

7th ANNUAL

Meeting of the Minds Symposium

Friday, October 14 • 8 am to 1 pm

Keynote Speaker



Jeffrey Noebels, MD, PhD Dr. Noebels holds the Cullen Trust for Health Care Endowed Chair in Neurogenetics and is Professor of Neurology, Neuroscience, and Molecular and Human Genetics at Baylor College of Medicine in Houston, Texas. He is also the Director of the Developmental Neurogenetics Laboratory, and serves as Vice Chair of Research of the Neurology Department at Baylor College of Medicine. In addition to his academic appointments, Dr. Noebels is a past President of the American Epilepsy Society and an Ambassador of the International League Against Epilepsy. He is the recipient of numerous honors, including a Javits Neuroscience Investigator Award from the National Institutes of Health, awards from the PEW Foundation and the American Epilepsy Society, as well as the Michael Prize, the Novartis Award and the Michael E. DeBakey Excellence in Research Award.

Dr. Noebels received his PhD in neuroscience from Stanford University and his MD from Yale School of Medicine. He completed postdoctoral training in neurogenetics at Harvard Medical School as a Lennox Fellow and his adult neurology residency training at Massachusetts General Hospital. He studied as a Klingenstein Fellow in the areas of epilepsy and neuropathology at Boston Children's Hospital. He joined Baylor College of Medicine in 1986.

Dr. Noebels' major research focus has been to identify genes that cause epilepsy and trace their cellular mechanisms in the developing nervous system. He discovered the first inherited mouse model for childhood absence epilepsy and many other genes for seizure disorders, as well as preventive strategies to alter disease trajectory. A current interest is in understanding how some epilepsy genes are linked to cognitive and other comorbidities. His laboratory described the first gene linking seizures with cardiac arrhythmias, and he is a Principal Investigator of the NIH Center for Sudden Unexplained Death from Epilepsy (SUDEP) Research, a multisite translational research program to predict premature lethality in individuals with epilepsy. A recent discovery found that SUDEP genes promote spreading depolarization in the brainstem leading to cardiorespiratory collapse following a seizure, and overlap with genes responsible for migraine with aura.

Other Speakers



Dale Deutsch, PhD Dr. Deutsch is a Professor in the Department of Biochemistry and Cell Biology at Stony Brook University. Dr. Deutsch received his PhD in biochemistry, specializing in enzymology, from Purdue University. His postdoctoral research took him to University of Colorado, University of Chicago and eventually Stony Brook University, where he joined the Department of Pathology in 1982. In 1988, he joined the Department of Biochemistry and Cell Biology, where he has continued to direct the major undergraduate biochemistry teaching laboratory. Dr. Deutsch has also been a visiting professor at Tokushima University in Japan and at Scripps Research Institute in La Jolla, California, and was recently on sabbatical in San Francisco. He has been the recipient of numerous research grants and is in the third year as the Principal Investigator on a five-year, \$3.5 million NIH grant to study anandamide transport inhibitors.

Dr. Deutsch has made numerous contributions to the field of endocannabinoid biology. His laboratory at Stony Brook University identified the enzyme that metabolizes the endogenous marijuana-like substance anandamide and characterized the first inhibitors of this enzyme, known as fatty acid amide hydrolase (FAAH). Dr. Deutsch and his lab also established that anandamide uptake into cells is driven by FAAH activity and that the enzyme called NAPE-PLD is responsible for its biosynthesis. More recently, Dr. Deutsch's research has shed light on which intracellular transporters carry anandamide to FAAH for catabolism and has shown that these transporters, called fatty acid binding proteins, are carriers for tetrahydrocannabinol and cannabidiol (CBD), which are the key components of marijuana. Dr. Deutsch's research suggests that binding to fatty acid binding proteins may account for anti-epileptic effects of CBD in certain types of juvenile epilepsy. The mechanism may involve increased levels of anandamide at the synapse.



Mary Andriola, MD Dr. Andriola is a Professor in the Department of Neurology at Stony Brook Medicine and Director of the Division of Child Neurology, as well as Co-Director of the Stony Brook Epilepsy Center. She earned her MD from Duke University School of Medicine and completed her internship in pediatrics at Duke University School of Medicine and completed residency training in neurology at University of Florida College of Medicine. Dr. Andriola has led or been a participating physician in dozens of clinical trials, and has authored and co-authored dozens of scientific papers and abstracts. She was selected as one of Castle Connolly Best Doctors in America™ (2001 to present), as one of the Doctors of Excellence™ for the past 20 years and as one of *New York Magazine's* "Best Doctors." (2005 to 2013). In her 28 years at Stony Brook, Dr. Andriola has directed the training of many residents and fellows in Child Neurology and Clinical Neurophysiology, many of whom have joined the department as faculty.

Dr. Andriola's current research interests are related to the mechanisms of epileptic seizures and the efficacy of cannabidiol therapy in their attenuation. She is Principal Investigator for two upcoming multicenter randomized double-blind, placebo-controlled trials to assess the safety and efficacy of pharmaceutical cannabidiol oral solution as an adjunctive therapy for treatment of subjects with inadequately controlled Lennox-Gastaut or Dravet syndromes. As a New York State licensed medical doctor for medical marijuana, she is currently treating patients with epilepsy requesting cannabidiol therapy, and beginning a study of these patients.



Charles (Chuck) Mikell III, MD Dr. Mikell recently joined the Department of Neurosurgery at Stony Brook Medicine as an Assistant Professor following his neurosurgical residency training at Columbia University Medical Center – New York Presbyterian. Dr. Mikell treats functional and movement disorders of the brain and nervous system, including Parkinson's disease, epilepsy, pain, essential tremor and spasticity. In collaboration with neurologists and neuropsychologists, Dr. Mikell is helping to develop a new Movement Disorders Center within the Stony Brook University Neurosciences Institute.

As a resident, Dr. Mikell conducted extensive research in single-unit physiology, field potentials and neuroimaging of coma that resulted in numerous peer-reviewed publications in journals such as *Brain*, *JAMA*, *Stroke* and *Journal of Neurosurgery*. He was awarded the prestigious Janssen Fellowship in Translational Neuroscience Research and he won the first prize at the New York Society for Neurosurgery Resident Research twice. Currently Dr. Mikell is pursuing research on novel uses of deep brain stimulation to understand brain diseases such as Parkinson's disease, schizophrenia and coma after head injury. His research interests also include using neurosurgical techniques to understand how the brain generates the conscious experience.



Shaoyu Ge, PhD Dr. Ge is an Associate Professor in the Department of Neurobiology and Behavior at Stony Brook Medicine. He received his PhD in biophysics and neurobiology from the University of Science and Technology in China. He completed postdoctoral training in cholinergic activation on synaptic plasticity with John Dani, PhD, at Baylor College of Medicine and in mechanisms of adult neurogenesis with Hongjun Song, PhD, at Johns Hopkins University. He joined Stony Brook in 2008.

Dr. Ge's research has been centered on the generation and integration of newborn neurons in the adult brain. One of his current interests is testing how sphingolipid signaling regulates the generation and integration of newborn neurons in the adult brain and the effects of sphingolipid signaling on seizures. He is also studying how this signaling affects hippocampal function under different conditions such as seizure models of epilepsy. Dr. Ge has published more than 20 papers in such journals as: *Nature*, *Neuron*, *Nature Neuroscience*, *Journal of Neuroscience*, *Cell*, *PLOS Genetics* and *PNAS*. He also serves as a reviewer for *Neuron*, *Developmental Cell* and *Nature Communications*.



Louis Manganas, MD, PhD Dr. Manganas is an Assistant Professor in the Department of Neurology at Stony Brook Medicine and a board-certified pediatric neurologist. He is also the Director of the Lourie Center for Pediatric Multiple Sclerosis. Dr. Manganas earned his MD/PhD from Stony Brook University School of Medicine, where he also completed residencies in pediatrics and neurology, and a fellowship in pediatric neurology. He also completed a fellowship in clinical epilepsy at Yale New Haven Hospital. He was awarded a Pfizer Fellowship in Epilepsy Grant in 2011 and a Pediatric Epilepsy Research Foundation Grant in 2016 from the Child Neurology Society.

Dr. Manganas' research interests focus on neurogenesis — the birth of neurons — which occurs throughout adulthood in the mammalian brain. Specifically, he is interested in how aberrant neurogenesis may influence epileptogenesis — the process involved in developing recurrent seizures — after a new onset seizure. As a postdoctoral fellow, Dr. Manganas was able to show that neural stem cells cultured from a mouse brain had a unique metabolic profile using NMR when compared to other brain cells, including mature neurons, astrocytes and oligodendrocytes. Noninvasive detection of this unique metabolic profile was possible using MRI/MRS in animals and humans, which also allowed for quantitative measurements of neural stem cells *in vivo*. After a seizure has occurred, neural stem cell proliferation increases. One theory of epileptogenesis proposes aberrant connections among these newborn neurons leads to epilepsy. The extent to which neural stem cell proliferation correlates with a risk for epilepsy is unknown. About 50 percent of patients who have had a single seizure will go on to develop epilepsy. Using MRI/MRS along with the unique neural stem cell metabolic profile to quantify neurogenesis may ultimately allow one to noninvasively determine who would be at risk for epilepsy after a seizure.