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.

N66001-15-C-4041 (Vogelstein) 5/11/15 - 8/28/18 3.0 calendar
DARPA $171,131
Title: From RAGs to Riches: Utilizing Richly Attributed Graphs to Reason from Heterogeneous Data

Multiple, large, multifarious brain imaging datasets are rapidly becoming standards in neuroscience. Yet, we lack the tools to analyze individual datasets, much less populations thereof. Therefore, we will develop theory and methods to analyze and otherwise make such data available.

ACI-1649880 (Burns) 1/01/17 – 10/31/18 0.47 calendar
NSF $45,671
Title: Brain Comp Infra: EAGER: BrainLab CI: Collaborative, Community Experiments with Data-Quality Controls through Continuous Integration

The BrainLab CI prototype system will deploy an experimental-management infrastructure that allows users to construct community-wide experiments that implement data and metadata controls on the inclusion and exclusion of data.

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.

90074647 (Vogelstein) 10/1/2017 – 09/30/2018 0.64 Calendar
Dog Star Technologies $56,479
Title: Brain Ark

Characterize the statistical properties of the individual graphs, to identify circuit motifs, both that specialize in a species specific fashion, and that are preserved across species. As a test, will compare the connectomes of sea lions and coyotes.

(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.

PENDING

NSF (Burns) 01/15/2019 – 01/14/2022 0.5 calendar
$729,303,
Title: NCS-FO Simplified and Generic Knowledge-Extraction for Big Multi-Modal Brain Data

This Project applies recent advances that merge machine learning and classical statistics to define simple and generic knowledge extraction frameworks.

NSF (Schuman) 08/01/2018– 07/31/2021 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.

NSF (Miller) 01/01/2019 – 12/21/2020 1.0 calendar
$534,675
Title: Scalable Cyberinfrastructure to Accelerate Learning the Rules Governing Brain Morphome-Connectome from Genome via Data Integration and Analysis Across Species, Scales & Modalities

We will build a scalable, modular but cohesive, robust yet performant cyber-infrastructure (CI) to learn these rules, using diverse distributed data spanning phyla, scales, and modalities.