On October 31, 2014 the fifth annual Meeting of the Minds Symposium, entitled “Parkinson’s Disease and Deep Brain Stimulation Therapies: Practice and Theory”, took place at the Charles B. Wang Center at Stony Brook University. The symposium was sponsored by Stony Brook University Neurosciences Institute with support from the founding departments, the hospital, and the Hartman Center for Parkinson’s Disease Research. The symposium attracted more than 200 physicians, nurses, researchers, students and other healthcare professionals with an interest in the neurosciences.

Ali Rezai, MD, a world-renowned deep brain stimulation (DBS) and movement disorder expert from The Ohio State University, delivered the keynote address, “Neuromodulation: Current and Future Applications.” He explained how the use of DBS is considered when a patient has progressed to non-responsive Parkinson’s disease and presented findings from some of his latest DBS research. In his review of neuronal stimulation as a therapy, Dr. Rezai showed that in addition to its use in patients with Parkinson’s disease, it is now used or being considered for a multitude of conditions including peripheral pain, seizures, and incontinence, among others. The keys to making DBS work have been advances in: brain center circuit connectivity, resolution of brain imaging, construction and guidance of electrodes, and in vivo electrophysiological monitoring, which together allow placement of electrodes with sub-millimeter accuracy into appropriate brain centers.
The symposium also featured six other experts in the field of Parkinson’s disease and movement disorders (see above). Guy Schwartz, MD, who recently joined Stony Brook Medicine as Director of the Movement Disorders Section, Department of Neurology, provided “An Update on Parkinson’s Disease Treatment”. He summarized Parkinson’s disease symptoms and drug treatments, and addressed the genetic and environmental causes of the disease. He also summarized research findings that indicate CoQ10 and ibuprofen therapy as potential agents, in addition to levodopa, to help patients with Parkinson’s disease.

Adding a touch of drama to the symposium, John Lutterbie, PhD, Professor, Department of Theatre Arts at Stony Brook University, opened his presentation, “Theatre Training as Effective Therapy in Parkinson’s Disease: Preliminary Findings” by introducing theatre arts student, Margarite Espada, who performed a theatre training exercise for the audience, using her body to express the emotions of fear and anger. Then second-year Stony Brook University School of Medicine student researchers addressed the audience about their research into the use of theatre training, vs. traditional physical therapy training, to improve the quality of life for patients with Parkinson’s disease.
Craig Evinger, PhD, Professor, Department of Neurobiology and Behavior at Stony Brook Medicine, explained the mechanics behind his trigeminal blink reflex model system, during his “Deep Brain Stimulation in the Blink of an Eye” presentation. Patients with Parkinson’s disease and rodent models have similar eye blinking defects. Dr. Evinger showed that deep brain stimulation can modify these defects, or at a different frequency in control rodents, can induce these defects.

Lorne Mendell, PhD, Distinguished Professor, Department of Neurobiology and Behavior at Stony Brook Medicine, spoke about the plasticity of spinal connections during high frequency stimulations during his presentation, “Bilateral Functional Changes in Somatosensory Thalamus After Lateral Spinal Cord Hemisection.” Dr. Mendell showed that by varying the stimulation frequency, synaptic plasticity in somatosensory thalamus could be altered.

In his presentation, “Nanotechnology Solutions for Neural Control,” J. Andre Melendez, PhD, a prominent nanobioscientist, discussed various nanoscale solutions/therapies for the diagnosis and treatment of patients with Parkinson’s and other diseases. He also discussed work of colleagues on nano-devices, and polymers that could have disease applications. Dr. Melendez is the Associate Head, Nanobioscience Constellation; Professor, Nanobiosciences, at SUNY College of Nanoscale Science and Engineering.

In “Using Rat Models to Study the Neurobiological Basis for Sex Differences in the Non-Motor Symptoms of Parkinson’s Disease,” Mary Kritzer, PhD, discussed the influence of estrogen and androgen (sex hormones) in Parkinson’s disease. Studying the physiology and cognitive dysfunction of rodents after dopamine lesioning, she showed that reducing androgens restored the cognitive defect induced by the lesion. Dr. Kritzer is a professor in the Department of Neurobiology and Behavior at Stony Brook Medicine.

Also included in the symposium was a poster presentation session on projects that relate to Parkinson’s disease. This fascinating session was presented by Stony Brook University principal investigators or their graduate students.
The fifth annual “Meeting of the Minds” was hosted by Dennis Choi, MD, PhD, Director, Stony Brook University Neurosciences Institute, Professor and Chair, Department of Neurology, Stony Brook Medicine. The morning session moderator was Lorna Role, PhD, Co-Director, Stony Brook University Neurosciences Institute, Professor and Chair, Department of Neurology & Behavior, Stony Brook Medicine. The afternoon session moderator was Ramin Parsey, MD, PhD, Co-Director, Stony Brook University Neurosciences Institute; Professor and Chair, Department of Psychiatry, Stony Brook Medicine. Raphael Davis, MD is a Co-Director of Stony Brook University Neurosciences Institute, and Professor and Chair, Department of Neurosurgery, Stony Brook Medicine.

The mission of Meeting of the Minds is to assemble investigators, clinicians, donors, and the public to increase collaborative investigations and trials, understanding, and support in the areas highlighted by the meeting.