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Building and rebuilding corticospinal circuits – lessons from development

Vendredi 20 mars 2026

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/81271307568?pwd=kTNeVDVaRHah4vb718KaNCJeGjpJ1X.1

Intérêts de recherche

Paralysis is the leading cause of disability worldwide and curing this disability will ultimately require repairing neural circuits that control movement. Our current focus is aimed at corticospinal repair and plasticity. This neural circuit, which connects the cerebral cortex with spinal circuits, is the principal motor system responsible for voluntary movement. Damage to the corticospinal system is a principal cause of disability following stroke, spinal cord injury, cerebral palsy and motor neuron disease.

A main focus of our work is identifying the molecular program that directs corticospinal projections to specific levels of the nervous system. These projections can extend from the cortex to either the brainstem, or spinal cord at distinct spinal levels – e.g. cervical, thoracic, or lumbar cord. Projections to distinct levels are responsible for distinct movements' e.g. cervical projections control arm movement while lumbar projections control leg movement. Using single cell profiling of developing corticospinal neurons, we are beginning to establish some of the earliest molecular differences between these segmentally distinct projections. Our hope is that these developmental genes could eventually be recruited toward directing regeneration of segmentally-specific corticospinal connectivity in instances of injury or disease.

Entrée libre

La conférence sera présentée en anglais

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