

Great Lakes NeuroTechnologies Receives \$1.5 Million to Further Technology for Assessing Bradykinesia Response to Novel Therapies in Parkinson's Disease

08 AUG 2012: Valley View, OH – Great Lakes NeuroTechnologies [<http://www.glneurotech.com>] announced today that they have received \$1.5 million in funding to commercialize a technology for Parkinson's disease (PD) patients that will better assess motor symptoms in response to new deep brain stimulation (DBS) and pharmaceutical therapies. The funding, provided by the National Institute of Neurological Disorders and Stroke, is focused on home-based technology to assess bradykinesia in PD. While tremor is often the most visible symptom of PD, bradykinesia can be the most impairing and is often used as a clinical trial endpoint. Bradykinesia encompasses slowed movements, low amplitude movement, and hesitations or patients "getting stuck" when they try to move. The current standard in evaluating bradykinesia is the Unified Parkinson's Disease Rating Scale, a subjective, qualitative ranking system. Scoring instructions for bradykinesia integrate multiple movement features into a single score that increases variability and limits exploration into how particular bradykinesia features are influenced by specific treatments. Capturing this data would allow novel therapies to target specific bradykinesia manifestations.

The funding will support the design, implementation, and clinical assessment of a portable, user-worn, bradykinesia feature extraction system for integration with Great Lake NeuroTechnologies' Kinesia HomeView [<http://www.glneurotech.com/Kinesia-HomeView/>] technology platform for home-based objective PD monitoring. "Telemedicine is a rapidly growing field and we aim to be at the forefront with this technology and its ability to capture PD symptom severities in the home," said principal investigator and Biomedical Research Manager Dustin A. Heldman, Ph.D. "With better quantification of different bradykinesia features, novel therapies may be developed to target a patient's specific bradykinesia manifestations. Furthermore, this home-based platform for more continuous monitoring will allow the capture of complex symptom fluctuation patterns in response to treatment." As one important example, home monitoring may be particularly important when evaluating motor symptom response to DBS since, unlike tremor, bradykinesia can take up to an hour to respond.

The technology development will utilize miniature, wireless motion sensor units on the finger and thumb of patients to quantitatively assess motions during specific repetitive motion exercises. Patients will use an online interface on their own personal computers or tablets to complete the exercises. All data will be transmitted to a cloud server where high sensitivity algorithms will independently rate speed, amplitude, and rhythm of movement. Clinicians and researchers will be able to login via a clinician web-interface to view detailed graphical reports illustrating bradykinesia severities in response to DBS or other therapies throughout the day. The clinical testing for this development will be completed in partnership with Dr. Hubert Fernandez at the Cleveland Clinic in Cleveland, Ohio and Drs. Alberto Espay and Fredy Revilla at the University of Cincinnati in Cincinnati, OH.

Great Lakes NeuroTechnologies thanks the National Institutes of Health and the National Institute on Neurological Disorders and Stroke for their support of this program (2R44NS065554-04A1).



PRESS RELEASE

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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