

INTREPID VOICES

Newsletter | October 2022 | Publication of the Defense Intrepid Network for TBI & Brain Health

MHS Research Symposium Showcases TBI Work



Dr. Jason M. Bailie, senior clinical research director at Intrepid Spirit Center Camp Pendleton, discusses *Lifetime Blast Exposure During Military Career Negatively Impacts Recovery from Traumatic Brain Injury*, during the Military Health System Research Symposium in Florida in September.

The theme of the 2022 Military Health System Research Symposium (MHSRS) -- Optimizing Readiness for the Warfighter -- is what we work toward every day throughout the Defense Intrepid Network for TBI and Brain Health (Defense Intrepid Network). Last month, after a two year hiatus, many of our network staff attended the in-person meeting in Florida with the goals of developing new connections and fostering existing research partnerships across academia, government, and industry organizations. Over the course of the meeting, Defense Intrepid Network staff gave over 30 presentations including both posters and invited oral presentations in a variety of breakout sessions.

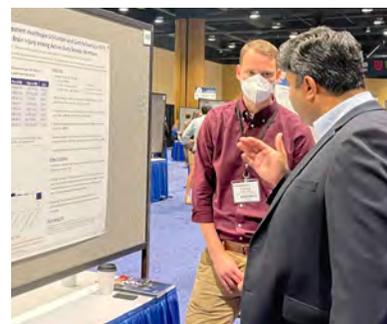
Through these presentations, staff showcased a wide range of studies aimed toward characterizing traumatic brain injury (TBI), blast exposure, and associated psychological health conditions as well as investigating long-term outcomes and potential therapeutic interventions. These studies employ a host

of tools and techniques to characterize patients and assess patient outcomes, including biomarker discovery, advanced neuroimaging modalities, and an array of cognitive and emotional assessments.

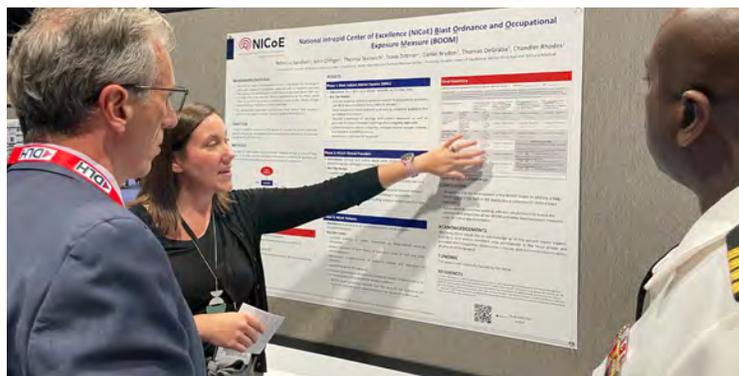
A small sampling of the research shared at MHSRS included investigation of emerging treatments such as the use of virtual environments, creative arts therapies, and targeted dietary manipulation, as well as explorations of characteristics of post-concussive subgroups including those with sleep disorders, cognitive dysfunction, post-traumatic headache, and posttraumatic stress disorder (PTSD). Furthermore, research presented also investigated trends in health care utilization and the impact of factors such as gender, blast exposure, and aerobic activity on patient outcomes.

In addition, the Defense Intrepid Network hosted a special event on Sept. 13 for MHSRS attendees to meet key leaders and staff from the Defense Intrepid Network and to learn about its history, capabilities, and research focus areas.

As we move closer to formalization and continue to evolve as a network, our partners will continue to play a key role in initiatives like Translating Research into Practice (TRIP). Together, we will continue to work towards improving patient care and outcomes for TBI and associated health conditions in order to optimize warfighter readiness.



Mr. Peter Hoover (left) discusses his poster with an attendee (right) at the MHSRS, about *Changes in Outpatient Healthcare Utilization Following a Mild Traumatic Brain Injury Among Active-Duty Service Members*.



Dr. Chandler Rhodes (middle) discusses her poster about the *National Intrepid Center of Excellence (NICoE) Blast Ordnance and Occupational Exposure Measure (BOOM)* with NICoE Director CAPT Carlos Williams (right) and an attendee (left) at MHSRS.

MHS Research Symposium Showcases TBI Work

The Defense Intrepid Network for TBI and Brain Health was well represented at the Military Health System Research Symposium in Florida Sept. 12-15 with the following posters and presentations (in no particular order):

BREAKOUT SESSIONS

Artificial Intelligence, Machine Learning, and Predictive Analytics in Military Medicine, Moderator: *Dr. Jesus Caban*

Validating Augmented Reality Tools as Treatment Options for Vestibular Injury, Presenter: *Dr. Vrajeshri Ordek*

Virtual Environments for Vestibular Rehabilitation Following Traumatic Brain Injury: Comparison of Performance on Large-Scale Virtual Reality and Mobile Augmented Reality Platforms, Presenter: *Dr. Kerry B. Rosen*

Strategic Memory Advanced Reasoning Training (SMART) as a Novel Approach to Cognitive Rehabilitation in Warfighters: Preliminary Findings from the VoCET Clinical Trial, Presenter: *Dr. Jason M. Bailie*

White Matter Hyperintensities, Cognitive Function, Comorbidities, Blood Biomarkers, and mild TBI: A LIMBIC-CENC Multicenter Study, Presenter: *Dr. David F. Tate*

Association Between Traumatic Brain Injury and Subsequent Cardiovascular Disease Among Post-9/11 Veterans: A Long-Term Impact of Military Relevant Brain Injury Consortium Study, Presenter: *Dr. Mary Jo Pugh*

EHR-based Language Models for Identifying Patients at Risk of Developing Mental Health Conditions and Suicide Ideation After First mTBI, Presenter: *Mr. Peter Hoover*

Remote Blast-related mTBI is Associated with Differential Expression of Exosomal microRNAs Identified in Neurodegenerative and Immunological Processes, Presenter: *Ms. Christina DeVoto*

Lifetime Blast Exposure During Military Career Negatively Impacts Recovery from Traumatic Brain Injury, Presenter: *Dr. Jason M. Bailie*

POSTERS

Learning to Heal through Art Therapy: Military Service Members Presenting Closure and Healing Mask Themes Have Higher Connectivity Between Brain Regions Associated with Memory and Pain, Presentation Author: *Dr. Janell Payano Sosa*

Changes in Outpatient Healthcare Utilization and Cost Following a Mild Traumatic Brain Injury among Active Duty Service Members, Presentation Author: *Mr. Peter Hoover*

National Intrepid Center of Excellence (NICoE) Blast Ordnance and Occupational Exposure Measure (BOOM), Presentation Author: *Dr. Chandler Rhodes*

Effect of Combat and Mission Related Repetitive Blast and Blunt Force TBI on Cerebral Autonomic Injury and Response to Integrative Medicine Therapies, Presentation Author: *Dr. Thomas DeGraba*

Detection of White Matter Bundles Anomalies in Service Members with Chronic Mild Traumatic Brain Injury Using a Geodesic Learning Framework, Presentation Author: *Dr. Ping-Hong Yeh*

Characterizing Intensive Outpatient Program Response among Service Members Using Change Between Distinct Post-Concussive Symptom Subgroups, Presentation Author: *Dr. Adam Kinney*

Distinct Trajectories of Healthcare Utilization Following the Completion of an Intensive Outpatient Program, Presentation Author: *Dr. Jose Lara-Ruiz*

Diffusion Imaging Comparison of High-Performance Gradient System (MAGNUS) with GE/NFL HHI Study Protocol on Clinical MR System, Presentation Author: *Dr. Herman Morris*

Subject-Specific Analysis for Diffusion and Kurtosis Changes in Mild Traumatic Brain Injury (mTBI) Patients with High-Performance MAGNUS MRI Gradient, Presentation Author: *Dr. Nastaren Abad*

Relation of Aerobic Activity to Cognition and Well-Being in Chronic mild Traumatic Brain Injury: A LIMBIC-CENC Study, Presentation Author: *Dr. William C. Walker*

Cerebellar Structural Alterations in Military-Relevant Traumatic Brain Injury and their Correlations with Psychiatric and Cognitive Measures, Presentation Author: *Dr. Emily Dennis*

Diffusion Tensor Magnetic Resonance Imaging of the Hypothalamus in Traumatic Brain Injury Warfighters and Correlation with Blood Endocrine Levels, Presentation Author: *CPT Alan Bell*

Targeted Dietary Manipulation as an Adjunct Strategy to Reduce Pain in Chronic Post-Traumatic Headache Among Service Members, Presentation Author: *Mr. Jacques Arrieux*

Traumatic Brain Injury Classification Variability in the Military Health System During the Afghanistan/Iraq Conflicts: Surveillance, Clinical, Research, and Policy Implications, Presentation Author: *Dr. Rachel Sayko Adams*

Women Report Worse Neurobehavioral Symptoms than Men Following Uncomplicated Mild Traumatic Brain Injury in U.S. Military Service Members, Presentation Author: *Dr. Ida Babakhanyan*

Immersive Virtual Reality-based Treatment of PTSD after Mild TBI, With and Without an Eye Movement Task, Presentation Author: *Dr. Michael Roy*

Research in Art Therapy in Service Members with Post-Traumatic Stress Symptoms at the National Intrepid Center of Excellence, Presentation Author: *Dr. Chandler Rhodes*

Cognitive Flexibility in Post-Traumatic Stress Disorder: Slowed Performance Associated with Altered Modulation of Cortical Oscillatory Activity During Task-Switching, Presentation Author: *Dr. Thomas DeGraba*

Association between White Matter Integrity of Locus Coeruleus Pathways to Hypothalamus and Sleep Apnea in Military-related Mild Traumatic Brain Injury, Presentation Author: *Dr. Ping-Hong Yeh*

Sleep-Wake Intracerebral Fluid Tracking (SWIFT) using Continuous Wave Functional Near-Infrared Spectroscopy (CW fNIRS): A Novel Approach to Visualizing TBI Associated Neurodegeneration, Presentation Author: *Ms. Phorum Sheth*

Diffusion Tensor Imaging Correlates of Sleep Dysfunction in Warfighters with Chronic Traumatic Brain Injury, Presentation Author: *CPT Alan Bell*

Obstructive Sleep Apnea Risk is Associated with Number of White Matter Hyperintensities, But History of Mild TBI Exposure is Not: A LIMBIC-CENC Study, Presentation Author: *Dr. Amanda Garcia*

Aggression in Military Members with Mild Traumatic Brain Injury and Post-Traumatic Stress Disorder is Associated with Intimate Partner Health-Related Quality of Life, Presentation Author: *Dr. Tracey Brickell*

Risk Factors for the Presence and Persistence of Post-Traumatic Stress Symptoms Following Traumatic Brain Injury and Polytrauma in U.S. Service Members and Veterans, Presentation Author: *Dr. Rael Lange*

Describing Disability and Gender Differences Among Separated U.S. Service Members with a History of Mild TBI, Presentation Author: *Ms. Isabelle Wal*

Educational Opportunities

OCT
14

Understanding and Responding to Microaggressions. Co-led by Col. Jessica Bunin, associate dean of DEI and associate professor of medicine, USUHS; and Maia Magder, DEI officer at WRNMMC and NICoE speech-language pathologist. 0900 - 1030 ET in the NICoE Auditorium.

OCT
14

Concussion/mTBI Clinical Phenotypes. NICoE Education Webinar with neurologist Dr. Thomas Bayuk. 0730 - 0830 ET.

OCT
21

Post-Traumatic Hypopituitarism. NICoE Education Webinar with endocrinologist LT COL Nicole Vietor. 0730 - 0830 ET.

OCT
25
DEC
14

19th Annual Healing Arts Exhibit hosted by the Walter Reed Arts in Health Program featuring artwork from the Walter Reed community. America Pavilion 1st floor between America Garage and building 19.

OCT
28

Audiology/Vestibular/Vision in the TBI Patient. NICoE Education Webinar with physical therapist Dr. Jessica Best and audiologist Dr. Melissa Kokx-Ryan. 0730 - 0830 ET.

NOV
16

Global Impact of Traumatic Brain Injury Care. A Traumatic Brain Injury Center of Excellence Quarterly Education Series Webinar about the role of historical conflicts in shaping TBI care, current pressing issues in the field, and areas for future research. 1200 - 1630 ET. Visit health.mil/TBIEducators.

NOV
18

Low Vision Rehabilitation: An Emerging Practice in Occupational Therapy. NICoE Education Webinar with occupational therapist Stephanie Haberman. 0730 - 0830 ET.

DEC
2
DEC
9

Operationalizing Solutions for Implicit Bias. Co-led by Col. Jessica Bunin, associate dean of DEI and associate professor of medicine, USUHS; and Maia Magder, DEI officer at WRNMMC and NICoE speech-language pathologist. 0900 - 1030 ET in the NICoE Auditorium.

DEC
2

Combat-related TBI and Psychological Health Comorbidities: Biological Markers of Recovery and Neuro. NICoE Education Webinar with Dr. Thomas DeGraba, chief innovations officer for the NICoE. 0730 - 0830 ET.

DEC
9

Better Together: Evidence-based Practice Management of Cognitive Group Therapy. NICoE Education Webinar with speech-language pathologists Shannon Auxier and Maia Magder. 0730 - 0830 ET.

INNOVATIONS IN PAIN MANAGEMENT

One area that particularly benefits from the Defense Intrepid Network for TBI and Brain Health's (Defense Intrepid Network) interdisciplinary and holistic approach to care is pain management.

That's because pain manifests in many ways throughout the body and affects other functions such as sleep, mood regulation, and critical thinking.

In recognition of Pain Awareness Month, we're highlighting a few physicians among many in the Defense Intrepid Network who are thinking about pain management in new ways in order to advance TBI care, and ultimately benefit patients.

ISC FORT CAMPBELL

One of the most comprehensive pain programs in the Defense Intrepid Network is at Intrepid Spirit Center (ISC) Fort Campbell in Kentucky. The Integrated Pain Management Clinic is located inside the ISC to treat a multitude of conditions at the same time.

Its success relies on a multi-disciplinary team of specialists that includes a massage therapist, a pain psychologist, a clinical pharmacist, a physical therapist, a movement specialist, and additional clinicians to perform treatment.

"We focus on the whole person in an effort to address chronic pain concerns," said Fort Campbell Physician Assistant Charles Brill. "[Dr.] Nicholas Spinuzza and I evaluate and develop an individualized treatment plan, based on both subjective and objective findings, during our initial visit and then continue to modify as needed depending on their response to the therapies."

A wide range of patient symptoms are treated at the clinic, from headaches and migraines to chronic regional pain

PAIN TREATMENTS AT FORT CAMPBELL

- Fluoroscopy, ultrasound, anatomic guided joint, tendon, ligament, and muscle injections
- Interlaminar epidural steroid injection
- Transforaminal epidural steroid injection
- Sacroiliac joint injection
- Trigger point injection (steroid or prolotherapy)
- Botox injection
- Joint injection
- Medial branch blocks
- Occipital nerve blocks
- Peripheral nerve blocks
- Stellate Ganglion blocks (PTSD, CRPS)
- Neural prolotherapy cutaneous nerve blocks
- Cefaly therapy (abort migraines)
- A-stim therapy (chronic pain, migraines, PTSD)
- Myofascial release therapy/Scar therapy (cupping, scrapping, injection)
- Full body and auricular acupuncture
- Peripheral pain stimulators

syndrome, post-surgical or post-trauma groin, pelvic, and limb pain, autonomic dysregulation, back and neck pain, myofascial pain and trigger points.

"We function as a portal for more complexly injured service members to access interdisciplinary assessment and intensive outpatient rehabilitation, with TBI and pain as dual centers of gravity," said ISC Fort Campbell Director Mr. Terry A. James. "This care covers any combination of TBI, behavioral health, comorbid substance misuse, pain, musculoskeletal, sleep medicine, and other related disorders."

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"The Fort Campbell Traumatic Brain Injury Clinic's care has restored my hope of recovery and ability to continue active duty service ... Having a provider who cares and is willing to go beyond [what anyone else has done previously] in my career means a lot. As my treatment plan and ability to recondition affected systems improves, I honestly believe the sky will be the limit once again."

– Patient

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LANDSTUHL REGIONAL MEDICAL CENTER TBI PROGRAM

The Grand Rounds lecture series—including the National Intrepid Center of Excellence's own Interdisciplinary TBI Grand Rounds—oftentimes leads to new and innovative treatment techniques.

In 2007, Col. George Smolinski, who is now the medical director of the Landstuhl TBI Program, attended a Grand Rounds seminar at the National Rehabilitation Hospital about an innovative technique using a person's own blood to treat tennis elbow.

After doing more research, Smolinski realized that this approach held great promise for injured service members to treat a variety of degenerative musculoskeletal conditions.

"At the time, we were using steroids for inflammation in acute injuries, but that didn't address the underlying disorder and wasn't tremendously effective against chronic conditions like arthritis," he said.

For example, for service members with arthritis, treatments were often limited, and even the most definitive treatment for arthritis—inserting an artificial joint—limited high-impact activity.

"Lots of younger service people didn't have alternative treatment options until newer technologies like plasma rich platelet injections came along," Smolinski said.



Col. George Smolinski

INNOVATIONS IN PAIN MANAGEMENT - *continued*

Two years later with the support of leadership, he acquired the necessary equipment to apply the procedure to patients at Landstuhl.

"LRMC was one of the first—if not the first—military treatment facility to establish this treatment program in 2009," he said. "Now, every major military medical center does this procedure. It is now widely used not just for orthopedic injuries, but also is now being applied to nerve injuries and even carpal tunnel syndrome."

ISC JOINT BASE LEWIS-MCCHORD

Throughout the Defense Intrepid Network, individual physicians are sometimes inspired by their own personal experience to seek ways to improve care.

Dr. Trisha Trujillo at Intrepid Spirit Center Joint Base Lewis-McChord in Washington state said she was motivated by her own chronic pain and expertise as an occupational therapist to introduce additional techniques to treat patients after she began working at the ISC in March.

"I noticed a lot of service members coming in with chronic pain and that's one of the biggest impacts for military readiness; meeting this need is a goal in this clinic [and the Defense Intrepid Network]," she said.

In the last few months, Dr. Trujillo and her colleagues



Dr. Trisha Trujillo

formed a new structure of seven weekly group classes for active duty service members. These include: iRest Meditation Group, Introductory Cognitive Behavioral Therapy Skills Group, Group Art Therapy, Mindfulness Based Art Therapy, Reduce Pain & Restore Functional Movement through Myofascial & Trigger Point Release Group, Revise and Restructure: Routine Management, and Stress Management Techniques. Classes review behaviors and activities that contribute to TBI symptoms, explore ways to manage symptoms, and nurture the mind and body connection.

The Reduce Pain & Restore Functional Movement through Myofascial & Trigger Point Release Group and iRest Meditation group are scheduled to be unveiled January 2023. However, the five other groups are actively running. In the meantime, Dr. Trujillo teaches the principles and exercises to individual patients.

"The more they know about how they're supposed to recover and the normal trajectory, the better they do," she said. "If they have validation and understanding, there is a direct correlation to positive outcomes. Education is key to success."

The group class about myofascial and trigger points will teach patients how to manually release facial pain with gentle, sustained pressure using simple equipment at home.

"I do these exercises regularly on myself and experience good results," Dr. Trujillo said. "If we can teach the skills to implement on a routine basis, the hope is that chronic pain can be alleviated. It's making service members feel empowered to take control of some of these things. Instead of waiting for the pain to go away, it becomes an active rather than a passive process."



**PAIN
MANAGEMENT**

New Research Study Aims to Prevent Chronic Headaches after Mild Traumatic Brain Injury



Headaches are one of the most common symptoms of mild traumatic brain injury (mTBI), affecting 78 to 98 percent of patients. Around 20 to 40 percent of these patients experience chronic symptoms and have 15 or more headache days per month.

A new research study aims to significantly decrease the number of headache days participants experience per month and prevent acute headaches from becoming chronic, said Annabel Lee Raboy, clinical research manager for the Center for Neuroscience and Regenerative Medicine (CNRM).

The study "Treatment of Acute Post-traumatic Headache with a CGRP Receptor mAb in Military Service Members and Civilians with Mild Traumatic Brain Injury," is the first randomized, placebo-controlled, multisite trial to investigate the safety and efficacy of erenumab 140 mg. Erenumab is an injectable drug approved by the Federal Drug Administration in 2018 for the preventive treatment of migraine in adults.

Currently, there are no approved treatments specifically for post-traumatic headache.

"Right now, service members are using Tylenol and ibuprofen to treat these headaches," said the study's Principal Investigator Dr. David Brody. "This study could produce mild benefits or be a game-changer."

With less headache days per month, service members could improve their quality of life and return to duty more quickly after a TBI.

Participants are currently enrolling at Womack Army Medical Center in Ft. Bragg, N.C.; Naval Medical Center Camp Lejeune in Jacksonville, N.C.; and Brooke Army Medical Center in Fort Sam-Houston, Texas.

Intrepid Spirit Center (ISC) Directors Capt. Diana Fu (Camp Lejeune) and Capt. Scott Klimp (Fort Bragg) are principal investigators for each of their respective sites to promote the

study, enroll participants, address any safety concerns, and lead staff to conduct the study.

"It's exciting that CNRM gets to work with the ISCs," said Martin Cota, senior clinical trials specialist. "This will lead to more studies as we continue to build relationships with them."

Emergency room staff, primary care physicians, and pharmacists will be notified about this study because eligible participants must have sustained a mTBI within seven days of beginning the study and receiving the first dose of erenumab. Eligible participants must also have new, worsening, or increased headaches after their injury.

Since most mild TBIs occur during training, military commanders will also be informed to keep an eye out for injured service members to refer to the study, said Dr. Brody.

"We urge service members to call us soon after they have a TBI," he said. "Don't wait seven days. We can administer the dose sooner than that."

Each participant will receive three injections of erenumab over three months, with a possibility of a fourth dose, and will be monitored for a total of 16 weeks.

To learn more about the trial, please email cnrmstudies@usuhs.edu, or reach out to Ms. Raboy or Dr. Brody.

RESOURCES FOR MANAGING PAIN AFTER CONCUSSION

- A [video](#) and [fact sheet](#) for stretches to help with neck pain.
- For providers, TBICoE offers the DHA-accredited course, Management of Headache Following Concussion. Course available on [JKO](#).

Get to Know the New Director of the Joint Base Elmendorf-Richardson TBI Clinic

Leveraging his unique active duty experience and expertise as a neuropsychologist, new JBER TBI Clinic Director Major Earl Banning is excited about working as part of a larger team to think creatively about traumatic brain injury (TBI) care for service members and veterans.

Q What is your professional background?

A I completed my PsyD in clinical psychology from Philadelphia College of Osteopathic Medicine and joined the Air Force to complete my internship year. I've had experience with TBIs while working at the Air Force Academy, particularly with student athletes. I spent the next few years as a survival, evasion, resistance, and escape (SERE) psychologist before beginning my two-year fellowship in neuropsychology at Brooke Army Medical Center (2015-2017). After completing my Fellowship, I was the director of neuropsychology at Wright Patterson Air Force Base. During my time, I deployed and performed TBI screenings as part of the medical group.

Q How do you think that experience will equip and help you to succeed in this role?

A My academic trainings as well as years of experience as a neuropsychologist have definitely prepared me to be the TBI clinic director here in Alaska. I am also aware that learning within this field is endless.

As a SERE psychologist, I helped service members, who were held captive or isolated from their units, reintegrate back into the military and to society. It's not about fixing problems, but instead is about helping those who experienced an abnormal event to return to "normal." Many of these patients also had TBI / PTSD and some lasting symptoms. So, when assessing and treating TBI patients now, I am careful not to do iatrogenic harm by assuming the person is permanently injured and cannot return to baseline. A person can experience TBI / PTSD and return to normal duty functions and have no ongoing limitations with the right assessment, team, and treatment. Of course, there are those with lasting impacts, but they can also find major improvements with treatment.

With that view, I like to think about how our clinic as an entity and our providers view TBI and how we approach patients.



Q What drew you to apply for this role and the mission of treating service members with TBI, PTSD, and other invisible wounds of war?

A I joined the military in order to help those impacted by Operation Enduring Freedom and Operation Iraqi Freedom and hoped to work with members impacted by PTSD. I knew this is where I could make a difference. I truly love being active duty and working with our veterans.

Q What is something unique about you that you offer to this role?

A I see myself as a good leader but also a great team member. I look for knowledge from all of our TBI clinics. Further, I like how this role leads to opportunities for creativity and novel approaches for how we address TBI in this setting.

Q What are your short- and long-term goals as director?

A Short term: Learn how this team currently operates and figure out what is working.

Long term: Figure out what is not working and implement changes. Find the best and most effective ways to care for our veterans.

I do think TBI education is lacking, so I would like to do more outreach. Education can extend to other medical providers as well as to the military community.

Q What are you most excited about or looking forward to in this role?

A Working with a team! My last clinic was just myself and a tech (sometimes). I was able to teach residents, but I look forward to working with a team dedicated to treating TBI.



Maj. Earl Banning is the new director of the Joint Base Elmendorf-Richardson TBI Clinic.

Auditory Cognitive Lab: A Music Therapy and Speech Pathology Co-Treatment Program

By Danielle Kalseth MM, MT-BC, Heather Morrison MS, CCC-SLP, CBIS, Joint Base Elmendorf-Richardson

Auditory Cognitive Lab (ACL) is an integrative music therapy and speech language pathology clinical program that helps patients with mild traumatic brain injury and hearing dysfunction, with specific attention to auditory processing disorders. Most patients in the program are diagnosed with sensorineural hearing loss, central auditory processing disorder, tinnitus, or a combination.

Music therapists and speech language pathologists at Intrepid Spirit Center (ISC) Fort Belvoir created the first ACL program in 2016. It has since been redesigned and replicated at multiple sites across the Defense Intrepid Network in collaboration with Creative Forces®: NEA Military Healing Arts Network, including ISC Fort Carson, ISC Camp Pendleton, and Joint Base Elmendorf-Richardson (JBER).

Since 2019, 50 patients at JBER have participated in the ACL program. They learn strategies to help improve understanding of what they hear, aid in attending to tasks, and information recall. This addresses some of the frustrations that patients report with following auditory directions, recalling conversations, hearing others when there is background noise, and understanding rapid speech. Some patients report avoiding social situations due to these difficulties or increased stress within their relationships related to communication breakdowns.

Some strategies can be used immediately, and others improve brain function over time. Patients complete take-home assignments and learn how to incorporate practices in their everyday lives. Participants also report learning how to self-advocate, which often reduces communication breakdowns.



The Auditory Cognitive Lab uses drumming to train in memory and attention tasks.

A team of Creative Forces music therapists and the speech language pathologist at JBER standardized the ACL treatment protocol for four, five, and six-week programs and to support both the intensive outpatient program and longitudinal outpatient clinic. Feasibility testing of this protocol is projected to begin at JBER in 2023 pending Institutional Review Board approval.

“[ACL] has taught me to push myself outside of my comfort zone. It has helped me to be better at noticing things, including what I can do in any given situation to be more successful.”

– Patient



Ceramic Artist Creates Cups to Talk About War

Gulf War veteran and ceramic artist Ehren Tool visited the National Intrepid Center of Excellence (NICoE) recently to create and give away clay cups that each recipient could personally design with military insignia and symbols about war.

Since 2001, Tool has made and given away more than 25,000 cups.

"The cups are just cups and don't mean anything unless the images resonate with folks," he said. "The folks they usually resonate with are those who have already paid a much higher price than any dollar amount."

Patients and staff on-site the day Tool visited the NICoE were able to design their own cups with the symbols that meant the most to them. Michelle Smith, a Navy widow, glazed the cups at George Mason University and shipped them back to the NICoE to be given to each person.

During the school year, Tool is ceramics studio manager in the Department of Art Practice at University of California, Berkeley, but often travels during summer break to create and give away more cups. While visiting the National Capital Region, he worked at George Mason University and displayed and gave away a few cups at the Library of Congress.



Clay cups made by Ehren Tool.

Tool creates the cups with the goal of starting honest conversations about war and for service members to share their stories with loved ones.

"I think hand-to-hand is the appropriate scale to talk about war," he said. "I think you are more likely to share a story in your living room drinking whiskey with loved ones than standing with strangers in front of a public memorial."

Though he acknowledges that it feels easier not to talk about war experiences, he says silence comes at a cost as well. This aligns with the Defense Intrepid Network's interdisciplinary care model that uses creative arts therapy to help patients verbalize their trauma to create pathways for healing.



Ehren Tool creates his clay cups while visiting the National Capital Region. Photo credit: Rob Leese, Uniting US artist, U.S. Air Force retired.

"An Irish bartender told me 'A burden shared is a burden halved.' I'm not really sure it does unless the listener is trained to respond in a way that doesn't exacerbate the pain," Tool said.

When he hands a person a cup, sometimes words aren't needed.

"The ones I remember the most are when they get handed the cup and then we burst into tears. Being able to hand the widowed wife, grieving mother, vet who lost his buddy decades ago means so much. To be able to look them in

the eye and shake hands or hug," he said.

[Watch a video](#) from Tool's visit at the NICoE.

“*The hope is that cups can be touchstones to speak about unspeakable things.*”
— Ehren Tool



Around the Network



MEDICAL DIRECTOR OF LANDSTUHL REGIONAL MEDICAL CENTER TBI PROGRAM PROMOTED

Col. (Ret.) Paul Pasquina (left), professor and chair of the Department of Physical Medicine & Rehabilitation at the Uniformed Services University of the Health Sciences (USUHS), congratulates Col. George Smolinski (right), medical director of **Landstuhl Regional Medical Center TBI Program**, for his promotion to colonel at the pinning ceremony Aug. 1 at USUHS.

CLINICAL EDUCATION AND OUTREACH LEAD AT THE NICoE IS PROMOTED

On Aug. 30, CAPT Stefanie Glenn of the U.S. Public Health Service (USPHS) pins Cmdr. Marie Manteuffel as her husband and daughter look on during a promotion ceremony at DHA headquarters in Falls Church, Va. Manteuffel is the clinical education and outreach lead at the **NICoE** and is a USPHS pharmacist. CAPT Mercedes Benitez-McCrary, department chief for clinical operations at the NICoE, welcomed attendees. Mr. Ronald Hamilton, DHA J-1 director; Brig. Gen. Norman West, DHA director of staff; and Rear Adm. Brandon Taylor, DHA public health director, spoke during the event.



TWO CORPSMAN AT THE NICoE ADVANCE TO NEXT RANK

Petty Officer Andrea Drage (left) advanced to HM2 and Petty Officer Jacob Johnson (right) advanced to HM3 on July 1 during Cycle 255 of the Navy-wide advancement exam. The exam has two cycles per year in March and in September.



LISTEN TO THE PICKING YOUR BRAIN PODCAST

The Traumatic Brain Injury Center of Excellence (TBICoE) [Picking Your Brain](#) podcast has a new episode featuring Senior Enlisted Advisor to the Chairman of the Joint Chiefs of Staff Ramón "CZ" Colón-López. He shares his personal experience with TBI, offers insight into why many service members delay treatment, and tells how leadership is working to reduce the stigma. Find the episode on the [TBICoE podcast page](#), [DVIDS](#), or anywhere you listen to podcasts.



PICKING YOUR BRAIN

Photo credit: TBICoE

Around the Network - continued

FIRST ACUTE CONCUSSION EVALUATION CONDUCTED AT ISC FORT CARSON

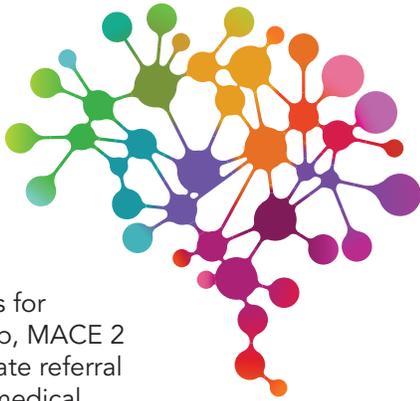
Chris Lewandowski, TBICoE regional education coordinator for the Colorado market, conducts the first Military Acute Concussion Evaluation (MACE 2) training for 1st and 2nd Brigade Medics in the new Intrepid Spirit Center **Fort Carson** building, which opened in June. MACE 2 is an acute assessment tool that is preferred by the DHA.



Photo credit: Ms. Emily Childs, Fort Drum REC

TBICOE RELEASES NEW CLINICAL RECOMMENDATION

TBICoE recently released the Neuroimaging Following Concussion/Mild TBI clinical recommendation, a concise and interactive clinical algorithm with guidance on imaging modalities in both acute and post-acute time frames. Primary care managers can use it to make informed, evidenced-based decisions regarding whether imaging is indicated following a concussion. While MACE 2 red flags and indications for neuroimaging may overlap, MACE 2 red flags indicate immediate referral to a higher level of care, medical evacuation, or both, and should not be used to determine if a patient needs imaging. To download a copy of the interactive clinical recommendation or the MACE 2, visit health.mil/TBIProviders.



REGIONAL EDUCATION COORDINATOR TRAINS PROVIDERS ON USS CARL VINSON

Ms. Randi Sedigh, licensed clinical social worker and TBICoE regional education coordinator, trained providers onboard the USS Carl Vinson aircraft carrier (Nuclear Propulsion 70) for the Military Acute Concussion Evaluation 2 and the Progressive Return to Activity.



Photo credit: Ms. Randi Sedigh

JOINT BASE LEWIS-MCCHORD WORKS ON NEW RESEARCH PROJECTS

Joint Base Lewis-McChord is working on submissions to the Institutional Review Board for several new brain injury specific biomarker and PTSD research projects to include a PTSD-Advanced Platform Trial.



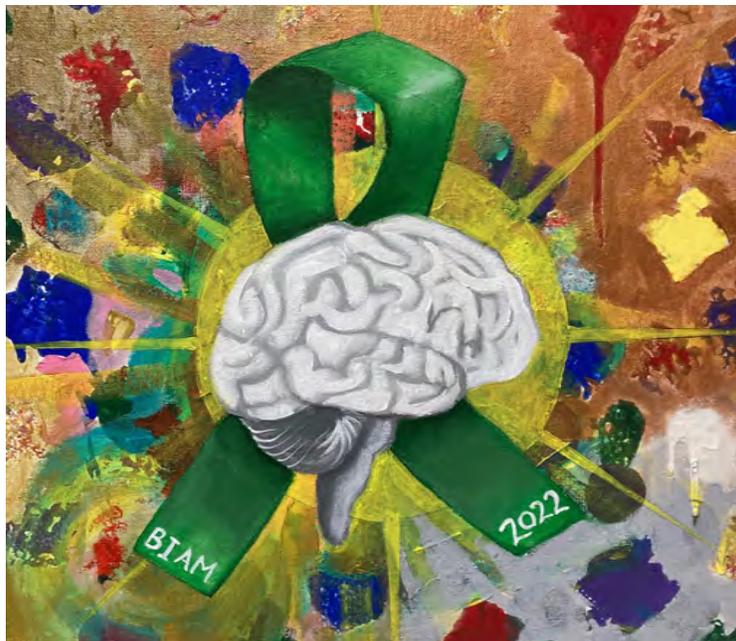
SUMMER FEST AT EGLIN AIR FORCE BASE

To support military families with special needs, Intrepid Spirit Center **Eglin Air Force Base** staff shared TBICoE fact sheets on sleep issues and family caregiving strategies at the Eglin AFB Exceptional Family Member Program Summer Fest in July. In the photo: Col. Laura Lewis, ISC director (2nd from right); and Sheoah Hardy (far right), licensed clinical social worker for the ISC.

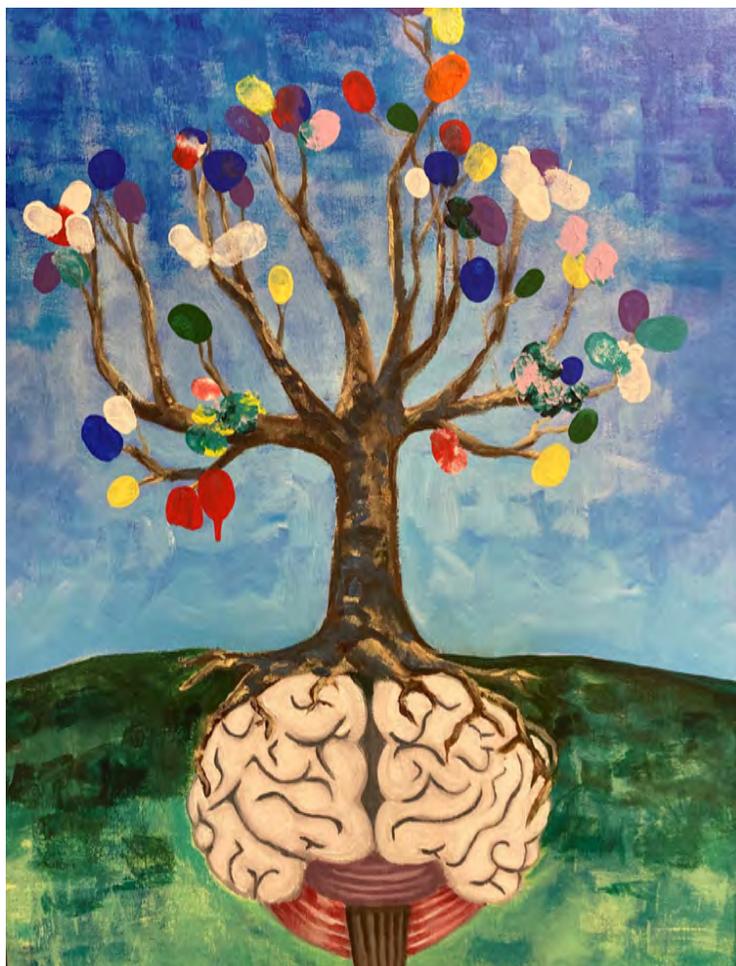
Around the Network - continued

STAFF AND PATIENTS COLLABORATE ON NEW ART AT EGLIN AIR FORCE BASE

Intrepid Spirit Center (ISC) **Eglin Air Force Base** staff and patients collaborated on two art pieces that now hang on the walls at the ISC.



Creative Arts Therapist Kevin D'Augustine created the brain stencils before individuals contributed using sponges (above) or thumb prints (below).



FORT BLISS GALLERY SHOWCASES PATIENTS' ART

A one-day Art and Healing gallery event in July showcased art created by patients at Intrepid Spirit Center **Fort Bliss**. A patient also created the logo on the event flyer.



Photo credit: Amabilia G. Payen, public affairs office, William Beaumont Army Medical Center



Intrepid Network Patient Testimonials



"Great facility [at ISC **Eglin Air Force Base**], awesome staff, environment is absolutely beneficial and geared toward making patients feel they are at the right place to take care of any concerns they may have. And above all, medical personnel, **DOCTORS**, specialists, and assistants are phenomenal."

"I went to audiology [at the **NICoE**] and 1.5 hours later I had hearing aids. We were at dinner and the waitress told us what they had for dessert. It's been 10 years; I was able to hear at the restaurant and that was awesome."

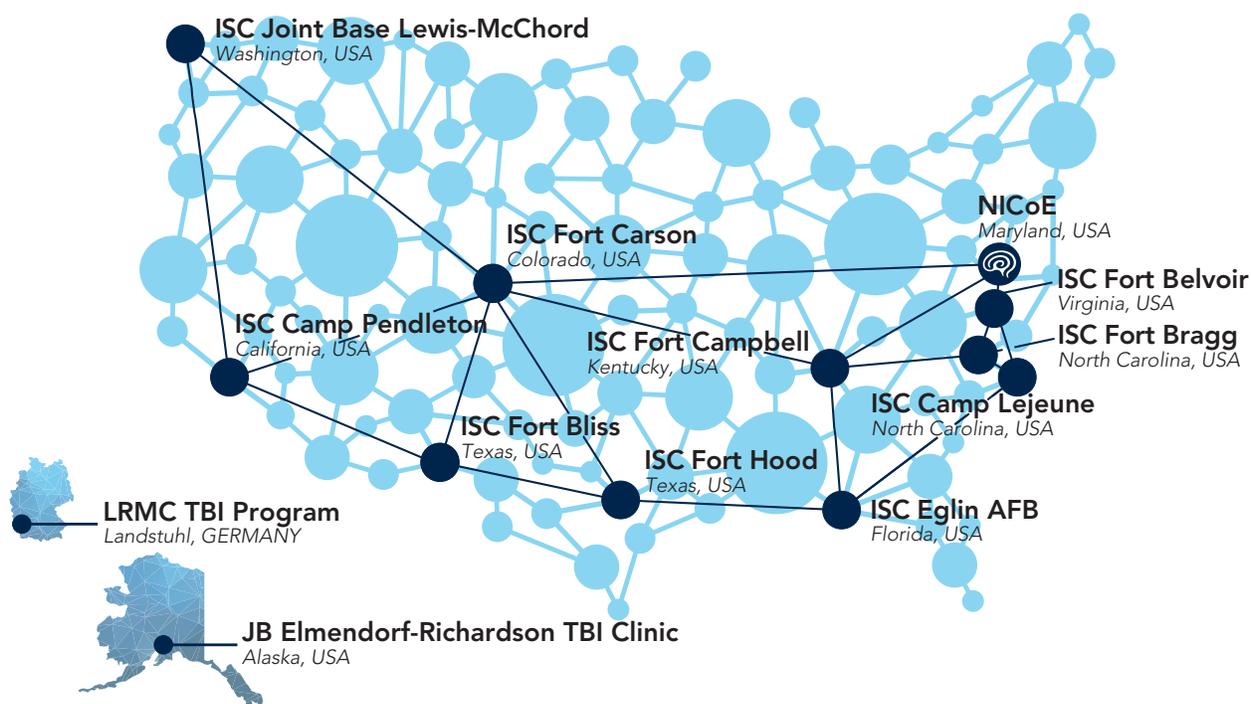
THANK YOU FOR WHAT YOU DO [at **Camp Pendleton**]. To each and every one of you and your disciplines, and your overlaps—the time and the patience you have to sit there and deal with our buffoonery—deal with our questions—deal with our issues—deal with our space cadet mindset—THANK YOU for the continued care. Please, PLEASE NEVER GIVE UP on those who sit on this side of the table ... there are more like us than you can imagine, we're just not used to saying help."

"This program is what true therapy and healing should look like. Your team [at **ISC Fort Hood**] helped me understand the consequences of war and made a dent in my armor. I now have the tools needed to be on target."

"Without question you have the best team of providers, HMS, and staff that I have ever encountered. Their relentless care for our well-being did not go unnoticed and only credits the strong foundation **NICoE** has built. Lastly, a hero is defined as a person who is admired or idealized for courage, outstanding achievements or noble qualities. Your team exceeds these attributes and are the strongest heroes I've met in my career."



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