

RESEARCH ASSOCIATE ON NISQ ERA QUANTUM COMPUTATION (THEORY)

The Stewart Blusson Quantum Matter Institute (SBQMI) at UBC is seeking a Scientific Research Associate, most likely a theorist, to support activity in the study of quantum computation in the NISQ era. SBQMI has just launched the Grand Challenge entitled “Pushing the boundaries of noisy intermediate scale quantum computing”, a program geared towards the study of quantum algorithms that can be run on present-day and near future quantum computing devices. The initial focus is on quantum algorithms that require up to 100 qubits and 10,000 quantum gates. As for applications, of particular interest are problems in quantum material science, and fermionic systems such as the fermionic Hubbard model and Kondo physics. From the perspective of methods, machine learning, quantum simulation (analog and digital) and symmetry analysis (e.g. symmetry protected topological order) are emphasized.

The successful candidate will work with the Principal Investigators and other researchers to explore the search space for NISQ era quantum algorithms and to benchmark existing quantum computer hardware, and, to this end, is expected to contribute ideas of their own. Further, the Research Associate will contribute to writing and publishing articles in top-tier journals; training and mentoring SBQMI students and postdoctoral fellows; be responsible to act as coordinator for several research efforts; and collaborate with other national and international academic institutions and industry organizations.

SBQMI is a world-leading venture into research of systems and phenomena involving quantum devices and effects. We believe in the power of collaboration as a fuel in the search for creative solutions. The institute comprises a strong interdisciplinary team of experimentalists and theorists from physics, chemistry and applied science, who have established strong and active partnerships with TRIUMF, the Max Planck Society, and many other world leading institutions.

The successful candidate will thrive in our collegial culture and will bring the following qualifications to the role:

- Ph.D. in Physics, Computer Science or other area relevant to the research pursuits of SBQMI Grand Challenge on NISQ era quantum computing;
- Minimum of 3 years of experience in a research, or research and development environment;
- Publications in reputable scientific journals, and/or patents;
- Demonstrated capacity to pursue independent research;
- Experience mentoring students or staff;
- Experience with a variety of tools applied in the design of quantum algorithms, for example in the quantum simulation of fermionic systems, and/or in Machine Learning (classical and quantum);
- In-depth theoretical knowledge of the field of quantum information science as a whole;
- Background in condensed matter physics;
- Ability to write computer code for the classical simulation of quantum algorithms.

If you are interested in this exciting opportunity, please apply to www.facultycareers.ubc.ca/35782. Application closing date is Nov. 30, 2019.

Salary will be commensurate with qualifications and experience. UBC offers a competitive benefits package including extended medical, dental, life insurance, and pension.

For more information about the Grand Challenge: <https://qmi.ubc.ca/pushing-boundaries-noisy-intermediate-scale-quantum-nisq-computing>

For more information about SBQMI: www.qmi.ubc.ca

For more information about Vancouver: <http://www.tourismvancouver.com/>

Equity and diversity are essential to academic excellence. An open and diverse community fosters the inclusion of voices that have been underrepresented or discouraged. We encourage applications from members of groups that have been marginalized on any grounds enumerated under the B.C. Human Rights Code, including sex, sexual orientation, gender identity or expression, racialization, disability, political belief, religion, marital or family status, age, and/or status as a First Nation, Metis, Inuit, or Indigenous person.