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McKnight Brain Institute
UNIVERSITY of FLORIDA



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THE SCRIPPS RESEARCH INSTITUTE

FLORIDA SYMPOSIUM ON THE **BRAIN** INITIATIVE

*Identifying and enhancing
our competitive edge
through information
exchange and collaboration*

McKnight Brain Institute,
DeWeese Auditorium
January 16, 2014
8:30 a.m. - 5:45 p.m.

Additional sponsorship by



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Welcome to the Florida Symposium on the *BRAIN* Initiative



THOMAS A. PEARSON, MD, MPH, PhD
Executive Vice President for
Research and Education
University of Florida Health Science Center

"I am delighted to welcome you to the inaugural Florida Symposium on the BRAIN Initiative, convened at the McKnight Brain Institute on the campus of the University of Florida. I congratulate Dr. Ashizawa and his team for organizing this exciting day, bringing in an eminent keynote speaker, and showcasing neuroscience research at several research institutions in Florida. This is a timely and important effort, to gather together the remarkable talent and creativity in the area of neuroscience in the State of Florida. This symposium is the first step in what I am confident will be a process leading to significant contributions from Florida to the nation's emerging BRAIN Initiative."



DAVID P. NORTON, PhD
Vice President for Research
University of Florida Health Science Center
Professor, Department of Materials
Science and Engineering
University of Florida

"Just as the Human Genome Project accelerated genetic research, the BRAIN Initiative promises dramatic advances in our understanding of how the brain functions. The University of Florida has been preparing for this opportunity for decades, building the McKnight Brain Institute into a national leader in the neurosciences. UF is now uniquely situated to be a major player in the BRAIN Initiative, using our strong interdisciplinary culture to look at neuro questions from many different perspectives."



About: *BRAIN* Initiative (Brain Research through Advancing Innovative Neuro technologies)

“On April 2, 2013, President Obama launched the BRAIN (Brain Research through Advancing Innovative Neuro technologies) Initiative to “accelerate the development and application of new technologies that will enable researchers to produce dynamic pictures of the brain that show how individual brain cells and complex neural circuits interact at the speed of thought.” Funding will stem from the NIH, DARPA, and the NSF, as well as a host of private entities. The aims of this collaborative initiative are multi-fold and cross-discipline.

The most recent NIH Interim Report identifies nine high-priority foci for the BRAIN Initiative in 2014, including the generation of a census of cell types, establishment of structural maps, development of large-scale neural network recording capabilities, and innovation in the procurement and processing of the prodigious amounts of data expected to be generated.

This symposium provides a forum for Florida’s top brain and neuroscience research institutions and investigators to discuss strengths and opportunities for multi-institutional collaboration throughout the state... establishing Florida as our nation’s undisputed State of Next-Generation Brain Research.”

Florida Symposium on the *BRAIN* Initiative

AGENDA

Thursday, January 16

DeWeese Auditorium (at the MBI)

8:30 a.m. Welcome and Introduction –
Thomas A. Pearson, MD, MPH, PhD

KEYNOTE

8:40 a.m. Emery N. Brown, MD, PhD MIT

CLINICAL OPPORTUNITIES – Chaired by David Nelson, MD

9:30 a.m. Ronald Davis, PhD Scripps

9:45 a.m. Paul Carney, MD UF

10:00 a.m. Todd Golde, MD, PhD UF

10:15 a.m. David Nelson, MD UF

10:30 a.m. Break

NEUROGENETICS – Chaired by Ronald Davis, PhD

10:45 a.m. Thomas Foster, PhD UF

11:00 a.m. Damon Page, PhD Scripps

11:15 a.m. Baoji Xu, PhD Scripps

11:30 a.m. Brock Grill, PhD Scripps

11:45 a.m. Gavin Rumbaugh, PhD Scripps

12:00 p.m. Maurice Swanson, PhD UF

12:15 p.m. Lunch

BIG DATA – Chaired by Cole Smith, PhD

1:15 p.m. Leonid Moroz, PhD UF

1:30 p.m. Sara Burke, PhD UF

1:45 p.m. Sathya Puthanveetil, PhD Scripps

2:00 p.m. Matthew Gitzendanner, PhD UF

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Florida Symposium on the *BRAIN* Initiative

AGENDA

Thursday, January 16

DeWeese Auditorium (at the MBI)

HIGH FIELD MR & NOVEL IMAGING – Chaired by Thomas Mareci, PhD

2:15 p.m.	Thomas Mareci, PhD	UF
2:30 p.m.	Joanna Long, PhD	UF
2:45 p.m.	Samuel Grant, PhD	FSU
3:00 p.m.	Marcelo Febo, PhD	UF
3:15 p.m.	Andrew Maudsley, PhD	UM
3:30 p.m.	Break	

NANOTECHNOLOGY – Chaired by Jack Judy, PhD

3:45 p.m.	Jack Judy, PhD	UF
4:00 p.m.	Weihong Tan, PhD	UF

NEUROGENETICS & OTHER FRONTIERS IN NSC – Chaired by Thomas Foster, PhD

4:15 p.m.	David Borchelt, PhD	UF
4:30 p.m.	Seth Tomchik, PhD	Scripps
4:45 p.m.	Srini Subramaniam, PhD	Scripps
5:00 p.m.	Barry Ache, PhD	UF
5:15 p.m.	Panel Discussion	
5:45 p.m.	Closing Statements	



Keynote Speaker **EMERY N. BROWN, MD, PhD**

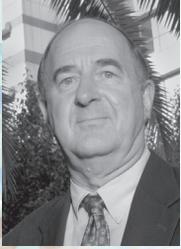


**Warren M. Zapol Professor of Anesthesia,
Harvard Medical School
Professor, Harvard-MIT Division of
Health Sciences & Technology
Professor of Computational Neuroscience, MIT**

Emery N. Brown, MD, PhD, is the Edward Hood Taplin Professor of Medical Engineering, professor of computational neuroscience at MIT, the Warren M. Zapol Professor of Anaesthesia at Harvard Medical School and Massachusetts General Hospital (MGH), and an anesthesiologist at MGH. He is a member of the Institute of Medicine of the National Academies, a Fellow of the American Academy of Arts & Sciences, the Institute of Electrical and Electronics Engineers (IEEE), the American Statistical Association, and of the American Association for the Advancement of Science. He has made conceptual and experimental contributions to the neurophysiological understanding of general anesthesia. He developed signal processing methods to solve key data analysis challenges in neuroscience: characterizing how neuronal ensembles maintain dynamic representations of information in their group spiking activity; tracking neural receptive field plasticity; and tracking neurophysiological and behavioral changes during learning and during general anesthesia. He serves on the NIH BRAIN Initiative Working Group, NIH Council of Councils, the NSF Mathematical and Physical Sciences Advisory Committee, the Board of Directors of the International Anesthesia Research Society and Board of Directors of the Burroughs-Wellcome Fund. He is the recipient of a 2007 NIH Director's Pioneer Award, the 2011 Jerome Sacks Award from the National Institute of Statistical Sciences, and a 2012 NIH Director's Transformative Research Award.

Florida Symposium on the *BRAIN* Initiative

SPEAKERS



BARRY W. ACHE, PhD
Distinguished Professor & Director of the Center
for Smell & Taste
University of Florida

Dr. Ache has been active in chemical senses research since first assuming a faculty position in 1970. For much of that time his work has been continuously funded by the NIH (NIDCD). In more recent years he has focused on understanding the cellular basis of odor coding in the olfactory periphery. His laboratory uses primarily electrophysiological, but also molecular, biochemical, and imaging approaches on crustacean, insect, and mammalian animal models to understand how natural, complex odor mixtures set the output of olfactory receptor neurons. In addition to maintaining an active research program, he also directs the University of Florida Center for Smell and Taste (UFCST), whose goal it is to integrate and foster chemical senses research across the University and in the Southeast.



DAVID R. BORCHELT, PhD
Professor of Neuroscience & Director, Santa Fe
Health Alzheimer's Disease Research Center
University of Florida

Over the past several years there has been tremendous progress in identifying the gene products that mediate a number of neurodegenerative disorders, including familial Alzheimer's disease, familial amyotrophic lateral sclerosis, and Huntington's disease. Dr. Borchelt's laboratory is committed to investigations designed to elucidate the molecular processes by which specific mutant proteins cause disease. This work involves the use of transgenic mouse models, knockout mice, and cell culture systems to examine the effect of mutations on the function and biology of the mutated proteins. Collectively, these approaches provide insight into the molecular mechanisms of disease and have the potential to identify new therapeutic strategies for these disorders.



SARA N. BURKE, PhD
Assistant Professor of Neuroscience
University of Florida College of Medicine

Dr. Burke is the newest member of the Age-related Memory Loss Program at the McKnight Brain Institute at the University of Florida. The principal aim of Dr. Burke's research is to investigate how medial temporal lobe and frontal cortical structures involved in memory and high-level sensory perception are altered by advanced age and how nutrition and fitness can circumvent possible network impairments.



PAUL R. CARNEY, MD
Professor
Wilder Chair for Epilepsy Research
Director, Pediatric Epilepsy Program
University of Florida

Dr. Carney is Professor of Pediatrics, Neurology, Neuroscience, and Biomedical Engineering, Wilder Chair for Epilepsy Research, Chief of Pediatric Neurology, and Director of the Comprehensive Pediatric Epilepsy Program at the University of Florida and McKnight Brain Institute in Gainesville, Florida, USA. His research has included several interdisciplinary projects investigating the pathophysiology of epilepsy and sleep disorders, and the development and application of new technology for the diagnosis and treatment of epilepsy.



RONALD L. DAVIS, PhD
Professor and Chair,
Department of Neuroscience
Scripps Research Institute – Florida

Ronald Davis is the Founding Chair of the Department of Neuroscience at the Scripps Research Institute, Florida. He is one of the nation's leading experts on the molecular and cellular biology of learning and memory and the disorders that disrupt memory. Prior to joining the Scripps Research Institute, he was the R.P. Doherty-Welch Chair of Science at the Baylor College of Medicine, holding professorial appointments for approximately a 20-year period in the Departments of Molecular and Cellular Biology, Human and Molecular Genetics, Psychiatry and Behavioral Sciences, and Neuroscience. He was Vice Chair for Research in the Department of Psychiatry and Behavioral Sciences as well as the Director for the Center for Memory and Learning at that institution.



MARCELO FEBO, PhD
Assistant Professor, Department of Psychiatry
University of Florida College of Medicine

The Febo laboratory uses functional neuroimaging methods to study the neural correlates of addiction in rodent models. Presently we are interested in investigating several areas of interest that include: (i) the long-term impact of chronic cocaine exposure on the brain dopaminergic system, (ii) the role of brain oxytocin and vasopressin systems in psychopathology and relapse (iii) and the roles of the medial prefrontal cortex and striatum on motivation and emotion. Our work contributes to understanding conditions such as addiction and depression. Since arriving at the University of Florida we have also participated in high field imaging research in animal models of neurodegenerative diseases such as Parkinson and Alzheimer's disease.



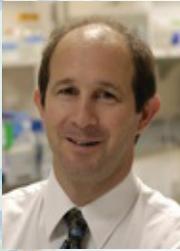
THOMAS C. FOSTER, PhD
Professor and Evelyn F. McKnight Chair for
Research on Cognitive Aging and Memory
University of Florida

Dr. Thomas Foster is the Evelyn F. McKnight Chair for Research on Cognitive Aging and Memory and Professor of Neuroscience at the University of Florida. Dr Foster's research program utilizes a combination of behavioral characterization with biochemical, molecular, and electrophysiological techniques to obtain a vertically integrated perspective on neural aging, from the molecular to the cognitive level. The two main goals of the lab are to identifying mechanisms for age-related memory impairment and to test treatments to alleviate memory deficits. He is currently the principle investigator on two grants from the National Institute of Aging, which includes a MERIT award.



MATT GITZENDANNER, PhD
Associate Scientist, Biology & Florida Museum of
Natural History
University of Florida

Dr. Gitzendanner is an Associate Scientist in the Department of Biology, where his research spans a broad array of topics generally related to evolutionary genomics. He has studied topics ranging from population and conservation genetics to genomics and bioinformatics. Dr. Gitzendanner also holds a position at UF Research Computing, where he conducts training sessions and provides user support.



TODD E. GOLDE, MD, PhD

**Director, Center for Translational Research on
Neurodegenerative Disease
Professor, Neuroscience
University of Florida**

Dr. Golde's laboratory conducts disease oriented research with a specific, but not exclusive, focus on neurodegenerative diseases such as Alzheimer's disease (AD) and Parkinson Disease (PD). Their basic road map for this research is to try and understand the disease, create models that mimic aspects of the disease process in a time course that is amenable to study, identify targets for intervention, and opportunistically develop and evaluate therapies that might alter the disease course.

Dr. Golde has created a collaboration and partnership with the Center for Movement Disorders and Neurorestoration in an effort to recruit the brightest and best translational researchers to UF. Dr. Golde directs the sister center at UF- The Center for Translational Research in Neurodegenerative Diseases.



SAMUEL C. GRANT, PhD

**Associate Professor and Graduate Committee Chair,
Department of Chemical & Biomedical Engineering
FAMU-FSU College of Engineering, The Florida State University**

**Director, MRI User Program, Center for Interdisciplinary
Magnetic Resonance, The National High Magnetic Field Laboratory,
The Florida State University**

**Associate Director, Center for Advancing Exercise and
Nutrition Research on Aging, The Florida State University**

My research laboratory is focused on the development of high resolution techniques to investigate the biophysical origins of magnetic resonance (MR) signals under a variety of perturbations. We utilize high magnetic fields to achieve high sensitivity and spatial/spectral resolution on specimen ranging from single isolated neurons to fixed neurological tissues (brains and spinal cords) to in vivo animal models and human patients. Our close affiliation with the National High Magnetic Field Laboratory (www.magnet.fsu.edu) provides access to the highest magnetic fields in the world, including the one-of-a-kind ultrawide bore 21.1-T MR system. Dr. Grant's Laboratory Website – <http://www.eng.fsu.edu/~grantsa>



BROCK GRILL, PhD

**Assistant Professor, Department of Neuroscience
Scripps Research Institute – Florida**

Brock Grill is an Assistant Professor in the Department of Neuroscience at the Scripps Research Institute – Florida. Dr. Grill's research team uses proteomic, genetic and transgenic approaches to understand the signaling networks that govern axon growth and synapse formation. He has a particular interest in intracellular signaling molecules that coordinate synapse formation with termination of axon growth. Understanding the molecular underpinnings of neural development is critical for devising new therapeutic approaches to treat neurodegenerative diseases, and injury from stroke and trauma.

Dr. Grill received his B.Sc. in Microbiology from the University of Alberta, Canada; his doctorate in Experimental Medicine from the University of British Columbia, Canada; and received his postdoctoral training at UC Santa Cruz and Stanford University.



JACK W. JUDY, PhD

**Professor, Director of the Nanoscience Institute for
Medical and Engineering Technologies
University of Florida**

Dr. Judy's research primarily focuses on the development of novel microscale and nanoscale systems technologies and their use in a wide variety of engineering, scientific, biological, and medical applications. He has developed and delivered courses on microscale and nanoscale device fabrication, design, and systems integration, as well as courses on neuroengineering technologies, systems, and applications. His research interests include the development of novel micro/nanoscale systems and their use in a wide variety of engineering and biomedical applications.



JOANNA R. LONG, PhD

**Associate Professor, Biochemistry &
Molecular Biology
Director, Advanced Magnetic Resonance Imaging
& Spectroscopy Facility
University of Florida**

Dr. Long's research focuses on developing magnetic resonance techniques for monitoring proteins, lipids, and metabolites in situ and in vivo to gain a molecular level understanding of their complex behaviors. Her research group also focuses on specific systems of importance to understanding and remediating disease states. using the techniques we develop. Current projects include: 1) The development of dynamic nuclear polarization to examine metabolic flux in vivo; 2) Developing DNP approaches for studying membrane protein structures. 3) the structure and assembly of proteins in amyloid fibril formation and biofilm stabilization; 4) the structural and dynamical details of membrane binding, lipid recognition, and lipid transfer/ extraction by lysosomal lipid transport proteins; 5) the structure, dynamics and function of lung surfactant peptides which traffic lipids in pulmonary surfactant.



THOMAS H. MARECI, PhD

**Professor, Department of Biochemistry and
Molecular Biology
Associate Director, Advanced Magnetic Resonance
Imaging and Spectroscopy Facility
University of Florida**

Dr. Mareci studies the structure and biochemical processes of the nervous system using nuclear magnetic resonance (NMR). His research group uses diffusion weighted imaging methods to visual fiber structure in white and gray matter and use these measurements to compliment functional connectivity measures between gray matter regions. In addition, this group is studying convection drug delivery into the nervous system using dynamic contrast enhanced MR imaging in vivo, as well as designing and constructing unique MR coils with enhancement sensitivity to allow the acquisition of very high spatial-resolution MR images and spectra.



ANDREW MAUDSLEY, PhD
Professor of Radiology,
University of Miami

Dr. Maudsley is a Professor of Radiology at the University of Miami and is carrying out research in the area of new methods and applications of magnetic resonance imaging (MRI) and spectroscopy for diagnostic imaging of the brain. Studies include implementation of proton MR Spectroscopic Imaging (MRSI) for mapping distributions of brain metabolites and alterations with disease and injury. Recent studies include multimodality neuroimaging investigations of neurodegenerative diseases, epilepsy, traumatic brain injury, and cancer.



LEONID L. MOROZ, PhD
Professor of Neuroscience, Genetics,
Biology & Chemistry
University of Florida

Dr. Leonid Moroz is a Professor of Neuroscience, Biology, Chemistry and Genetics at the University of Florida. His interdisciplinary research utilizes a combination of molecular, physiological, computational and comparative approaches to decipher (i) genomic bases of neuronal identity and plasticity in memory circuits, and (ii) the origins neurological impairments during age-related memory loss.

The long-term objective of Dr. Moroz' program is to understand fundamental aspects of (a) mechanisms of integrative activity of genome in neurons as they learn and remember, focusing on individually identified neurons in memory-forming circuits and mechanisms of long-term memory persistence; and (b) the origins and evolution of nervous systems using comparative approaches.



DAVID R. NELSON, MD
Professor of Medicine,
Molecular Genetics and Microbiology
Director, UF Clinical and Translational
Science Institute
Associate Dean for Clinical Research
University of Florida

Dr. David Nelson is Professor of Medicine and Assistant Vice President for Research at the University of Florida where he serves as the Director of the Clinical and Translational Science Institute. The mission of this NIH funded institute is to improve how biomedical research is conducted and to enable scientists to work together to accelerate the translation of laboratory discoveries into clinical treatments. He received his undergraduate degree from Dartmouth College, his medical degree from SUNY Upstate University in Syracuse, completed a Residency in Internal Medicine at The University of Massachusetts, and obtained fellowship training in Gastroenterology and Hepatology at the University of Florida. Dr. Nelson's area of clinical expertise is Hepatology with an emphasis on the management of viral hepatitis and liver cancer. Dr. Nelson also has strong translational research interests, focusing primarily on the immunopathogenesis and treatment of chronic hepatitis C and hepatocellular carcinoma.



DAMON T. PAGE, PhD
Assistant Professor, Department of Neuroscience
Scripps Research Institute – Florida

Dr. Damon Page is an Assistant Professor in the Department of Neuroscience at the Florida campus of The Scripps Research Institute. His lab is deciphering how risk factors for autism influence the development of cellular architecture and functional circuits in the brain. This insight may be used in turn to benefit those affected by autism, pointing to molecular targets for improved diagnostics and therapeutics.

Dr. Page received his bachelor's degree in biology from Eastern Oregon University and his PhD from the University of Cambridge. He was a postdoctoral fellow at the Medical Research Council Laboratory of Molecular Biology and the Massachusetts Institute of Technology (MIT), and was a senior analyst at the Allen Institute for Brain Science prior to joining Scripps.



SATHYANARAYANAN V. PUTHANVEETIL, PhD
Assistant Professor, Department of Neuroscience
Scripps Research Institute – Florida

Dr. Sathya Puthanveetil is an Assistant Professor in the Department of Neuroscience at the Florida campus of the Scripps Research Institute. Research in his laboratory centers on the molecular and cellular basis of long-term memory storage and its disorders. His laboratory explores these questions using an integrated approach that combines several high throughput techniques with electrophysiology, biochemistry and imaging. He uses *Aplysia* and mice as models to address these questions at both cellular and systems level.

Dr. Puthanveetil received his bachelor's degree in agriculture from Kerala Agricultural University in India and his Ph.D. from Washington State University. He was a postdoctoral fellow in the laboratory of Nobel winner, Dr. Eric Kandel, at Columbia University Medical Center, Howard Hughes Medical Institute prior to joining Scripps.



GAVIN RUMBAUGH, PhD
Associate Professor, Department of Neuroscience
Scripps Research Institute – Florida

Dr. Gavin Rumbaugh is an Associate Professor in the Department of Neuroscience at the Florida campus of The Scripps Research Institute. The goal of his lab is to understand how synaptic connections contribute to development and function of neural circuits that underlie memory and cognition.

Dr. Rumbaugh received his bachelor's degree in biology from Westminster College and his PhD from the Georgetown University School of Medicine. He was a postdoctoral fellow in the laboratory of Dr. Richard Huganir at Johns Hopkins School of Medicine. Prior to joining Scripps he was an Assistant Professor at the Evelyn F. McKnight Brain Research Institute at the University of Alabama at Birmingham School of Medicine.



SRINI SUBRAMANIAM, PhD
Assistant Professor, Department of Neuroscience
Scripps Research Institute – Florida

Dr. Srinivasa (Srini) Subramaniam is an Assistant Professor in the Department of Neuroscience at Scripps Florida. Prior to joining Scripps he was a Research Associate in the Department of Neuroscience at Johns Hopkins University, Baltimore, MD. Areas of research focus on neurodegenerative diseases. Other areas of research include: signaling mechanisms mediating striatal damage in Huntington disease, signaling mechanisms mediating abnormal movements in Parkinson disease, and novel modulators of Alzheimer's disease pathogenesis.

Dr. Subramaniam received his Ph.D., in Neuroscience from the University of Heidelberg, Heidelberg, Germany, 2004. He did postdoctoral training at the Johns Hopkins School of Medicine, Baltimore, USA. 2006-2012.



MAURICE SWANSON, PhD
Associate Director of Center for Neurogenetics
Professor of Molecular Genetics
and Microbiology
University of Florida

RNA-Mediated Disease – Microsatellite instability is associated with nearly 30 hereditary disorders. Disease may result from repeat expansions within a coding region and synthesis of a toxic protein. Alternatively, many microsatellites are located in non-coding regions and cause diseases such as spinocerebellar ataxia types 8, 10 and 12 (SCA8, SCA10, SCA12), fragile X-associated tremor ataxia syndrome (FXTAS) and myotonic dystrophy (DM). Dr. Swanson's lab proposed the RNA-mediated disease model in which mutant DM1 and DM2 mRNAs are trapped in the nucleus and sequester (C)CUG repeat binding proteins that are essential for normal tissue development and maintenance. Swanson's lab has identified these sequestered factors as the muscleblind-like (MBNL) proteins and developed several mouse models to successfully test the toxic RNA hypothesis. Ongoing efforts are focused on investigating whether RNA toxicity has a pathogenic role in other neurological disorders.



SETH M. TOMCHIK, PhD

**Assistant Professor, Department of Neuroscience
Scripps Research Institute – Florida**

Dr. Seth Tomchik is an Assistant Professor in the Department of Neuroscience at Scripps Florida. His lab is studying how memories are encoded across neuronal circuits in the brain, and how these normal patterns of plasticity are disrupted in neurological disorders. Ultimately, this research may lead to more effective treatments for diseases that affect memory.

Dr. Tomchik received his bachelor's degree in psychology and Ph.D. in biology from the University of Miami. He was a postdoctoral fellow at the University of Miami School of Medicine and Baylor College of Medicine prior to joining Scripps.



WEIHONG TAN, PhD

**Distinguished Professor & V.T. and Louise Jackson
Professor of Chemistry
University of Florida**

Dr. Weihong Tan, the University of Florida Distinguished Professor and V. T. and Louise Jackson Professor of Chemistry at the University of Florida, is our principal investigator and well recognized for work in chemical biology, molecular engineering, and bionanotechnology. Tan's group has more than 25 students, postdoctors and research scientists working on three major areas: His group focuses mainly on molecular sciences for biomedical studies and applications. They are mainly concerned with two major areas of biomedical problems: cancer and learning and memory studies. Dr. Tan's three areas of research activities are: bionanotechnology, molecular engineering and chemical biology. His overall goal is to develop molecular level knowledge and tools for biomedical studies and for DNA based molecular devices in energy creation and molecular movement.



BAOJI XU, PhD
Professor,
Department of Neuroscience
Scripps Research Institute – Florida

Dr. Baoji Xu is a Professor with tenure in the Department of Neuroscience at the Florida campus of the Scripps Research Institute. His lab is interested in understanding how neural circuits are formed, modified, and maintained in the brain. Brain neural circuits are the structural basis for human behaviors. Abnormalities or degenerative changes in neural circuits have been shown to cause many disorders, including autism, mental retardation, depression, Alzheimer's disease, and obesity. He studies how growth factors regulate the development and function of neural circuits. His research employs a combination of mouse genetic, biochemical, molecular, histological, and behavioral approaches.



Organizing Committee



TEE ASHIZAWA, MD
Executive Director, McKnight Brain Institute
Melvin Greer Professor
Chairman, Department of Neurology,
University of Florida College of Medicine



LUCIA NOTTERPEK, PhD
Professor and Chair
Department of Neuroscience,
University of Florida



MINGZHOU DING, PhD
J. Crayton Pruitt Family
Department of Biomedical Engineering,
University of Florida



EVELYN F. AND WILLIAM L. MCKNIGHT BRAIN INSTITUTE (MBI)

Mission.

To understand how normal central nervous system (CNS) development and function contribute to higher cognitive functions, including lifelong learning and memory, via complex interactive neural circuitries that produce all of our incredible human behaviors. Focusing on the ability to remember and learn throughout life, treatment of movement disorders, brain cancer and stroke, our dedicated scientists and clinical investigators rely on state-of-the-art facilities, resources and

creativity that are required for the discovery of powerful new protocols to treat all neurological disorders that have the potential to impair quality of life. Our dedication to this mission will continue to lead advances in knowledge of the normal, compromised, protected, and repaired CNS.

Research.

The McKnight Brain Institute at the University of Florida is a research and teaching center, which conducts integrated research in neuroscience, neurology, neurosurgery, psychiatry, cognitive science, and related areas. The MBI is one of the nation's most comprehensive and technologically advanced centers devoted to discovering how the normal brain operates, and how we can repair the brain following injury, disease, or aging. The MBI's current strategic research focuses include neurodegeneration (such as AD, PD, and ALS), age-related memory loss, brain and spinal cord injuries, brain tumors, and addiction.

To aid research in these areas, the MBI operates several core facilities providing advanced (up to 17.5 tesla) magnetic resonance imaging and spectroscopy, cell and tissue analysis, flow cytometry, brain tissue banking, gene therapy, and more. The MBI is also an integral part of the Neuroscience Initiative of the "Top 10" Proposal, in collaboration with the health science campus, College of Engineering, and other colleges.

Education.

The College of Medicine departments of Neuroscience, Neurology, Neurosurgery, and Psychiatry, along with the Centers for Smell and Taste, Structural Biology, and Addiction Research & Education are housed together in the MBI to create convenient collaborations and educational opportunities for students and faculty.

Additionally, the MBI unites researchers from multiple colleges and departments throughout the Health Science Center with numerous interdisciplinary programs and projects, and facilitates over 320 lectures and seminars each year involving the best scientists from around the globe. With over 50 labs and 200,000 square feet of research space, the MBI provides a rich environment to train today's students and post docs to become tomorrow's leading investigators. This year we will start supporting IDP graduate programs, including the M.D. / Ph.D. Program.

Patient Care.

The MBI contains administrative offices for three clinical departments of the College of Medicine as well as the Neuromedicine Interdisciplinary Clinical and Academic Program (NICAP) developed to improve the patient experience throughout the continuum of care by focusing on safety and quality concerns. Additionally, the MBI is home to the linear accelerator-based radiosurgical system developed by the department of Neurosurgery, which has become one of the most popular commercial radiosurgery systems worldwide.

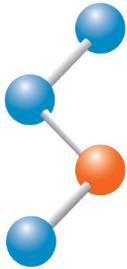
Special Thanks to Symposium Science Writer:



CZERNE REID, PhD
Department of Psychiatry
University of Florida

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