Research VA Advanced Postmaster and Postdoctoral Fellowship
War Related Illness and Injury Study Center
Washington DC VA Medical Center
Michelle Costanzo, Ph.D.
WRIISC-DC Research Fellowship Director
50 Irving Street, NW
Washington, DC 20422
https://www.warrelatedillness.va.gov/

Fellowship Year Begins: start date is negotiable.

Application and Selection Procedures
The WRIISC-DC Research Fellowship is a two-year, full-time program with VA benefits, including 13 days annual leave, 13 days sick leave, health insurance, and 10 federal holidays. Salaries are set yearly dependent on local cost of living adjustments as well as training level. Our program is designed to provide two full years of postmaster and postdoctoral training. However, advancement to the second year is contingent on successful completion of first year requirements.

Accepted fellows are expected to participate in research activities as follows:
• 40% Within the predetermined research scope and methodology, conduct research experiments.
• 20% Collect and analyze data, including periodical/literature search and utilizing specialized skills in related field to analyze the collected data.
• 20% Participate/assist in manuscript writing for publication in scientific journals and/or presentations. May also assist in grant writing.
• 15% Lab maintenance, including equipment maintenance, and ordering of supplies as needed.
• 5% Other duties as assigned, which may include attending Scientific Conferences and Meetings.

Eligibility
To be considered for our postmaster or postdoctoral training program, applicants must have completed a master's degree or doctoral degree in Neuroscience, Kinesiology, Biological engineering, Psychology, and Epidemiology or be on track to complete the degree prior to the program. Certification of U.S. citizenship and drug screening are required for all VA postmaster and postdoctoral fellows. In addition, VA employment requires that males born after December 31, 1959, must have registered for selective service by age 26. Please review VA eligibility requirements before applying Advanced Fellowships - Office of Academic Affiliations

The WRIISC-DC Research Fellowship seeks and values diverse experiences and backgrounds as the building blocks of a rich training environment. Our program emphasizes respect for trainees, Veterans, and staff members representing all forms of diversity, including (but not limited to) race, ethnicity, religion, gender identity, sexual orientation, disability, marital status, Veteran status, and political affiliation. Fellows are entitled to equal treatment in selection decisions and freedom from harassment and unfair treatment.

This program seeks to admit trainees from diverse backgrounds while selecting the most qualified candidates. As such, individuals from diverse backgrounds are strongly encouraged to apply. The VA is an Equal Opportunity Employer and the training program follows institutional guidelines in this regard.

Application Materials

Please submit the following materials in electronic format to Dr. Costanzo at
Michelle.Costanzo@va.gov

1. A cover letter that describes:
    a. Your background, current professional interests, and research goals
    b. Specific reasons you are interested in training at the WRIISC-DC
    c. Methodological experience with assessment (e.g., behavior, physiological, neuroimaging) and intervention (e.g., exercise, nutrition, behavioral), including settings you have worked in and patient populations
2. Curriculum vitae
3. One research work sample (e.g., a first-author published article, master's thesis, capstone, or presentation) or practical clinical assessment accomplishments (e.g., VO_2 Max test, exercise stress test, wingate, muscular strength, balance and gait, IMPACT, ANAM, cognitive assessment, neuroimaging, or quantitative interviews)
4. Graduate course work
5. A letter from your Dissertation Chair or Master's advisor, specifying the expected date that you will complete all requirements necessary to complete your masters or doctoral degree (e.g., successfully defend your dissertation, thesis or capstone.)

Please contact Dr. Costanzo (Michelle.Costanzo@va.gov), with any questions about the application process.

Training Setting

The War Related Illness and Injury Study Center (WRIISC) is a National VA Post-Deployment Health Resource that offers tertiary level care and is housed within a VA medical center. This national program with sites in DC, NJ, and CA, has both a clinical and research component. Patients from around the nation are referred to WRIISC clinicians to provide a multidisciplinary second opinion for difficult-to-diagnose war-related illnesses. WRIISC also conducts national epidemiological research in the veteran population, often using representative national samples of Veterans including those who are not receiving VA medical care. The WRIISC-DC team includes clinical (e.g., integrative medicine, neurology, nutrition, deployment health, neuropsychology, social work, environmental exposure, and health coaching) and research (e.g., neuroscience, exercise physiology, epidemiology, neuroimaging,
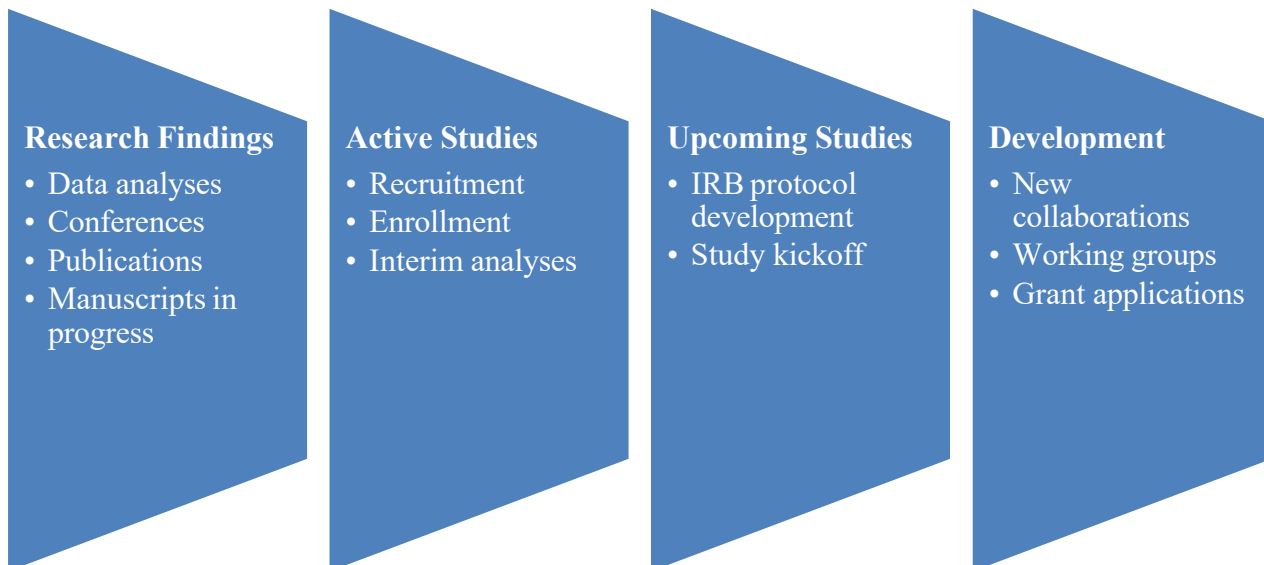
and cognitive science) staff. Fellows that join our interdisciplinary team have the opportunity to directly assist our unique population.

The WRIISC-DC is housed within the Washington DC VA Medical Center, a 205-bed hospital that provides care to more than 78,000 Veterans on an outpatient basis. The DC VAMC is located in the heart of the District of Columbia, approximately 3 miles from the US Capitol, 4 miles from the White House, and in close proximity to a number of other medical centers (e.g., MedStar National Rehabilitation Hospital and Children's National Hospital). Washington, DC is a vibrant, diverse city with many charming neighborhoods, exciting cultural opportunities (including the Smithsonian museums, which offer free admission), extensive and excellent dining and nightlife options, a comprehensive public transportation system, sports arenas, beautiful parks, and trails providing access to outdoor recreational activities. At the DC VAMC, the Clinical Research Center (CRC), a new 18,000 sq. ft. building facility, officially houses the medical center's Research and Development Department including: out-patient clinical research, human performance research units, contemporary laboratories, and record retention.

Research Overview

Fellows can expect to gain an advanced understanding of brain-behavior relationships; generate and implement a feasible research project within the time constraints of the fellowship including writing a VA Career Development Award https://www.research.va.gov/funding/cdp.cfm; and learn to interpret, adapt, and incorporate new research findings from the literature and established data sets for first-author publication; support ongoing research protocols through data collection; and engage in grant writing for WRIISC studies that are under development.

The DC WRIISC Research Program is organized in four key domains that maintain active publication productivity, successful data acquisition, and security of grant funding.

Research Findings
- Data analyses
- Conferences
- Publications
- Manuscripts in progress

Active Studies
- Recruitment
- Enrollment
- Interim analyses

Upcoming Studies
- IRB protocol development
- Study kickoff

Development
- New collaborations
- Working groups
- Grant applications

List of Research Activities

Fellows will have the opportunity to enhance their research skills through a variety of educational, mentoring, and training activities. Fellows will be involved in multiple projects relevant to the WRIISC that may involve programmatic research, research that informs VA policy, environmental exposure research, neuroimaging research, and other topics. In addition, fellows are encouraged to develop a mentored research project based on their own interests. Fellows will mentor study coordinators in research activities, practice presentation skills in research meetings, collaborate with other WRIISC team members on presentations/posters, and assist with protocol and grant application writing.

On-going

Multi-modal observational study of TBI and occupational military exposures with varying symptoms (TOS-Study) The purpose of this study is to gather information on Veterans that may have been exposed to a TBI as well as complex military exposures. By employing a multi-modal data approach, this study aims to understand the relationship between brain injury and psychological assessments, neural activity, brain structure and functional organization.

WRIISC-DC Data Repository
Repository for data acquired during clinical evaluation which Veterans provide consent to be used for research purposes.

Individualization of exercise training prescription using ANS function among patients with chronic multi-symptom illness
This pilot study will explore the optimal manner to administer exercise interventions for Veterans with chronic multi-symptom illness (CMI) through using objective HRV metrics of intensity.

Assessing the Effectiveness of Health Coaching; The Washington DC and California WRIISC programmatic approach to evaluating longitudinal health coaching outcomes
The objective of the quasi-experimental study is to examine the impact of a clinical health coaching program aimed at promoting adherence to the clinical recommendations and increasing health behaviors in treatment-seeking Veterans receiving care at the DC and CA WRIISC.

Biomedical Research, Artificial Intelligence and Neuroimaging (BRAIN) Study Development
Investigating the relationships between mental health and routine clinical measures such as vitals, fitness, and lab reports along with radiological scans and clinical notes is the primary aim of the proposed study. In this study we aim to take a machine learning approach to quantitatively build models that predict different neuro-pathological conditions and the risk of developing such conditions. We plan to use the VA Corporate Data Warehouse (VACDW) to perform a retrospective analysis using machine learning, natural language processing, and artificial intelligence techniques.

Completed

Complementary and Alternative Medicine (CAM) for Sleep, Health Functioning, and Quality of Life in Veterans with Gulf War Veterans' Illnesses
The objective of this study is to test the efficacy of combined auricular acupuncture and iRest® Yoga Nidra (CAM) compared to Gulf War Health Education (GWHE) for improving health-related functioning among Veterans with Gulf War Illnesses (GWI).

Clinical Bio-Behavioral Assessment of Inhibitory Control in PTSD: A Pilot Study of the Anti-Saccade Paradigm
Investigation of a cognitive control test (antisaccade) imbedded in social/emotional salient stimuli with faces, examining eye tracking performance in Veterans with PTSD.

Enhancing executive function and self-regulation success through the promotion of brain health behaviors: a telehealth pilot study for Veterans with chronic multi-symptom illness
The objective of this pilot study is to examine the effectiveness of a telehealth intervention intended to augment several factors related to brain health and cognition in Veterans with chronic multi-symptom illness. We aim to harness new technologies and distance-bridging approaches to develop a targeted intervention to improve executive function by promoting health behaviors (e.g., physical activity and mindfulness meditation) to augment cognitive control in order to facilitate self-regulation.

Predictors of Response to Insomnia Treatments for Gulf War Veterans
This study aims to address the insomnia problem in Gulf War Veterans by providing critical information for evidence-based personalization of Cognitive Behavior Therapy for Insomnia (CBT-I). Two treatments will be compared in a randomized clinical trial with parallel groups designed over three sites that include, WRIISC California, WRIISC New Jersey and WRIISC Washington DC

Recruitment Protocol for Effect of Exercise Training on Physical, Cognitive and Behavioral Function in Patients with Traumatic Brain Injury (partnership with NIH)
This study supports recruitment efforts to facilitate Veteran enrollment in the primary study that is ongoing at the National Institutes of Health (NIH): Protocol Number 15-CC-0164. The broad objective of this minimal risk NIH study is to examine the effects of moderate and more intense aerobic exercise as an intervention on cognitive performance, physical functioning and health-related quality of life in patients with chronic (more than 12 months post-injury) TBI.

The Comparative Health Assessment Interview (CHAI) Study (partnership with VA Central Office)
CHAI's primary objective is to assess the effect of military service, deployment and combat on the health and well-being of OEF/OIF/OND Veterans and their adolescent children across multiple domains including mental health and suicide risk.

Computational Modeling of Inhibitory Control Deficits in Veterans with Post-traumatic stress disorder (partnership with UMD)
The primary goal of this collaboration with the Department of Computer Science at the University of Maryland is to develop a neurocomputational model able to simulate prefrontal cortical and relevant sub-cortical activity related to cognitive control. This model will incorporate a variety of functionalities (e.g., working memory, goal-directed behavior, inhibitory control, top-down direction of attention) associated with cognitive information processing and will inform the underlying

prefrontal mechanisms of cognitive impairments related to post deployment injury in Veteran populations (e.g., post-traumatic stress disorder).

External projects related to outside investigator-driven collaborations:
WRIISC Researchers are encouraged to maintain relationships with colleagues from prior positions both outside and within the VA and foster new ways to expand the research program, for example through accessing publicly available large datasets. These manuscripts represent the efforts of WRIISC researcher involvement on projects outside the scope of those defined within the research program.

Project IN-DEPTH: VA NIH Investigative Deep Phenotyping Study of Gulf War Veteran Health (partnership with NIH)
The VA and the National Institute of Neurological Disorders and Stroke (NINDS) at the National Institutes of Health (NIH) have started to develop a research collaboration using state-of-the-art methods to explore the clinical and biological phenotypes of Gulf War Illness. The primary objective of the GW protocol is to explore the clinical and biological phenotypes of Gulf War Illness (GWI) in Veterans of Operations Desert Shield/Desert Storm (ODS/S, deployed August 1990 – June 1991). The study is composed of two independent protocols: the first lead by the VA to ensure patient safety and determine eligibility and the second lead by the NIH to acquire the data necessary for phenotyping and hypothesis generation.

A complex measure for a complex problem: Cortical activation and the Levenshtein Distance during the Tower of Hanoi puzzle (partnership with UMD)
Development of EEG cognitive task that could be an outcome measure for intervention studies.

Resources
A variety of neuropsychological assessment, medical symptomatology, treatment adherence, sleep, exercise, EEG, eye-tracking, and war-related exposure data are currently being analyzed. We have the following data acquisition modalities in-house and are exploring novel remote data acquisition methodologies for the post-COVID era: 64-channel EEG Brain Vision system, 3T MRI, eye-tracking, transcranial doppler. Remote Measures: Ballistocardiography (Emfit QS), remote EEG (Muse 2), and Actigraphy.

Educational Activities

1. **WRIISC-DC Journal Club:** Fellows will participate in a periodic meeting with WRIISC-DC staff and colleagues from outside departments to present research findings and discuss journal articles covering clinical and research interests of the group (e.g., exposure, health coaching, neuropsychological assessment, neuroimaging, etc.). Fellows will present an article of interest at least twice per year.

2. **Professional Conference Attendance:** Throughout the training year, fellows will have the opportunity to attend professional conferences with funding typically covered by the WRIISC for one conference per year. Following return from a professional conference, the fellow is expected to provide an informal presentation of relevant material to the fellowship faculty.

Additional educational activities are available at/near the DC VAMC campus. Attendance is encouraged, but not required. Activities will include but are not limited to:

- DC VAMC Grand Rounds
- WRIISC webinars
- DC VAMC Pathology Brain Cutting Conference
- MedStar National Rehabilitation Hospital Didactics and Journal Club
- TeleECHO Integrative Cognitive Rehabilitation Seminars
- MedStar Health Research Institute (MHRI) - Georgetown-Howard Universities Center for Clinical and Translational Science (GHUCCTS) Monthly Statistical Seminar Series
- Georgetown-Howard Universities Center for Clinical and Translational Science (GHUCCTS) Research Grand Rounds

Performance Evaluation

Fellows will receive formal, face to face feedback regarding progress being made in the fellowship twice yearly. Formal feedback will include written evaluation that includes ratings in professional competency areas related to clinical practice and scholarly inquiry. Fellows who receive ratings below developmentally-appropriate minimums in each competency area will be given specific feedback and training to improve their skills in these areas. If necessary, remediation plans designed to assist with any difficulty demonstrating development in professional competencies will be created by training faculty and completed by the fellow before the conclusion of the training program. Fellows will also be presented with a description of these evaluation procedures, mechanisms to document complaints, their rights and responsibilities related to evaluations, current due process procedures, and methods to express concerns/address grievances related to training or supervision at the start of the fellowship.

Training Faculty

Michelle Costanzo, Ph.D. – WRIISC-DC Research Director
Ryan Brewster, Ph.D. – WRIISC-DC Neuropsychology Fellowship Director
Matthew Reinhard, Psy.D. – WRIISC-DC Director
Charity Breneman, Ph.D., MSPH — Senior Exercise Physiologist and Epidemiologist
Immanuel Samuel, PhD., -- Associate Scientific Director
Calvin Lu, PhD., -- Research Cognitive Neuroscientist

Recent Trainees

Timeline

2023-Present	*Clinical Psychology*	*Sherri Tschida, PhD, Fielding Graduate University*
2022-2023	*Kinesiology: Cognitive Motor Neuroscience*	*Calvin Lu, PhD., University of Maryland, College Park*
2020-2022:	*Applied Physiology*	*Kamila Pollin, PhD., University of Delaware*
2018-2020	*Kinesiology: Cognitive Motor Neuroscience*	*Kyle Jaquess, PhD., University of Maryland, College Park*