VOGELSTEIN, J.T.

ACTIVE

R01NS092474 (Smith) 9/30/2014 – 6/30/2019 0.94 calendar
NIH (TRA); Prime: Allen Institute $178,305 (Subcontract)
Title: Synaptomes of Mouse and Man

The major goals of this project are to discover the synaptic diversity and complexity in mammalian brains, specifically comparing and contrasting humans with mice, the leading experimental animal.

1712947 (Cencheng) 05/01/2017 - 04/30/2020 0.40 calendar
NSF $42,707
Title: Multiscale Generalized Correlation: A Unified Distance-Based Correlation Measure for Dependence Discovery

This project aims to establish a unified methodology framework for statistical testing in high-dimensional, noisy, big data, through theoretical advancements, comprehensive simulations, and real data experiments.

1R01DC016784-01 (Ratnanather) 07/01/2017 – 06/30/2020 1.0 calendar
NIH $151,863
Title: CRCNS US-German Res Prop: functional computational anatomy of the auditory cortex

The goal of this project is to create a robust computational framework for analyzing the cortical ribbon in a specific region: the auditory cortex.

1707298 (Vogelstein) 07/01/2017 - 06/30/2019 1.0 calendar
NSF 16-569 Neural System Cluster $246,773
Title: NeuroNex Technology Hub: Towards The International Brain Station for Accelerating and Democratizing Neuroscience Data Analysis and Modeling

We propose to lower the barrier to connecting data to analyses and models by providing a coherent cloud computational ecosystem that minimizes current bottlenecks in the scientific process.

FA8750-17-2-0112 (Priebe) 10/1/2016 – 09/30/2020 0.49 Calendar
DARPA $52,448
Title: What Would Tukey Do?

The goal is to develop theory & methods for generating a discoverable archive of data modeling primitives and for automatically selecting model primitives and for composing selected primitives into complex modeling pipelines based on user-specified data and outcome(s) of interest.

1U19NS104653-01 (Engert) 09/01/2017 - 08/31/2022 2.0 calendar
Harvard University/ Prime: NIH $133,038
Title: Sensorimotor processing, decision making, and internal states: towards a realistic multiscale circuit model of the larval zebrafish brain

The general goal of the proposal is to generate a realistic multiscale circuit model of the larval zebrafish's brain – the multiscale virtual fish (MSVF). The model will span spatial ranges from the nanoscale at the synaptic level, to local microcircuits to inter-area connectivity - and its ultimate purpose is to explain and simulate the quantitative and qualitative nature of behavioral output across various timescales.

(Vogelstein) 1/01/2018 – 12/31/2019 0.48 Calendar
Schmidt Sciences $114,657
Title: Connectome Coding at the Synaptic Scale

This project will study learning and plasticity at an unprecedented scale, revealing the dynamics of large populations of synapses comprising an entire local cortical circuit. No previously conducted experiment could answer the questions about the dynamics of large populations of synapses, which is crucial to understanding the learning process.

FA8650-18-2-7834 (Vogelstein) 11/1/2017 – 10/31/2021 1 Calendar
DARPA $642,639
Title: Lifelong Learning Forests

Our Lifelong Learning Forests (L2Fs) will learn continuously, selectively adapting to new environments and circumstances utilizing top-down feedback to impact low-level processing, with provable statistical guarantees, while maintaining computational tractability at scale.

FA8650-18-2-7834 (Tolias) 11/1/2017 – 10/31/2021 0.43 Calendar
DARPA $12,226
Title: Continual Learning Across Synapses, Circuits, and Brain Areas

Our primary goal will be to develop the pre-processing analysis pipeline for the imaging data collected in this project.

NSF 1807546 (Schuman) 07/16/2018– 06/30/2021 0.5 calendar
$32,280
Title: SemiSynBio: Collaborative Research: YeastOns: Neural Networks Implemented in Communication Yeast Cells

The goal is to provide neuroscience and machine learning expertise to guide the design of the computational learning capabilities of the system.

PENDING

NSF (Priebe) 4/1/2019 – 3/31/2023 0.5 calendar
$996,040
Title: Exploiting latent structure for efficient and robust inference in heterogeneous biological networks

This proposal is an effort to understand and exploit latent graph structure, both probabilistic and geometric, for inference in single and multiple heterogeneous biological networks at different scales, with the goal of developing robust, provably accurate statistical methodology that can be readily applied to a vast array of

problems in biological network science, from cancer genomics to connectomics to models of infectious disease.

1R01MH120482-01 (Satterthwaite/Milham MPI) 07/01/19 – 06/30/24 1.0 Calendar Months
NIMH $493,825
This Reproducible imaging-based brain growth charts in psychiatry
Psychiatric illnesses often begin in childhood, adolescence, or young adulthood, and are increasingly conceptualized as disorders of brain development. Reproducible growth charts of bran development are critical for understanding both normal brain development and abnormalities associated with diverse psychopathology. Early interventions crafted using these growth charts would benefit the public health by reducing the huge disability associated with psychiatric disorders and limiting the costs to society at large.
Hope this is helpful.

OVERLAP

In the event that pending proposals are awarded, Dr. Vogelstein will adjust his effort to stay within 12 months of support.