



Undergraduate Research Assistant

Research Division
Winter 2027 term

Posting Date: Sept 17th, 2026

About Us

SNOLAB is an international facility for world-class underground physics research. It has an expanding program in astroparticle physics and underground science. Located in an environmentally-controlled cleanroom 2 km underground in the Vale Creighton Mine near Sudbury Ontario, with a suite of surface facilities and laboratories, SNOLAB is currently preparing for the next generation of experiments focusing on neutrino studies and the search for galactic dark matter. SNOLAB partners with several Canadian and foreign universities.

The Positions

SNOLAB currently has several vacancies available for the January–April term. The majority will be directly supported by SNOLAB and few more will be funded by research grants through a partner university.

The SNOLAB positions aim at developing new techniques to expend the capabilities of the facility. The grant-funded positions are geared toward furthering specific experiments, with the work involving hardware improvement, data analysis, monte-carlo simulation and detectors shifts.

The list of opened positions (at the time of the posting) can be found at the end of this document. Other SNOLAB experiments may hire additional people as resources become available.

These are full-time positions.

SNOLAB is committed to equity in employment and encourage applications from all qualified applicants, including women, Indigenous persons, members of visible minorities and persons with disabilities. In accordance with Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents. SNOLAB will provide support in its recruitment processes to applicants with disabilities, including accommodation that considers an applicant's accessibility needs.

Further information about SNOLAB may be found at www.snolab.ca



📍 Creighton Mine #9, 1039 Regional Road 24, Lively, ON P3Y1N2
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Criteria

Education:

Applicants must be 18 years or older, registered in post-secondary studies at an accredited institution or apprenticeship program, recent graduate (having graduated in the last 3-6 months) or individual returning to full-time or part-time studies in the next academic term.

Experience:

Owing to the broad range of topics, many profiles are sought after, including physics, chemistry, and engineering. Experience in basic data analysis, including data formatting, statistics, and computer programming will be an asset. Hands-on skills are also valued. Candidates should be comfortable working in a team environment where frequent and open communication is encouraged and expected as part of the culture. Any additional experience working in a laboratory environment, especially a cleanroom environment, is an asset.

Salary

Salary will be determined by education and qualifications within a 20-25 \$/hr range. These positions are subject to availability of funding. To meet operational needs, shift work may be required.

To Apply (to SNOLAB directly)

To apply, please go to <https://forms.cloud.microsoft/r/K4WTXX9sFQ>. This link will open a Microsoft Form. Upon submission, you will receive an email from studenthiring@snolab.ca. Use the link in the email to upload a **single PDF** containing:

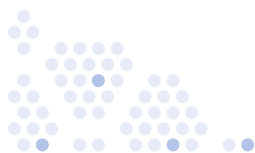
- Cover letter
- Resume
- Unofficial transcript

We will accept only one application per applicant (applying again will overwrite the previous application). If you have questions/concerns, please address them to studentjobs@snolab.ca.

The review of applications will start on October 1st. SNOLAB thanks all applicants for their interest.

Closing Date

Sept 30st, 2026



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List of opened positions

Coincidence Gamma Counting for low-background assays: We are developing a proposal for improved sensitivity in gamma counting. This project will use coincidences between gammas in decay cascades for assays with extremely low backgrounds. The project will use Monte Carlo computer simulation techniques with some analysis of data from existing detectors. The majority of the work will be done on surface with some underground shifts.

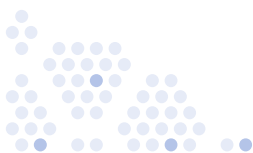
Low background laboratory (LBL): The Low Background Lab research assistant will be engaged with the operation and analysis of data from the high purity germanium detectors, radon emanation systems, alpha detectors, neutron detectors, seismic/vibration sensors and other scientific instruments used within the SNOLAB material assay and screening program. In addition, characterization of the response of the detectors via Monte Carlo simulations will be performed and data will be input into the radiopurity.org database as required.

Muon Studies: Muon rates on surface are reduced by a factor of 50 million by going underground at SNOLAB. Nevertheless, the muons that do interact at that depth are very high-energy and can provide interesting information about the density of the atmosphere and its seasonal variation. Students working on this project will be performing simulations of the detectors and early analysis of their data. Ideal candidates will have an interest in hardware and analytical or computational skills.

NuDoubt++: The NuDoubt++ experiment is a next-generation detector for the study of two-neutrino and neutrinoless positive double weak decays ($2\beta^+/\text{EC}\beta^+$). The experiment is based on a novel detector concept combining hybrid and opaque scintillators with an innovative light read-out technique. The selected candidate will assist with material assays and procurement, as well as simulations of external backgrounds relevant to the future underground deployment of the experiment at SNOLAB. The position offers hands-on experience at the intersection of rare-event searches, detector development, and low-background techniques. Ideal candidates will have an interest in experimental particle or nuclear physics and analytical or computational skills

PICO: [PICO](#) operates dark matter search detectors using C₃F₈ which form superheated bubbles when it interacts with dark matter and/or various background particles. The project consists of the PICO-40 experiment which is currently operating and the PICO-500 experiment which is under construction. The successful candidate would be expected to take detector shifts on PICO-40, analyze data, calibrate, and help in the general operation of the detector. The candidate would also help with the construction and assembly of the PICO-500 detector as needed.

CUTE: The Cryogenic Underground TEst (CUTE) facility is a low background cryogenic setup for testing and running dark matter direct detection detectors, quantum computing devices, and various other setups. The successful interested candidate will be responsible for upgrades to the CUTE facility monitoring and controls, will participate in operations of the facility, and will have opportunities to work on simulations of radioactive backgrounds using the GEANT4 software. Students will work with electronics, coding, and participate in cryogenic work on installing projects into the dilution fridge.



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Quantum Science at CUTE: Low-temperature (~mK) cryogenic technologies are used for a variety of applications in astroparticle, nuclear, and quantum physics. The Cryogenic Underground TEST (CUTE) facility at SNOLAB provides a low-background and a vibrationally isolated environment for testing and operating these future devices. The CUTE facility currently hosts a project on quantum science to understand the effects of radiation on qubit coherence times, as well as correlated errors. Based on their interests, the selected candidate can tailor their portfolio from a flexible range of tasks from assisting in making hardware upgrades at CUTE to bolster its ability to conduct quantum science experiments, qubit data analysis, procedure and technical documentation, writing qubit measurement scripts, and building outreach models for public engagement.

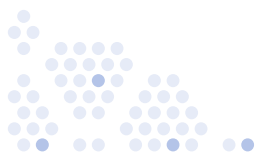
RadioActive isotope Measurement Program at SNOLAB (RAMPS): The half-life from long-lived radioactive isotopes can provide fundamental information necessary for a variety of fields of physics (rare-event searches, nuclear physics, geochronology etc.). The goal of the RAMPS pilot project is to perform novel measurements of long-lived isotopes using (or enhancing) existing SNOLAB detectors. The successful candidate would be responsible for aiding in the measurement of new isotopes, analyzing data from the pilot project measurements, and developing new, SiPM (Silicon Photomultiplier) based, detectors to enhance future measurements. Specifically, the winter semester will focus on the second science run for the RAMPS project.

Radon Spherical Counter: The principle of a Spherical Proportional Counter can be found [here](#). In this project, a 10 cm sphere is used to detect alpha particles emitted by radon daughters, as a part of a radon assay technique. The successful candidate will work on the characterization of the detector, the improvement of the setup, data taking, analysis and redaction of SOP.

SNO+ and XLZD Assay program: SNO+ utilizes a variety of assay systems to look for radon in the detector components, both in liquid and gas form. This is crucial for understanding the backgrounds in detail and therefore enabling the best possible physics outcomes. There are efforts to develop trapping capabilities and a new assay system utilizing scavengers.

We are also expanding and improving our radon counting capabilities. This includes upgrading the data acquisition (DAQ) systems of our electrostatic chambers and developing a new data-analysis framework to improve their performance and increase measurement throughput. In parallel, we are improving our Lucas-cell detectors by developing and producing our own zinc-sulfide (ZnS(Ag)) scintillation coating, with the goal of achieving the lowest possible intrinsic background rates. Two positions are available for this work. For one of them, a student with a chemistry and nanotechnology background is strongly considered.

The scintillator QA & Operations: The QA program for SNO+ was established to control the purity of the scintillator by testing its optical properties, e.g., UV-Vis transparency can be affected by contaminants by showing an increase in absorption. The detector will be refilled with a repurified scintillator. This process will require a QA testing campaign, and the successful candidate will take part in that QA program and operations of the purification plant. The successful candidate will also help in improving the monitoring tools for quality control of the SNOLAB cleanroom environment.



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