NEWS RELEASE

Wilfrid Laurier University

Laurier professor receives grant for innovative cognitive neuroscience laboratory

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Contact: **Dr. Sukhvinder Obhi**
Assistant Professor, Psychology
(519) 884-0710 ext. 2423

or

Lori Chalmers Morrison
Public Affairs Officer
(519) 884-0710 ext. 3070

WATERLOO – With recent infrastructure funding from the Canada Foundation for Innovation (CFI), Wilfrid Laurier University's Dr. Sukhvinder Obhi will establish a state of the art 'cognition in action' laboratory. The results of his research on action will have wide ranging implications in the long term, from informing brain disorder and stroke rehabilitation programs, to music instruction techniques and the design of high-level robotic devices.

Obhi's lab will be among a small number of labs worldwide that combine multiple behavioural measurement techniques with neural intervention – in the form of transcranial magnetic stimulation (TMS) – in a single facility. The new lab will form part of the Laurier Centre for Cognitive Neuroscience, currently under development, which aims to become one of Canada's premier centres for cognitive neuroscience research.

"I am thrilled by Dr. Obhi's successful grant application," says Dr. Art Szabo, Laurier's dean of science. "He is an outstanding young researcher, typical of the several recent hires in our cognitive neuroscience research cluster."

The CFI funding will allow Obhi to purchase optical and electromagnetic motion recorders, and a TMS system. By simultaneously combining this equipment that tracks eye and limb movements, measures reaction time and delivers magnetic brain stimulation that can

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essentially ‘reverse-engineer’ the brain, Obhi takes an innovative, holistic approach to understanding how the brain processes information to enable action. The integrated lab makes an endless variety of experiments possible. “We can measure limb movements, eye movements and reaction times in conjunction with delivering TMS to provide us with a complete picture,” explains Obhi. “With TMS, we can safely alter the brain’s processing during a task and measure the performance deficit to gain an idea of what different parts of the cortex contribute to a given action.”

The lab will also enable Obhi to attract highly-motivated graduate students: “We currently have positions available for graduate studies in cognitive neuroscience, and strongly encourage outstanding students to apply.”

Through his research, Obhi aims to explore three main areas of action: how the brain uses sensory information to direct movements when performing the same action in two different situations, the control processes and neural systems involved in performing bimanual actions, and how perceptions of other people’s actions lead to conclusions about their intentions or desires.

Obhi’s CFI grant application received positive feedback from reviewers, who evaluated it based on a range of criteria, including: the research quality, the need for the infrastructure, and the wider benefits of the research such as training personnel and benefits to the country as a whole. One reviewer deemed Obhi’s grant application “among the very best” they had reviewed, noting the impressive series of proposed experiments and his training with renowned experts at some of the best laboratories in the business. The $112,000 CFI grant accounts for 40% of the infrastructure cost. Obhi has applied for matching funds through the provincial government’s Ontario Research Fund (ORF), and the remaining 20% will come from start up funding and manufacturer’s discounts.

Obhi joined Laurier in 2005 following a postdoctoral fellowship at the University of Western Ontario and doctoral training at University College London in England, during which time he spent several months using TMS at Harvard University. He is a recent recipient of the Petro-Canada Young Innovators Award, which supports young faculty whose work is innovative and has the potential to be significant for society at large.

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