

Laura Miller McPherson, PT, DPT, PhD

Department of Physical Therapy
Nicole Wertheim College of Nursing and Health Sciences
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EDUCATION

- Post-doctoral fellowship in neurophysiology, Northwestern University, Feinberg School of Medicine, Chicago, IL
- Ph.D. in Biomedical Engineering, Northwestern University, Evanston, IL
- D.P.T., Northwestern University, Feinberg School of Medicine, Chicago, IL
- B.E. in Biomedical Engineering (minor: Neuroscience), Vanderbilt University, Nashville, TN

AREAS OF SPECIALTY

- Quantification of neural control deficits in individuals post-stroke
- Interactions between the autonomic and motor systems in the control of posture
- Analysis of motor unit behavior obtained from high-density surface EMG decomposition using time- and frequency-based approaches
- Rehabilitation robotics

SELECTED PUBLICATIONS

Miller LC, Thompson CK, Negro FN, Heckman CJ, Farina D, Dewald JPA (2014). High-density surface EMG decomposition allows for recording of motor unit discharge from proximal and distal flexion synergy muscles simultaneously in individuals with stroke. *Conf Proc IEEE Eng Med Biol Soc.*: 5340-4. PubMed PMID: 25571200.

Miller LC, Dewald JPA (2012). Involuntary paretic wrist/finger flexion forces and EMG increase with shoulder abduction load in individuals with chronic stroke. *Clin Neurophysiol.*; 123(6): 1216-1225. PubMed PMID: 22364723.

Miller LC, Ruiz Torres R, Stienen AHA, Dewald JPA (2009). A wrist and finger force sensor module for use during movements of the upper limb in chronic hemiparetic stroke. *IEEE Trans Biomed Eng.*; 56(9): 2312-2317. PubMed PMID: 19567336.

INTERESTS

- Neurologic physical therapy
- Systems-level neuroscience
- Biomedical engineering
- Interdisciplinary education
- Personal: cooking, traveling, sports, hiking, family

HONORS & AWARDS

- Early Career Professional Award, American Physical Therapy Association Neurology Section, 2015

- International finalist, Student Paper Competition, International Conference of the IEEE Engineering in Medicine and Biology Society, 2014
- Outstanding Student Presentation, International Motoneuron Meeting, 2014
- NIH Pre-doctoral Trainee, NIH T32, Interdisciplinary Graduate Education in Movement and Rehabilitation Sciences, 2012 – 2014
- Mary Lou Barnes Award, Outstanding Promotion of Doctoral Studies II Application in Neurology, Foundation for Physical Therapy, 2013
- Dean of Feinberg School of Medicine DPT/PhD Scholar Award, Northwestern University, 2012