**Faculty Profile: Sang Wook Lee**

Associate Professor

Department: Biomedical Engineering

School: School of Engineering

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Education: Ph.D. in Mechanical Engineering, University of Illinois, 2006

**Research Interests and Expertise:**

Sang Wook Lee’s main research focuses on examining abnormal neuromechanics of the human hand and upper extremity after neurological injuries such as stroke, essential tremor, and/or cerebral palsy, and developing novel engineering methods to promote their functional recovery.

**Biography:**

Sang Wook Lee received the B.S. and M.S. degrees in mechanical design and production engineering from Seoul National University, Seoul, Korea, in 1997 and 1999, respectively, and the Ph.D. degree in mechanical engineering from University of Illinois, Urbana-Champaign, IL, USA, in 2006. From 2006 to 2010, he was a postdoctoral fellow at the Rehabilitation Institute of Chicago (now Shirley Ryan AbilityLab). He is an Associate Professor in the Department of Biomedical Engineering at the Catholic University of America, Washington, DC, USA, and holds a joint appointment as a Research Scientist at the Center for Applied Biomechanics and Rehabilitation Research in the MedStar National Rehabilitation Hospital, Washington, DC, USA, and as an Adjunct Professor in the Department of Mechanical Engineering, Korea Advanced Institute of Science and Technology, Daejeon, Korea. He is the recipient of the Mary E. Switzer fellowship from the National Institute on Disability and Rehabilitation Research in 2009, the Delsys Prize for promoting innovation in electromyography in 2013, CAREER award from National Science Foundation in 2014, and Kaman Research Award from School of Engineering at the Catholic University of America in 2014 and 2021.

**Five Selected Papers:**

1. Nguyen, H., Phan, T., Shadmehr, R., Lee, S.W. 2023. Choice of arm use in stroke survivors is largely driven by the energetic cost of the movement, *Neurorehabilitation and Neural Repair*, 37: 183-193.
2. Lee, S.W., Cho, H.J., Shin, H.W., Hallett, M. 2021. Sensory tricks enhance connectivity between cortical regions in cervical dystonia, *Clinical Neurophysiology,* 132: 3116-3124*.*
3. Wang, J., Lum, P.S., Shadmehr, R., Lee, S.W. 2021. Perceived effort affects choice of limb and reaction time of movements, *Journal of Neurophysiology,* 125: 63-73*.*
4. Panyakaew, P., Cho, H.J., Lee, S.W., Wu, T., Hallett, M. 2020. The pathophysiology of dystonic tremors and comparison with essential tremor, *Journal of Neuroscience,* 40: 9317-9326*.*
5. Vermillion, B.C., Dromerick, A.W., Lee, S.W. 2019. Restoring task mechanics of functional hand tasks for stroke survivors by counteracting subject-specific impairments, *IEEE Transactions on Neural Systems and Rehabilitation Engineering,* 27: 1606-1616.

**Professional Activities (please also include STEM education/diversity/outreach activities)**

* Subcommittee on Career Development Program (2021-2024), Scientific Merit Review Board, Rehabilitation Research and Development Service, Department of Veterans Affairs (VA).
* Ad hoc reviewer for grant proposals submitted to National Institute on Disability and Rehabilitation Research (NIDRR), National Aeronautics and Space Administration (NASA), and National Science Foundation (NSF). Ad hoc reviewer for 30+ journals.
* Summer internship program for high school students (6 students in the last 3 years).
* Member: IEEE, ASB