

## **Dear Pre-Final Year students,**

Fully Funded Summer Research Internship at Canada..!

At [Institute for Quantum Computing \(IQC\) - University of Waterloo, Canada](#)

World Rank: [#173](#), Ranked [#6](#) in Canada

## **Undergraduate School on Experimental Quantum Information Processing (USEQIP)**

### **Summary**

Undergraduate School on Experimental Quantum Information Processing (USEQIP) is a two-week program on the theoretical and experimental study of quantum information aimed primarily at students one year away from completing their undergraduate studies. The lectures and experiments are geared toward students in engineering, physics, chemistry, mathematics and computer science, though all interested students are invited to apply.

During the USEQIP program at the Institute for Quantum Computing (IQC) students will be exposed to lectures and experiments on the following topics and more.

### [Quantum information processing](#)

- Quantum algorithms
- Quantum error correction
- Quantum cryptography
- Foundations of quantum mechanics

### [Implementations of quantum information processing](#)

- Nuclear magnetic resonance (NMR)
- Electron spin in quantum dots
- Superconducting qubits
- Quantum optics
- Decoherence modeling
- Quantum sensors and actuators

### [Experimental exploration](#)

- Quantum control and decoherence in NMR
- Attempted Bell-inequality violation and Mach-Zehnder interferometry
- Investigation of single-photon detectors
- Superconductivity
- Fabrication of nano-scale devices in IQC's state-of-the-art cleanroom
- Quantum key distribution
- Design, optimize and implementation of a two-qubit quantum algorithm

**Program Name:**

**Undergraduate School on Experimental Quantum Information Processing (USEQIP)**

**1. Eligibility:**

\* CSE, IT (UG - 3rd Year)

**2. Schedule:**

Deadline: [January 7, 2020](#)

Results: [January 30, 2020](#)

Duration of the program: [May 25 - June 5, 2020](#)

**3. Required documents:**

\* Curriculum vitae

\* Cover letter

\* Transcripts

\* One to three references

\* List of scientific publications

**5. Stipends**

\* Accommodations & Meals are covered

\* Reimbursement of Travel expenses

**Internship Site link:** <https://uwaterloo.ca/institute-for-quantum-computing/programs/useqip>

**Note:**

1. Reference letters are submitted by the Faculty. Contact your references once you have submitted your application.

2. Applications due Tuesday, January 7, 2020 and references are due Tuesday, January 14, 2020. References will not be contacted until your application is submitted. It is your responsibility to ensure you give your reference adequate time to complete the reference material.

3. Address your cover letter to the USEQIP Committee.

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