Friedman Brain Institute Announces 2017 FBI Research Scholars

On behalf of the Philanthropic Leadership Council of The Friedman Brain Institute, we are pleased to announce the 2017 recipients of the FBI Research Scholars Awards.

Richard and Susan Friedman Research Scholar Award



Rafael O'Halloran, PhD Assistant Professor Radiology and Psychiatry

Effect of Methylphenidate on Real-Time Cognitive Neurofeedback Training.

Our proposal is to perform pharmacologicallyenhanced, neuro-feedback training as an intervention in drug addiction and other disorders of self-control. In this training subjects see a measure of their own brain activity in an MRI scanner in real-time and learn to modulate brain regions associated with self-control. The presumption is that these learned skills will be generalizable to improved function outside the scanner in daily

Saint-Amand Research Scholar Award

life.



Andrew W. Varga, MD, PhD Assistant Professor Medicine, Pulmonary, Critical Care and Sleep Medicine

Bidirectional sleep modulation and role of neuronal activity on tau neuropathology in a

mouse model of dementia In this proposal we aim to chronically disrupt or augment sleep in a mouse model of tauopathy and determine the

consequence on the severity and brain regional specificity of subsequent tau deposition. We also aim to determine whether region-specific suppression of neuronal activity during sleep disruption ameliorates the sleep-disruption induced accumulation of tau.

Nash Family Research Scholar Award



Gang Fang, PhD Assistant Professor Genetics and Genomic Sciences

Functions of A Novel Form of DNA Methylation in Neuronal Development and Schizophrenia

Approximately 1.8 million people in the US have a diagnosis of schizophrenia, a debilitating psychiatric disorder. Increasing evidence suggests schizophrenia results from abnormal early neuronal development before disease onset, and that schizophrenia has both genetic and epigenetic components involving DNA methylations and histone modifications. In this project, we will study the functions of a novel form of DNA methylation in neuronal development and schizophrenia.

Rosen Family Research Scholar Award



Peter H. Rudebeck, PhD Assistant Professor Neuroscience and Psychiatry

Neural mechanisms of human higher cognitive function

Dysfunction within the prefrontal cortex is affected in nearly every psychiatric and neurological disorder, including Alzheimer's disease where deficits in working memory are thought result from dysfunction in dorsolateral prefrontal cortex (dIPFC). The goal of our project is to characterize neural activity in different layers of human dIPFC as it relates to higher cognitive function, specifically working memory, and relate these activity patterns to functional imaging measures of the same area.

Elizabeth and Michael Fascitelli Research Scholar Award



Nadejda Tsankova, MD, PhD Assistant Professor Pathology and Neuroscience Characterization of Astroglial Pathology in Pediatric Human Temporal Lobe Epilepsy

Epilepsy is a chronic and debilitating syndrome typically arising in children, which has been studied and treated in the context of neuronal excitability, but emerging studies indicate that dysregulation of glia, such as astrocytes, oligodendrocytes, and microglia, contributes to the maintenance of an epileptic scar. We will directly investigate the pathological role of astroglia in epilepsy, using fresh neurosurgical specimens from patients with drug-resistant epilepsy. Taking advantage of novel methodologies developed in our lab, we will isolate astrocyte-specific populations from these specimens and will characterize how epilepsy remodels their epigenetic, transcriptional, and structural phenotypes at the glial-neuronal niche, hoping to expose novel targets for more effective anti-epileptic drugs in the pediatric population.

We are delighted by the enthusiastic interest that Mount Sinai's neuroscience community has shown towards the Research Scholars program. The faculty committee received and reviewed over 50 proposals. Because so many were outstanding and innovative, we regret that we only have funding for five awards this year. We encourage faculty to apply again next year.

The Friedman Brain Institute Research Scholars Partnership

The goal of The Friedman Brain Institute is to coordinate all of the neuroscience research being carried out throughout the numerous departments at Mount Sinai, both basic and clinical, and to build translational bridges between them and the clinical treatment programs throughout the Mount Sinai Health System.

Funded entirely through philanthropy, the Research Scholars Partnership seeks to further this goal by encouraging innovative, pilot brain research and offering Mount Sinai's most promising researchers, who have the courage to venture into new areas of investigation, the freedom and flexibility to follow science wherever it leads.



