CALVIN LU

(301)520-6909 lu.calvin91@gmail.com

EDUCATION

Doctor of Philosophy (Ph.D.) Cognitive Motor Neuroscience **2021**

University of Maryland, *The School of Public Health, Kinesiology,* College Park MD

Dissertation: Hacking the Nervous System: Promotion of Psychomotor Efficiency Through Autonomic Regulations when Performing Under Pressure

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Research Scientist / Program Coordinator

Complex Exposure Threats Center of Excellence (CETCE) **2023 - Present**

Washington DC VA Medical Center, Washington, DC 20422

- Establish research protocols to improve diagnostics for complex diseases
- Developed the research vision statement for the Center of Excellence application
- Leveraging electronic health records, health registries, and large databases to understand disease onset and progression of Veterans with complex health conditions
- Designing a tool to capture Veterans' service-related exposure history [Veterans Military Occupational and Environmental Assessment Tool] and formulate scoring to quantify exposure dose
- Explore wearable technology to advance remote data collection and determine what aspects of habitual lifestyle are strong indicators of poor health outcomes
- Innovate research instruments of high utility into clinical workflow
- Collaboration with the clinicians to develop research hypotheses and assemble discovery briefings
  - Utilize machine learning to improve the identification of suicide ideation through longitudinal follow-ups by determining psychological factors that may influence suicide ideation occurrences.
  - Employ structural equation modeling for decision-making to inform the future direction of clinical care and research interventions.
  - Understanding the impact of chronic blast exposure on the brain health of post-deployed Veterans. Focus on resting-state brain activity, executive functioning through neuropsychological assessments, and deficits in quality of life such as auditory processing or sleep quality.
- Collaboration with external partners to improve disease diagnosis and understand symptom sources
  - Quantifying allostatic load [biological wear-and-tear] through a multi-disciplinary approach.
  - Studying the cancer risks of Veterans and Service Members, by examining all exposure-related data sources and linking them with biospecimen and phenotypic data.

Technical skills

▪ scientific and technical writing ▪ BLUF reports ▪ signal processing ▪ statistical analysis ▪ data management ▪ grant proposal ▪ research and development ▪ team lead ▪ presentation and webinar ▪ product launch ▪ protocol development

Notable Projects

- Veteran occupational and deployment-related Exposure Evaluation and Risk Stratification
- Testing Exercise Response Reflecting Allostatic Profile in Veterans
- Project for Military Exposures and Toxin History Evaluation in US Service Members

Advance Research Fellow

War Related Injury and Illness Study Center (WRIISC) **2022 – 2023**

Washington DC VA Medical Center, Washington, DC 20422

- Conduct a remote observational study to examine characteristics of Veterans with high blast exposures and TBI symptoms on suicide risks and their current quality of life
- Examine the effectiveness of non-pharmacological interventions to improve Veteran's health

Notable Projects

- Multi-modal observational study of Veterans with TBI with varying symptoms
- Chinese Acupuncture and Mindfulness for sleep, health function, and quality of life in veterans with Gulf War Illness
- Individualization of an exercise program guided by HRV in Veterans with Gulf War Illness