

Guidelines for Proof of Concept Seed Fund Program

Purposes

This funding opportunity is targeted to astroparticle physics researchers working in Canada, who are interested in repurposing technology pertinent to their core research for the sake of solving a practical problem that is not directly driven by that research (e.g., adapting a valve controller to provide a low-cost medical gas flow device). The fund is available to any applicant who is, or is supervised by, an eligible grant holder in academia, but it may be used to reimburse a wide range of expenses incurred to develop, re-develop and demonstrate technology towards the solution of a practical problem.

It is not a requirement of the seed fund program that a defined practical problem is successfully addressed by the applicant's technology development and demonstration project. The program requires tangible data-driven progress towards understanding the relevant technology's potential to successfully resolve the identified problem (e.g., successful demonstration of critical components required to address the problem; virtual prototype performance analyses; demonstration of dual-use of a technology in an application adjacent to problem definition, etc.).

Successful applicants will receive an award letter committing the Institute to reimbursement of up to \$20,000 CAN of eligible direct costs incurred for the proposed project. Letters of award are valid for 12 months, but may be renewed for an additional six-month period at the discretion of the McDonald Institute administrative staff. The awardee may submit an itemized invoice for incurred expenses every three months until three months beyond the end date of the award.

Eligibility

The lead applicant is strongly encouraged to meet with the McDonald Institute Business Development Officer prior to submitting an application.

The lead applicant (proponent) must be a researcher with a focus on astroparticle physics at a Canadian academic institution who is A) managing an institutional research account eligible to hold funds from Tri-Council granting agencies (or currently in receipt of CFREF funding through the McDonald Institute); or B) are working under the direct supervision of a researcher meeting criterion A, above.

Proposals must be aligned with the McDonald Institute's vision and overall goals of advancing the impact of particle astrophysics research in Canada. It is expected that the technology and innovation targets of applications will derive their value from research data, technological development, technical skills, or professional relationships gained from the work of astroparticle physicists working in Canada.

Proposal Submission

Complete a separate application form for each proof-of-concept project for which you seek funding support. Template completion is mandatory and includes several sections which have assigned length restriction limits. Applicants are encouraged to insert relevant diagrams illustrating their technology's proposed mode of action, project workflows, or other relevant logic. These items will not count towards the specified length of the proposal.

The current competition requires a team description, which may also include relevant external partners, suppliers or technology end-users. Applicants are welcome to attach up to three CVs highlighting relevant technical or innovation management experience that may advance the project. Completed applications may be sent to admin@mcdonaldinstitute.ca with the subject line "Proof of Concept Seed Fund {Lead Applicant's Last Name}".

Calls for Proposals will be issued no less than once per fiscal year and applications will be adjudicated within one month of submission deadlines.

Equity, Diversity, Inclusion and Indigenization (EDI)

Equity, Diversity, Inclusion and Indigenization considerations are highly important to the McDonald Institute's innovation strategy. Applicants will be scored on their engagement with diverse technology end users and consideration for consequences of successful technology deployment (e.g., is a mechanical ventilator built to serve the needs of a physically disabled person; will it provide accessible documentation; and have all relevant stakeholders for the user case been consulted and has their input been taken into account). The following questions should be addressed in the application materials:

- For whom, among problem owners, would the proposed technology solution work?
For whom, among problem owners, might it not work and who will you engage in order to find out what realistic steps could mitigate such a gap?
- While solving the identified problem using technology, what other things are likely to happen (relationships altered, materials altered, knowledge altered) in the process?

The Team

Identify the roles and relevant expertise of team members (e.g., inventor, entrepreneur, end-user, advisor, technician, demonstrator, etc.). What knowledge is missing from the team with respect to anticipating the consequences of a successful demonstration (i.e., if successful, who should be engaged after the proof-of-concept demonstration)?

Ticket Value

Successful awardees may invoice the McDonald Institute to recover up to \$20,000 of Proof-of-Concept costs including salary costs of awardee-supervised research personnel (post-doctoral, graduate, undergraduate students, or technical or engineering staff); materials, licences and fees required to fabricate, operate or demonstrate the proof of concept (including fees for machining work, assembly, software development). Up to 20 per cent of an award is eligible for travel support related to proof-of-concept activities.

Reimbursement of Back-Dated Expenses

Documented expenses incurred in the three months prior to an award letter may be reimbursed, provided that the applicant has disclosed such prior spending in their application budget.

Adjudication

Applications will be scored on problem and problem-owner definition, feasibility of work plan, well-identified success/failure criteria for project milestones and long-term risk identification (emphasis on equitable outcomes for stakeholders and other sustainability metrics). Applications will also be scored according to alignment with the Proof of Concept Seed Fund program criteria and the objectives of the McDonald Institute.

The McDonald Institute administrative staff will issue letters of award based on the recommendation of a simple majority of its Business Partnerships and Programs Committee, whose members are listed at mcdonaldinstitute.ca/about/governance. The scoring matrix is available below.

SCORING MATRIX

CRITERION	DESCRIPTION	SCORE
Problem, Solution & Problem Owner Definition (2 pages max.)	<p><i>Application clearly defines the nature of the problem, its apparent value (time, money and quality), the proposed technology solution, and the nature of persons who would use the proposed solution to address this problem instead of an existing solution, or next-best alternative (problem owners).</i></p> <p><i>The problem should be scaled to the outcomes of the proposed proof-of-concept project. The applicant is encouraged to reference any relevant out-of-scope problems, but they must identify the specific problem that is actually solved by the project.</i></p> <p><i>The problem owner should be an early adopter (someone who is already actively trying to solve the problem in question).</i></p>	/40
Workplan & Success/Failure Criteria (single table)	<i>Defines the starting state and the desired end state of the project. Defines the target performance criteria for each deliverable (e.g., deadline, cost, performance target).</i>	/20
Risk Identification (250 words max.)	<i>Identifies the workplan steps with the highest risk of failure and indicates project adjustments that will be taken to resolve such failures (i.e., modifications to workplan).</i>	/5
Equity Thinking (250 words max.)	<p><i>Identifies more than one barrier potentially affecting the distribution of benefits from the proposed innovation (cost, time, quality, physical access, social pressure, etc.)</i></p> <p><i>Identifies one or more indirect consequences of effecting the proposed solution.</i></p>	/10
Feasibility (see workplan table and 1-page budget)	<i>The team as a whole is able to carry out the proposed work and the budget and workplan are reasonable and provide enough latitude to successfully overcome problems in the project.</i>	/15
Alignment with Institute Mission (250 words)	<i>Applicant's proposal demonstrates potential for frontier research activity in astroparticle physics to drive innovation without unduly disrupting core research progress.</i>	/10

