

Dear Colleagues,

The 2025 Graduate Instrumentation and Detector School (GRIDS2025) sponsored by TRIUMF and the Arthur B. McDonald Canadian Astroparticle Physics Research Institute (McDonald Institute) will take place at TRIUMF in Vancouver, Canada from May 26th – June 6th.

Please pass this information on to graduate students and postdocs who might be interested, and consider posting the [poster found here](#).

About the School:

GRIDS2025 (indico.triumf.ca/e/grids2025) is a summer school aimed at graduate students for whom particle and radiation detection plays an important role in their work, and who would like to gain hands-on experience with detectors and associated instrumentation technology. The goal of the school is to provide an introduction to practical aspects of detector principles and operations in nuclear, particle, and astroparticle physics, such that participants achieve a working knowledge of the origin of data produced by commonly employed detector systems.

Objectives:

GRIDS will offer a diversified program from leading experts, combining plenary seminars with hands-on laboratory experience with typical detector and instrumentation technologies.

Participants will develop a basic understanding of the interactions of particles with matter that are relevant to radiation detection, and of the physical mechanisms for collecting energy deposited by radiation. Operational principles will be covered for commonly employed detectors suitable for measurements of energy, momentum, timing, and particle identification. Low background environments and radio-frequency and electronic techniques will be discussed. Participants will explore design and decision-making in the field of radiation detection with focus on the rationale, limitations, and breadth of detector applications and development.

Participants will also develop laboratory skills to operate commonly used equipment for radiation detection in a safe and effective manner, identify common problems associated with operating particle physics detectors, and work as a team to experiment using a detector assembly.

Sessions:

- The History and Future of Radiation Detectors
- Calorimeters and Particle Identification
- Cryogenic Detectors
- Data Acquisition and Electronics
- Gas Detectors
- ISAC/RIB Techniques
- Liquid Noble Detectors
- Low-Background Techniques
- Scintillation Detectors
- Solid State Detectors

Laboratory experiments will include:

- Beamline Techniques
- Organic & Inorganic Scintillators
- Photo-Sensors Techniques
- Gas Detectors
- GEM Detectors
- Solid State Cryogenics Techniques
- Data-Acquisition Systems
- Low-Level Electronics
- Laser Technology
- Low-Background Techniques

Application and Registration Procedure:

The school will be accepting a limited number of participants, although we will continue to admit a larger cohort than in past years. Applications along are accepted via the GRIDS website, while letters of reference should be sent to grids@triumf.ca.

To lower any barriers to participation, some travel support is available from MI and TRIUMF. Please include any support needs you may have when applying. Please recognize this is a limited resource, and so make it clear why your participation will rely on our travel support rather than e.g., support from your supervisor.

The application process is open through the website indico.triumf.ca/e/grids2025. Applications, including letters of reference, must be received by Friday, January 31st. Successful applicants will be notified by early March.

For further information:

Visit the school website at indico.triumf.ca/e/grids2025 for more information, including travel and accommodations.

Additional questions can be forwarded to grids@triumf.ca.

Organizing Committee:

- Alexis Brossard, TRIUMF
- Doug Bryman, UBC/TRIUMF
- Andrea Capra, TRIUMF
- Ken Clark, McDonald Institute/Queen's/TRIUMF
- Pietro Giampa, TRIUMF/McDonald Institute (co-chair)
- Dana Giasson, TRIUMF
- Iain McKenzie, TRIUMF
- Tony Noble, McDonald Institute/Queen's (co-chair)
- Marcello Pavan, TRIUMF (co-chair)
- Wolfgang Rau, TRIUMF
- Mark Richardson, McDonald Institute/Queen's (co-chair)
- Alan Robinson, University of Montreal
- Aleksey Sher, TRIUMF
- Jana Thomson, TRIUMF
- Isabel Trigger, TRIUMF