

Summary of Research Program:

Blast Concussion Mild Traumatic Brain Injury (mTBI)

Strategies: multimodal neuroimaging: structural and functional magnetic resonance imaging (diffusion tensor imaging [DTI], DTI tractography, macromolecular proton fraction mapping, resting state and task-based functional MRI; susceptibility-weighted imaging, FDG-positron emission tomography [PET]; cerebrospinal fluid and plasma biomarkers; genetic risk factors; clinical, neurocognitive and behavioral assessments,

Gulf War Veterans Illness (GWVI)

Strategies: multimodal neuroimaging and CSF and plasma biomarkers as described above, epigenetics, pain sensitivity testing and ability to activate endogenous opioid systems, and functional activity of paraoxonase I, the enzyme that metabolizes organophosphate insecticides.

Cerebrospinal Fluid and Plasma Biomarkers of Neurodegeneration

Strategies: Bead-based multiplex assays using Luminex and Meso-Scale platforms, Quanterix ultra-sensitive platform, and broad-scale mass spectrometry for measurement of proteins, circulating RNAs, microRNAs in collaboration with VA/UW and Institute for Systems Biology investigators.

Pharmacologic Treatment of Disruptive Agitation in Alzheimer's Disease (AD)

Strategies - Alzheimer's Disease Cooperative Study multi-center randomized placebo-controlled trial of the alpha-1 adrenoreceptor antagonist, prazosin, for treatment of disruptive agitation in AD.



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