



The Center for Neurorestoration and Neurotechnology (CfNN) began with a June 2012 award from the Department of Veterans Affairs Rehabilitation Research and Development Service. The Center is a collaboration between the Providence VA Medical Center, Brown University, Butler Hospital,

Benjamin D. Greenberg, MD, PhD *Newly Appointed Associate Director of CfNN*



Dr. Greenberg's background includes a BA in Psychology from Amherst College, a PhD in Neuroscience from the University of California, San Diego, and an MD from the University of Miami, training in neurology at Columbia University, and a psychiatry residency at Johns Hopkins Hospital. After residency, he became Chief of Adult Obsessive-Compulsive Disorder (OCD) Research in the Laboratory of Clinical Science at the National Institute of Mental Health. While working with NIH colleagues in neurology and psychiatry, he initiated studies in OCD and related conditions using Transcranial Magnetic Stimulation (TMS) in the 1990s.

In 2000, Dr. Greenberg joined the OCD Research Group at Butler Hospital and Brown Medical School, where his main research has been developing surgical and

noninvasive treatments in neuropsychiatry. He has led a multicenter trial of deep brain stimulation for intractable OCD, and related mechanistic studies as Co-Director of two NIMH-funded Translational Research Centers on the brain circuitry of OCD. His work in surgical therapies also includes studies of gamma knife ventral capsulotomy for OCD

Since 2013, when Dr. Greenberg joined CfNN at the Providence VA Medical Center, noninvasive neuromodulation has again become a major focus of interest. These methods include TMS and transcranial DC and AC electrical stimulation (tDCS and tACS). The work focuses on testing device-based treatments in chronic pain, Post Traumatic Stress Disorder (PTSD), as well as OCD and Tourette syndrome. For pain, a research goal is reducing the suffering associated with chronic pain by modulating the relevant brain circuitry. Across conditions, the effort aims to develop brain stimulation methods to improve the response to behavioral therapies for Veterans and others with chronic pain, PTSD, OCD, or Tourette syndrome. The CfNN, together with resources at Brown University and its affiliated hospitals, provides the environment for collaborative translational research using brain stimulation, neuroimaging, neuroanatomy, neurophysiology, and cognitive neuroscience to better understand the neurocircuitry of these and other illnesses with the ultimate goals of enhancing rehabilitation and relieving suffering in Veterans and others affected by these serious conditions.

Congratulations to Leigh Hochberg, MD, PhD, Director of CfNN

Dr. Hochberg was one of the Brown scientists honored by the Rhode Island ALS Association. The Rhode Island chapter of the Amyotrophic Lateral Sclerosis (ALS) Association has conferred its highest honor to researchers at Brown. The Spirit of Lou Gehrig Award, presented at the organization's 19th Annual Evening of Hope on July 1, recognizes achievement in ALS research. "This year's event was designed to highlight the fact that significant ALS research is being conducted right here in Rhode Island at Brown University," said John Pagliarini, ALSA-RI Chapter president.

IMPORTANT DATES

MEETING DATES:

- August 12, 2015
12:00PM
IRB Meeting
- August 25, 2015
Visit from Karen Siegel, Deputy Director, RR&D
- August 25, 2015 4:00PM
CfNN Executive Council Mtg.
- August 26, 2015
12:00PM
R&D Meeting
- September 8, 2015 4:00PM
CfNN Executive Council Mtg.
- September 22, 2015 4:00PM
CfNN Leadership Mtg.
- September 24, 2015 1:00PM to 5:00PM
CfNN Steering Committee Mtg.

DATES TO REMEMBER

- September 30, 2015
FY 2015 ends
- October 1, 2016
FY 2016 begins
- December 2015
2015 Annual Report is due

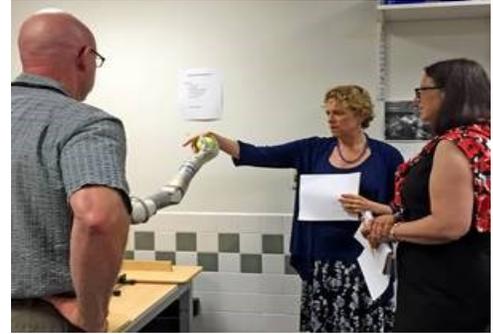
CENTER RENEWAL

- October 1, 2015
Abstract due
- February 15, 2016
Center Renewal Application due
- April 2016
Review
- May/June 2016
Site Visit

DEKA ARM DEMO

Geoff Grinsell, supply technician, and Dr. Linda Resnik, principal investigator of the DEKA Arm Study, demonstrate the DEKA Arm to Christine Smith, right, executive director of the Rhode Island Science and Technology Advisory Council (STAC) at the Providence Medical Center June 22, 2015.

STAC provides grants to promote science and technology in Rhode Island, and the demonstration was part of a tour of research facilities at the Providence VAMC. The DEKA Arm is designed to provide improved function over traditional prosthetics. (PVAMC photo by Candace Shuman).



In the News

Dr. Noah Philip, Director of the Psychiatric Neuromodulation Clinic, was recently interviewed by Barbara Morse Silva of NBC 10 News, about his Neuromodulation for PTSD research at the Providence VA Medical Center. Follow this link, [Health Check](#), for the complete interview.



Dr. Jerome Sanes has won a Fulbright Scholar Award to embark upon research projects with colleagues in France. He will be in Paris on sabbatical from Brown and CfNN for a year collaborating with scientists at the Brain and Spinal Cord Institute, an affiliate of the University of Pierre and Marie Curie, on a study of cognitive flexibility in healthy adults and those with Parkinson's disease. Using functional magnetic resonance imaging (fMRI), Dr. Sanes hopes to measure the activation in the brain that people employ when adaptively changing their actions as warranted by the task conditions or their own volition. He and his French collaborators will see how that activation, occurring in distinct but connected brain regions, may differ in people with Parkinson's Disease, who sometimes exhibit less cognitive flexibility. This research could lead to future development of therapeutic interventions, either with implanted neurotechnologies or medicines.

Including Drs. Sanes, 17 Brown faculty members have been named Fulbright scholars over the last six academic years. The program, established in 1946 by U.S. Senator J. William Fulbright, sponsors U.S. and foreign participants for exchanges in a wide range of disciplines "to increase mutual understanding between the people of the United States and the people of other countries."

Welcome to CfNN, Focus Area 4 !

W. Curt Lafrance, Jr., M.D., M.P.H. is the Director of Neuropsychiatry and Behavioral Neurology at Rhode Island Hospital and Assistant Professor of Psychiatry and Neurology (Research) in the Departments of Psychiatry and Human Behavior and of Clinical Neurosciences at Brown Medical School. He is the neuropsychiatrist for the RIH Comprehensive Epilepsy Program, Staff Physician at the Providence VAMC and a faculty member of the Brown Institute for Brain Science. He is the clinical lead for the VA National Telemental Health Center Tele-NES clinic. He is the director of the combined neurology/psychiatry residency at Brown University, and a faculty member of the Brown Forensic fellowship, where he teaches and mentors undergraduates, and medical students, residents and fellows in research and clinical practice. His research with CfNN will focus on neuropsychiatric aspects of epilepsy, nonepileptic seizures, psychogenic movement disorders (PMD), somatoform disorders, traumatic brain injury and biomarkers with Veterans.

Causey Dunlap, a graduate of Trinity College and native Floridian, has joined CfNN as a Research Health Science Specialist. She previously worked in research at the Miriam Hospital and will be assisting on the "Theta-Burst Neuromodulation for Chronic PTSD" and the "Transcranial Direct Current Stimulation Virtual Reality for PTSD" research projects with Dr. Noah Philip and Dr. Mascha Frank.