The Florida Brain Project is a consortium effort by Florida Universities and Research Institutions to make the State of Florida known within the United States as “The State of Brain Research,” through well-coordinated brain and neurological research collaborations across diverse disciplines.

ORGANIZING COMMITTEE

TETSUO ASHIZAWA, MD
Executive Director & Chair
McKnight Brain Institute
Department of Neurology
University of Florida

RON DAVIS, PhD
Professor & Chair
Department of Neuroscience
SCRIPPS Florida

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Scientific Director of The Miami Project To Cure Paralysis
Professor of Neurological Surgery
University of Miami

DAVID FITZPATRICK, PhD
Scientific Director & Chief Executive Officer
Max Planck Florida Institute for Neuroscience
THE FLORIDA BRAIN PROJECT
Inaugural Symposium 2014

ORGANIZING COMMITTEE continued

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Florida State University

LEONARD PETRUELLI, PhD
Professor
Department of Neuroscience
Mayo Clinic – Jacksonville

RALPH SACCO, MD
Professor & Chair
Department of Neurology
University of Miami
Alexander “Sandy” Halperin, DDS, was diagnosed with early-onset Alzheimer’s disease in 2010 at age 60. As a person living with dementia, Sandy has chosen to remain active as an alumni member of the National Early-Stage Advisory Group. He hopes to bring awareness to what he calls “invisible illnesses.” Sandy is compelled to be a part of the discovery of treatments, preventions and cures, as well as de-stigmatizing the diagnosis of dementia. “Partnering with FSU’s College of Medicine has been my best step in enhancing Alzheimer’s research funding,” he said.

The goal of the Florida State University College of Medicine’s Alzheimer’s research program at the Center for Brain Repair is to develop innovative means of diagnosis, intervention and treatment, as well as to shape public policy and national advocacy to benefit Alzheimer’s patients, caregivers and families.

Alzheimer’s disease has become the leading cost for the U.S. Medicare and Medicaid programs, totaling at least $142 billion this year – more than either heart disease or cancer. By the year 2050, it is expected that the costs for caring for people with Alzheimer’s and other cognitive disorders will soar to an estimated $1.3 trillion. One-third of people who die have Alzheimer’s at the time of their death, and Alzheimer’s is now the sixth leading cause of death in the U.S. Approximately 40 percent of Alzheimer’s caregivers suffer from depression.
The Florida Brain Project Inaugural Symposium  
**AGENDA**  
Monday, July 28, 2014

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<th>Time</th>
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<tr>
<td><strong>WELCOME</strong></td>
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<tr>
<td>7:15 a.m.</td>
<td>Check-in and continental breakfast</td>
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<tr>
<td>8:00 a.m.</td>
<td>Tetsuo Ashizawa, MD, University of Florida</td>
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<tr>
<td><strong>GENES and BRAIN</strong></td>
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<tr>
<td>Chaired by Richard Nowakowski, PhD</td>
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<tr>
<td>8:10 a.m.</td>
<td>Genetic Dissection of Inhibitory Circuits</td>
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<td>Hiroki Taniguchi, PhD, Max Planck Florida Institute</td>
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<tr>
<td>8:30 a.m.</td>
<td>Genomic Deciphering of the Brain and Memory Circuits: from Neural Classification to Synthetic Brain (and Regeneration Medicine)</td>
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<td>Leonid Moroz, PhD, University of Florida</td>
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<tr>
<td>8:50 a.m.</td>
<td>Mechanisms of Olfactory Memory Allocation in Drosophila</td>
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<td>Seth Tomchik, PhD, The Scripps Institute - Florida</td>
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<tr>
<td>9:10 a.m.</td>
<td>Genes to Behavior: Genomic Studies of Reproductive Behaviors</td>
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<td>Michelle Arbeitman, PhD, Florida State University</td>
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<tr>
<td>9:30 a.m.</td>
<td>Genetics of Dementia and Movement Disorders</td>
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<td>Owen Ross, PhD, Mayo Clinic - Jacksonville</td>
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<tr>
<td>9:50 a.m.</td>
<td>Genetic Studies in Neurological Diseases</td>
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<td>William Scott, PhD, University of Miami</td>
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<tr>
<td>10:10 a.m.</td>
<td>Additional Discussions on Genes and Brain</td>
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<tr>
<td><strong>IMAGING and NANOTECHNOLOGY</strong></td>
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<tr>
<td>Chaired by David Fitzpatrick, PhD</td>
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<tr>
<td>10:35 a.m.</td>
<td>Novel Metabolic and Microarchitectural Brain Insight from Advanced $^1$H Magnetic Resonance Spectroscopic and Imaging Techniques Imaging</td>
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<td>Lucio Frydman, PhD, National High Magnetic Field Laboratory</td>
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<tr>
<td>10:55 a.m.</td>
<td>Multi-photon In Vivo Imaging of Cortical Circuit Function and Development</td>
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<td>David Fitzpatrick, PhD, Max Planck Florida Institute</td>
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<tr>
<td>11:15 a.m.</td>
<td>Microscale and Nanoscale System Technologies in Biomedical Applications</td>
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<td>Jack Judy, PhD, University of Florida</td>
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<tr>
<td>11:35 a.m.</td>
<td>Nanotherapeutics for Brain Disease</td>
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<td>Juan Sanchez-Ramos, MD, PhD, University of South Florida</td>
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<tr>
<td>11:55 a.m.</td>
<td>Additional Discussions on Imaging and Nanotechnology</td>
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<tr>
<td><strong>12:05 p.m.</strong></td>
<td><strong>Lunch (provided for speakers and poster presenters)</strong></td>
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### SYNAPTIC PLASTICITY
Chaired by Cliff Gooch, MD

1:05 p.m.  **Imaging the Molecular Basis of Synaptic Plasticity in Single Dendritic Spines**  
Ryohei Yasuda, PhD, Max Planck Florida Institute

1:25 p.m.  **Proteins Regulating Synaptic Plasticity**  
Yi Zhou, PhD, Florida State University

1:45 p.m.  **Role of ApoE in Neuronal Synaptic Function**  
Edwin Weeber, PhD, University of South Florida

### REGENERATION and NEURONS
Chaired by Cliff Gooch, MD

2:05 p.m.  **Regenerative Therapy for Neurodegenerative Disease**  
Takahisa Kanekiyo, MD, PhD, Mayo Clinic - Jacksonville

2:25 p.m.  **Functional CNS and PNS In Vitro Models Composed of Human Cells**  
James Hickman, PhD, University of Central Florida

2:45 p.m.  **Combining Phenotypic and Target-based Screening in Drug Discovery for CNS Injury**  
John Bixby, PhD, University of Miami

3:05 p.m.  **Nervous System Reconstruction**  
Cliff Gooch, MD, University of South Florida

3:25 p.m.  **Additional Discussions on Synaptic Plasticity and Neuroregeneration**

3:35 p.m.  **Coffee Break**

### COGNITION and AGING
Chaired by Dave Morgan, PhD

3:50 p.m.  **Inflammation in Mouse Models of Alzheimer’s Pathology**  
Dave Morgan, PhD, University of South Florida

4:10 p.m.  **Age-related Memory Loss: Where Synaptic Plasticity Meets Oxidative Stress**  
Tom Foster, PhD, University of Florida

4:30 p.m.  **Oxytocin - A Neurochemical for Social Bonding and Buffering**  
Zuoxin Wang, PhD, Florida State University

4:50 p.m.  **Imaging Biomarkers and Cognition**  
Clinton Wright, MD, University of Miami

5:10 p.m.  **Discussions on Cognitive Aging and the Sessions of 7/28/14**

6:00 p.m.  **Poster Session, in Salon B and Adams Park**

6:30 p.m.  **Reception, in Ballroom and Salon A**
# The Florida Brain Project Inaugural Symposium

## AGENDA

**Tuesday, July 29, 2014**

### KEYNOTE ADDRESS

- **8:00 a.m.** Alzheimer’s Disease Research - Patient’s Perspective  
  Sandy Halperin, DDS

- **8:45 a.m.** Q & A with Sandy Halperin, DDS

### NEURODEGENERATIVE DISORDERS

**Chaired by Lucia Notterpek, PhD**

- **9:00 a.m.** Neuropathology of Dementia  
  Dennis Dickson, MD, Mayo Clinic - Jacksonville

- **9:20 a.m.** Exercise and Brain  
  Neill Graff-Radford, MD, Mayo Clinic - Jacksonville

- **9:40 a.m.** Targeting TNF Inflammatory Brain Networks for Therapies of Alzheimer’s Disease and Other Neurodegenerative Disorders  
  Yong Shen, MD, PhD, Roskamp Institute

- **10:00 a.m.** Coffee Break

- **10:15 a.m.** Neuroimmunology, Alzheimer’s and Other Neurodegenerative Diseases  
  Todd Golde, MD, PhD, University of Florida

- **10:35 a.m.** The Electric Brain  
  Michael Okun, MD, University of Florida

- **10:55 a.m.** Diet-induced Obesity Causes Loss of Olfactory Function, Degeneration of Brain Circuits, and Impairs Learning  
  Debra Ann Fadool, PhD, Florida State University

- **11:15 a.m.** Florida Translational Research Program  
  Phil Arlen, PhD, Sanford-Burnham Institute

- **11:35 a.m.** Additional Discussions on Neurodegenerative Disorders

- **11:45 a.m.** Lunch (provided for speakers and poster presenters)

### AUTISM and OTHER NEUROPSYCHIATRIC DISORDERS

**Chaired by Tetsuo Ashizawa, MD**

- **12:45 p.m.** Neural Circuit Abnormalities in Autism  
  McLean Bolton, PhD, Max Planck Florida Institute

- **1:05 p.m.** Regulation of Brain Growth Dynamics by Signaling Through the ASD-susceptibility Gene, Pten  
  Damon Page, PhD, The Scripps Institute - Florida

- **1:25 p.m.** Transgenerational Transmission of Neuropsychiatric Disorders  
  Pradeep Bhide, PhD, Florida State University

- **1:45 p.m.** Additional Discussions on Autism and Other Neuropsychiatric Disorders

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## ISCHEMIC and TRAUMATIC CNS INJURIES

**Chaired by Ralph Sacco, MD**

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<thead>
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<th>Time</th>
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<th>Speaker</th>
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<tr>
<td>1:55 p.m.</td>
<td><strong>Addressing Stroke Disparities, Prevention and Treatment</strong></td>
<td>Ralph Sacco, MD, University of Miami</td>
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<tr>
<td>2:15 p.m.</td>
<td><strong>Unravelling Ischemic Preconditioning for Focal and Global Cerebral Ischemia</strong></td>
<td>Miguel Perez-Pinzon, PhD, University of Miami</td>
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<td>2:35 p.m.</td>
<td><strong>Translation of Stem Cell Therapy for Stroke from the Lab to the Clinic</strong></td>
<td>Cesar Borlongan, PhD, University of South Florida</td>
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<td>2:55 p.m.</td>
<td><strong>Coffee Break</strong></td>
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<tr>
<td>3:10 p.m.</td>
<td><strong>Innovative Treatments for SCI: Bench to Bedside Schwann Cell Transplant for SCI</strong></td>
<td>Dalton Dietrich, PhD, University of Miami</td>
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<tr>
<td>3:30 p.m.</td>
<td><strong>Managing Inflammation after Spinal Cord Injury Through Manipulation of Macrophage Function</strong></td>
<td>Yi Ren, PhD, Florida State University</td>
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<tr>
<td>3:50 p.m.</td>
<td><strong>SCI and Repair</strong></td>
<td>David Fuller, PhD, University of Florida</td>
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<tr>
<td>4:10 p.m.</td>
<td><strong>New Approaches in TBI Research-Hypothermia, Biomarkers, and Cell Therapies</strong></td>
<td>Ross Bullock, MD, PhD, University of Miami</td>
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<td>4:30 p.m.</td>
<td><strong>Additional Discussions on CNS Injuries</strong></td>
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<tr>
<td>4:40 p.m.</td>
<td><strong>Closing Comments</strong></td>
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CHRONIC ISCHEMIC TOLERANCE INDUCED BY RESVERATROL PRECONDITIONING
Kevin B. Koronowski BS, Kunjan R. Dave PhD, Isabel Saul BS, John W. Thompson PhD, Vladimir Camarena PhD, Juan I. Young PhD, Miguel A. Perez-Pinzon PhD, University of Miami

EXPRESSION OF A HYPERACTIVE TRANSCRIPTION FACTOR INCREASES AXON GROWTH AND REGENERATION
Saloni Mehta, Xueting Luo, Tatiana I. Slepak, Kevin K. Park, John L. Bixby, Vance P. Lemmon, University of Miami

HUMAN FETAL STEM CELL TRANSPLANT IN PENETRATING BALLISTIC BRAIN INJURY (PBI)
Markus Spurlock, Khadil Hosein, Ross Bullock, Shojo Yokobori, Shyam Gajavelli, Stephanie Lee, Guobin Zhang, Pingdeingde Sam, Meghan Blaya, Yoelvis Hernandez, Lai Yee Leung, Frank C. Tortella, University of Miami

THE EFFECTS OF EXERCISE, COGNITIVE TRAINING, OR BOTH ON COGNITION AND QUALITY OF LIFE POST-STROKE
Clinton B. Wright MD, MS, Ralph L. Sacco MD, MS, John E. Lewis, PhD, David Loewenstein, PhD, Bonnie Levin, PhD, Eduard Tiozzo, PhD, Carolina Mendoza-Puccini, IMCS, University of Miami

NEUROVASCULAR PROTECTION BY POST-ISCHEMIC INJECTIONS OF A LIPOXIN A4 RECEPTOR AGONIST, BML-111, IN A RAT MODEL OF ISCHEMIC STROKE
Kimberly E. Hawkins, Kelly M. DeMars, Henry S. Cho, Jonathan Singh, Ian C. Frankowski, Sylvain Doré, & Eduardo Candelario-Jalil, University of Florida

SEX DIFFERENCES IN A RAT MODEL OF RISKY DECISION MAKING
Kristy Greene Shimp, Orsini, C.A., Gilbert, R.J., Willis, M., Bizon, J.L., Setlow, B., University of Florida

A QUICK, NON-INVASIVE, AND RELIABLE DIAGNOSTIC TEST FOR ALZHEIMER’S DISEASE
Jennifer J Stamps, Linda M Bartoshuk, PhD, Kenneth M Heilman, MD, University of Florida

MAGNETIC RESONANCE MICROSCOPY OF NEURAL TISSUES: FORM AND FUNCTION
Jeremy J Flint, Choong-Heon Lee, Kannan Menon, Brian Hansen, Stephen J Blackband, University of Florida

PHRENIC MOTONEURON LOSS AND DIAPHRAGM FUNCTION FOLLOWING CERVICAL SPINAL CORD INJURY
Nicole Little, S. Hussey, E.J. Gonzalez-Rothi, L.M. Mercier, D.D. Fuller, M.A. Lane, P.J. Reier, University of Florida

DIETARY ATTENUATION OF TUMOR METABOLISM DIMINISHES PROPAGATION OF GliOBLASTOMA
Regina T. Martuscello, Locht P. Deleyrolle, Christopher D. Louviere, David J. McCarthy, Musa A. Jundi, Benjamin G. Griffith, Brent A. Reynolds, University of Florida

ENHANCED EXPRESSION OF ESTROGEN RECEPTOR ALPHA WITH GENE THERAPY EXTENDS THE THERAPEUTIC WINDOW
L. A. Bean, A. Rani, A. Kumar, T. C. Foster, University of Florida

HOW MANY GENES ARE NEEDED TO LEARN AND REMEMBER? GENOMIC AND EPIGENOMIC BLUEPRINTS OF MEMORY CIRCUITS AND DISEASES
A.B. Kohn, D. Dhingra, Y. Sun, G. Meredith, K.M Candelario, D.A. Steindler, A. Fodor, A. Kumar, S. Harden, C. J. Frazer, T. C Foster, L. L. Moroz, University of Florida

DISSECTING AN INHIBITORY NEURAL CIRCUIT THAT MODULATES NEURONAL ACTIVITY AND SURVIVAL IN THE AUDITORY BRAINSTEM
Briana J. Carroll, David H. Brown, Richard L. Hyson, Florida State University

TWO NEURAL STREAMS, ONE VOICE: BRAIN CIRCUITS FOR THEME AND VARIATION IN AN ANIMAL MODEL FOR HUMAN SPEECH
Mark Basista, Kevin C. Elliott, Matthew T. Ross, Wei Wu, Richard Bertram, Richard L. Hyson, Frank Johnson, Florida State University
INFLUENCE OF GONADAL HORMONES ON BEHAVIORAL SENSITIVITY TO LOW-DOSE KETAMINE
Samantha K. Saland, Mohamed Kabbaj, Florida State University

HYPEREXCITABILITY OF PRESUBICULAR NEURONS IN A RAT MODEL OF TEMPORAL LOBE EPILEPSY
Saad Abbasi, Sanjay Kumar, Florida State University

HIPPOCAMPUS ACROSS THE ESTROUS CYCLE: COMPARING TRANSCRIPTOME AND PROTEOME
Lisa DiCarlo, Joseph Bundy, Cynthia Vied, Richard Nowakowski, Florida State University

ELUCIDATION OF THE MECHANISM OF ACTION OF WITHAFERIN A-MEDIATED REGULATION OF LRRK2

A COMPETITIVE NMDA RECEPTOR ANTAGONIST, CPP, SELECTIVELY IMPAIRS ODOR SPAN TASK PERFORMANCE IN RATS
S. R. Dalrymple, D. A. MacQueen, D. M. Diamond, University of South Florida

PREDATOR EXPOSURE PRODUCES ANTEROGRADE AND RETROGRADE ENHANCEMENT OF INCIDENTAL LEARNING IN RATS: INSIGHT INTO THE NEUROBIOLOGY OF FLASHBULB MEMORIES
L. A. Bullard, C. R. Park, D. M. Diamond, University of South Florida

CAUSAL NETWORK ANALYSIS OF PROLIFERATIVE AND STRESS RESPONSE PATHWAYS IN YOUNG AND OLD HIPPOCAMPUS TREATED WITH NT-020
Antwoine Flowers, Bethany Grimmig, Charles Hudson, P Bradshaw, V. Delic, Paula C Bickford, University of South Florida

TRACTOGRAPHY AND FUNCTIONAL CONNECTIVITY OF DEEP BRAIN STIMULATION (DBS) CONTACTS AND CLINICAL OUTCOME IN MOVEMENT DISORDERS

IN VITRO MODEL OF CNS INFORMATION PROCESSING FOR NEUROLOGICAL DISEASE APPLICATIONS
Bonnie Berry, Mark Schnepper, Frank Sommerhage, Max Jackson, Tom DeMarse, Andrea Lavado, James J Hickman, University of Central Florida

IN VITRO MODEL OF THE REFLEX ARC TO UNDERSTAND NERVOUS SYSTEM DISEASE AND DEFICIT
Xiufang Guo, Mainak Das, John Rumsey, Alec Smith, Alisha Colon, Chris McAleer, Chris Long, Kerry Wilson, Maria Stancescu, Candace Martin, James J. Hickman, University of Central Florida.
ACKNOWLEDGMENTS

THE FLORIDA BRAIN PROJECT INAUGURAL SYMPOSIUM WAS MADE POSSIBLE BY A DONATION FROM

DRS. MARTIN AND SANDRA FACKLER

TO THE MCKNIGHT BRAIN INSTITUTE AT THE UNIVERSITY OF FLORIDA.

Administrative support provided by:

McKnight Brain Institute at the University of Florida
College of Medicine at Florida State University
The FLORIDA BRAIN PROJECT
Inaugural Symposium
July 28-29, 2014

Why Florida is the “State of Brain Research”

University of Florida
Florida State University
University of Miami
University of South Florida
The Scripps Research Institute - Florida
Mayo Clinic Jacksonville
Max Planck Florida Institute
University of Central Florida
National High Magnetic Field Lab
Roskamp Institute
Sanford-Burnham Medical Institute

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