

# Canada Excellence Research Chair

## Adrian Owen

Recruited to Western University in 2010, Adrian Owen, *Canada Excellence Research Chair in Cognitive Neuroscience and Imaging*, addresses one of the most challenging topics in clinical medicine: residual brain function in patients who are non-responsive after suffering a severe brain injury.

### Biography

- 20 years of pioneering breakthroughs in cognitive neuroscience
- Research interests include: “brain mapping,” cognitive deficits in patients with Parkinson’s disease, consciousness disorders and detecting residual cognitive function in people in a vegetative state
- Published in such prestigious journals as *Nature*, *The Lancet*, *Science* and *New England Journal of Medicine*
- Previous work at the Medical Research Council’s *Cognition and Brain Sciences Unit*, and *Wolfson Brain Imaging Centre* at the University of Cambridge, used fMRI to explore attention, memory and control in brain-injured patients and healthy volunteers

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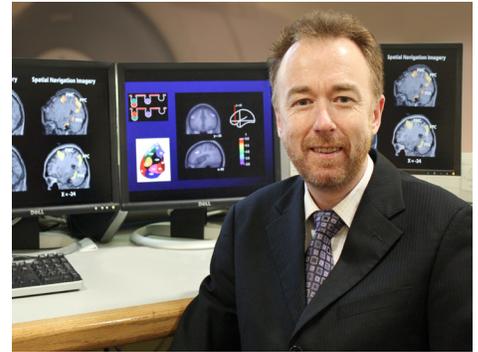
- Aimed at improving health care delivery for brain-injured patients, affecting diagnosis and clinical care, medical ethics, and medical and legal decision-making about life after severe brain injury
- Testing new theoretical models and using functional neuroimaging (fMRI) approaches to detect and measure activity in brain-injured patients who appear to be entirely vegetative
- Developing new brain-computer interfaces to allow these patients to communicate with the outside world and expand possible choices for therapy
- These pioneering techniques offer a new window into the consciousness of some brain-injured patients
- Studying the cognitive deficits (problems in perceiving, thinking, reasoning and remembering) in patients suffering from such neurodegenerative diseases as Parkinson’s, Huntington’s, Alzheimer’s and amyotrophic lateral sclerosis (ALS)
- Member of Western’s world-renowned Brain and Mind Institute

### Neuroscience and Imaging Research at Western

- Imaging and Neuroscience/Brain & Mind have been identified as strategic research strengths at Western and Robarts Research
- More than 100 researchers engaged in neuroscience research
- 10 Canada Research Chairs and one CERC allocated to neuroscience and/or imaging
- **The Brain and Mind Institute** is widely recognized as a global leader in cognitive neuroscience research
- **Clinical Neurological Sciences** is Canada’s most comprehensive, multisubspecialty centre for complex neurological disorders
- Home to one of the world’s most comprehensive imaging suites, including one of three 7T fMRI systems for neurological use

### Links

- Western’s CERC microsite, with photos, video and background
- Adrian Owen’s personal web site
- Adrian Owen’s ‘Test Your Brain’ website



*Adrian Owen's recruitment from the University of Cambridge further enhanced global strengths in neuroscience and imaging at Western and Robarts Research Institute.*

### Highlights:

- First to use fMRI to demonstrate patients in a 'vegetative state' may have cognitive thoughts
- Developed a cost-effective, EEG-based bedside method of assessing patients' consciousness
- This finding was CBC's top health story of 2011
- Nature study showed brain training video games do not make people smarter
- More than \$150 million in funding for neuroscience research at Western over five years, and \$100 million in imaging infrastructure
- Global leadership in cognitive neuroscience through the Brain and Mind Institute, which has produced more than 1,000 leading papers over 15 years



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