UNIVERSITY OF WATERLOO | IQC Institute for Quantum Computing

INSTITUTE FOR QUANTUM COMPUTING
519-888-4021 | fax 519-888-7610
iqc@uwaterloo.ca | uwaterloo.ca/iqc

January 23, 2020

We seek a motivated postdoctoral researcher, working in theory, to be part of a joint theoretical and experimental effort at the Institute for Quantum Computing. The position will be held jointly within the Engineered Quantum System Laboratory (EQSL) of Prof. Christopher Wilson and the Quantum Interactions group (QI) of Prof. Christine Muschik. This theory project will focus on the quantum simulation of strongly-interacting field theories and lattice gauge theories using superconducting quantum circuits. The successful candidate will be expected to work closely with both the theoretical group of Prof. Muschik and the experimental group of Prof. Wilson, helping to bridge the efforts of the two groups. This work seeks to advance the state of the art in quantum technologies while also understanding fundamental natural phenomena.

The QI group has a large, established effort focussed on quantum-optical implementations of gauge-theory simulations. EQSL is an established laboratory with a complementary experimental effort on the quantum simulation of field theories. It has dedicated equipment for the associated experiments as well as access to all nanofabrication tools necessary through the Quantum NanoFab.

This project is part of the Transformative Quantum Technologies program at IQC, a $140 million program created to bridge the gap between quantum science and technology. The work will take place at the Quantum-Nano Center, a 285,000 square foot facility constructed to hold IQC and the Waterloo Institute of Nanotechnology.

IQC, located at the University of Waterloo outside of Toronto, provides a vibrant research environment with interdisciplinary researchers coming from physics, engineering, chemistry, math and computer science. The Institute is dedicated to the advancement and development of quantum information science and quantum technology. The environment is also enhanced by our close association with our sister institution, the Perimeter Institute for Theoretical Physics.

Positions are available to start immediately, but the actually starting time is negotiable. Positions will start at 1 + 1 or 2 years, depending on experience. Funding is in place for continuations beyond that. The successful applicant should have (or be nearing completion of) a PhD in a field of physics or closely related discipline. Candidates should have significant experience in the theory of superconducting quantum circuits and quantum optics. Experience in strongly-interacting field theories and lattice gauge theories is a plus. A high level of proficiency in English is also a requirement.

Interested candidates should send their CV to Prof. Christopher Wilson at chris.wilson@uwaterloo.ca and Prof. Muschik at muschik.office@uwaterloo.ca.