magnetic Resonance Spectroscopy and Genetic Analysis of Oxidative Stress in OEF/OIF Veterans with PTSD and TBI</td>
<td>CSR&amp;D</td>
<td>2018-2023</td>
<td>$165,000</td>
<td>$645,000</td>
</tr>
<tr>
<td>Mitchell</td>
<td>Eating Disorders in Veterans: Risk, Resilience, and Service Use</td>
<td>HSR&amp;D</td>
<td>2019-2022</td>
<td>$0</td>
<td>$525,112</td>
</tr>
<tr>
<td>Niles</td>
<td>Novel Interventions for Gulf War Veterans’ Illnesses</td>
<td>CSR&amp;D</td>
<td>2016-2023</td>
<td>$0</td>
<td>$1,757,080</td>
</tr>
<tr>
<td>Niles</td>
<td>Barriers to CPAP Use in Veterans with Comorbid OSA and PTSD</td>
<td>RR&amp;D</td>
<td>2021-2022</td>
<td>$7,437</td>
<td>$17,850</td>
</tr>
<tr>
<td>Noller, C.</td>
<td>Neuromodulation to Alter Acute Inflammation and Neuropsychiatric Deficits Following Traumatic Brain Injury</td>
<td>CDA</td>
<td>2021-2023</td>
<td>$9,467</td>
<td>$183,623</td>
</tr>
<tr>
<td>Norman &amp; Galovski</td>
<td>Non-Inferiority Trial of Trauma Informed Guilt Reduction Therapy to Prolonged Exposure</td>
<td>CSR&amp;D</td>
<td>2022-2028</td>
<td>$0</td>
<td>$1,457,477</td>
</tr>
<tr>
<td>Norman</td>
<td>Topiramate and Prolonged Exposure for Alcohol Use Disorder and PTSD</td>
<td>RR&amp;D</td>
<td>2018-2022</td>
<td>$116,813</td>
<td>$993,584</td>
</tr>
<tr>
<td>Oslin (Gelernter – Site PI)</td>
<td>PRIME Care (PRecision medicine in MEntal health Care)</td>
<td>HSR&amp;D</td>
<td>2017-2022</td>
<td>$265,239</td>
<td>$11,306,320</td>
</tr>
<tr>
<td>Pineles</td>
<td>An Electrophysiological Predictor of SSRI Response in Veterans with PTSD</td>
<td>CSR&amp;D</td>
<td>2019-2022</td>
<td>$163,238</td>
<td>$1,158,051</td>
</tr>
<tr>
<td>Pless Kaiser</td>
<td>Improving Psychosocial Functioning in Older Veterans with PTSD</td>
<td>CDA</td>
<td>2017-2022</td>
<td>$10,300</td>
<td>$942,679</td>
</tr>
<tr>
<td>Ranganathan</td>
<td>VA PRIME Care</td>
<td>PRIME</td>
<td>2017-2022</td>
<td>$82,067</td>
<td>$329,363</td>
</tr>
<tr>
<td>Shiner</td>
<td>Patient Safety Center of Inquiry: Prevention of Suicide</td>
<td>NCPS</td>
<td>2019-2022</td>
<td>$246,163</td>
<td>$536,107</td>
</tr>
<tr>
<td>Principal Investigator</td>
<td>Research Title</td>
<td>Funding Source</td>
<td>Years</td>
<td>Current Funding</td>
<td>Total Funding</td>
</tr>
<tr>
<td>------------------------</td>
<td>----------------</td>
<td>----------------</td>
<td>-------------</td>
<td>-----------------</td>
<td>---------------</td>
</tr>
<tr>
<td>Sloan</td>
<td>An Efficient Exposure-Based Treatment for PTSD Compared to Prolonged Exposure: A Noninferiority Trial</td>
<td>CSR&amp;D</td>
<td>2019-2023</td>
<td>$414,987</td>
<td>$1,762,404</td>
</tr>
<tr>
<td>Smith</td>
<td>Long-Term Health Impact of Vietnam Era Service: Examining Gender Differences in Risk of Mortality and Chronic Disease</td>
<td>CSR&amp;D</td>
<td>2022-2024</td>
<td>$182,478</td>
<td>$383,456</td>
</tr>
<tr>
<td>Sullivan</td>
<td>Neural Metabolic Stress in mTBI and PTSD</td>
<td>CDA</td>
<td>2018-2023</td>
<td>$245,154</td>
<td>$877,915</td>
</tr>
<tr>
<td>Taft</td>
<td>Adjunctive Motivational Alcohol Intervention to Prevent Intimate Partner Violence</td>
<td>CSR&amp;D</td>
<td>2021-2025</td>
<td>$246,972</td>
<td>$1,304,582</td>
</tr>
<tr>
<td>Taft</td>
<td>Strength at Home Implementation and Evaluation</td>
<td>VACO IPV Program</td>
<td>2021-2022</td>
<td>$309,128</td>
<td>$309,128</td>
</tr>
<tr>
<td>Thompson-Hollands</td>
<td>Family Involvement in Treatment for PTSD: A Brief, Feasible Method for Enhancing Outcomes, Retention, and Engagement</td>
<td>VA CSR&amp;D</td>
<td>2022-2026</td>
<td>$125,438</td>
<td>$1,098,623</td>
</tr>
<tr>
<td>Vogt</td>
<td>Measurement-Based Transition Assistance: Evaluating the Promise of a Web-Based Approach to Promote Veterans’ Support Seeking</td>
<td>HSR&amp;D</td>
<td>2022-2024</td>
<td>$150,915</td>
<td>$195,515</td>
</tr>
<tr>
<td>Vogt</td>
<td>Risk and Resilience Factors Related to Suicidal Ideation during Transition from Military to Civilian Life: Secondary Analyses of the TVMI Cohort Study</td>
<td>HSR&amp;D</td>
<td>2020-2022</td>
<td>$156,627</td>
<td>$356,266</td>
</tr>
<tr>
<td>Whitworth</td>
<td>Impact of Lifestyle on Cardiovascular and Metabolic Risk Factors in Trauma Exposed Post-9/11 Veterans</td>
<td>CDA</td>
<td>2021-2026</td>
<td>$207,588</td>
<td>$1,045,448</td>
</tr>
<tr>
<td>Wiltsey Stirman</td>
<td>Using the Multiphase Optimization Strategy to Adapt Cognitive Processing Therapy</td>
<td>HSR&amp;D</td>
<td>2022-2026</td>
<td>$138,474</td>
<td>$1,063,822</td>
</tr>
<tr>
<td>Zelkowitz</td>
<td>Psychological Drivers of Self-Destructive Behaviors in PTSD</td>
<td>CSR&amp;D</td>
<td>2022-2027</td>
<td>$31,868</td>
<td>$982,298</td>
</tr>
<tr>
<td>Zimmerman</td>
<td>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?</td>
<td>HSR&amp;D</td>
<td>2020-2023</td>
<td>$290,631</td>
<td>$1,198,168</td>
</tr>
</tbody>
</table>

BLR&D Biomedical Laboratory Research & Development Service; CDA Career Development Award; CSR&D Clinical Science Research and Development Service; CPAP Continuous Positive Airway Pressure; HSR&D Health Services Research and Development Service; IPV Intimate Partner Violence; MDD Major Depressive Disorder; MST military sexual trauma; mHealth mobile health; mTBI mild traumatic brain injury; NCPS National Center for Patient Safety; OEF/OIF Operation Enduring Freedom/Operation Iraqi Freedom; OSA Obstructive Sleep Apnea; OMHSP Office of Mental Health and Suicide Prevention; PI Principal Investigator; PRIME Precision Medicine in Mental Health Care; PTSD Posttraumatic Stress Disorder; REAP Research Enhancement Award Program; 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; VHA Veterans Health Administration; VISN Veterans Integrated Service Network.
### National Institutes of Health (NIH)

<table>
<thead>
<tr>
<th>Principal Investigator</th>
<th>Research Title</th>
<th>Funding Source</th>
<th>Years</th>
<th>Current Funding</th>
<th>Total Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abdallah</td>
<td>Glial and Synaptic Functions in Major Depression</td>
<td>NIMH</td>
<td>2017-2022</td>
<td>$130,963</td>
<td>$2,493,229</td>
</tr>
<tr>
<td>Bohnert (Kuhn – Site PI)</td>
<td>Testing a PTSD m-Health Intervention to Improve Alcohol Treatment Outcomes</td>
<td>NIAAA</td>
<td>2020-2025</td>
<td>$519,268</td>
<td>$3,043,387</td>
</tr>
<tr>
<td>Carlson</td>
<td>Development of a Risk Factor Screen for Mental Health Problems after Sudden Illness or Injury</td>
<td>NIMHD</td>
<td>2018-2023</td>
<td>$0</td>
<td>$2,293,641</td>
</tr>
<tr>
<td>Carpenter</td>
<td>Enhancing Memory and Learning in Cognitive Processing Therapy for PTSD</td>
<td>K</td>
<td>2022-2027</td>
<td>$189,216</td>
<td>$946,080</td>
</tr>
<tr>
<td>Cosgrove, Pietzak &amp; Esterlis</td>
<td>Imaging Microglial Activation in PTSD using PET</td>
<td>NIMH</td>
<td>2017-2022</td>
<td>$0</td>
<td>$825,495</td>
</tr>
<tr>
<td>Davis</td>
<td>Dysregulation in mGluR5 as a Marker of BPD and Suicide Related Endophenotypes</td>
<td>K</td>
<td>2018-2023</td>
<td>$209,375</td>
<td>$983,483</td>
</tr>
<tr>
<td>Esterlis &amp; Pietzak</td>
<td>Depression and Accelerated Brain Aging: A PET Imaging Study</td>
<td>NIMH</td>
<td>2018-2023</td>
<td>$1,246,108</td>
<td>$4,051,532</td>
</tr>
<tr>
<td>Esterlis</td>
<td>In Vivo Imaging of a Neural Marker of Suicidal Behavior in Bipolar Disorder</td>
<td>NIMH</td>
<td>2018-2023</td>
<td>$782,677</td>
<td>$3,935,570</td>
</tr>
<tr>
<td>Gradus &amp; Shiner</td>
<td>Identification of Novel Agents to Treat PTSD Using Clinical Data</td>
<td>NIMH</td>
<td>2020-2024</td>
<td>$554,790</td>
<td>$2,459,226</td>
</tr>
<tr>
<td>Hayes (Miller – Site PI)</td>
<td>Neuroimaging and Molecular Markers of AD and Neurodegenerative Disease after Concussion</td>
<td>NIA</td>
<td>2019-2023</td>
<td>$239,414</td>
<td>$1,205,642</td>
</tr>
<tr>
<td>Kaffman</td>
<td>Amygdala Hyper-Connectivity in a Mouse Model of Unpredictable Early Life Stress</td>
<td>NIMH</td>
<td>2019-2024</td>
<td>$404,790</td>
<td>$2,081,954</td>
</tr>
<tr>
<td>Kaffman</td>
<td>Role of Microglial IRF8 in the Developmental Consequences of Early Adversity</td>
<td>NIMH</td>
<td>2020-2025</td>
<td>$250,000</td>
<td>$1,250,000</td>
</tr>
<tr>
<td>Kaye</td>
<td>Determining the Role of Noradrenergic Heterogeneity in Innate Threat Response</td>
<td>K</td>
<td>2020-2025</td>
<td>$194,940</td>
<td>$974,700</td>
</tr>
<tr>
<td>Kelmendi</td>
<td>The Neural Correlates of the Effects of Psilocybin in OCD: Randomized Controlled Study</td>
<td>K</td>
<td>2020-2024</td>
<td>$190,443</td>
<td>$778,392</td>
</tr>
<tr>
<td>Krystal</td>
<td>Center for the Translational Neuroscience of Alcoholism CTNA-5</td>
<td>NIAAA</td>
<td>2021-2026</td>
<td>$1,765,263</td>
<td>$8,726,845</td>
</tr>
<tr>
<td>Krystal &amp; Smith</td>
<td>Yale Clinical and Translational Science Award Calhoun Diversity in Health-Related Research</td>
<td>NCATS</td>
<td>2022-2024</td>
<td>$232,490</td>
<td>$456,019</td>
</tr>
<tr>
<td>Lee, L.</td>
<td>Boston Early Adversity and Mortality Study: Linking Administrative Data to Long-Term Longitudinal Studies</td>
<td>NIA</td>
<td>2019-2024</td>
<td>$696,953</td>
<td>$3,528,185</td>
</tr>
<tr>
<td>Levy</td>
<td>Individual Differences in Decision Making Under Uncertainty</td>
<td>NIMH</td>
<td>2019-2024</td>
<td>$393,090</td>
<td>$3,337,954</td>
</tr>
<tr>
<td>Principal Investigator</td>
<td>Research Title</td>
<td>Funding Source</td>
<td>Years</td>
<td>Current Funding</td>
<td>Total Funding</td>
</tr>
<tr>
<td>------------------------</td>
<td>---------------------------------------------------------------------------------</td>
<td>----------------</td>
<td>-------------</td>
<td>-----------------</td>
<td>---------------</td>
</tr>
<tr>
<td>Halko (Esterman – Site PI)</td>
<td>Non-Invasive Attentional Network Modulation</td>
<td>NIMH</td>
<td>2021-2022</td>
<td>$763,833</td>
<td>$763,833</td>
</tr>
<tr>
<td>Niles</td>
<td>Feasibility of Remote-Delivery Interventions: Tai Chi and Wellness for PTSD and Pain in Veterans</td>
<td>NCCIH</td>
<td>2022-2025</td>
<td>$178,170</td>
<td>$612,213</td>
</tr>
<tr>
<td>Nillni</td>
<td>PTSD-Related Neurobiological Mediators of Negative Pregnancy Outcomes</td>
<td>K</td>
<td>2017-2022</td>
<td>$153,933</td>
<td>$615,735</td>
</tr>
<tr>
<td>Nillni</td>
<td>A Non-Inferiority Trial Testing Delivery of Written Exposure Therapy by Community Health Workers for Treatment of PTSD during Pregnancy</td>
<td>NICHD</td>
<td>2022-2027</td>
<td>$562,952</td>
<td>$2,532,758</td>
</tr>
<tr>
<td>Owen</td>
<td>Development of a Mobile Mindfulness Intervention for Alcohol Use Disorder and PTSD among OEF/OIF Veterans</td>
<td>NIAAA</td>
<td>2021-2024</td>
<td>$259,782</td>
<td>$1,039,078</td>
</tr>
<tr>
<td>Pineles &amp; Pace-Schott</td>
<td>Circadian Influence on Fear Extinction Resulting from Prolonged Exposure Therapy for PTSD</td>
<td>NIMH</td>
<td>2022-2024</td>
<td>$198,748</td>
<td>$320,956</td>
</tr>
<tr>
<td>Rasmusson</td>
<td>Facilitation of Reconsolidation Blockade and Extinction Retention in PTSD by Intravenous Allopregnanolone</td>
<td>NIMH</td>
<td>2021-2025</td>
<td>$603,175</td>
<td>$3,809,704</td>
</tr>
<tr>
<td>Sloan</td>
<td>Delivering Written Exposure Therapy for PTSD in Underserved Primary Care Settings</td>
<td>NIMH</td>
<td>2021-2026</td>
<td>$123,470</td>
<td>$4,958,744</td>
</tr>
<tr>
<td>Smith, S., Logue, Uddin &amp; Nievergelt</td>
<td>The Impact of Traumatic Stress on the Methylome: Implications for PTSD</td>
<td>NIMH</td>
<td>2020-2025</td>
<td>$702,411</td>
<td>$3,589,840</td>
</tr>
<tr>
<td>Smith, A. (Kuhn – Site PI)</td>
<td>A SMART Design to Facilitate PTSD Symptom Management Strategies among Cancer Survivors</td>
<td>NCI</td>
<td>2020-2025</td>
<td>$604,550</td>
<td>$2,342,355</td>
</tr>
<tr>
<td>Stockman (Cloitre – Site PI)</td>
<td>Addressing Trauma from Interpersonal Violence through a Web-Based Peer Navigation-Social Support Intervention to Improve ART Adherence among Women</td>
<td>NIMH</td>
<td>2021-2026</td>
<td>$798,490</td>
<td>$3,992,450</td>
</tr>
<tr>
<td>Williams (Holtzheimer – Site PI)</td>
<td>Mechanistic Circuit Markers of Trancranial Magnetic Stimulation Outcomes in Pharmaco-resistant Depression</td>
<td>NIMH</td>
<td>2020-2024</td>
<td>$659,708</td>
<td>$2,111,915</td>
</tr>
<tr>
<td>Wiltsey Stirman</td>
<td>Evaluating Effectiveness and Engagement Strategies for Asynchronous Texting Based Trauma Focused Therapy for PTSD</td>
<td>NIMH</td>
<td>2021-2024</td>
<td>$806,007</td>
<td>$2,510,190</td>
</tr>
<tr>
<td>Wiltsey Stirman</td>
<td>Leveraging Routine Clinical Materials and Mobile Technology to Assess CBT Quality</td>
<td>NIMH</td>
<td>2021-2022</td>
<td>$556,814</td>
<td>$2,607,817</td>
</tr>
<tr>
<td>Wiltsey Stirman</td>
<td>Telehealth 2.0: Evaluating Effectiveness and Engagement Strategies for CPT-Text for PTSD</td>
<td>NIMH</td>
<td>2021-2024</td>
<td>$695,236</td>
<td>$3,059,706</td>
</tr>
<tr>
<td>Wiltsey Stirman</td>
<td>Improving and Sustaining CPT for PTSD in Mental Health Systems</td>
<td>NIMH</td>
<td>2021-2022</td>
<td>$0</td>
<td>$1,615,257</td>
</tr>
</tbody>
</table>
### Fiscal Year 2022 Funding

<table>
<thead>
<tr>
<th>Principal Investigator</th>
<th>Research Title</th>
<th>Funding Source</th>
<th>Years</th>
<th>Current Funding</th>
<th>Total Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wolf</td>
<td>Longitudinal Neurometabolic Outcomes of Traumatic Stress-Related Accelerated Cellular Aging</td>
<td>NIA</td>
<td>2020-2025</td>
<td>$423,508</td>
<td>$1,694,033</td>
</tr>
<tr>
<td>Wolf</td>
<td>Neurobiological Correlates of Accelerated Cellular Aging</td>
<td>NIA</td>
<td>2019-2022</td>
<td>$157,500</td>
<td>$346,500</td>
</tr>
<tr>
<td>Woodward &amp; Khan</td>
<td>In-Home Sleep Monitoring to Detect Suicide Risk in Veterans</td>
<td>NIMH</td>
<td>2020-2022</td>
<td>$53,802</td>
<td>$416,632</td>
</tr>
<tr>
<td>Zimmerman</td>
<td>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</td>
<td>NIDA</td>
<td>2019-2023</td>
<td>$572,087</td>
<td>$2,864,531</td>
</tr>
</tbody>
</table>

AD Alzheimer’s Disease; ART Antiretroviral Therapy; BPD Borderline Personality Disorder; CBT Cognitive Behavioral Therapy; CPT Cognitive Processing Therapy; CTNA-5 Center for Translational Neuroscience of Alcoholism; IRF8 Interferon regulatory factor 8; K Research Career Development Award; mGluR5 Metabotropic glutamate receptor 5; m-Health mobile health; NCATS National Center for Advancing Translational Sciences; NCCIH National Center for Complementary and Integrative Health; NCI National Cancer Institute; NIA National Institute on Aging; NIAAA National Institute on Alcohol Abuse and Alcoholism; NICHD National Institute of Child and Human Development; NIDA National Institute on Drug Abuse; NIMH National Institute of Mental Health; NIMHD National Institute on Minority Health and Health Disparities; OCD Obsessive Compulsive Disorder; OEF/OIF Operation Enduring Freedom/Operation Iraqi Freedom; PET Positron Emission Tomography; PI Principal Investigator; PTSD Posttraumatic Stress Disorder; SMART Sequential Multiple Assignment Randomized Trial

### Department of Defense (DoD)

<table>
<thead>
<tr>
<th>Principal Investigator</th>
<th>Research Title</th>
<th>Years</th>
<th>Current Funding</th>
<th>Total Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lee, D. &amp; Stanley</td>
<td>Latent Profile-Based Psychopathology Phenotypes and Self-Injurious Thoughts and Behaviors: An Examination of the Military Suicide Research Consortium Common Data Elements</td>
<td>2021-2022</td>
<td>$122,754</td>
<td>$122,754</td>
</tr>
<tr>
<td>Marx &amp; Chard</td>
<td>Psychometric Evaluation of the Clinician Administered PTSD Scale for DSM-5 and the PTSD Symptom Scale Interview for DSM-5 (PSSI-5) in an Active Duty and Military Veteran Sample</td>
<td>2018-2023</td>
<td>$1,681,050</td>
<td>$6,354,218</td>
</tr>
<tr>
<td>McLean &amp; Rosen</td>
<td>Targeted Strategies to Accelerate Evidence-Based Psychotherapies Implementation in Military Settings</td>
<td>2017-2023</td>
<td>$0</td>
<td>$8,608,151</td>
</tr>
<tr>
<td>Mitchell</td>
<td>Eating Disorders in Veterans: Prevalence, Comorbidity, Risk, and Healthcare Use</td>
<td>2018-2023</td>
<td>$525,112</td>
<td>$1,067,200</td>
</tr>
<tr>
<td>Norman (Wachen – Site PI)</td>
<td>Trauma Informed Guilt Reduction Therapy for Guilt, Shame, and Moral Injury Resulting from Trauma: Rationale, Design, and Methodology of a Two-Site Randomized Controlled Trial</td>
<td>2015-2022</td>
<td>$459,105</td>
<td>$2,725,696</td>
</tr>
</tbody>
</table>
## Fiscal Year 2022 Funding

<table>
<thead>
<tr>
<th>Principal Investigator</th>
<th>Research Title</th>
<th>Years</th>
<th>Current Funding</th>
<th>Total Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shiner</td>
<td>Real World Effectiveness of Long-Acting Injectable versus Oral Naltrexone for Co-Occurring Posttraumatic Stress Disorder and Alcohol Use Disorder</td>
<td>2022-2024</td>
<td>$315,250</td>
<td>$616,716</td>
</tr>
<tr>
<td>Taft</td>
<td>Strength at Home Couples Program: Examining Sexual Aggression</td>
<td>2020-2022</td>
<td>$137,075</td>
<td>$274,149</td>
</tr>
<tr>
<td>Wachen</td>
<td>Massed Cognitive Processing Therapy for Combat-Related PTSD</td>
<td>2017-2022</td>
<td>$0</td>
<td>$3,282,395</td>
</tr>
</tbody>
</table>

## Other Non-VA Sources

<table>
<thead>
<tr>
<th>Principal Investigator</th>
<th>Research Title</th>
<th>Funding Source</th>
<th>Years</th>
<th>Current Funding</th>
<th>Total Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bredemeier (McLean &amp; Larsen – Site PIs)</td>
<td>A Comparison of Prolonged Exposure Therapy, Pharmacotherapy, and Their Combination for PTSD: What Works Best and for Whom</td>
<td>PCORI</td>
<td>2021-2025</td>
<td>$224,434</td>
<td>$905,205</td>
</tr>
<tr>
<td>Cloitre</td>
<td>Trauma-Focused Care in LGBTQ+ Communities: Building Capacity for Research</td>
<td>PCORI</td>
<td>2021-2023</td>
<td>$125,000</td>
<td>$250,000</td>
</tr>
<tr>
<td>Davis</td>
<td>In Vivo Investigation of the Relationship Between Kappa Opioid Receptor and Suicidal Behavior in PTSD</td>
<td>American Foundation for Suicide Prevention</td>
<td>2023-2024</td>
<td>$0</td>
<td>$88,058</td>
</tr>
<tr>
<td>Davis</td>
<td>Dysregulation in Kappa Opioid Receptor as a Marker of BPD and Suicide Related Endophenotypes</td>
<td>Robert Leet and Clara Guthrie Patterson Trust</td>
<td>2021-2022</td>
<td>$22,500</td>
<td>$45,000</td>
</tr>
<tr>
<td>Driesen &amp; Street</td>
<td>AMPA Components of the Ketamine Anti-Suicidal Response</td>
<td>American Foundation for Suicide Prevention</td>
<td>2022-2024</td>
<td>$50,000</td>
<td>$100,000</td>
</tr>
<tr>
<td>Galovski &amp; Street</td>
<td>Women Veterans Network (WoVeN) Continued Expansion</td>
<td>Bob Woodruff Foundation</td>
<td>2022</td>
<td>$123,700</td>
<td>$123,700</td>
</tr>
<tr>
<td>Galovski &amp; Street</td>
<td>Women Veterans Network (WoVeN)</td>
<td>May &amp; Stanley Smith Charitable Trust</td>
<td>2021-2022</td>
<td>$38,000</td>
<td>$50,000</td>
</tr>
<tr>
<td>Galovski &amp; Street</td>
<td>Core Support - Women Veterans Network (WoVeN)</td>
<td>Oak Foundation</td>
<td>2020-2022</td>
<td>$100,000</td>
<td>$200,000</td>
</tr>
<tr>
<td>Galovski &amp; Street</td>
<td>Core Support - Women Veterans Network (WoVeN)</td>
<td>Oak Foundation</td>
<td>2022-2026</td>
<td>$17,000</td>
<td>$400,000</td>
</tr>
</tbody>
</table>
## Fiscal Year 2022 Funding

<table>
<thead>
<tr>
<th>Principal Investigator</th>
<th>Research Title</th>
<th>Funding Source</th>
<th>Years</th>
<th>Current Funding</th>
<th>Total Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Galovski &amp; Street</td>
<td>Building Re-Integration from Dreams and Goals to Execution and Success (BRIDGES): A Peer Support Program for Transitioning Women Service Members</td>
<td>Walmart Foundation</td>
<td>2022-2024</td>
<td>$125,000</td>
<td>$250,000</td>
</tr>
<tr>
<td>Gilbar &amp; Taft</td>
<td>Social Information Processing and Intimate Partner Violence</td>
<td>United States–Israel Binational Science Foundation</td>
<td>2021-2025</td>
<td>$54,000</td>
<td>$216,000</td>
</tr>
<tr>
<td>Girgenti</td>
<td>Sex-Specific Molecular Mechanisms in PTSD</td>
<td>Brain and Behavior Research Foundation</td>
<td>2020-2022</td>
<td>$1,780</td>
<td>$70,000</td>
</tr>
<tr>
<td>Goldfarb</td>
<td>Neuroimaging Habit Learning in Posttraumatic Stress Disorder</td>
<td>NARSAD</td>
<td>2022-2024</td>
<td>$35,000</td>
<td>$70,000</td>
</tr>
<tr>
<td>Kachadourian</td>
<td>Non-Suicidal Self Injury in Military Veterans with PTSD: An Ecological Momentary Assessment Study</td>
<td>Yale Center for Clinical Investigation</td>
<td>2020-2022</td>
<td>$20,000</td>
<td>$40,000</td>
</tr>
<tr>
<td>Kehle-Forbes (Norman – Site PI)</td>
<td>Comparative Effectiveness of Trauma-Focused and Non-Trauma-Focused Treatment Strategies for PTSD among Those with Co-Occurring SUD</td>
<td>PCORI</td>
<td>2020-2025</td>
<td>$1,621,492</td>
<td>$5,635,307</td>
</tr>
<tr>
<td>Kelmendi</td>
<td>Cohen Foundation Research Grant</td>
<td>The Cohen Foundation</td>
<td>2021-2026</td>
<td>$322,767</td>
<td>$1,655,404</td>
</tr>
<tr>
<td>Livingston &amp; Weisberg</td>
<td>Impact of COVID-19-Related Medication-Assisted Treatment Policy Changes on Patients with Opioid Use Disorders</td>
<td>PCORI</td>
<td>2020-2022</td>
<td>$1,129,612</td>
<td>$2,494,203</td>
</tr>
<tr>
<td>McCaslin</td>
<td>Development of a Provider Tool to Increase Culturally Competent and Patient-Centered Care: The Military Culture and Experience Index</td>
<td>Ci2i - HSR&amp;D Center of Excellence, VA Palo Alto HCS</td>
<td>2021-2022</td>
<td>$20,379</td>
<td>$20,379</td>
</tr>
<tr>
<td>McLean</td>
<td>An Efficient 2-Day Treatment for Posttraumatic Injury for Firefighters</td>
<td>FEMA</td>
<td>2021-2024</td>
<td>$469,456</td>
<td>$1,499,997</td>
</tr>
<tr>
<td>Nillni</td>
<td>A Pragmatic Effectiveness Trial of a Brief Exposure Therapy for PTSD on Substance Use and Mental Health Morbidity and Mortality during the Perinatal Period</td>
<td>Grayken Center for Addiction</td>
<td>2019-2022</td>
<td>$75,000</td>
<td>$150,000</td>
</tr>
<tr>
<td>Noller</td>
<td>Neuropsychiatric Consequences of Brain Injury: Determining How Neuroinflammation May Mediate Neurobehavioral Outcomes</td>
<td>Gary Tucker Junior Investigator Research Award</td>
<td>2022-2024</td>
<td>$0</td>
<td>$1,124,900</td>
</tr>
<tr>
<td>Principal Investigator</td>
<td>Research Title</td>
<td>Funding Source</td>
<td>Years</td>
<td>Current Funding</td>
<td>Total Funding</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>--------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------</td>
<td>---------------</td>
<td>-----------------</td>
<td>---------------</td>
</tr>
<tr>
<td>Okamura &amp; Shimabukuro (Zimmerman – Site PI)</td>
<td>Participatory System Dynamics Modeling</td>
<td>SAMHSA</td>
<td>2022-2026</td>
<td>$449,016</td>
<td>$1,868,991</td>
</tr>
<tr>
<td>Sareen (Pietrzak – Site PI)</td>
<td>Defining the Longitudinal Course, Outcomes, and Treatment Needs of Vulnerable Canadians with Posttraumatic Stress Disorder</td>
<td>Canadian Institutes of Health Research</td>
<td>2015-2022</td>
<td>$0</td>
<td>$2,386,073</td>
</tr>
<tr>
<td>Taft</td>
<td>Strength at Home: Promoting Healthy Relationships, Healing Trauma, Breaking the Cycle of Violence</td>
<td>Mother Cabrini Health Foundation</td>
<td>2021-2022</td>
<td>$185,463</td>
<td>$185,463</td>
</tr>
<tr>
<td>Wiltsey Stirman</td>
<td>Gavin Farrell Foundation CPT Training Initiative</td>
<td>Gavin Farrell Foundation</td>
<td>2019-2030</td>
<td>$64,090</td>
<td>$64,090</td>
</tr>
<tr>
<td>Wiltsey Stirman &amp; Kaysen</td>
<td>A Web-Based Intervention for Healthcare Workers Impacted by COVID-19</td>
<td>Huang Family Foundation</td>
<td>2021-2022</td>
<td>$1,000,000</td>
<td>$1,300,000</td>
</tr>
<tr>
<td>Wiltsey Stirman</td>
<td>Adaptive Digital Mental Health Tools to Improve COVID-19 Mental Health among Healthcare Workers</td>
<td>The Jen-Hsun and Lori Huang Foundation Digital Mental Health Platform Fund</td>
<td>2021-2022</td>
<td>$500,000</td>
<td>$1,000,000</td>
</tr>
<tr>
<td>Wolf</td>
<td>The Utility of MMPI-2 RF in Informing VA Pain Clinic Care</td>
<td>University of Minnesota Press, Test Division</td>
<td>2016-2022</td>
<td>$0</td>
<td>$24,000</td>
</tr>
</tbody>
</table>

BPD Borderline Personality Disorder; COVID-19 Coronavirus Disease 2019; Ci2i Center for Innovation to Implementation; CPT Cognitive Processing Therapy; DSM-5 Diagnostic and Statistical Manual - Version 5; 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; NARSAD National Alliance for Research on Schizophrenia & Depression; PCORI Patient-Centered Outcomes Research Institute; PI Principal Investigator; PSSI-5 PTSD Symptom Scale Interview for DSM-5; PTSD Posttraumatic Stress Disorder; SAMHSA Substance Abuse and Mental Health Services Administration; SUD substance use disorder; VA Department of Veterans Affairs
### Projects Pending Funding

<table>
<thead>
<tr>
<th>Principal Investigator</th>
<th>Research Title</th>
<th>Funding Source</th>
<th>Years</th>
<th>Total Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bean &amp; Scioli</td>
<td>The VA REAP Center for Rehabilitative Care: Optimizing Mobility, the Mind, and Motivation</td>
<td>VA RR&amp;D</td>
<td>2021-2025</td>
<td>$1,570,721</td>
</tr>
<tr>
<td>Colvonen</td>
<td>Examining Early Intervention OSA PAP Treatment on Long-Term Outcomes in Veterans with SUD/PTSD in a Residential Treatment Program</td>
<td>VA RR&amp;D</td>
<td>2022-2023</td>
<td>$1,378,409</td>
</tr>
<tr>
<td>Forbush &amp; Mitchell</td>
<td>Assessment of Eating Disorder and Comorbidity Risk and Resilience in a Nationally Representative Sample of Recent Military Enlistees</td>
<td>DoD</td>
<td>2023-2026</td>
<td>$673,823</td>
</tr>
<tr>
<td>Forbush (Mitchell-Site PI)</td>
<td>Integrative Therapy for Veterans with Eating Disorders and Trauma</td>
<td>DoD</td>
<td>2023-2026</td>
<td>$1,162,190</td>
</tr>
<tr>
<td>Hallenbeck</td>
<td>Virtual Care CORE Associate Investigator Funding</td>
<td>VA HSR&amp;D</td>
<td>2023</td>
<td>$23,500</td>
</tr>
<tr>
<td>Harpaz-Rotem</td>
<td>Using Ketamine to Enhance Memory Reconsolidation and Extinction of Overgeneralized Fear in Individuals Diagnosed with PTSD</td>
<td>NIH NIMH</td>
<td>2023-2028</td>
<td>$8,322,871</td>
</tr>
<tr>
<td>Holtzheimer</td>
<td>Targeted Brain Stimulation to Enhance Recovery after Shockwave-Induced Blast TBI: Identifying Neural Biomarkers to Guide Treatment</td>
<td>VA BLR&amp;D</td>
<td>2023-2027</td>
<td>$1,200,000</td>
</tr>
<tr>
<td>Lee, D. &amp; Esterman</td>
<td>Suicide Risk Interventions: A Comparison of Treatment Dose and Neural Markers of Treatment Outcome</td>
<td>VA CSR&amp;D</td>
<td>2023-2027</td>
<td>$1,195,952</td>
</tr>
<tr>
<td>Livingston &amp; Simpson</td>
<td>Adapting and Evaluating a Web-Based Intervention for Women Veterans: Women’s VetChange for Unsafe Drinking and PTSD Symptoms</td>
<td>NIH NIAAA</td>
<td>2022-2027</td>
<td>$2,577,895</td>
</tr>
<tr>
<td>Macia</td>
<td>Implementation of a Trauma-Informed Skills Intervention to Improve Outcomes for Homeless Veterans</td>
<td>VA HSR&amp;D</td>
<td>2023-2028</td>
<td>$939,914</td>
</tr>
<tr>
<td>Miller</td>
<td>Post-Acute Sequelae of SARS-CoV-2 Infection and the Aging Brain</td>
<td>NIH Other</td>
<td>2023-2028</td>
<td>$3,149,949</td>
</tr>
<tr>
<td>Mitchell</td>
<td>The Impact of Trained Provider Teams on Diagnosis and Treatment of Eating Disorders in the Veterans Healthcare Administration</td>
<td>DoD</td>
<td>2023-2026</td>
<td>$793,109</td>
</tr>
<tr>
<td>Morey, Logue &amp; Nievergelt</td>
<td>Genomic Architecture of Functional Brain Networks in PTSD</td>
<td>NIH NIMH</td>
<td>2023-2027</td>
<td>$2,756,174</td>
</tr>
<tr>
<td>Noller</td>
<td>Harnessing the Cholinergic Inflammatory Reflex to Alter Neuroinflammation and Neuropsychiatric Consequences Following Traumatic Brain Injury</td>
<td>VA CDA</td>
<td>2023-2027</td>
<td>$1,124,900</td>
</tr>
<tr>
<td>Principal Investigator</td>
<td>Research Title</td>
<td>Funding Source</td>
<td>Years</td>
<td>Total Funding</td>
</tr>
<tr>
<td>------------------------</td>
<td>---------------------------------------------------------------------------------</td>
<td>----------------</td>
<td>-----------</td>
<td>---------------</td>
</tr>
<tr>
<td>Rosenfeld</td>
<td>Virtual Care CORE Associate Investigator Funding: Expanding and Adapting webSTAIR-NT for LGBTQ+ Veterans</td>
<td>VA HSR&amp;D</td>
<td>2022-2023</td>
<td>$25,000</td>
</tr>
<tr>
<td>Sripada (Kuhn - Site PI)</td>
<td>Testing Adaptive Interventions to Improve PTSD Treatment Outcomes in Federally Qualified Health Centers</td>
<td>NIH NIMH</td>
<td>2022-2026</td>
<td>$2,500,000</td>
</tr>
</tbody>
</table>

BLR&D Biomedical Laboratory Research and Development Service; CDA Career Development Award; CORE Consortium of Research; CSR&D Clinical Science Research and Development Service; DoD Department of Defense; HSR&D Health Services Research and Development Service; LGBTQ+ Lesbian Gay Bisexual Transgender Queer; NIAAA National Institute on Alcohol Abuse and Alcoholism; 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; REAP Research Enhancement Award Program; RR&D Rehabilitation Research and Development Service; SARS-CoV-2 Severe Acute Respiratory Syndrome Coronavirus 2; SUD Substance Use Disorder; TBI traumatic brain injury; VA Department of Veterans Affairs; webSTAIR-NT web-based Skills Training in Affective and Interpersonal Regulation Narrative Therapy
Appendix D: Publications


137. Holder, N., Batten, A., Shiner, B., Li, Y., Madden, E., Neylan, T. C., Seal, K., Patterson, O., DuVall, S., & Maguen, S. (2022). Veterans receiving a second course of Cognitive Processing Therapy or Prolonged Exposure therapy: Is it better to switch or stay the same? *Cognitive Behaviour Therapy, 51*, 456-469. doi:10.1080/16506073.2022.2058996


---

Publications


Appendix E: Publications in Press


---

National Center for PTSD | www ptsd va gov | 2022 Annual Report | 96


180. 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.*


Appendix F: Scientific Presentations by National Center Staff

AcademyHealth Annual Research Meeting | Washington, DC | June 2022


3. Gibson, T., Livingston, N., Head, M., Davenport, M., Meng, F., Chen, M., Stein, M., Henke, R., & Weisberg, R. *Examination of the effects of a rapid policy shift in access to medication for opioid use disorders (MOUD) among the commercially insured.*


Association for Behavioral and Cognitive Therapies | Virtual | November 2021

8. Benevides, E., Herbitter, C., Newberger, N. G., Bryant, W. T., Hinds, Z., & Livingston, N. *The role of specific identity components in understanding the relationship between real-time sexual and gender minority (SGM) discrimination and mood.*


International Society for Traumatic Stress Studies | Virtual | November 2021

21. Alpert, E. Making sense of trauma memories: Characteristics and responses to trauma narratives as predictors of PTSD outcomes. In J. K. Carpenter (Chair), Examining cognitions and emotions during recounting and processing of the trauma memory as predictors of symptom change in Prolonged Exposure.

22. Archibald, E., Chan, A. C., McLaughley, V., Wachen, J. S., Street, A. E., & Galovski, T. E. Online peer support groups for women veterans are an effective tool during Covid-19.


32. Cuccurullo, L. J., Bowen, M., Breen, K., & Bernardy, N. C. Developing PTSD teams at three rural VA medical centers: Movement toward team-based care.

33. Cuccurullo, L. J., Bowen, M., Breen, K., & Maieritsch, K. P. Supporting PTSD evidence-based care at rural VA Medical Centers during the Covid-19 pandemic. In L. Cuccurullo (Chair), Supporting EBP practice during the Covid-19 pandemic for veterans and active duty military: Working together for the field during challenging times.


43. Mackintosh, M. This might sting a bit: Symptom spikes and treatment benefits related to including trauma narratives in Cognitive Processing Therapy.


47. McQuade, M., Benevides, E., Wilson, E., O’Donnell, S., Mori, D., & Niles, B. L. PTSD and chronic pain: Comorbidity and symptom severity among Gulf War veterans.


52. Pless Kaiser, A. Interpersonal perspectives: Concordance of military veteran PTSD status based on first-person and close informant assessment methods.


57. Shiner, B. When standard treatment is not enough: Augmenting and sequencing care for posttraumatic stress disorder [Webinar].


61. Vogt, D. Relationship and community functioning of warfare-exposed U.S. Veterans. In D. Vogt (Chair), Expanding stress and trauma research to consider associations with relationship and community functioning.


63. Welch, K., Vogt, D., & Smith, B. N. Direct and indirect effects of family stressors during deployment on post-military interpersonal functioning in female and male post-9/11 veterans: Examining the role of social support.

64. Whitworth, J., Scioli, E. R., Keane, T. M., & Marx, B. P. Comorbid depression, anxiety, alcohol, and substance use are associated with increased odds of physical inactivity and cigarette smoking among veterans with PTSD.


Other


69. Abdallah, C. (2022, April). Brain networks as target for successful antidepressant treatments. Grand Rounds, Stony Brook University, Stony Brook, NY.


72. Abdallah, C. (2022, January). Challenges and opportunities in our search for a robust and reproducible biomarker of ketamine. Core for Advanced MRI (CAMRI), Houston, TX.

73. Abdallah, C. (2022, March). Connectome fingerprints of behavioral symptoms and treatments. Presented for the Computational and Molecular Psychiatry Seminar, University of Iowa, Iowa City, IA.

74. Azevedo, K. J. (2022, March). Leveraging anthropology to address the Covid-19 global mental health syndemic. Society for Applied Anthropology, Salt Lake City, UT.


117. McQuade, M., Wilson, E., O’Donnell, S., Mori, D., & Niles, B. L. (2022, April). A 12-week wellness intervention reduces insomnia severity in veterans with Gulf War illness. Poster accepted for the annual meeting of the Society of Behavioral Medicine, Baltimore, MD.


123. Pless Kaiser, A. (2021, October). *Veteran PTSD-related distress at end of life: Results from the bereaved family survey*. Presentation at the National Palliative Care Research Center, Jackson Hole, WY.


130. Sloan, D. M. (2022, March). *Written Exposure Therapy for PTSD: A brief PTSD treatment approach*. Virtual presentation - Grand Rounds, Department of Psychiatry, Medical University of South Carolina, Charleston, SC.


Thompson, A., Kaplan, A., Spoon, M., & Diem, S. (2022, August). Racial disparities in the reporting of disruptive behavior. Presentation at the VA Quality Scholars Summer Institute, Houston, TX.

Thompson-Hollands, J. (2022, September). Involving family members in PTSD treatment: Enhancing retention through social support [Webinar]. Presented to the Department of Psychology, University of Kentucky, Lexington, KY.


Vasterling, J. J. (2021, November). Neuropsychology of PTSD and mild TBI. Presented to Postgraduate Program in Neuropsychology, University of Bristol, UK, Virtual.


Appendix G: Education Presentations by National Center Staff

International Society for Traumatic Stress Studies | Virtual | November 2021

1. **Bippart, V., McCarthy, E., & Hamblen, J. L.** *AboutFace: PTSD treatment can turn your life around - A peer education campaign from the National Center for PTSD.*

2. **Davis, J., & Sloan, D. M.** *Navigating peer review and editorial roles.*


5. **Merrick, C.** Building the Clinician-Administered PTSD Scale for DSM-5 training simulator, a virtual patient course. In J. Hamblen (Chair), *Strategies to improve PTSD assessment: Advances in face-to-face training and virtual technology.*

Other


15. **Bippart, V., McCarthy, E., & Hamblen, J. L.** (2022, February). *AboutFace: PTSD treatment can turn your life around - a peer education campaign from the National Center for PTSD* [Webinar]. Tech into Care Series.


22. **Bosch, J. O., & Becket-Davenport, C. M.** (2022, August). *Meet them where they are: Hands-on skills for using mobile apps to support mental health*. Presentation at the American Psychological Association, Minneapolis, MN.

23. **Bosch, J. O., & Walsh, N.** (2022, June). *Integration of Mobile Mental Health Apps Along the Continuum of Care* [Webinar]. Santa Barbara County Psychological Association.


28. **Decker, S. E., Matthieu, M. M., Smith, B. N., & Landes, S. J.** (2021, November). *Facilitators to dialectical behavior therapy skills groups in the Veterans Health Administration*. In M. Harned (Chair), *Implementing dialectical behavior therapy in the Department of Veterans Affairs*. Challenges and successes symposium, National Harbor, MD.

29. **Esterman, M.** (2021, December). *Sustained attention: Consequences for age-related health and functioning* [Webinar]. Presentation at the Mobility and Falls Center Meeting, Marcus Institute for Aging Research, Hebrew Senior Life, Virtual.


57. **Meshberg-Cohen, S.** (2022, March). *Bringing evidence-based trauma care into substance use disorder (SUD) treatment.* Invited presentation at The VCU Opioid ECHO Series, Richmond, VA.


62. **Rosenfeld, E. A.** (2021, November). *Spreading the word: How graduate students can leverage social media for #SciComm and professional development.* Member of panel discussion at the Association for Behavioral and Cognitive Therapies Annual Conference, Virtual.


64. **Schnurr, P. P.** (2021, October). *An update on the treatment of PTSD.* Research Advisory Committee on Veterans Readjustment, Department of Veterans Affairs, Virtual.


67. **Skidmore, C., & Street, A. E.** (2022, May). *Beyond MST: Using the mobile app to support individuals who experienced military sexual trauma [Webinar].* Invited address for the National Community Based Outpatient Care Mental Health Grand Rounds, Department of Veterans Affairs.


70. **Sloan, D. M.** (2022, February). *Development and efficacy data for Written Exposure Therapy for PTSD.* Presentation for clinical brown bag series, Department of Psychology, University of Southern California, Los Angeles, CA, Virtual.

71. **Sloan, D. M.** (2022, July). *Written Exposure Therapy for PTSD: A brief treatment approach.* Invited presentation to Madison VA Medical Center, Madison, WI.


73. **Street, A. E.** (2021, December). *WoVeN, the Women Veterans Network: An innovative peer support program for women veterans [Webinar].* Invited address for the Office of Women's Health, Veterans Health Administration, Women's Health National Call.


75. **Street, A. E.** (2022, March). *Sexual assault and PTSD [Webinar].* Invited address for Posttraumatic Stress and Related Disorders Conference, sponsored by Harvard Medical School and Massachusetts General Hospital, Virtual.

76. **Taft, C. T.** (2021, November). *Strength at Home Couples program training.* Presented at Invited half-day training at Veterans Health Administration, Virtual.


## Appendix H: Editorial Board Activities

<table>
<thead>
<tr>
<th>Activity</th>
<th>Board Member(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administration and Policy in Mental Health Services and Mental Health Services Research</td>
<td>Wiltsey Stirman</td>
</tr>
<tr>
<td>Annals of LGBTQ Public and Population Health</td>
<td>Livingston</td>
</tr>
<tr>
<td>Asian Biomedicine (Research, Reviews and News)</td>
<td>Gelernter</td>
</tr>
<tr>
<td>The Behavior Therapist</td>
<td>Wiltsey Stirman (Associate Editor)</td>
</tr>
<tr>
<td>Behavior Therapy</td>
<td>Thompson-Hollands, Wiltsey Stirman</td>
</tr>
<tr>
<td>Behavioral Medicine</td>
<td>Livingston (Associate Editor)</td>
</tr>
<tr>
<td>Behaviour Research and Therapy</td>
<td>Sloan</td>
</tr>
<tr>
<td>Biological Psychiatry</td>
<td>Gelernter, Krystal (Editor)</td>
</tr>
<tr>
<td>British Journal of Psychiatry Open</td>
<td>Cloitre (Associate Editor)</td>
</tr>
<tr>
<td>Cerebral Cortex</td>
<td>Esterman (Associate Editor)</td>
</tr>
<tr>
<td>Chinese Journal of Psychology</td>
<td>Keane</td>
</tr>
<tr>
<td>Chronic Stress</td>
<td>Averill (Deputy Editor), Esterlis, Krystal (Associate Editor), Pietrzak, Woodward</td>
</tr>
<tr>
<td>Clinical Psychology Review</td>
<td>Pineles</td>
</tr>
<tr>
<td>Clinical Psychology: Science and Practice</td>
<td>Marx</td>
</tr>
<tr>
<td>Cognitive and Behavioral Practice</td>
<td>Livingston, McLean (Associate Editor), Norman, Wachen</td>
</tr>
<tr>
<td>Contemporary Clinical Trials</td>
<td>McLean, Schnurr, Wachen (Associate Editor)</td>
</tr>
<tr>
<td>Depression and Anxiety</td>
<td>Holtzheimer, Schnurr, Tiet, Wolf</td>
</tr>
<tr>
<td>Eating Behaviors</td>
<td>Mitchell (Associate Editor)</td>
</tr>
<tr>
<td>European Journal of Psychotraumatology</td>
<td>Cloitre (Associate Editor), Pineles</td>
</tr>
<tr>
<td>Frontiers in Neurology – Multiple Sclerosis and Neuroimmunology</td>
<td>DiSano, Noller</td>
</tr>
<tr>
<td>Frontiers in Psychiatry</td>
<td>Whitworth (Guest Associate Editor)</td>
</tr>
<tr>
<td>International Journal of Emergency Mental Health</td>
<td>Keane</td>
</tr>
<tr>
<td>Journal of Anxiety Disorders</td>
<td>McLean (Associate Editor), Pietrzak</td>
</tr>
<tr>
<td>Journal of Clinical Psychology</td>
<td>Nazem (Associate Editor), Sloan</td>
</tr>
<tr>
<td>Activity</td>
<td>Board Member(s)</td>
</tr>
<tr>
<td>--------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Journal of Consulting and Clinical Psychology</td>
<td>Marx, Sloan, Taft</td>
</tr>
<tr>
<td>Journal of Contemporary Psychotherapy</td>
<td>Sloan</td>
</tr>
<tr>
<td>Journal of Family Psychology</td>
<td>Taft</td>
</tr>
<tr>
<td>Journal of Family Violence</td>
<td>Taft</td>
</tr>
<tr>
<td>Journal of General Internal Medicine</td>
<td>Galovski (Guest Editor)</td>
</tr>
<tr>
<td>Journal of Gerontology: Medical Sciences</td>
<td>Esterman (Editor)</td>
</tr>
<tr>
<td>Journal of Neuroscience</td>
<td>Levy (Associate Editor)</td>
</tr>
<tr>
<td>Journal of Obsessive-Compulsive and Related Disorders</td>
<td>Thompson-Hollands</td>
</tr>
<tr>
<td>Journal of Psychopathology and Clinical Science</td>
<td>Miller (Associate Editor), Wolf</td>
</tr>
<tr>
<td>Journal of Trauma and Dissociation</td>
<td>Barlow, Carlson, Marx</td>
</tr>
<tr>
<td>Journal of Traumatic Stress</td>
<td>Bovin, Galovski (Associate Editor), Marx, Miller, McLean, Morland, Sloan (Editor), Larsen, Lee, D., Thompson-Hollands, Wolf</td>
</tr>
<tr>
<td>Neuropsychology</td>
<td>Vasterling</td>
</tr>
<tr>
<td>Neuropsychopharmacology</td>
<td>Gelernter (Associate Editor)</td>
</tr>
<tr>
<td>Psychiatric Genetics</td>
<td>Gelernter</td>
</tr>
<tr>
<td>Psychological Assessment</td>
<td>Mitchell, Vasterling</td>
</tr>
<tr>
<td>Psychological Services</td>
<td>Norman</td>
</tr>
<tr>
<td>Psychological Trauma: Theory, Research, Practice and Policy</td>
<td>Barlow, Carlson, Keane, Larsen, Marx, Miller, Smith, Stanley, Vogt, Wachen</td>
</tr>
<tr>
<td>Psychology Injury and Law</td>
<td>Pietrzak, Wolf</td>
</tr>
<tr>
<td>Psychosomatic Medicine</td>
<td>Lee, L., Sloan</td>
</tr>
<tr>
<td>Suicide and Life-Threatening Behavior</td>
<td>Stanley</td>
</tr>
<tr>
<td>Trauma, Violence &amp; Abuse</td>
<td>Keane</td>
</tr>
</tbody>
</table>
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
VA Palo Alto Health Care System
Building 334-PTSD
795 Willow Road
Menlo Park, CA 94025

Evaluation Division (NEPEC)
VA Connecticut Healthcare System (182)
950 Campbell Avenue
West Haven, CT 06516

Women’s Health Sciences Division
VA Boston Healthcare System (116B-3)
150 South Huntington Avenue
Boston, MA 02130