



Arthur B. McDonald  
Canadian Astroparticle Physics Research Institute

### **Cross-Disciplinary Internship Application Guidelines 2023**

The Arthur B. McDonald Canadian Astroparticle Physics Research Institute (McDonald Institute) strives to grow connections and collaborations with new disciplines to create relationships that communicate and mobilize scientific knowledge.

The **Cross-Disciplinary Internship Program** is designed to enhance the student experience by providing an opportunity for continuing post-secondary students registered in non-physics majors<sup>1</sup> to participate in novel research in astroparticle physics (APP). This program is open to students across Canada to work with leading APP faculty over the course of the summer term (16 weeks between May and August 2023), alternative terms are available with pre-approval. This program is intended to provide students with meaningful opportunities to engage in discovery-based learning and to develop research and communications skills.

For the summer of 2023, there will be a maximum of 4 positions available valued at a maximum of \$12,000 CAN payable by invoice, and the funds are only to be used for salary reimbursement. During this time, students will implement a co-developed research project that draws upon their unique expertise and skills with a host supervisor. Supervisors (faculty or postdoctoral fellows) will provide resources required to complete the research project (e.g. office/lab space, equipment, consumables, etc.). In addition, a contribution of \$500 CAN from the supervisor towards student opportunities (e.g. conference participation, training opportunities, etc.) is required. Students and their supervisors will also have access to the McDonald Institute network and professional development training opportunities. Students and supervisors are strongly encouraged to apply for complementary funding from other sources. These funds must be disclosed in a timely manner to the McDonald Institute.

Prior to applying, students and their supervisors must contact Dr. Alexandra Pedersen, the McDonald Institute's Business Development Officer, at [admin@mcdonaldinstitute.ca](mailto:admin@mcdonaldinstitute.ca) to discuss their project. Please use "CDI Program – [LAST NAME]" as the subject line when reaching out.

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<sup>1</sup> Non-physics disciplines include, but are not limited to, artificial intelligence, biology, chemistry, climate change, computer studies, economics, education, engineering, geography, geology, health studies, Indigenous studies, law, sociology, etc. This program is not open to undergraduate or graduate students enrolled in physics. For other opportunities, please see the McDonald Institute funding opportunities [website](#).

We seek proposals co-developed by a student and an APP supervisor (faculty or postdoctoral fellow) that:

1. Focus on discovery-based learning in astroparticle physics ([aligned with the McDonald Institute Research Strategy](#)).
2. Bring new skillsets that are relevant to the astroparticle physics community to enhance the capabilities of a research group/lab.
3. Enhance the student's experience in a cross-disciplinary setting and advance future research endeavours, networking, and interdisciplinary activities.
4. Offer unique training/mentorship opportunities for the student.
5. Include considerations for Equity, Diversity, Inclusion, and Indigenization (EDI) in the training environment.
6. Encourage the participation of students from equity deserving groups who are traditionally underrepresented and underserved in the physics discipline.
7. Engages cross-disciplinary collaboration from a student studying outside of astroparticle physics (i.e., social sciences such as: anthropology, communication studies, economics, education, geography, history, Indigenous studies, sociology, or other STEM groups such as: biology, chemistry, environmental science, film and media technology, to name a few) and draw from varying levels of post-secondary experiences (i.e., college diploma, undergraduate, or graduate students).
8. Allows students to pursue new opportunities in previously underdeveloped collaboration areas aimed at advancing scientific knowledge and knowledge mobilization in astroparticle physics.
9. Are realistic in their timeline to completion (4 months, pre-approval is required for alternative timeframes).

Following the completion of their research project, successful applicants are required to provide a photo of themselves engaged in the research group or lab and create materials to showcase the outcomes of their research project and the success of their placement. The McDonald Institute encourages a variety of mediums for knowledge mobilization. For example, a student may submit a short article for non-academic audiences describing their experience, a 3-5 minute video, podcast, photo essay, website, etc. focusing on research outcomes and the value of cross-disciplinary collaborations. Submissions will be used for promotional purposes of the McDonald Institute, the supervisor's lab, and the Cross-Disciplinary Internship Program.

### **Eligibility:**

Prospective **students** must have the following qualifications to apply:

- Enrolled in a full- or part-time post-secondary program outside of physics;
- Eligible to work in Canada;
- Returning to studies after the internship is complete;
- Enthusiasm for discovery-based research and intellectual curiosity;
- A strong record of academic achievement;

- Be open to cross-disciplinary knowledge sharing and learning about astroparticle physics.

Prospective **supervisors** must be either **faculty members** or **postdoctoral fellows** affiliated with the McDonald Institute or have APP research based in Canada. A unique facet of the CDI program are opportunities for postdoctoral fellows to apply as supervisors and gain official supervisory experience. Supervisors must be available for hands-on, discovery-based learning over the course of the program (i.e., accessible for the duration of the program). The supervisor must be eligible to hold an institutional account for grants or awards and is responsible to provide office space, lab materials, and a minimum of \$500 towards student opportunities (e.g. conference participation, training session, etc.). Please be reminded that all applicants need to contact the Business Development Officer for application guidance, in particular for postdoctoral fellows whose institutional accounts may be linked to their formal supervisor.

### **How to Apply:**

Students must meet with an APP faculty researcher at the institution of choice who is willing to be their supervisor for the 2023 internship. Student and faculty members are required to jointly develop a research proposal for submission to the program.

Once the student and supervisor have met, the applicants must contact Dr. Alexandra Pedersen, the McDonald Institute's Business Development Officer, at [admin@mcdonaldinstitute.ca](mailto:admin@mcdonaldinstitute.ca) to discuss their project. Please use "CDI Program – [LAST NAME]" as the subject line when reaching out. Informing the Business Development Officer of your application is **not** a guarantee of acceptance, rather supportive guidance to ensure all eligibility criteria are met and questions about the application process are answered.

Together, the student and faculty member co-fill the application form. Students are required to attach an unofficial transcript to the application and submit the forms as a single PDF document by **4pm EST on Friday January 20, 2023**.

Please send a single PDF application to [admin@mcdonaldinstitute.ca](mailto:admin@mcdonaldinstitute.ca) with "CDI Program – [SUPERVISOR LAST NAME]" as the subject line.

Late or incomplete applications will not be reviewed.