



**Research Collaborations to Address the Behavioral Health Problems
and Challenges Facing Military Personnel, Veterans, and Their Families
in North Carolina**

June 28, 2021

University of North Carolina System
Chapel Hill, North Carolina

**Research Collaborations to Address the Behavioral Health Problems and Challenges Facing
Military Personnel, Veterans, and Their Families in North Carolina**

Contents

Relevant Statute..... 3

Introduction 4

Selected Research by UNC System Institutions 5

Research Collaborations to Address the Behavioral Health Problems and Challenges Facing Military Personnel, Veterans, and Their Families in North Carolina

Relevant Statute

GENERAL ASSEMBLY OF NORTH CAROLINA
SESSION 2011 SESSION LAW 2011-185 SENATE BILL 597
AN ACT TO ENSURE THAT THE BEHAVIORAL HEALTH NEEDS OF MEMBERS OF
THE MILITARY, VETERANS, AND THEIR FAMILIES ARE MET.

SECTION 10.(a) The General Administration of The University of North Carolina, in collaboration with Operation Re-Entry North Carolina at East Carolina University, North Carolina Translational and Clinical Sciences Institute, other institutions of higher education in this State, the North Carolina National Guard, and the United States Department of Veterans Affairs, shall, to the extent available resources allow, collaborate on research to address the behavioral health problems and challenges facing military personnel, veterans, and their families.

SECTION 10.(b) The research required by this section shall be conducted by collaborative research teams which shall include civilian investigators from institutions of higher learning in this State and private research organizations, health providers in regional and national military health system institutions, and providers and investigators in VISN 6 in the VA system. These teams shall aggressively pursue federal funding to conduct the research required by this section.

SECTION 10.(c) At a minimum, the research required by this section shall include the following goals:

- (1) To define the behavioral health problems facing service members, veterans, and their families, with a special emphasis on the behavioral health needs of the reserve components of the Armed Forces of the United States, including the National Guard.
- (2) To develop, implement, and evaluate innovative pilot programs to improve the quality, accessibility, and delivery of behavioral health services provided to this population.
- (3) To evaluate the effectiveness of new programs put into place by the National Guard and other military organizations to address the behavioral health challenges facing military service personnel, veterans, and family members. The National Guard shall cooperate in providing information to assess the effectiveness of behavioral health services provided to it and its members.
- (4) To contribute to the knowledge of evidence-based behavioral health screening, diagnosis, treatment, and recovery supports for military service personnel, veterans, and their families.
- (5) To study other issues pursuant to requests by the various branches of the active and reserve components of the Armed Forces of the United States and the United States Department of Veterans Affairs, in order to improve behavioral health services for service members, veterans, and their families.

SECTION 10.(d) On July 1, 2012, and annually thereafter, the General Administration of The University of North Carolina shall report its findings to the Joint Legislative Health Care Oversight Committee and to the House of Representatives and Senate Appropriations Subcommittees on Health and Human Services.

Research Collaborations to Address the Behavioral Health Problems and Challenges Facing Military Personnel, Veterans, and Their Families in North Carolina

Introduction

The University of North Carolina (UNC) is proud to support our military and is committed to providing educational opportunities, providing services, and conducting research to address military and veteran needs. As of fall 2020, more than 20,000 military-affiliated students attended UNC System universities. The UNC System has dedicated staff and on-campus resources designed to support these service members and their families. Additionally, UNC System institutions partner with the Departments of Defense and Veterans Affairs—including North Carolina-based military elements and other public and private organizations—through targeted research and clinical efforts, educational and training programs, and other services to support the state's large military community.

Research Collaborations to Address the Behavioral Health Problems and Challenges Facing Military Personnel, Veterans, and Their Families in North Carolina

Behavioral Health and the Military: Selected Research by UNC System institutions

1. Appalachian State University – *Chronic Effects of Neurotrauma Consortium & Home Excellence Resource Center to Advance, Redefine, and Evaluate Non-Institutional Care*

- a. PI: Erin Bouldin (Health and Exercise Science, College of Health Sciences)
- b. Sponsor: VA Salt Lake City Health Care System
- c. Amount: \$16,245
- d. Dates: 9/1/2020- 8/31/2021
- e. Summary: The Chronic Effects of Neurotrauma Consortium (CENC) studies focus on the long-term mental and physical health of Veterans who served after 9/11/2001. These studies include an observational study on late neurologic effects of Operation Enduring Freedom (OEF), Operation Iraqi Freedom (OIF), and Operation New Dawn (OND) combat, the epidemiology of mild traumatic brain injury (mTBI) and Neurosensory Outcomes, and visual sensory impairments and progression following mTBI, among others. The goal of the Home Excellence Resource Center to Advance, Redefine, and Evaluate Non-Institutional Care (HERO CARE) Center of Excellence (CoE) is to expand the capacity of the VA to deliver integrated, Veteran- and caregiver-partnered, data-driven approaches to non-institutional care across VA. The project includes piloting innovative interventions to improve non-institutional care at each of the four VAMCs involved in this effort, using a hybrid implementation approach to evaluate feasibility and impact. Findings and deliverables from these projects will be integrated to develop a toolkit that can be used across the VA to improve non-institutional care. This work is a continuation of a project that began in 2019.

2. Appalachian State University – *Health and Quality of Life of Veterans with Post-Traumatic Epilepsy and their Caregivers*

- a. PI: Erin Bouldin (Institute for Health & Human Services, College of Health Sciences)
- b. Sponsor: Department of Defense (DOD)/ University of Utah
- c. Amount: \$201,807
- d. Dates: 9/30/2020 - 9/29/2024
- e. Summary: This research aims to study the health, changes in health trajectory (improving, stable, and declining) over a two-year period, and burden on caregivers of veterans with and without post-traumatic epilepsy (PTE). The project also will evaluate changes in available services and unmet needs among caregivers of post-9/11 veterans with PTE, and assess whether caregiver characteristics are associated with the health trajectories of caregivers and of veterans with PTE over this period.

3. East Carolina University – *Camp Corral Analysis*

- a. PI: Debra Jordan (Recreation Sciences)
- b. Sponsor: Camp Corral (non-profit)
- c. Amount: \$10,000
- d. Dates: 1/1/2021 - 12/31/2021
- e. Summary: Camp Corral (CC) is a nonprofit organization that provides free summer camp experiences for children of military service members who are injured, ill, or fallen. Each year over 3,000 children attend CC camps and CC undertakes an evaluation of those

Research Collaborations to Address the Behavioral Health Problems and Challenges Facing Military Personnel, Veterans, and Their Families in North Carolina

experiences. While the summer 2020 camp season was canceled due to COVID-19, CC conducted a retrospective evaluative survey of parents about their children's 2019 camp experience. ECU analyzed these survey results.

4. Elizabeth City State University – *Viking Victory: Ready. Set. Go! Peer Wellness Ambassadors Leading the Race against Mental Health*

- a. PI: Kevin Wade (Student Affairs)
- b. Sponsor: UNC System Office
- c. Amount: \$25,000
- d. Dates: 8/1/2020 - 7/31/2021
- e. Summary: Elizabeth City State University's Division of Student Affairs is proposing to strengthen our existing behavioral health resources through the implementation of Viking Victory, an innovative approach of being responsive and proactive to addressing mental health on campus, while increasing retention rates for the next generation of leaders. Through this grant, ECSU will develop Mental Health First Aid training for support staff and students (Peer Wellness Ambassadors – to include student veterans), and develop a "Viking Engage App" to market, track, report, and evaluate effectiveness. The team will partner with Mental Health First Aid, East Carolina University, and Albemarle Hopeline, as well as the extended Elizabeth City community.

5. Fayetteville State University – *Veterans in the Community (VACOM)*

- a. PI: Afua Arhin (Nursing)
- b. Sponsor: DHHS Health Resources and Services Administration (HRSA)
- c. Amount: \$491,709
- d. Dates: 7/1/2019 - 6/30/2022
- e. Summary: The School of Nursing at Fayetteville State University established the Veterans in the Community (VACOM) project with two major goals: (1) recruit veterans into the undergraduate nursing program, and (2) establish a VACOM Fellows Program for faculty and affiliated preceptors to gain competence in community-based/primary care and veteran centeredness. Under the first major goal, objectives are to: • Increase the number of student veterans admitted to the School of Nursing annually by 50%. (Current 20 to 30). The nursing school will continue to collaborate with FSU's Fort Bragg Veteran Center to target recruitment of LPNs and ADN veterans who currently work in community-based care of Womack Army Medical Center and Fayetteville Veterans Administration Center, as well as recruitment of transitioning-out soldiers via the Army Transition Program. • Increase the number of undergraduate student veterans in the nursing program pipeline who matriculate to the upper division from the current 65% to 90%, and maintain retention rate of student veterans in the upper division at the current 100%, through focused support, mentoring, and tutoring. • Enhance didactic and clinical training curricula to integrate community-based/primary care, population health, and inter-professional education. FSU will complete a curriculum audit to identify gaps in population health content, modify didactic and clinical course (310 clinical hours) content to fill the gaps, offer non-traditional options for course delivery to accommodate working nurses, and integrate mobile health tools for student learning and tracking population health outcomes. FSU also will continue clinical collaborations with the Fayetteville VAMC community-based/primary care clinics and establish new

Research Collaborations to Address the Behavioral Health Problems and Challenges Facing Military Personnel, Veterans, and Their Families in North Carolina

collaborations with Cape Fear Valley's Community Paramedic Program and Coastal Southeastern United Care (Out-patient Psychiatric and tele-health). Under the second major goal, objectives are to train 20 Faculty and Preceptors each year as VACOM Fellows, achieving primary care certification through NC AHEC/ UNC Collaboration and certification in Practice in Military Culture through FSU's Social Work Program. Overall, this project will substantially benefit underserved populations. Cumberland County is designated as a Health Professional Shortage Area (HPSA) component county for community-based/primary care.

6. NC Central University – *Honest Conversations in Safe Spaces Suicide Prevention Program*

- a. PI: Carolyn Moore (Counseling Center)
- b. Sponsor: Substance Abuse and Mental Health Services Administration (SAMHSA)
- c. Amount: \$102,000
- d. Dates: 9/30/2017 - 9/29/2020
- e. Summary: The North Carolina Central University Honest Conversations in Safe Spaces Suicide Prevention Program will strengthen NCCU's capacity and infrastructure to provide coordinated behavioral health programming that promotes mental health and suicide prevention. The project brings together community and campus stakeholders as members of a Suicide Prevention Coordinating Committee tasked with developing a comprehensive suicide prevention effort that includes development of a suicide response protocol that campus mental health professionals and other administrators will follow when working with students with suicidal behavior and an organized tracking or monitoring system for those students. In addition, the program will implement mental health promotion interventions and strategies to reduce risk factors associated with suicide, while also enhancing protective factors. While these strategies will be available to the entire NCCU student population of mostly African American students, there is a special focus on students considered at high risk for suicide, including veterans and military affiliated students. Specific interventions include focus groups with students from the targeted groups to achieve cultural competence of programs and materials, signature campus wide health promotion events, and on-line interactive training tools specifically designed for the targeted groups.

7. NC State University – *North Carolina Veteran Needs and Service Applications*

- a. PI: Samantha Cacace (Center for Family & Community Engagement)
- b. Sponsor: Vaya Health/ Governors Institute on Alcohol and Substance Abuse
- c. Amount: \$73,799
- d. Dates: 9/1/2020 - 6/30/2021
- e. Summary: The North Carolina Department of Health and Human Services has a special interest in veteran and military health and wellness, as veterans and military service members make up 10% of the North Carolina adult population. *NCServes*, a regional branch of the national resource networking organization known as *AmericaServes*, connects North Carolina military service members, veterans, and their families with resource providers, ranging from mental and physical healthcare to legal, spiritual, and leisure needs. For this project, NC State, in partnership with the Governor's Institute, NC DHHS, and Syracuse University's Institute for Veterans and Military Families, is seeking assistance to develop predictive analytic tools to support strategic decision-making

Research Collaborations to Address the Behavioral Health Problems and Challenges Facing Military Personnel, Veterans, and Their Families in North Carolina

regarding expansion and optimization of coverage, service offerings, provider-based management, new client marketing, and identifying areas of improvement for this vital service organization.

8. NC State University – *Youth Support and Internship Program*

- a. PI: Harriet Edwards (Agricultural & Human Sciences)
- b. Sponsor: U.S. Department of Agriculture (USDA), National Institute of Food and Agriculture (NIFA)
- c. Amount: \$900,000
- d. Dates: 9/1/2019 - 8/31/2021
- e. Summary: Project Youth Extension Service (YES) is a national internship program that engages 25-50 college students motivated to serve the needs of National Guard and Reserve Component military families during all phases of deployment. Interns receive extensive youth development educational and facilitation skills. In turn, they travel to Guard/Reserve events to deliver youth programs in support of Department of Defense Yellow Ribbon Reintegration Program sessions. Project YES provides participating interns direct, experiential opportunities to strengthen their professional knowledge and skills while meeting the needs of military families impacted by deployment related absences.

9. UNC-Chapel Hill — *Assessing & Tracking Tactical (ATTAC) Forces Initiative*

- a. PI: Jason Mihalik (Exercise and Sport Science)
- b. Sponsor: Department of Defense (DOD)
- c. Amount: \$1,266,802
- d. Dates: 1/27/2020 - 1/26/2022
- e. Summary: Traumatic brain injury (TBI) has been identified as the signature injury of our most recent combat theaters, with up to 25% of soldiers evacuated from Iraq having experienced a head or neck injury. The majority of service-related brain injuries are clinically categorized as “mild” TBI (mTBI); however, the term “mild” is a misnomer, since the acute/sub-acute and cumulative effects of mTBI can be debilitating to individuals and cumulatively pose a significant impediment to force readiness. It is clear mTBI can adversely affect short- and long-term performance, health and retention of military personnel. Soldiers with mTBI have high medical resource utilization and reduced quality of life. These findings are especially true for Special Operations Forces (SOF) combat soldiers given the growing reliance on SOF to intervene in global conflicts and the war on terror. Lifetime prevalence concussion rates for US Military personnel are estimated to be 19.5%, and thus protecting the long-term neurological health of SOF soldiers is paramount to life both during and following military careers. Research on retired National Football League players has demonstrated possible cognitive impairment in 35% of the sample, and similar data for retired military personnel at high risk for concussion is lacking. The Assessing & Tracking Tactical (ATTAC) Forces Initiative builds on existing clinical research studies underway with soldiers at Ft. Bragg, NC, and expands to include 3rd Special Forces Group (Airborne) and Air Force Special Operations Command (AFSOC) service members. The Initiative aims to evaluate neurophysiological, human performance, clinical, and psychometric outcomes across the SOF lifespan in three cohorts: new SOF soldiers, active SOF soldiers, and retired SOF soldiers.

Research Collaborations to Address the Behavioral Health Problems and Challenges Facing Military Personnel, Veterans, and Their Families in North Carolina

10. UNC-Chapel Hill—*Multiscale Integration of Neural, Social, and Network Theory to Understand and Predict Transitions from Illness to Wellness*

- a. PI: Peter Mucha (Mathematics)
- b. Sponsor: University of Pennsylvania, US Army Research Office (ARO)
- c. Amount: \$227,870
- d. Dates: 7/2/2018 - 7/1/2021
- e. Summary: Binge drinking is common and destructive on US military bases, and alcohol use accounts for 10% of deaths in working-age adults. Social factors cut across each of these elements of drinking behavior. For example, whether and how much members of a person's social network drink can influence cue exposure; the person's reactivity to those cues may vary as a function of how susceptible they are to mimicking and adopting behaviors of other network members. In addition, the ability to change drinking behavior may in turn depend on the strategy the person adopts to regulate the desire to drink and their capacity to implement that strategy. Alcohol use and abuse are theorized to arise from a dynamic interplay between intra- (i.e. brain or neural networks) and extra-individual (i.e. social networks) processes. Alcohol use and abuse are both strongly tied to mesolimbic brain reward system reactivity to alcohol-related cues. Further, many behaviors, including alcohol consumption, spread from person to person, highlighting the role of interpersonal interactions with social network members. Rather than considering intra- and extra-individual processes in isolation, understanding the brain mechanisms and social network factors of decision making must therefore account for individual differences in brain network architecture and function, individual differences in receptivity to influence, and group level social structures that may promote different decision pathways and levels of behavioral contagion. To address this gap, this study uses specific cognitive strategies based on mindfulness and hypnosis to develop a causal model of how different brain and cognitive states interact with social resources to predict behavioral trajectories. Thus, we will simultaneously model intra- (i.e. brain networks) and inter- individual (i.e. social networks) processes governing the kinds of alcohol (and alcohol-related) cues to which individuals are exposed, how different people react to them, and regulate responses to them. This project is part of a multidisciplinary research effort with the University of Pennsylvania and Columbia University, supported by the Durham, NC based Army Research Office.

11. UNC Charlotte – *Musculoskeletal Injury, Psychological Distress, and Suicide among Military Veterans: Understanding Disparities and Barriers to Healthcare Access*

- a. PI: Robert Cramer (Public Health Sciences)
- b. Sponsor: Tuscaloosa Veterans Affairs Medical Center
- c. Amount: \$9,458
- d. Dates: 9/1/2020 - 9/1/2021
- e. Summary: The overall goal of this pilot is to establish relationships between the Tuscaloosa VA Medical Center and current academic partners (UNC Charlotte, University of Kentucky) with the Charleston Health Equity and Rural Outreach Innovation Center (HEROIC). This team brings expertise in Veteran suicide risk, musculoskeletal injuries, rehabilitation sciences, mental and behavioral health, and intervention development

Research Collaborations to Address the Behavioral Health Problems and Challenges Facing Military Personnel, Veterans, and Their Families in North Carolina

and implementation. The group will collect meaningful pilot data and demonstrate collaboration to develop a grant application to address gaps in health equity and access for Veterans with musculoskeletal injuries, mental health disorders, and suicide risk.

12. UNC Greensboro – *IN*vestigating training assoCiated blasT pAthology (*INVICTA*)

- a. PI: Christopher Rhea (Kinesiology)
- b. Sponsor: Henry M Jackson Foundation, Department of Defense (DOD)
- c. Amount: \$189,118
- d. Dates: 7/1/2020 - 6/30/2021
- e. Summary: The majority of combat injuries sustained during the conflicts in Iraq and Afghanistan (OEF and OIF) were associated with explosive blast events and head trauma, including traumatic brain injury (TBI). Operational, research, and medical leaders have become increasingly concerned that repeated exposure to low-levels of blast overpressure may have both acute and cumulative long-term effects. Since many military exposures to blast events occur during training, the UNC Greensboro group is studying service member exposure to repeated low-level blast events while firing heavy weapons during combat training exercises. Heavy weapons training (HWT) instructors typically experience 100-150 blast exposures during a 3-year assignment. Using the training programs as a natural experiment, the team studied changes in functional or cognitive ability in certain individuals after exposure to HWT blast events and found that short-term difficulties with some tasks, including the ability to recall information across time, were present in nearly 20% of service members after exposure. This study expands current knowledge regarding the biological mechanisms that underlie the neurological impact of repetitive low-level blast exposures. We will examine possible blast-related changes in biological markers using blood samples collected before and after blast-exposure and correlate important changes with the measured level of blast exposure and with changes in functioning. The findings from this study will inform further long-term studies of relationships between blast-exposure, acute neurological and biological findings and the risk of developing chronic-progressive degenerative conditions that may resemble chronic traumatic encephalopathy (CTE).

13. UNC Wilmington – Project SOAR

- a. PI: Danny Johnson (CHHS School of Health and Applied Human Sciences)
- b. Sponsor: Department of Veterans Affairs (VA)
- c. Amount: \$116,328
- d. Dates: 9/30/2020 – 9/30/2021
- e. Summary: Project SOAR is a unique program nationally, and the only adaptive sport and recreation program designed specifically for military veterans and members of the Armed Forces with disabilities living within 90 miles of Wilmington, NC. Since 2016, Project SOAR has promoted recreational, rehabilitative, therapeutic, and wellness needs of military veterans and members of the Armed Forces with disabilities through adaptive sport clinics and an equipment loan program for six sports: archery, cycling, golf, kayaking, SCUBA diving, and surfing as vehicles to foster involvement in these activities with a team, organization, family and friends, and/or individually. Sports are adapted by coaches and staff for a wide variety of physical and invisible disabilities including: spinal cord injuries, amputations, brain injuries, and post-traumatic stress

Research Collaborations to Address the Behavioral Health Problems and Challenges Facing Military Personnel, Veterans, and Their Families in North Carolina

disorder. The program has led veterans and members of the Armed Forces living with a disability to independent involvement in these activities, as well as increased health, wellness, and quality of life. The majority (81%) of participants have reported highest satisfaction with sports clinics, coaches, and staff involved with Project SOAR, and 100% of participants reported positive impacts from Project SOAR on their overall mental health, primarily in the areas of well-being, confidence, and resilience. In addition, all participants placed value on their ability to reconnect with veterans in the community through Project SOAR events and clinics. With continued support from the Department of Veterans Affairs for 2020-2021, Project SOAR will be able to expand its impact on the health of current participants and target the over 26,000 unreached veterans in southeast NC living with the highest level of disability rating.