Great Lakes NeuroTechnologies Launches Study to Develop Intelligent Algorithms for Programming Deep Brain Stimulation in Parkinson's

22 JAN 2013: Valley View, OH – Great Lakes NeuroTechnologies (GLNT) announced today that they are launching a study to determine the feasibility of using intelligent algorithms to assist with programming deep brain stimulation settings for Parkinson's disease.   The study is being funded by a $283,828 Phase I Small Business Innovative Research grant from the National Institutes of Health, National Institute of Neurological Disorders and Stroke. The technology will be developed at Great Lakes NeuroTechnologies [http://www.glneurotech.com]and the clinical feasibility study completed at The University of Alabama at Birmingham.

Deep brain stimulation (DBS) represents a growing therapy for movement disorders such as Parkinson's disease (PD). DBS involves implanting an electrode in a specific area of the brain, and then adjusting stimulation settings to a level that alleviates PD symptoms without causing side effects. While the therapy has been shown effective for treating Parkinson's motor symptoms, there is a great disparity in outcomes among implanted patients due to varied postoperative management, particularly concerning DBS programming optimization. There may be several reasons for outcome variability in patients including programmer training and experience and the time required to determine an optimal set of DBS parameters. Programmers can adjust several types of settings including the contact, polarity, frequency, pulse width, and amplitude of stimulation. This creates a tremendous amount of possible combinations that must be evaluated over multiple types of motor symptoms in a limited time frame during an office visit.

"As the neuromodulation market continues to grow, we see a strong need for value added tools that can improve the DBS programming experience for both physicians and patients", said Dustin Heldman, Biomedical Research Manager and Principal Investigator at GLNT.   "This research aims to develop intelligent algorithms that can reduce the time and optimize outcomes for programming deep brain stimulation. It builds upon the strong foundation of our Kinesia technology for measuring Parkinson's motor symptoms both in the clinic and at patient homes." The system will leverage existing Kinesia™ technology [http://glneurotech.com/kinesia/] to quantify Parkinson's motor symptoms such as tremor, bradykinesia, and dyskinesia to develop a functional map. Intelligent algorithms will navigate the DBS parameter space to determine an optimal set of programming parameters that maximize symptomatic benefits while minimizing side effects and battery consumption.

About Great Lakes NeuroTechnologies

Great Lakes NeuroTechnologies [http://www.glneurotech.com] is committed to pioneering innovative biomedical technologies to serve research, education, and medical communities, improving access to

medical technology for diverse populations, and positively impacting quality of life for people around the world.

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