Département de neurosciences Faculté de médecine Université de Montréal et du monde.

## Séminaires scientifiques hebdomadaires

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## Robert L. Sainburg, Ph. D.

Professeur de kinésiologie et de neurologie

Directeur du *Huck Institutes <u>Center for Movement Science and Technology</u>*PennState University and Penn State College of Medicine

# "It's the Wrong Hand, Bob!" Why treat the <u>good</u> hand in Stroke Patients?

Vendredi 4 avril 2025 12 h à 13 h

#### En présentiel

Pavillon Paul-G.-Desmarais | 2960, chemin de la Tour, local 1120

### **En ligne**

https://umontreal.zoom.us/j/81334546167?pwd=evSqoCY4bmfsMunwmfmfyhWsaqpw3z.1

#### Intérêts de recherche:

Our research on motor lateralization has suggested that the apparent "dominance" of one hand is not simply due to practice, but stems from differences in how each side of the brain controls movement. Motor lateralization indicates that one side of the brain does things that theother side doesn't, requiring both sides of brain to contribute to thecontrol of each arm. Our findings have suggested that the dominant hemisphere/hand is best at predictive aspects of executing an accurately aimed and smooth movement, but not so much at responding to unpredictable conditions. The non-dominant hand is very good at countering unpredictable forces, through control of limb impedance, but not so good at making smooth, straight movements. To test our hypothesis that each hemisphere might be specialized for these two aspects of control, we studied individuals who suffered an ischemic stroke in one side of the brain and as a result had severe movement deficits in the opposite arm and hand. While conventional wisdom suggested that the "good hand" would be unaffected by the stroke, our results showed otherwise. In patients with right-hemisphere damage, theright hand did badly on tests of how accurately it could stabilize at theend of a reaching movement, while in patients with left-hemisphere damage, the left hand did badly on making straight and accurately aimed movements. Most importantly, our studies indicated that these hemisphere specific movement deficits in the "good hand" of stroke patients substantially limited their functional independence in patients with severe paresis of their 'bad hand". This is because 1) these patients rely exclusively on their good hand for activities of daily living and 2) Ipsilesional (good hand) deficits vary with the severity of contralesional (bad hand) paresis. Taking these findings into account, we designed and tested an intervention study to improve functional independence by focusing on control and coordination of the 'good' hand in stroke patients. Our pilot study (recently published) showed strong positive results that led to a large multi-center intervention study that we are currently conducting. We expect that the results of this study will lead to more comprehensive approaches to rehabilitation that include addressing the hemisphere specific deficits in each hand of stroke patients.

**Entrée libre** 

La conférence sera présentée en anglais

Personne-ressource pour rencontrer le conférencier : Numa Dancause

numa.dancause@umontreal.ca