



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

June 30, 2014

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.

UNC System Strategic Directions 2013-2018 & The Military

Long-range planning is primary statutory responsibility delegated by the North Carolina General Assembly to the University of North Carolina Board Of Governors (“the Board”). Over the past forty years, the Board has periodically revised and updated a five-year strategic plan. At its February 2013 meeting, the Board of Governors adopted “Our Time, Our Future: the UNC Compact with North Carolina,” which serves as the University’s strategic directions for 2013-18. The core goals outlined in the plan also reflect the University’s deep commitment to help North Carolina respond to changing state needs and economic challenges.

The strategic plan includes specific goals for the University’s engagement with the military. For example, the plan calls for the university to improve and increase service to the Military and veteran population of the state. One supporting strategy includes the creation of a website with clear information about veteran and Department of Defense tuition benefits, academic credit articulation, academic programs, admissions, and student services. The website, uncserves.northcarolina.edu, includes detailed information about student support services and resources including campus health and counseling services.

These efforts are coordinated by the UNC Partnership for National Security. This branded initiative has been in existence since 2009.

The UNC Partnership for National Security

The University of North Carolina Partnership for National Security is a system-wide effort to support the service member, contribute to the mission and grow North Carolina’s economy. Through targeted degree programs, research priorities and projects, and strengthened on-campus resources and efficiencies designed to support the service member, UNC is a relevant partner with the military and specifically with North Carolina-based military elements.

UNC also works with partners across the state including the NC Military Foundation, NC Defense Business Association, NC Military Business Center, NC Department of Commerce, NC Small Business and Technology Development Center, and others to advance the goals of the Partnership.

Today, all sixteen of UNC’s degree-granting institutions have military affairs liaisons and dedicated student services officers (financial aid, student affairs and/or registrar’s office staff) for military-affiliated students. Fourteen have Student Veterans Association chapters and twelve have one or more ROTC units. Twelve have a separate orientation session for military-affiliated students and conduct military student awareness training for faculty, staff and students. Eleven have PTSD, TBI, and military stress trained support staff in their counseling centers. Those campuses without these services may seek assistance from a sister institution when necessary and UNC-GA staff identify

opportunities for joint training.

As of fall 2013, 7,720 of these students are using veterans' benefits for tuition purposes. Many more are enrolled who choose not to self-identify or are paying by other means. Though only three campuses are located in close proximity to a military installation, all have embraced the importance of reaching out to and servicing this important population. They have been successful in implementing national best practices and promoting access among the student military-affiliated population.

The Benefits of a System Approach: Collective Focus on Academic and Personal Success

In addition to a focus on quality education, the UNC Partnership initiative focuses on the well-being of the military-affiliated student. Faculty and staff understand that military-affiliated student transition is more than a change from the battlespace to the classroom. UNC has partnered with the Center for Deployment Psychology (CDP), a component center of the Department of Defense Center of Excellence for Psychological Health and Traumatic Brain Injury, to provide workshops throughout the state for mental and behavioral health clinicians as well as faculty and staff working with student veterans. The workshops address the social, cultural, clinical, and campus-specific concerns of service members and veterans and include specific discussion regarding campus outreach and planning that is appropriate for both clinical and non-clinical campus personnel. UNC faculty who participate in these workshops are available to assist at any of our campuses should the need arise. In fall 2013 and spring 2014, the University of North Carolina Asheville, North Carolina A&T State University hosted CDP workshops. The University plans to host additional workshops in 2015 for new faculty and others unable to attend the earlier events.

Campus military affairs committees stay updated on changing policies and the needs of military-affiliated students on campus. Campus-based student organizations for veterans, service-members, spouses and dependents host social events, team challenges, guest speakers, community service projects, memorial banquets, study groups, and serve as advocates for student veterans on campus. The North Carolina Central University (NCCU) School of Law operates a Veterans Law Clinic where under extensive supervision; law students assist veterans and their families with the complexities and technical aspects of filing their claims with the United States Department of Veterans Affairs Regional Offices nationwide, the Board of Veterans Appeals, and the United States Court of Appeals for Veterans Claims. This service is provided to veterans throughout North Carolina through partnerships with UNC campuses located in other regions of the State.

These efforts help meet the needs of students like Army veteran Nicolle Brossard. Brossard is fourth-generation military, a counselor in charge of a combat stress clinic, and a survivor of the tragic 2009 shooting at Fort Hood. She is also majors in nutrition at UNCG while working hard to overcome post-traumatic stress disorder (PTSD). Since

coming to UNCG, Nicolle has been embraced by the campus community and was appointed by Chancellor Linda P. Brady to serve on the Military, Veterans and Families Task Force. Even so, the Fort Hood incident remains a huge part of her life. She notes that with PTSD there are triggers everywhere on a campus—small rooms, few entry or exit points, laser pointers in the classroom.

UNCG's support for veterans includes a full time veteran services coordinator and an active Student Veterans Association chapter. Dedrick Curtis, a veteran and the former veteran services coordinator, said the need to support veterans financially and psychologically is an imperative as more and more of them enroll at campuses like UNCG. Connection is the key. At UNCG there are outings for veterans, veteran networking programs, veteran-specific scholarship funds, bridge loans, and degree programs tailored for veterans.

Campus Space for Veterans

During a visit to UNC system offices in June 2013, Michael Dakduk, then Executive Director of the Student Veterans Association of America (SVA), stressed the importance of having “one-stop shops” and designated meeting space for student veterans. He and others that advocate for student veterans believe this reduces the stress of the enrollment process—long lines in tight and loud spaces and offices in multiple locations. They also agree that having a dedicated meeting space for student veterans to discuss issues of common concern is crucial.

At Fayetteville State University (FSU), located seven miles from Fort Bragg, LaChelle Burgess sought assistance from the Student Veterans Center. Located across the street from the campus, the center has adequate parking and is easily accessible. The center is a one-stop shop where veterans complete the entire enrollment process. LaChelle says she was taken under the wing of the director who helped her plan not just for a job, but for a career. With one office to address all her concerns, LaChelle was able to focus on academics and join organizations on campus related to her major. She also became a work-study student at the center allowing her the opportunity to help other students. LaChelle graduated with honors and is now an auditor with the Navy Audit Service in Washington, D.C. She attributes her success to the great education and support system at FSU.

New Certificate and Degree Programs

UNC system Military Academic Advisors are available on post at Fort Bragg in Fayetteville, NC and aboard MCB Camp Lejeune in Jacksonville, NC to provide information and assistance to members of the armed services and their spouses and families. Seymour Johnson Air Force Base in Goldsboro, NC is served by Fayetteville State University. Other UNC campuses offer courses on military installations in North Carolina. Degree programs delivered on base can be completed through a combination of online and on-site courses. Through this interaction with potential and current

students, base education officers and military branch educational directives we are able to work with our campuses in developing programs that meet specific military education needs and the needs of those who serve this population. In the most recent academic year, the following new programs were approved to serve this population and those that serve them.

FAYETTEVILLE STATE UNIVERSITY

BSW-Social Work

The mission of this 120 semester credit hour Bachelor of Social Work (BSW) program is to prepare students for generalist social work practice with individuals, families, groups, organizations, and communities in rural, urban, and military settings. There is a special emphasis on military families, primary and behavioral health care issues, geriatrics, poverty in rural counties, and promotions of quality education for K-12 children and youth. Because the FSU service region is home to three large military installations (Fort Bragg, Pope Air Force Base, and Seymour Johnson Air Force Base), the BSW students will have the opportunity to engage in internship and volunteer experiences at military sites, and thereby learn to address the special needs of, and services available to, the military connected consumer.

UNIVERSITY OF NORTH CAROLINA AT WILMINGTON

Master of Arts in Conflict Management and Resolution

This program is designed to equip students with skills in conflict resolution from various orientations, whether theoretical, practical, ethical or professional. While these skills are applicable in a variety of contexts, this program was developed in response to a specific need and request of military and Special Forces installations in North Carolina. As such, specialty courses were developed to serve targeted needs of the military and defense communities and are delivered via a hybrid approach that includes intensive instructional blocks followed by self-paced but guided distance education.

Behavioral Health and the Military: Selected research by University of North Carolina Faculty

Faculty and staff at several University of North Carolina (UNC) institutions conduct sponsored research related to the behavioral health of military personnel and their families.

It is important to note that externally-funded research is submitted at the discretion of the faculty member in accordance with his or her research portfolio and expertise. Further, approval of a federal grant or contract is subject to review by federal program managers.

As an example, Dr. Kevin Guskiewicz of UNC-Chapel Hill is a renowned expert in head trauma. His initial work was focused on sport-related head trauma. Over time, Dr. Guskiewicz was able to effectively translate his sport-related work into application for the military and veteran communities. So, while he may conduct sport-related research

and the funding is provided by sport-related source, his research is likely applicable and informs his work as it relates to military and veterans. A listing of his grants and contracts follow:

Federal Agencies:

Co-Investigator; Project Leader, \$2,000,000 with Department of Defense (Chronic Effects of Neurotrauma Consortium (CENC) – “Association Between Repetitive TBI And Neuropsychological, Neuroimaging, and Blood Biomarkers In Military Service Members And Elite-Level Athletes.” Laskowitz, D & Grant, G (PI), Guskiewicz K, Bazarian J, Mihalik, J. (Submitted January 2013).

Co-Investigator, \$1,500,000 with Department of Defense (U.S. Army Medical Research and Materiel Command) – “A Novel Tool for Field Assessment of Mild Traumatic Brain Injury.” Espinoza, T & Phelps, S (PI), Wright, D, Guskiewicz, K, and Bazarian, J. (Funded: November 2012).

Co-Investigator, \$1,500,000 with National Institutes of Health (BINP) – “Acute and delayed consequences of BBB disruption in football players.” Janigro D (PI), Guskiewicz K, Bazarian J, Marchi N. (Submitted October 2012) initiative.” Guskiewicz KM, Mueller FO, Marshall SW, McCrea M, Cantu RC, Bleiberg J. (Awarded: October, 2001).

Co-Investigator, \$173,000 with Centers for Disease Control and Prevention- "Reducing falls through improved balance in older adults: A pilot intervention." Marshall SW, Guskiewicz KM, Hogue CC, et al. (Awarded: June 2000).

Principal Investigator, \$485,000 with Centers for Disease Control and Prevention- "Prospective investigation of mild head injury (MHI) in sport: A prevention initiative." Guskiewicz KM, Marshall SW, Mueller FO, et al. (Awarded: September, 1999).

Principal Investigator, \$2,799,000 with Department of Defense (CDMRP) – “A Prospective Study of Dual Task Rehabilitation Interventions for Treating Individuals with Traumatic Brain Injury.” Guskiewicz K, Mihalik JP, McCulloch K, Register-Mihalik, J, et al. (Submitted September 2010 – not funded).

Principal Investigator, \$3,043,595 with National Institutes of Health - “Association Between MTBI, Dementia and IPV in Retired Professional Football Players.” Guskiewicz K, Marshall S, Moracco B, Kaufer D, Thompson K, Smith JK, et al. (Submitted: June 2009 – not funded).

Principal Investigator, \$1,098,500 with Centers for Disease Control and Prevention- “Association Between MTBI, Dementia and IPV in Retired Professional Football Players.” Guskiewicz K, Marshall S, Moracco B, Kaufer D, Thompson K, Smith JK, et al. (Submitted: September 1, 2008 – not funded).

Co-Investigator, \$150,000 with U.S. Department of Defense - "Validation of the Military Acute Concussion Evaluation (MACE) for In-Theater Evaluation of Combat-Related Traumatic Brain Injury." McCrea M, Guskiewicz KM, Helmick K, and Jaffee (Awarded: August 2008).

Principal Investigator, \$600,000 with U.S. Department of Defense – "Association between mild traumatic brain injury and chronic clinical depression and neurodegenerative dementing disorders." Guskiewicz KM, Marshall SW, Kaufer D, Giovanell K, Smith JK, et al. (Submitted: October 2007 – not funded).

Co-investigator, \$1,300,000 with National Institute of Health (NIH) - "Epidemiology of Jump-Landing Movements and ACL Injury." Marshall SW, Padua DA, Guskiewicz KM, Yu B, Garrett WE, Kirkendall D, Evenson K, Wolf SH, Gregory E (Awarded: December 2004).

Principal Investigator, \$579,354 with Centers for Disease Control and Prevention- "Prospective investigation of sport-related concussion: Relationship between biomechanical, neuroanatomical, and clinical factors." Guskiewicz KM, Marshall SW, Smith K, Lin W, Ciocca M, Hooker D, Oliaro S, Crowell D (Awarded: September 2004).

Principal Investigator, \$500,000 with Centers for Disease Control and Prevention- "Validation of methods to assess outcomes of MTBI" Guskiewicz KM, Hammeke T, McCrea M, Randolph C, Barr W, Kelly J, Marshall S, Runyan CW, and Hargarten S (Submitted July 2003 – not funded).

Principal Investigator, \$1,533,442 with Department of Defense - Peer Reviewed Medical Research Program (PRMRP); Supplement to US Army Medical Research Material Command Broad Agency Announcement 02-1 – "Association between mild traumatic brain injury and chronic clinical depression and neurodegenerative dementing disorders." Guskiewicz KM, Longo F, McCrea M, Marshall S, Robertson K, Smith K, Lin W, Randolph C, Cantu R, Bleiberg J (Submitted: April 2003 – not funded).

Co-investigator, \$244,000 with National Institute of Health (NIH) - "Epidemiology of Jump- Landing Movements and ACL Injury." Marshall SW, Padua DA, Guskiewicz KM, Yu B, Garrett WE, Kirkendall D, Evenson K, Wolf SH, Gregory E (Submitted: February 2003 – not funded).

Principal Investigator, \$126,000 with Centers for Disease Control and Prevention- "Computerized neuropsychological testing for sport-related mild head injury (MHI) in sport: A prevention initiative." Guskiewicz KM, Mueller FO, Marshall SW, McCrea M, Cantu RC, Bleiberg J. (Awarded: October, 2001).

Co-Investigator, \$173,000 with Centers for Disease Control and Prevention- "Reducing falls through improved balance in older adults: A pilot intervention." Marshall SW, Guskiewicz KM, Hogue CC, et al. (Awarded: June 2000).

Principal Investigator, \$485,000 with Centers for Disease Control and Prevention- "Prospective investigation of mild head injury (MHI) in sport: A prevention initiative." Guskiewicz KM, Marshall SW, Mueller FO, et al. (Awarded: September, 1999).

National Foundations:

Co-Principal Investigator, \$800,000 with National Collegiate Athletic Association – “A prospective, longitudinal study of head impact exposure, neurologic health and brain imaging biomarkers in former NCAA athletes.” Guskiewicz K and McCrea M (Co-PIs), and Li SJ, and Mihalik J (Submitted April 2013).

Principal Investigator, \$99,998,876 with National Football League Players Association - “Advancing the Frontiers of Research in Professional Football: Safeguarding the Health of Active and Former NFL Players.” Guskiewicz, Marshall, McCrea (Submitted August 2012).

Co-Principal Investigator, \$400,000 with National Collegiate Athletic Association – “The National Sport Concussion Outcomes Study (NSCOS)” Giza C, Kutcher J, Guskiewicz K, McCrea M, Eckner JT, Broglio S. (Awarded: July 2012).

Co-Principal Investigator, \$99,165 with NFL Charities – “Association between football exposure and dementia in retired football players.” Guskiewicz KM and Marshall SW (Awarded December 2010)

Principal Investigator, \$98,000 with NFL Players Association – “Association between football exposure and dementia in retired football players.” Guskiewicz KM (Submitted April 2010)

Co-Principal Investigator, \$12,600 with NFL Charities – “Concussion Knowledge, Attitudes and Practices of High School Athletes and Coaches.” Guskiewicz K, and Mihalik JR (Awarded November 2008).

Principal Investigator, \$282,000 with National Operating Committee on Standards for Athletic Equipment – “Prospective investigation of sport-related concussion: Relationship between biomechanical, neuroanatomical, and clinical factors: Part II.” Guskiewicz KM, Mihalik JP, Marshall SW, Smith JK (Awarded: February 2009).

Principal Investigator, \$258,000 with Martek Biosciences, Corp. – “Docosahexaenoic Acid (DHA) Supplementation in Retired Professional Football Players.” Guskiewicz KM, Bailes JM, Marshall SW (Awarded: June 2008).

Principal Investigator, \$165,000 with National Operating Committee on Standards for Athletic Equipment – “Prospective Evaluation of Head Impacts in Youth Ice Hockey: Part II.” Guskiewicz KM, Mihalik JP, Marshall SW, Greenwald R (Awarded: January 2008).

Co-Principal Investigator, \$300,000 with National Operating Committee on Standards for Athletic Equipment – “Hypopituitarism in Retired Professional Football Players.” Kelly D, Guskiewicz KM. (Awarded: February 2008).

Co-Principal Investigator, \$225,000 with The Ontario Neurotrauma Foundation – “Prospective Analysis of Head Impacts Sustained in Bantam-Aged Minor Hockey Players.” Guskiewicz KM, and Montelpare W (Awarded: March 2006).

Principal Investigator, \$160,000 (\$40,000 for 4 years) – National Football League Players’ Association – “Investigating the Health of Retired NFL Players” (Awarded: June 2005).

Principal Investigator, \$240,000 with Medtronic – Sofamor-Danek – “Investigation of Back Pain in Retired Professional Football Players” Guskiewicz KM, Bailes J, Taft T, Hooker D (Awarded: September 2004).

Principal Investigator, \$240,000 with Alzheimer’s Association – “Association between cerebral concussion and mild cognitive impairment (MCI) later in life.” Guskiewicz KM, Kaufer D, McCrea M, Marshall SW, Smith K, Lin W. (Submitted: December 2004 – not funded).

Principal Investigator, \$300,000 with American Health Assistance Foundation – “Association between cerebral concussion and mild cognitive impairment (MCI) later in life.” Guskiewicz KM, Robertson K, Longo F, McCrea M, Marshall SW, Smith K, Lin W, Bailes J. (Submitted: September 2004 – not funded).

Principal Investigator, \$240,000 with Alzheimer’s Association – “Association between cerebral concussion and mild cognitive impairment (MCI) later in life.” Guskiewicz KM, Robertson K, Longo F, McCrea M, Marshall SW, Smith K, Lin W, Bailes J. (Submitted: December 2003 – not funded).

Principal Investigator, \$200,000 with National Football League Charities - “Association between mild traumatic brain injury and neurodegenerative dementing disorders.” Guskiewicz KM, Longo F, McCrea M, Marshall S, Robertson K, Smith K, Lin W, Randolph C, Cantu R, (Submitted: May, 2003 – not funded).

Principal Investigator, \$240,000 with Alzheimer’s Association – “Association between cerebral concussion and mild cognitive impairment (MCI) later in life.” Guskiewicz KM, Robertson K, Longo F, McCrea M, Marshall SW, Smith K, Lin W, Bailes J. (Submitted: December 2002 – not funded).

Co-investigator, \$114,465 with American Orthopaedic Society for Sports Medicine (AOSSM)- “Epidemiology of Jump-Landing Movements and ACL Injury.” Marshall SW,

Padua DA, Guskiewicz KM, Yu B, Garrett WE, Kirkendall D (Awarded: December 2002).

Co-Investigator, \$10,000 with National Federation of State High School Associations (NFHS)- "A prospective study on injury assessment, return to play and outcome following concussion in high school athletes." McCrea M, Hammeke T, Guskiewicz KM, et al. (Awarded: June 2001).

Co-Principal Investigator, \$10,000 with National Operating Committee on Standards for Athletic Equipment- "A Prospective Study on Injury Assessment, Return to Play and Outcome Following Concussion in Collegiate Football Players." Guskiewicz KM and McCrea M. (Awarded: July 2000 for continuation of NCAA funded project - see below).

Co-Investigator, \$12,000 with National Federation of State High School Associations (NFHS)- "A prospective study on injury assessment, return to play and outcome following concussion in high school athletes." McCrea M, Hammeke T, Guskiewicz KM, et al. (Awarded: June 2000).

Principal Investigator, \$45,990 with National Operating Committee on Standards for Athletic Equipment- "A Prospective study on injury assessment, return to play and outcomes following concussion in athletes." Guskiewicz KM, McCrea M, Marshall SW, et al. (Awarded: July 1999).

Co-Principal Investigator, \$40,000 with National Collegiate Athletic Association- "A Prospective Study on Injury Assessment, Return to Play and Outcome Following Concussion in Collegiate Football Players." Guskiewicz KM and McCrea M. (Awarded: February 1999).

Co-Investigator, \$1,000 with Mid-Atlantic Athletic Trainers' Association-"Cumulative Effects of Multiple Treatments of Phonophoresis with Dexamethasone on Serum Dexamethasone and Cortisol Levels." Strapp E, Guskiewicz KM, Forman S., et al. (Awarded: April 1999).

Principal Investigator, \$84,095 with National Operating Committee on Standards for Athletic Equipment - "Effect of mild head injury on cognition and postural stability." Guskiewicz KM, Mueller FO, Perrin DH, et al. (Awarded: August 1996).

Co-Principal Investigator, \$10,000 with National Athletic Trainers' Association Research and Education Foundation - "Effect of mild head injury on postural stability." Guskiewicz KM and Perrin DH. (Awarded: June 1996)

Co-Principal Investigator, \$15,000 with National Athletic Trainers' Association Research and Education Foundation - "Effect of mild head injury on cognition and postural stability." Guskiewicz KM and Perrin DH. (Awarded January 1995).

Principal Investigator, \$1,250 with District III - National Athletic Trainers' Association. - "Effect of mild head injury on postural stability and cognition." Guskiewicz KM. (Awarded: April 1995).

Local and University Centers:

Research Director, Center for the Study of Retired Athletes at UNC-CH. Secured \$250,000 from internal and external sources to develop and operate the center for the initial 3 years. (Developed: September 2000).

Co- Investigator, \$35,000 with Waukesha Service Club (Charitable Grant). "Neurocognitive Functioning and Brain Activation in Acute MTBI: A Neuropsychological and Functional MRI Study. (Awarded: March 2001).

Co-Investigator, \$2,940 with Injury Prevention Research Center, University of North Carolina-"Response of Bone Mineral Density and Serum Hormone Levels Following Exercise Modifications in Amenorrheic Athletes." Peterson S, Guskiewicz KM, Hackney AC, et al. (Awarded: February 1999).

Co-Investigator, \$3,099 with Injury Prevention Research Center, University of North Carolina-"Cumulative Effects of Multiple Treatments of Phonophoresis with Dexamethasone on Serum Dexamethasone and Cortisol Levels." Strapp E, Guskiewicz KM, Forman S., et al. (Awarded: March 1999).

Selected Research Across the UNC System

What follows are representative examples of research projects funded by the Federal government from FY08 to present. While numerous projects are conducted by UNC researchers related to nutrition and supplements for military personnel, toxic exposures experienced by military personnel, and non-brain injuries and injury prevention, those studies are not included in this summary.

Marriage and Family

Title: Life Skills for a Healthy Marriage: A Family Readiness Program

Campus: East Carolina University

PI: Elizabeth Carroll

Sponsor: DHHS/Program Support Center

Amount: \$2,022,979 (FY07-11)

Description: Essential Life Skills for Military Families (ELSMF) program was developed to provide couples and individuals interested in marriage with the information and skills that can help strengthen their relationship. ELSMF is an 8-hour educational curriculum developed specifically for the Reserve and National Guard service member and their families. The complete program includes topics such as Deployment Readiness, Financial Management, Couple Commitment, Communication Skills, Problem Solving Skills and Parenting Together and Apart. ELSMF staff partner with Family and

Consumer Science agents in Cooperative Extension to provide ELSMF for Reserve Component and National Guard couples and individual interested in marriage within their communities throughout North Carolina.

Communication and Neurological Disorders

Title: Telerehabilitation for adults with communication disorders secondary to neurological impairments

Campus: UNC Greensboro

PI: Michael Campbell

Sponsor: DHHS/Health Resources and Services Administration (HRSA)

Amount: \$297,000 (FY11)

Description: Providing appropriate rehabilitation services for individuals with neurological communication disorders requires specialized training of speech-language pathologists. Yet, reports indicate a state- and nation-wide shortage of speech-language pathologists to provide care for individuals with communication disorders. This shortage is critical in North Carolina, considering the number of military personnel who are returning to North Carolina, often rural areas, with one type of neurological disorder, traumatic brain injury. This pilot program is developing methods, systems, and technology to allow for the remote delivery of synchronous and asynchronous rehabilitative services to adults with neurological impairments, who have limited local access to outpatient rehabilitation facilities. The services will be specifically targeted to treat cognitive-linguistic deficits associated with acquired neurological disorders.

Treatment and Prevention Best-Practices

Title: The Establishment of a Comprehensive Interprofessional Behavioral Center that Focuses on the Biopsychosocial Needs of Military Personnel, Veterans and their Families

Campus: Fayetteville State University

PI: Afua Arhin

Sponsor: Health Resources and Services Administration (HRSA)

Amount: \$394,516 (FY13)

Description: The purpose of this project is to establish a comprehensive Interprofessional Behavioral Center (IPBC) that focuses on the biopsychosocial health of military personnel, veterans and their families. The Department of Nursing at Fayetteville State University (FSU) will lead this collaboration with the departments of Social Work, Psychology as well as the FSU/ Fort Bragg Veteran's Center and Fayetteville VA Medical Center. Services will include the assessment and management of behavioral based health problems, evidenced based prevention, early intervention, complementary and alternative therapies, and promotion of psychosocial wellness. This collaborative center will focus on the holistic approaches to behavioral health of military personnel, veterans and families, which will include complementary and alternative medicine as treatment options for chronic pain and other co-morbidities.

Title: The Development of a Mobile Health Platform and Naturalistic Game Applications for Health Assessment, Intervention, and Evaluation

Campus: East Carolina University

PI: Carmen Russoniello

Sponsor: Department of Defense (DoD)

Amount: \$302,394 (FY13)

Description: Off the shelf casual video games video games have been shown to improve cognitive functioning as well as increase mood and decrease stress. The goal of the project is to develop, pilot, and deploy a mobile gaming platform that permits assessment and monitoring of reaction time and attention, assesses autonomic nervous system function and provides a game mechanism for managing stress and improving cognition, health and performance. Due to a dramatic rise in mild traumatic brain injuries (it is estimated that 20% of all combat troops will experience a concussion while deployed) increased emphasis has rightly been placed on finding ways to assess cognitive deficits and improve mTBI. The effects of traumatic brain injury are often associated with other dysfunctional conditions, specifically, chronic pain and PTSD. This project involves the development and testing of a game based neurocognitive assessment that is accessible, reliable, accurate, and enjoyable. The inexpensive, mobile phone based, assessment of cognition will be downloadable as an App and become immediately accessible to thousands of military personnel as well as millions of community residents. Once normative data is developed, strategies to predict, prevent and treat cognitive decline will be greatly enhanced.

Topic: Mental Health and Military Veterans

PI: Eric Elbogen

Sponsor: National Institute of Mental Health, Department of Education, Department of Defense, Henry M. Jackson Foundation

Amount: Department of Education Funding: \$ 596,246.00 (10/1/2010 - 9/30/2014)
Department of Defense Funding: \$ 2,930,509.00 (9/30/2011 - 9/29/2015)
National Institute of Mental Health Funding: \$ 1,575,159.00 (6/5/2008 - 11/30/2013)
Henry M. Jackson Foundation Funding: \$ 368,795.00 (11/1/2013 - 9/22/2014)

Description: Dr. Elbogen is a forensic psychologist who conducts both clinical work and empirical research at the intersection of law and mental health services, with a particular focus on military veterans.

Dr. Elbogen is currently Principal Investigator of an NIMH funded R01 examining the effects of Post-Traumatic Stress Disorder (PTSD) and Traumatic Brain Injury (TBI) on violence and aggression among Iraq/Afghanistan Veterans. He is Principal Investigator (PI) of a U.S. Department of Education funded project investigating improving financial capacity among veterans with psychiatric disabilities. He is also PI of a U.S. Department

of Defense funded randomized clinical trial of a cognitive rehabilitation intervention to improve executive function in Veterans with PTSD and TBI. In terms of clinical work, Dr. Elbogen currently provides forensic and neuropsychological assessments at Central Regional Hospital in Butner, N.C., in addition to forensic, neuropsychological, and personality testing through the UNC Forensic Psychiatry Program and Clinic.

His published work is here:

<http://www.ncbi.nlm.nih.gov/pubmed/?term=%28%22Elbogen+E%22%29+or+%28%22Elbogen+EB%22%29>

Foundational Knowledge

Title: Military influences on Veteran's Lives

Campus: UNC Chapel Hill

PI: Glen Elder

Sponsor: US Army Research Office

Amount: \$275,508 (FY09)

Description: This study links data from the National Longitudinal Study of Adolescent Health and the Defense Manpower Data Center (DMDC) to investigate in thorough fashion the behavioral and health outcomes of service in the all-volunteer force. The longitudinal adolescent health study was recently updated to include the responses of participants when at ages 24-32. With the return of overseas respondents, the number of men and women with military service increase significantly in this wave of responses for the longitudinal study.

Comprehensive Programmatic Support

Title: Operation Re-Entry North Carolina (ORNC)

Campus: East Carolina University

PI: James Morris

Sponsor: US Department of Defense

Amount: \$2,097,000 (FY11)

Description: Funding supports the research projects, facilities, training and dissemination activities of ORNC, which lies at the intersection of rehabilitation, behavioral health and telemedicine.

Title: Citizen Soldier Support Program Foundation Supported Activities

Campus: UNC Chapel Hill

PI: Peter Leousis

Sponsor: Bristol Myers Squibb Foundation

Amount: \$109,274 (FY12)

Description: Funds support development of online training aimed at Employee Assistance Program (EAP) staff. Training will assist EAP staff in dealing with deployment and post-deployment behavioral health problems and will also reduce the high unemployment rate among veterans. By educating EAP providers, employers will

be more informed, ensuring that veterans either enter or return to the civilian workforce as valuable and productive employees with unique skills and real world experiences.

Summary of Proposed Projects related to Behavioral Health of the Military

The following are summaries of additional projects that UNC personnel have proposed to federal agencies that are either awaiting notification or were not selected for funding. Although projects were not or may not be funded, they represent interests and capacities of UNC personnel.

- Strengthen the resiliency and facilitate the reintegration of veterans through creative and innovative uses of technology (ECU, to Substance Abuse and Mental Health Services Administration (SAMHSA))
- Evaluate effectiveness of inter-professional initiative to improve military/veteran participants' psychological wellbeing, as well as reduce possible stigma and/or hesitancy in seeking and receiving behavioral healthcare (FSU, to NIH)
- Understand strength and vulnerabilities in behavioral and physical health of children with one or more parent deployed (FSU, to NIH)
- Examine the effects of deployment on the mental health, behaviors, and development of young children ages 2-5 in military families (NC A&T State University, to NIH)
- Test tailored, psychosocial recreation therapy interventions adapted from early stage dementia research to reduce apathy in patients with mild traumatic brain injury (MTBI) and complications (UNC Greensboro, to US DoD)
- Develop testable models and modify pathways to obesity in military children (UNC Chapel Hill, to NIH)
- Understand whether binge eating and alcohol use disorders co-occur or cluster and, therefore, constitute a higher risk phenotype in women veterans (UNC Chapel Hill, to NIH)
- Identify risk and protective factors empirically related to violent behavior in the military workplace, home, and military community (on and off base) among active duty personnel (UNC Chapel Hill, to US DoD)
- Test efficacy of Brief Alcohol Screening and Intervention for Military Personnel (BASIMP) approach to reduce heavy alcohol use among military population (UNCC, to Army Medical Research and Materiel Command)