

Center for Movement Disorders & Neurorestoration

The UF Center for Movement Disorders & Neurorestoration investigates treatments for and causes of Parkinson's Disease, PSP/atypical parkinsonism, tics, tremor, dystonia, Huntington's Disease and other disorders. The interdisciplinary disciplinary approach at the UF Center for Movement Disorders & Neurorestoration brings together top researchers from multiple fields.

Deep Brain Stimulation Research

Drs. Foote and Okun together with a large interdisciplinary team- implant Deep Brain Stimulators that can change the rates and patterns of activity in one or more of many targets including the thalamus, subthalamic nucleus, globus pallidus, internal capsule, nucleus accumbens, and other brain regions. The UF Center for Movement Disorders & Neurorestoration is exploring the cognitive, behavioral, and mood effects of brain stimulation and researching the use of Deep Brain Stimulation to treat patients with Obsessive Compulsive Disorder and Tourette syndrome. The center is world renown for its cutting edge and pioneering research and technologies. Over the last 10 years the UF Center for Movement Disorders is in the top 5 in the world in production of research on DBS and electrical therapies and has been involved in all major DBS brain targets and disorders (e.g. PD, tremor, OCD, dystonia, Tourette, others). Dr. Okun's laboratory has recently turned its attention to Tourette syndrome and unlocking human tic physiology, and Dr. Foote has taken on MS tremor.

Clinical Trials

Clinical trials look into the safety and efficacy of a drug in improving symptoms or slowing/stopping/reversing the progression of a disease. Most drugs tested in clinical trials are not yet available in drug stores while some studies involve medications that are already available. Neuroprotective drugs may provide great benefit to those with Parkinson's and other movement disorders. UF under the leadership of Ramon Rodriguez has one of the largest fully integrated clinical trials programs in the country. The staff and facility are on site and have dedicated exam room space so that patients can be seen on the same day as for clinical care in any one of 10 specialties. Additionally the clinical trials center performs behavioral research (e.g. exercise, swallowing) and surgical research (e.g. DBS). Many important trials have been performed in this center including NIH COMPARE DBS, treatment of the masked face, expiratory muscle strength training, exercise of PD, as well as the NIH neuroprotective trials (NET-PD).

Clinical research database

With permission from patients, the UF Center for Movement Disorders & Neurorestoration tracks the progress of each patient's treatment as measured with several scales covering motor and non-motor areas. That information is entered into a central database that is used to find patterns in the data and to find patients that meet certain criteria for studies. 99% of all patients

in the center to date have consented to be part of this massive database and discovery project. The National Parkinson Foundation has modeled their massive quality improvement initiative after the UF INFORM effort.

Behavior and Emotion

The Bowers Laboratory is an interdisciplinary cognitive neuroscience research laboratory involved in the study of cognitive and affective behaviors in humans and the neural systems that underlie them. Participants include patients with Parkinson's disease, parkinsonism, dystonia and other movement disorders. This laboratory is world renowned for its efforts to better characterize the psychophysiology associated with disease (smiles, facial expression, sweating, autonomic features, etc.). Several major revelations for the field have emerged from their work including the first descriptions of stimulation induced smiles, and the first recognition of apathy as important in Parkinson's disease.

Gene Transfer, Stem Cells, and the Role of Proteins in Neurodegeneration

The UF Center for Movement Disorders & Neurorestoration is investigating two different strategies to alleviate behavioral deficits in rat and monkey models of Parkinson's disease. Dr. Mandel and his lab are pursuing both direct intrastriatal transmitter replacement (L-dopa delivery) and neurotrophic support strategies (GDNF delivery) in the unilateral 6-OHDA lesion model of PD using recombinant adeno-associated viral vectors (rAAV). This group has pioneered these approaches and are currently working on therapeutic strategies. Additionally Dr.'s Steinder and Reynolds are world-class stem cell researchers working in Parkinson's disease and DBS, and Dr. Nick McFarland has been working on protein processing.

New Laboratory at UF Dedicated to Curing DYT-1 Dystonia

Dr. Yuquing Li is one of the leading researchers in the world in dystonia and he and his laboratory in collaboration with Tyler's Hope for a Dystonia Cure have set out to cure the disease. Dr. Li is currently the most funded NIH researcher in this area in the United States and his work is cutting edge.