Neuroscience/Brain & Mind

For the past 40 years, some of Western University’s most internationally recognized research has been conducted in the field of neuroscience. From understanding childhood development to deciphering the neural basis for cognitive functions, Western cultivates an integrated approach to studies of the brain that bring together some of the most accomplished minds at the forefront of neuroscience research.

Clinical Neurological Sciences
- Rose to global prominence under the leadership of Dr. Henry Barnett and Dr. Charles Drake during the 1970s
- Canada’s most comprehensive, multi-specialty centre for treating complex neurological disorders
- Sets international standards in all areas of research related to degenerative and neuromuscular disorders, spinal injury, stroke, aneurysms and brain tumours
- Uses highly advanced diagnostic and treatment technologies to investigate such disorders as Parkinson’s disease, ALS and MS
- One of two Canadian centres equipped to treat complex epilepsy

The Brain and Mind Institute
- International leader in cognitive neuroscience research, focused on understanding the neural basis of mental capacities and such processes as categorization, motor control, attention, self-awareness, language, memory, perception and reasoning
- More than 20 principal scientists and colleagues across disciplines at Western and Robarts Research Institute
- Six prestigious Canada Research Chairs and Canada Excellence Research Chair Adrian Owen
- Canada’s premiere centre for high-field MR neuroimaging: home to a 7 Tesla functional MRI system – the highest-field human MRI device in Canada and one of only three 7Ts in the world developed for neurological use

CIHR Group on Action and Perception
- Specializes in using neuroimaging, behavioural studies, brain stimulation and neuropsychology techniques to study the circuitry behind transforming visual information into action and perception
- Helped launch the Canadian Action and Perception Network to understand how the brain works, especially for human movement control and perception, and for how disease and injury can disrupt these functions

Autism
- The multidisciplinary Kilee Patchell-Evans Autism Research Group is developing novel approaches to understand the symptoms, mechanisms and causes of autism
- Recent work on the possible role of gut bacterial metabolites in autism identified as one of Canada’s top 50 scientific discoveries
- The Endowed Academic Chair in Autism Studies, held by Dr. Rob Nicolson, examines abnormal brain development in autistic children to understand the cause of the disorder and develop more effective treatments and interventions

Recruited from Cambridge University, Canada Excellence Research Chair Adrian Owen was the first to demonstrate patients in a ‘vegetative state’ may have cognitive thoughts.

Highlights:
- More than 40 years of global leadership in neuroscience
- More than 100 researchers actively engaged in neuroscience research
- More than $150 million in external funding support for neuroscience research over the past five years
- One of the world’s most comprehensive imaging suites, including one of three 7T fMRI systems for neurological use
- Global leadership in cognitive neuroscience through the Brain and Mind Institute, which has produced more than 1,000 leading papers over 15 years
- Postdoctoral exchange program with Cambridge University, King’s College London and University College London