Summary of Talks:

- **Keynote speaker:** Walter Koroshetz, MD
- **Our early career scientists are diverse in background which includes neuroethics (Sankary), engineering/math (Gomez), computational (Rajan), molecular/cellular (Augustin) & systems (Suver).**
- **Circuits and Behavior portfolio:** Our project and program teams vary in size and scale of their projects. (3 multi-PI R01 projects, 1 U01 exploratory project, 4 multi-component U19 programs)
- **Cell diversity (Ascoli, Dong, Lim) and Tools/resource development (Shapiro, Chestek)**
- **Advancing human neuroscience (2 basic and 3 basic-clinical projects)**
A Multi-Disciplinary Approach to Understanding Circuits

“No single researcher or discovery will solve the brain’s mysteries. The most exciting approaches will bridge fields, linking experiment to theory, biology to engineering, tool development to experimental application, human neuroscience to non-human models, and more, in innovative ways.” - BRAIN 2025
Our funding opportunities allow for the tackling of scientific questions at different scales and of various complexities by balancing support for individual-lab science and team-science approaches.

<table>
<thead>
<tr>
<th>Funding Opportunities</th>
<th>GOALS and SCOPE OF WORK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual Lab or Small Multi-PI team</td>
<td><strong>Exploratory Projects</strong> to establish feasibility/validity</td>
</tr>
<tr>
<td>• Targeted BRAIN Circuits Planning Projects (<strong>R34, 2-yr</strong>)</td>
<td>• Targeted BRAIN Circuits Projects (<strong>R01, 5-yr</strong>)</td>
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<tr>
<td>Multi-Component, Team-Research Science</td>
<td><strong>Exploratory</strong> Team-Research BRAIN Circuit Programs (<strong>U01, 3-yr</strong>)</td>
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Theories, Models and Methods for Analysis of Complex Data from the Brain (**R01, 3-yr**)
Keynote Speaker

MAR 11, 2020 9:00 AM PDT

Keynote Presentation: The BRAIN Initiative and its Promise for the Treatment of Neuro/Mental/Substance Abuse Disorders

Speaker: Walter Koroshetz, MD

SEE ABSTRACT | Continuing Education: Florida CE | P.A.C.E. CE
Early Career BRAIN Scientists

Ethical Challenges in Early Phase Brain Device Research
Speaker: Lauren Sankary, JD, MA

Neuroethics

SEE ABSTRACT | Continuing Education: Florida CE | P.A.C.E. CE

Improving the Precision and Targeting of Transcranial Magnetic Stimulation
Speaker: Luis Gomez, PhD

Engineering, Math

SEE ABSTRACT | Continuing Education: Florida CE | P.A.C.E. CE

Real-Time Monitoring of Striatal GPCR Mediated cAMP Signaling Using Genetically Encoded Fluorescent Sensors
Speaker: Shana Augustin, PhD

Molecular, Cellular

SEE ABSTRACT | Continuing Education: Florida CE | P.A.C.E. CE

Sensing in a dynamic world: what the antennae of the fruit fly can teach us about sensation and the perception of movement
Speaker: Marie Suver, PhD

Systems

SEE ABSTRACT | Continuing Education: Florida CE | P.A.C.E. CE

Multi-region Neural Network Models of Adaptive and Maladaptive Learning in the Brain
Speaker: Kanaka Rajan, PhD

Computational

SEE ABSTRACT | Continuing Education: Florida CE | P.A.C.E. CE
Circuit Resilience

MAR 11, 2020 7:30 AM PDT

PANEL: Neuronal Circuit Resilience - How the Brain Manages to Maintain Reliable Behaviors with Unreliable Neurons

SEE ABSTRACT | Continuing Education: Florida CE | P.A.C.E. CE

Adrienne Fairhall, PhD
Professor in the Department of Physiology and Biophysics...

Tim Gardner
Associate Professor and Robert and Leona Chair in Neuro...

Carlos Lois, MD, PhD
Research Professor in Neurobiology at the Division of B...

Emotional Learning

MAR 11, 2020 1:30 PM PDT

PANEL: Dissecting the circuit logics in the amygdala underlying emotional learning

SEE ABSTRACT | Continuing Education: Florida CE | P.A.C.E. CE

Bo Li
Professor of Neuroscience, Cold Spring Harbor Laborator...

Tianyi Mao
Associate Professor, Vellum Institute, Oregon Health an...

Haining Zhong
Scientist/Associate Professor, Vellum Institute, Oregon...

Sensimotor

MAR 11, 2020 12:00 PM PDT

PANEL: Cracking a Neural Circuit's Function Through High-Resolution Physiology, Connectomics, and Computational Modeling

SEE ABSTRACT | Continuing Education: Florida CE | P.A.C.E. CE

Emre Asksay, PhD
Associate Professor of Computational Neuroscience in th...

Sebastian Seung, PhD
Anthony B. Evnin Professor in the Neuroscience Institut...

Mark Goldman, PhD
Joel Keizer Chair in Theoretical and Computational Biol...

Ashwin Vishwanathan, PhD
Research Associate at the Princeton Neuroscience Institu...
A new model organism for neuroscience: *Berghia stephanieae*
MSCZ: MultiScale Circuits of Zebrafish

Flyloops: Feedback loops of flies
Ripple hREM, hippocampal Ripple related Episodic Memory
Cell Diversity

Acoustically Targeted Molecular Neuromodulation
Speaker: Mikhail Shapiro, PhD

SEE ABSTRACT | Continuing Education: Florida CE | P.A.C.E. CE

Neural Interfaces for Controlling Finger Movements
Speaker: Cynthia Chestek, PhD

SEE ABSTRACT | Continuing Education: Florida CE | P.A.C.E. CE

PANEL: Anatomical Characterization of Neuron Cell Types in the Mouse Brain
Continuing Education: Florida CE | P.A.C.E. CE

Giorgio Ascoli, PhD
University Professor, Bioengineering Department, Volgen...

Hong-Wei Dong, MD, PhD
Professor of Neurology, Physiology & Neuroscience, Dire...

Byungkook Lim, PhD
Assistant Professor, Division of Biological Sciences, N...
Spatial Navigation

Deep brain Recording and Stimulation of Real World Episodic Memory in Humans
Speaker: Nanthia Suthana, PhD

SEE ABSTRACT | Continuing Education: Florida CE | P.A.C.E. CE

Episodic Memory


SEE ABSTRACT | Continuing Education: Florida CE | P.A.C.E. CE

Adam Mamelak, MD
Professor of Neurosurgery, Director of Epilepsy and Func...

Ueli Rutishauser, PhD
Board of Governors Chair in Neuroscience, Director, Hum...

Gabriel Kreiman, PhD
Professor at Harvard Medical School and Children's Hosp...

Jie Zheng, PhD
Research Fellow at Boston Children's Hospital
Brain-Machine Interfaces for paralysis, spinal cord injury

PANEL: Though to action: developing brain machine interfaces to assist individuals with paralysis
Continuing Education: Florida CE | P.A.C.E. CE

Tyson Aflalo, PhD
Member of Professional Staff, Executive Director, T&CC B...

Richard Andersen, PhD
James G. Boswell Professor of Neuroscience, T&C Chen Bra...

Spencer Kelis, PhD
Member of Professional Staff, Director of Engineering...

Charles Liu, MD, PhD
Professor of Neurosurgery, Director of the USC Neurores...

PANEL: A Neuroscience-Based Approach to Restoration of Sensomotor Function After Spinal Cord Injury
Continuing Education: Florida CE | P.A.C.E. CE

Robert Gaunt, PhD
Assistant Professor, Rehab Neural Engineering Labs, Unl...

Michael Boninger, MD
Tenured Professor & UPMC Endowed Vice Chair, Department...

Jennifer Collinger, PhD
Assistant Professor, Department of Physical Medicine an...

PANEL: Deep Brain Stimulation for Depression Using Directional Current Steering and Individualized Network Targeting
SEE ABSTRACT | Continuing Education: Florida CE | P.A.C.E. CE

Wayne Goodman, MD
D.C and Irene Ellwood Professor and Chair of the Mennin...

Nader Pouratian, MD, PhD
Professor of Neurosurgery and Radiation Oncology and af...

Sameer Anil Sheth, MD, PhD
Associate Professor, Vice-Chair of Clinical Research, N...