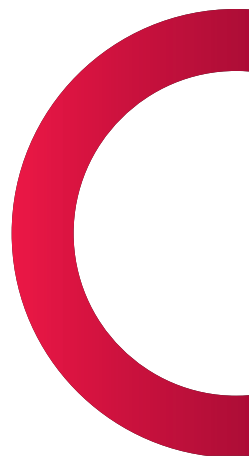




UNIVERSITY OF
WATERLOO

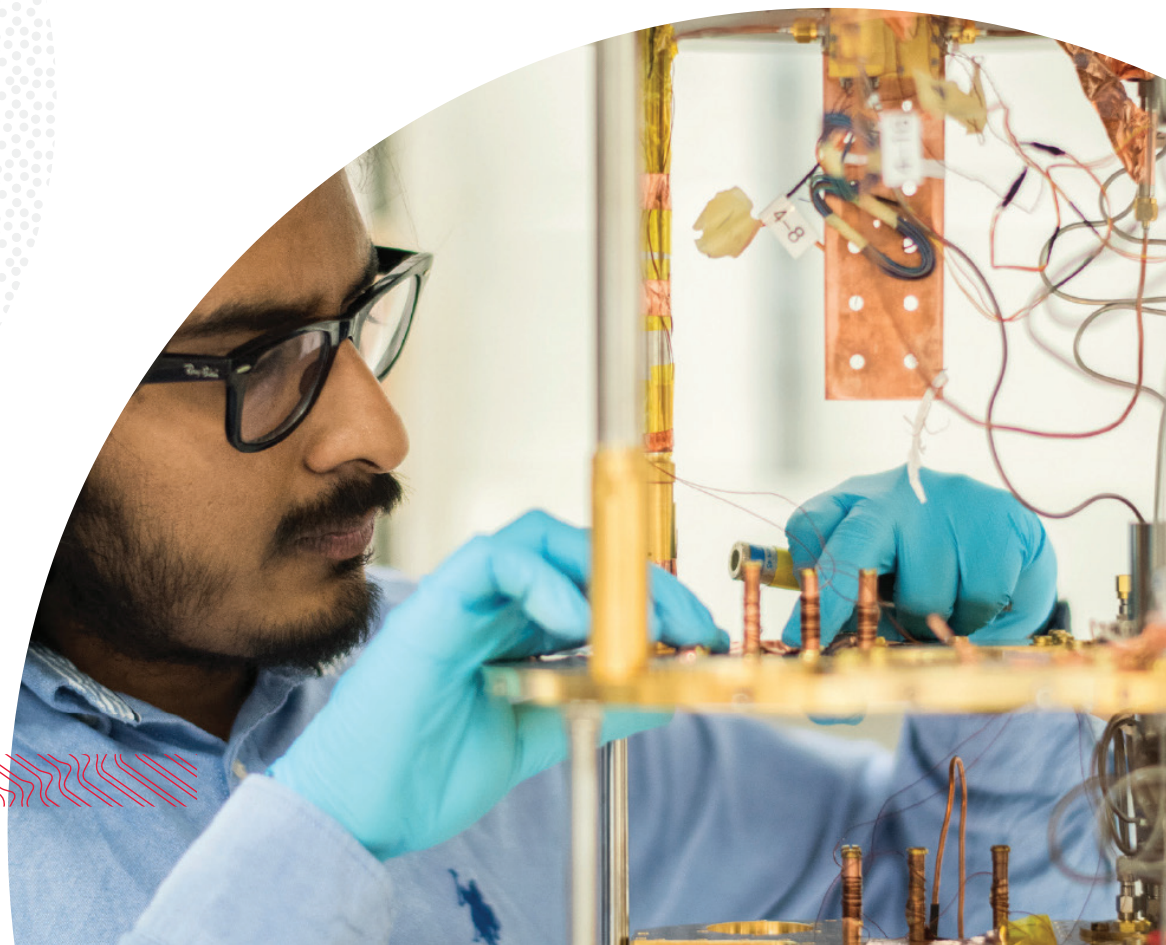


Institute for
Quantum
Computing



Graduate Studies in

QUANTUM INFORMATION

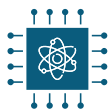


QUANTUM INFORMATION

Engage in world-class research that focuses on the foundations, applications, and implementations of quantum information. This interdisciplinary program is offered as a collaboration with the Institute for Quantum Computing (IQC) and the University of Waterloo's Faculties of Engineering, Mathematics, and Science.

RESEARCH AREAS

Work with leading experts to harness quantum mechanics in the following four areas:



QUANTUM COMPUTING

Harness the behaviour of atoms, light, and nanoelectronic circuits for a radically different and fundamentally more powerful computer.



QUANTUM COMMUNICATION

Develop ultrasecure communication channels, low-noise transmission protocols, and satellite-based global networks.



QUANTUM MATERIALS

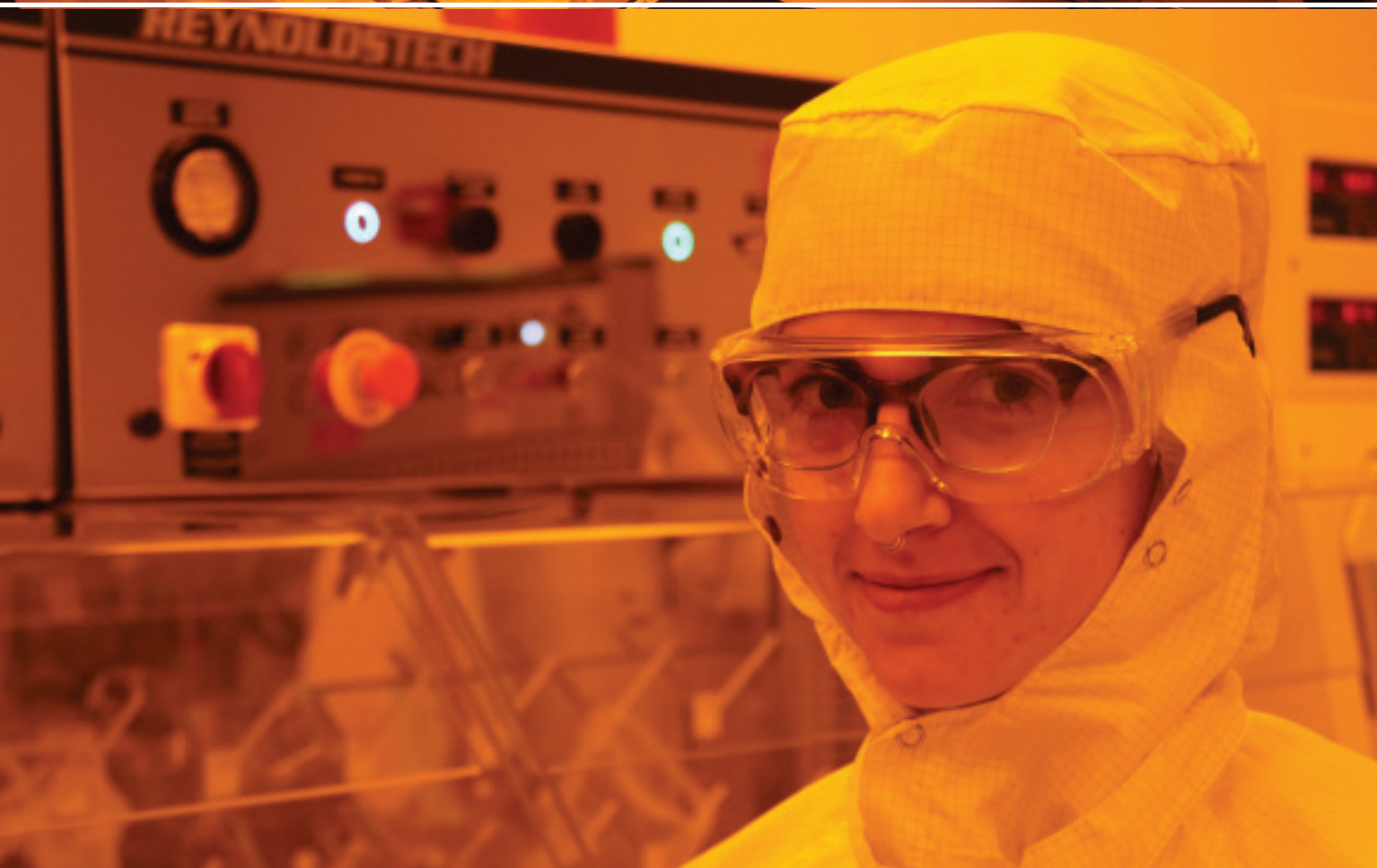
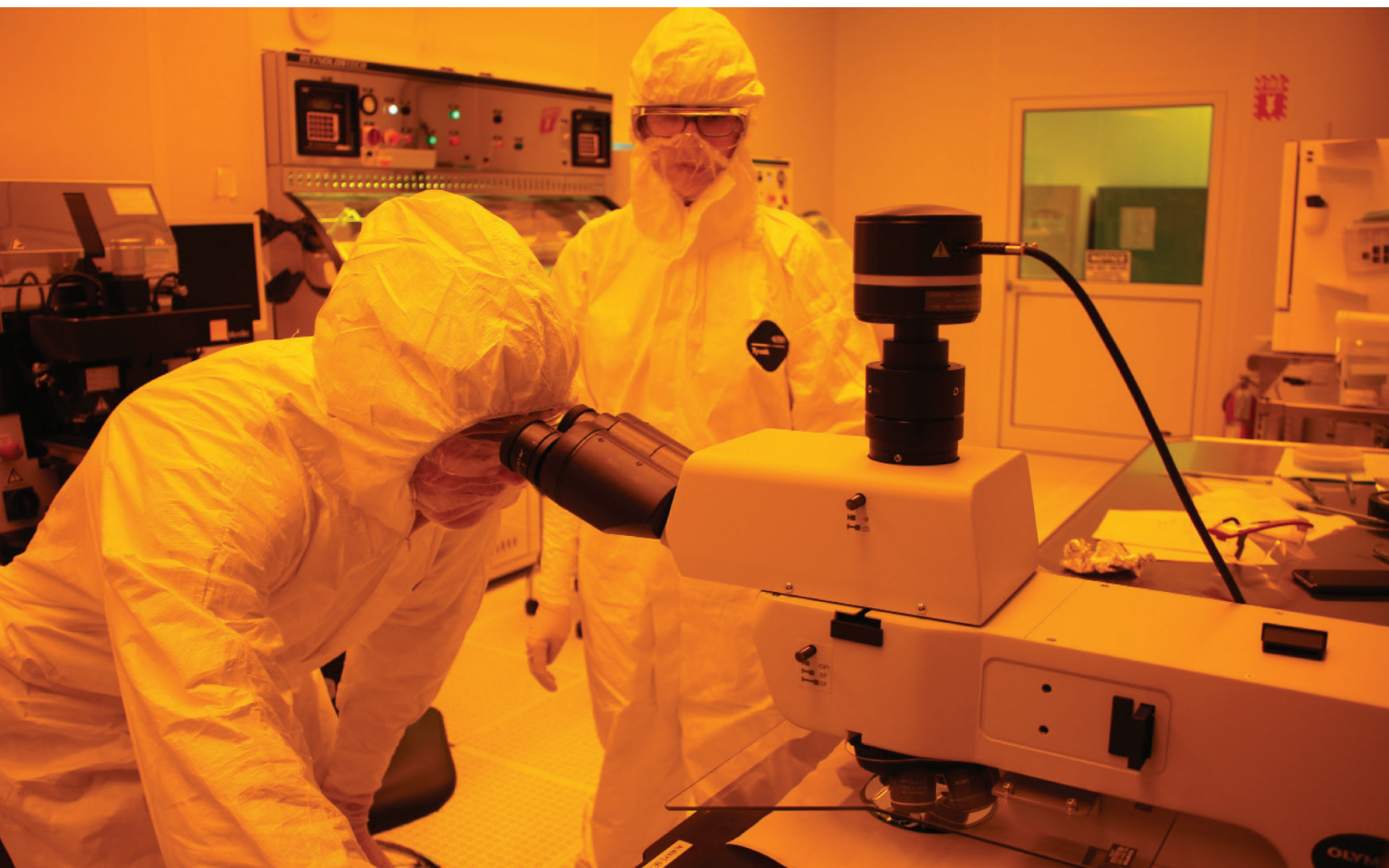
Engineer materials that exhibit unique properties for quantum information, processors, electronics, and other applications.



QUANTUM SENSING

Develop new sensors with unprecedented precision, sensitivity, selectivity, and efficiency.





TRANSFORMATIONAL RESEARCH

Work with leading researchers in physics, computer science, engineering, chemistry, and mathematics. Learn more about our supervisors and research programs: uwaterloo.ca/iqc/supervisors

RESEARCH GROUPS

Conduct interdisciplinary research with faculty and other students in the following areas:

- Atomic and ionic systems
- Error correction and fault tolerance
- Computation and communication complexity
- Materials science
- Neutron interferometry
- Nuclear and electron spins
- Optics and photonics
- Quantum algorithms
- Quantum and post-quantum cryptography
- Quantum information theory
- Superconducting qubits



QUANTUM LEADERSHIP

Our alumni have found diverse careers working in academia, multinational companies, governments, and start-ups. Here is a sample of where they are working:

- Alternative Energies and Atomic Energy Commission (CEA)
- Communications Security Establishment (CSE)
- Delft University of Technology
- Government of Canada
- Harvard University
- Fujitsu
- Google
- Massachusetts Institute of Technology
- NTT Basic Research Laboratories
- RBC Capital Markets
- University of Cambridge
- Microsoft
- NASA
- IBM

INSTITUTE FOR QUANTUM COMPUTING

Located at the University of Waterloo, IQC is recognized as one of the top five institutes for quantum information and a beacon of quantum talent. IQC harnesses the quantum laws of nature to develop curiosity- and impact-driven ideas and technologies. Its interdisciplinary research spans theory and experiment, and fosters collaboration with a growing and vibrant ecosystem of over 300 members.

200+

GRADUATE STUDENTS

31

FACULTY MEMBERS

2,400+

PUBLICATIONS

14

QUANTUM SPIN-OFF
COMPANIES

58

THE MOST COURSES IN
QUANTUM INFORMATION

ONE OF THE
HIGHEST

CONCENTRATIONS OF QUANTUM
SCIENTISTS IN THE WORLD

HOW TO APPLY

1. Explore our programs, supervisors, and admission requirements at: uwaterloo.ca/iqc/programs
2. Apply to the collaborative Quantum Information program through these departments:
 - Electrical and Computer Engineering (MSc, PhD)
 - Applied Mathematics (MMath, PhD)
 - Combinatorics and Optimization (MMath, PhD)
 - Computer Science (MMath, PhD)
 - Chemistry (MSc, PhD)
 - Physics and Astronomy (Thesis MSc, course-based MSc, PhD)
 - Pure Mathematics (MMath, PhD)
3. Connect with potential supervisors to let them know you have applied.

FUNDING AND FINANCIAL SUPPORT

Waterloo offers a variety of support to help you fund your education. For more information visit:

uwaterloo.ca/iqc/programs/graduate-studies/scholarships-and-awards





Institute for Quantum Computing

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Canada