

## **Stroke and SIG Programming: Dynamic Dominance provides a Model for Ipsilesional Motor Deficits in Stroke**

Speaker: Robert Sainburg, PhD - University Park, PA

Date and Time: Friday, February 11, 1:00 PM - 2:45 PM

Abstract: Our laboratory has systematically examined the neural foundations of motor lateralization and revealed substantial differences in coordination between the two arms that arise from the contributions of each cerebral hemisphere to movement of each arm. These findings led to the dynamic dominance hypothesis, which attributes to the left hemisphere, anticipation of task dynamics, and to the right hemisphere, control of limb impedance, largely determining the final position of reaching movements. Our hypothesis predicts hemisphere-specific deficits in the ipsilesional arm of stroke patients, a clinically important prediction because this arm is often described as "unaffected" with respect to motor control. This model looks promising in helping rehabilitation professionals choose intervention strategies by describing how each hemisphere might be employed during unilateral arm movements. At the end of the session, participants will be able to: 1. Describe how brain lateralization produces ipsilesional deficits in stroke. 2. Describe the dynamic dominance model of motor lateralization. 3. Apply the significance of ipsilesional deficits to motor function in stroke patients.