

# Monthly Neuro Seminar Series

*Spring 2024*



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### **Neural and biomechanical correlates of post-stroke gait retraining**

A stroke induces a cascade of neurophysiologic changes in cortical and spinal circuits that result in biomechanical gait impairments (reduced paretic propulsion, footdrop) and gait dysfunction (reduced speed), which in turn adversely affect quality of life. The overarching premise of our research is that while increasing gait speed is a major goal of stroke gait rehabilitation, targeting walking speed as a primary gait rehabilitation outcome without regard to biomechanical and neural mechanisms fails to meet the emerging standards of precision medicine, which is the future of rehabilitation research. This seminar will present our laboratory's recent and ongoing research probing neurobiological (top-down) and biomechanics (bottom-up) mechanisms underlying post-stroke gait rehabilitation. The seminar will present data from our lab elucidating neural mechanisms of treadmill training interventions combined with functional electrical stimulation, probed using non-invasive brain and peripheral nerve stimulation techniques. The seminar will also discuss our recent work on real-time gait biofeedback, including game-based biofeedback interfaces for stroke gait retraining.

Tuesday, March 12  
4:00 p.m.  
Coverdell S175



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