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

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

Links
• Western’s CERC microsite with photos, video and background
• Adrian Owen’s personal website
• Adrian Owen’s ‘Test Your Brain’ website