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ACTIVE

5RO1HL133889-04 (Gee) 4/1/2017 - 5/31/2022 4.6 CM

NIH- NLBI/University of Pennsylvania $ 148,220

ITK-Lung: A software framework for lung imaging processing and analysis

The project aims to develop an open-source software framework, based on the Insight ToolKit (ITK), specifically targeted for lung image processing and analysis.

Role: Subaward PI

3 UL1 TR003015-02S4 (Johnston/Shim) 8/20/2020 - 8/19/2021 0.5 CM

NIH $ 614,000

Pilot Study to Determine Health Effects of e-cigarette in Healthy Young Adults

The goal of this project is to conduct exploratory studies to comprehensively assess physiological responses of the human lungs, including airflow, pulmonary interstitium, and vasculature, to e-cigarettes using hyperpolarized xenon-129 (HXe) MRI.

Role: Co-I

N00014-18-1-2440/PJ-016-103 (Stone) 7/1/2018 - 6/30/2021 1.7 CM

US Navy Office of Naval Research/Cohen Veterans Biosciences $ 94,592

Predictive brain mapping in large populations via multiple modality matrix/tensor factorization

"Big data" issues extend to the various concerns of the U.S. Navy which span the operational gamut from tracking naval vessels around the world to neuroimaging for the health monitoring of its service members, particularly those affected by traumatic brain injury (TBI) or post-traumatic stress disorder (PTSD). This project will deliver a technological platform to address the need for actionable encoding of complex data.

Role: Co-I

Contract # 65849 (Stone) 4/1/2019 - 3/31/2022 0.6 CM

DOD/Henry Jackson Foundation $ 309,813

Individualized medicine in a gyrencephalic model of TBI polytrauma through the continuum of care

The goal of this research is to identify strategies to improve outcomes associated TBI, with and without hemorrhagic shock (HS), by identifying biomarkers predictive of an individual’s response to injury and to environmental factors with the goal of optimizing individual treatment strategies. Specifically, my lab will be responsible for developing improved methods for quantifying total distribution volume from dynamic 11C-Carfentanil brain PET data in human subjects.

Role: Co-I

HJF# 65635 (Stone) 1/1/2019 - 8/31/2022 1.3 CM

The Henry M. Jackson Foundation $ 86,296

Determining the Role of Tau and Amyloid in Chronic Symptoms and Deficits in Military Personnel Following TBIs through PET Imaging

The goal of this project is use PET to determine if TBI results in tau tangles and Aplaques 10 years following a TBI, and if there are clinical implications of these findings in a young military cohort. We will also determine if changes in blood based biomarkers implicated in AD at this same period relate to the formation of A plaques and tau tangles, findings that will ultimately provide insights needed to determine if some military personnel are at higher risk for AD-like pathology following a TBI.

Role: Co-I

No Number (Stone) 7/1/2020 - 6/30/2023 0.4 CM

Medical Technology Enterprise Consortium $ 441,052

Developing a model of brain and systemic physiological changes in experienced artillery service members

This study will test the hypothesis that repetitive low-level exposure to overpressure associated with artillery-related activities will result in functional, physiological, and structural neurological alterations in artillery service members as compared to controls.

Role: Co-I

5RO1HL132177-04 (Qing, Shim) 1/15/2017 - 12/31/2021 0.46 CM

NIH/NHLBI $ 479,462

Hyperpolarized Xenon-129 MRI: a new multi-dimensional biomarker to determine pulmonary physiologic responses to COPD therapeutics

The goal of this project is to develop comprehensive signatures of hyperpolarized xenon-129 imaging and confirm that they can quantify the multifactorial components of COPD disease phenotype and severity, and enable monitoring of changes in lung function induced by FDA approved medications to treat COPD.

Role: Co-I

780506 (Stone) 1/1/2021 - 12/31/2021 1.0 CM

Cohen's Veterans' Biosciences $ 251,809

Establishing a Normative Neuroimaging Library for Traumatic Brain Injury

This effort will address major gaps in the optimal utilization of advanced neuroimaging sequences relevant to traumatic brain injury and other important neurological conditions in a clinical setting through construction of a library of age-stratified neuroimaging data from normal individuals using standard magnetic resonance imaging techniques.

Role: Co-I

PENDING

1 R01 HL157427-01 (Mata) 4/1/2021 - 3/31/2026 1.0 CM

NIH $ 491,735

Endotyping of Asthmatic Airways using Xenon-129 MRI

The goal of this project is to evaluate the use of Hyperpolarized Gas MRI in conjunction with biological mechanisms to provide new insights into pulmonary asthma and the underpinning genesis of irreversible airway remodeling found in remodeled airways of the severe asthmatics related to fibrocytes.

Role: Co-I

R21CA252536-01 (Mata) 7/1/2020 - 6/30/2022 0.24 CM

NIH $ 150,000

Novel Method to Detect and Characterize Lung Cancer

The goal of this project is to evaluate the use of magnetic resonance imaging using hyperpolarized xenon-129 gas for locating small lung cancer nodules, by comparing results to corresponding CT scans, PET scans and lung biopsies

Role: Co-I

RO1 (Stone) 4/1/2021 - 3/31/2026 1.7 CM

NIH/University of Utah $ 70,000

Personalized Profiles of Pathology in Pediatric Traumatic Brain Injury

The goal of this project is to develop a comprehensive workflow for processing neuroimaging modalities for pediatric traumatic brain injuries.

Role: Co-I

(Gee) 4/1/2021 - 3/31/2026 3.54 CM

NIH/University of Pennsylvania $ 154,505

Advanced Normalization Tools

The goal of this project is to dramatically extend Advanced Normalization Tools' functionality through improvements in multi-modality registration, performance, and scalability

Role: Subaward PI

(Linn/Hubbard) 9/1/2021 - 8/31/2022 1.2 CM

University of Pennsylvania $ 18,000

Methods for integrative analysis of modern data sources to advance understanding of Alzheimer’s Disease

The goal of this project is to provide guidance and technical support with respect to image data processing using various ANTs software tools.

Role: Co-I

(Stone) 1/1/2021 - 12/31/2023 1.08 CM

Naval Medical Logistics Command $ 474,900

Neurological effects of repeated, low-level blast exposure in experienced artillery service members – expansion study

This study will test the hypothesis that repetitive low-level exposure to overpressure associated with artillery-related activities will result in functional, physiological, and structural neurological alterations in artillery service members as compared to controls.

Role: Co-I

(Dr. Leila Kheirandish-Gozal) 9/1/2021 - 8/31/2026 1.03 CM

Curators of the University of Missouri $ 15,500

Blood Brain Barrier and Structural Correlates of Cognitive Function in Pediatric OSAS

The proposed studies will enable improved understanding on how OSAS in children influences BBB permeability and neural recruitment patterns during executive function tasks, and provide structural correlates for the divergent cognitive phenotypes that characterize this frequent condition.

Role: Co-I

(Neumann) 9/1/2021 - 8/31/2026 0.6 CM

NIH $ 500,000

Persistent Central Neuroinflammation in Collegiate Athletes Diagnosed with a Concussion

Our proposed research will provide a non-invasive, in vivo measurement of SRC-related neuroinflammation status in collegiate athletes who have made an unrestricted return-to-play following a diagnosed injury which may result in a paradigm shift in our understanding of the (a) underlying physiology, (b) clinical management, and (c) poor early and late-life outcomes following one or more injuries.

Role: Co-I

(Stone) 10/1/2021 - 9/30/2024 1.7 CM

Naval Medical Research Center $ 495,357

Exploring the role of neuroinflammation in special operations forces exposed to repetitive low-level blast exposure

The goal of the currently proposed effort is to develop a comprehensive understanding of the relationship between repetitive low-level blast exposure and brain inflammation in service members.

Role: Co-I

(Shim) 4/15/2021 - 4/14/2026 0.6 CM

Virginia Biosciences Helath Research Coporation $ 462,002

Acute Hypoxic Respiratory Failure

The goal of this study is to demonstrate the safety and tolerability of SP16’s clinical utility to treat patients with ARDS/ALI caused by COVID and non-COVID etiology.

Role: Co-I