The Friedman Brain Institute Announces 2021 FBI Research Scholars

On behalf of the Philanthropic Leadership Council of The Friedman Brain Institute, we are pleased to announce the 2021recipients of The FBI Research Scholars Awards.

Fascitelli Research Scholar Award





Felix Richter
MD/PhD Student

Katherine Guttmann, MD
Assistant Professor, Pediatrics, Newborn Medicine

Benjamin Glicksberg, PhD
Assistant Professor of Genetics and Genomic Sciences

Madeline Fields, MD
Associate Professor, Neurology, Co-Director, Mount Sinai Epilepsy Program

Maite La Vega-Massello, MD
Assistant Professor, Neurology and Pediatrics

Multimodal Seizure Monitoring in the Neonatal Intensive Care Unit

Neurologic changes inform many clinical decisions in the Neonatal Intensive Care Unit and are assessed initially by physical exam, which is conducted at limited time points, can be delayed, is variable between examiners, and may not discern subacute changes. Neonatal seizures are subtle and challenging to differentiate from normal neonatal movements, so we plan to use machine learning to integrate video, EEG, vitals, and labs to derive robust and continuous neurologic metrics to predict seizure activity. This research lays the groundwork for neonatal informatics, which promises to improve neonatal outcomes but has been limited relative to other critical care disciplines.

Joseph and Nancy DiSabato Research Scholar Award



Navneet Dogra, PhD
Assistant Professor, Genetics and Genomic Sciences and Pathology

Panos Roussos, MD, PhD
Professor, Psychiatry and Genetics and Genomic Sciences Director, Pamela Sklar Division of Psychiatric Genomics

John F Fullard, PhD
Assistant Professor, Genetics and Genomic Sciences

Circulating Exosomes as a Liquid Biopsy for Brain.

As we embark on the new era of liquid-biopsy, Alzheimer's disease is the next frontier in precision medicine. The goal of our project is to develop a simple, low-cost, blood-based test, which will not only establish high-value drug targets but will also facilitate early diagnosis and real-time monitoring of psychiatric disorders.

Sundaram Research Scholar Award


Deanna L Benson, PhD
Professor, Neuroscience Scientific Director, Microscopy and Advanced Bioimaging Core

J. Javier Bravo-Cordero, PhD
Assistant Professor, Division of Hematology and Oncology, Department of Medicine The Tisch Cancer Institute, Associate Scientific Director, Microscopy and Advanced Bioimaging Core

Biological Basis for Increased Melanoma in Parkinson's Disease

Patients with Parkinson's Disease show increased risk for melanoma and vice versa. The biological basis for this relationship is unknown. We will be using mouse models in order to test whether a common Parkinson's Disease gene mutation alters melanoma growth and tumor microenvironment, to identify the cell types driving changes in tumor progression, and to investigate underlying mechanisms. We believe the data will provide a novel perspective into the onset and progression of both diseases.

Jane Martin and Stuart Katz Research Scholar Award


Dongming Cai, MD, PhD
Associate Professor, Neurology

Michael Lazarus, PhD
Assistant Professor, Pharmacological Sciences

Targeting Autophagy for Alzheimer's Disease

There is emerging evidence that autophagic dysfunction is involved in the pathogenesis of Alzheimer's Disease (AD). Early pathological changes, such as marked enlargement of endosomal compartments, gradual accumulation of autophagic vacuoles and lysosome dysregulation, are well-recognized in AD. The challenges of studying autophagy in AD reside in the complex nature of autophagy pathway and the lack of selective chemicals to modulate the pathway in vivo. In this project, we propose to study the role of autophagy in AD by testing small molecule inhibitors and activators of different stages of the pathway in different model systems of AD. The goals are to develop novel therapeutic strategy for AD and to understand the connection between the autophagic pathway and AD pathogenesis.

Richard and Susan Friedman Research Scholar Award


Hirofumi Morishita, MD, PhD
Associate Professor, Psychiatry, Neuroscience, and Ophthalmology

Rita Z Goldstein, PhD
Professor, Neuroscience

Closing a Translational Gap by Linking a Prefrontal Network to Social Deficits Across Species

Impaired social processing is a hallmark of several psychiatric disorders including Substance Use Disorders (SUD). The goal of this translational study is to bridge insights from specific circuit mechanisms in rodents to humans (and back) to advance our understanding of social processing deficits in psychiatric disorders starting with SUD. We will focus on the same circuitry and function, and adopt an equivalent methodological imaging approach in both humans and mice, to test the hypothesis that the prefrontal cortico-thalamic network is associated with social processing and is disrupted in human substance use disorders. Our study is expected to facilitate translational research aiming at developing a circuit-based intervention approach for improving social functioning in SUD and related psychiatric disorders.

Lipschultz Research Scholar Award


Eva Velthorst, MD
Assistant Professor, Psychiatry and Seaver Autism Center for Research and Treatment

Muhammad Parvaz, PhD
Assistant Professor, Psychiatry and Neuroscience

Multimodal neurophysiological tracking of conversational speech-to-brain synchrony in schizophrenia

It has been argued that the interpersonal impairment in schizophrenia is partly caused by difficulties to successfully engage in conversations. Yet, the mechanisms underlying these difficulties are still unknown. Using two robust neurophysiological measures, the proposed research will examine whether a lack of synchrony between spoken words and the listener's brain activity (i.e. speech-to-brain synchrony) in schizophrenia directly affects successful engagement in real-world conversations, and is associated with deficits in interpersonal functioning.

Satter Research Scholar Award


Vanna Zachariou, PhD
Professor, Neuroscience and Pharmacological Sciences

Benjamin tenOever, PhD
Fishberg Professor of Medicine and Professor of Microbiology

Elucidating Adaptive Responses of Dorsal Root Ganglia to Respiratory SARS-CoV2 Infection

Dorsal root ganglia represent a highly adaptive peripheral neuronal population that undergo rapid transcriptional changes in response to insult, including inflammation and noxious stimulation. SARS-CoV2 respiratory infection leads to substantial lung inflammation and a number of pathological conditions, such as microaneurysms and neuropathy. The goal of this proposal is to elucidate the susceptibility of dorsal root ganglia cells to SARS-CoV2 infection, characterize transcriptomic changes associated with respiratory infection, and use bioinformatics to identify targets for the development of neuron-specific inhibitors that may attenuate lung inflammation and neuropathic pain states.

Shah Family Research Scholar Award

Uraina Clark, PhD
Assistant Professor of Neurology
Director of Research Development, Center for Scientific Diversity

Neural Correlates of Social Discrimination and Associations with Cardiovascular Disease Risk

It is thought that social discrimination, a psychosocial stressor, can contribute to increased cardiovascular disease risk; however, the mechanisms underlying this association are not well understood. This pilot study seeks to elucidate potential neural mechanisms underlying associations between experiences of social discrimination and cardiovascular disease risk. The long-term goal is to gain greater etiological insights that may allow us to advance tailored interventions to better address cardiovascular disease and other socially-mediated health conditions.

Nash Family Research Scholar Award




Fedor Panov, MD
Assistant Professor, Neurosurgery Director of Adult Epilepsy Surgery Program

Allison Waters, PhD
Assistant Professor, Psychiatry and Neuroscience

James J Young, MD, PhD
Assistant Professor, Neurology

Helen Mayberg, MD
Director, Center of Advanced Circuit Therapeutics Professor, Neurology, Neurosurgery, Psychiatry and Neuroscience Mount Sinai Professor of Neurotherapeutics

Decoding Interoceptive Inputs to Mood with Simultaneous Depth and Surface Recording of Human Brain Electrophysiology

Abnormal interoception, or sensation of the body, is observed across psychiatric and neurological conditions wherein core symptoms emerge from bodily distress. Mechanisms of interoception have yet to be evaluated as targets for neuromodulation, in part because the location of interoceptive cortex is difficult to access in the human brain using standard methods. The proposed research addresses this challenge with simultaneous invasive and non-invasive electrophysiological recording in the epilepsy monitoring unit. Outcomes seed future collaboration between the Epilepsy Division of the Departments of Neurosurgery, Neurology and the Center for Advanced Circuit Therapeutics to clarify mechanisms of bodily sensation, and to develop targeted intervention on interoceptive processing.

Icahn School of Medicine at **Mount Sinai**