LURA/USRA Posting Information

Position Type:	☑ Lassonde Undergraduate Research Award- summer research ☑NSERC USRA ☐ Other (please specify)
Position Title:	Research Assistant/summer researcher
Location:	BCEE 328
Professor:	**Hossein Kassiri**
Department:	**Electrical Engineering and Computer Science**
Contact for Professor (Email, phone):	**Email: Hossein@eecs.yorku.ca**
# of positions available:	**2**
Project Description (200-500 words maximum)	**Development of various Verilog codes to control an implantable microelectronic brain machine interface chip:** Epilepsy, Parkinson and Alzheimer's disease are a few examples of neurological disorders that affect over 100 million people across the world. Many of these patients cannot be cured by pharmacological treatments or brain surgery, and their only option is brain machine interfaces (BMIs) that are used to **monitor brain activity and suppress undesired neurological events using detection-triggered electrical stimulation.** In Integrated Circuits and Systems Lab, we have developed such a BMI which contains a microelectronic chip as the core and an FPGA which controls the main chip. The system (chip + FPGA) is tested by graduate students in the lab and its functionality is validated. Also a new miniaturized version of this BMI is developed, that has same capabilities as well as being implantable on a freely moving animal.
Duties and Responsibilities of the student:	The successful candidate will be responsible for testing functionality of the existing FPGA codes on the new miniaturized system with Actel IGLOO FPGA and also writing new codes for new testing scenarios.

Skills and Qualifications:	The student should have the following qualifications: - Proficient in Verilog coding (experience with Actel FPGAs is a plus) - Familiar with basic electronic circuit test and debugging. - Self-driven and having an interest in bio-electronic projects.
Degrees, courses and Disciplines prerequisite*:	- Basic circuits theory - Verilog coding
Stipend	TBD
Duration:	16 weeks minimum
Start Date:	05/01/2017 (estimated)
End Date:	08/31/2017 (estimated)
Materials required for application:	TBC

**The projects will be available for viewing to students outside of Lassonde School of Engineering; please be clear what type of programs/pre-requisites are required for the projects.*