Research Manitoba

Innovation Proof-of-Concept Grant

PROGRAM GUIDE

1. Preface

Research Manitoba promotes, supports, and coordinates the funding of research excellence in health, natural and social sciences, engineering and the humanities in Manitoba. Our organization cultivates local talent development by investing in early career researchers and graduate students and fosters strategic partnerships to bolster innovation and commercialization in the province.

2. Purpose

The Innovation Proof-of-Concept Grant aims to strengthen Manitoba-based research innovation and development projects, by filling a funding gap in the Manitoba innovation ecosystem. Through two independent streams, this program provides funding for innovation and commercialization research that is not otherwise accessible. Funds from this program help support activities directly related to process validation and proof-of-concept research.

Funding is targeted towards Bioscience, ICT, Advanced Manufacturing, and Infrastructure and Transportation Industries and Technologies.

Stream 1: Manitoba-Based Consortium supports local collaboration that is addressing a company specific discovery or innovation towards market usability. This stream allows academics to use their world-class knowledge, facilities, and highly qualified personnel (HQP) to close the knowledge gaps identified during the industry partner's innovation development.

Stream 2: Manitoba Post-Secondary Researchers supports the advancement of discoveries or innovations within an academic setting, which may result in products or technologies, towards market usability.

3. Objectives

The specific objectives of the Innovation Proof-of-Concept Grant are to:

- Support research to enhance and strength technology or product maturity towards market usability
- Encourage research and development that will accelerate technology transfer and commercialization of innovative products, processes and services
- Support talent development and build capacity for translational research in Manitoba
- Advance industrial research, development and technology demonstration through collaboration between academia, non-profit organizations and the private sector *(Stream 1)*
- Increase the potential real-world use and commercial viability of researchers' discoveries *(Stream 2)*

4. Award Amount and Duration

Award funds are to be used to defray the costs incurred through process validation and proof-of-concept research. Examples of eligible expenses can be found in Appendix A.

Stream 1: Manitoba-Based Consortium will provide up to $150,000 over a two (2) year term ($75,000 per annum) maximum.

Stream 2: Manitoba Post-Secondary Researchers will provide up to $100,000 over a two (2) year term ($50,000 per annum) maximum.

Projects which are shorter in duration, or have smaller funding needs, are welcome to apply.

There is a lifetime maximum of one (1) grant towards process validation and proof-of-concept research for a single innovation/discovery.

A one (1) year automatic extension on the use of funds will be permitted, with no additional funding.

5. Matching Funds *(Stream 1 only)*

Research Manitoba will not fund the full cost of any **Stream 1: Manitoba-Based Consortium** project. Additional support in the form of eligible cash and/or in-kind contributions equivalent to a minimum of 50 per cent of the amount requested from Research Manitoba must come from the consortium partner(s). At least 50 per cent of the consortium matching funds *must* be a cash contribution.

For example, a project asking Research Manitoba for $150,000 in funding will have to demonstrate additional support equal to at least $75,000, of which at least $37,500 *must* be cash. Cash is defined as an expense requiring a cash outlay that are incurred and paid for by the partner organization(s).

Research Manitoba encourages co-funding with other funding agencies and organizations (i.e., government agencies, NSERC Alliance Grants, Mitacs, academic institutions). Where such co-funding / partnering is to take place, this should be identified in the proposal.

Research Manitoba encourages applicants and their industry partner(s) to consider an application to Mitacs to receive additional funding and training opportunities for trainees involved in this program.

6. Eligibility Requirements

Funding is targeted towards Bioscience, ICT, Advanced Manufacturing, and Infrastructure and Transportation industries and technologies.

Stream 1: Manitoba-Based Consortium

To apply, the **applicants** must:

- Be a Manitoba-based consortium comprised of two or more companies, organizations, and academic researchers. At a minimum, the consortium must contain one Manitoba-based academic member and one Manitoba-based industry partner. Either the Manitoba-based academic member or Manitoba-based industry partner are eligible to be the **primary applicant**. Consortia and industry partner requirements can be found in Appendix B.
- Conduct the majority of the proposed research and commercialization activities in Manitoba
- Not currently hold, or be a co-applicant on, a *Stream 1* grant for the same innovation/discovery

Stream 2: Manitoba Post-Secondary Researchers

To apply, the **primary applicant** must:

- Hold an appointment from a Manitoba post-secondary institution, or research affiliate, that allows the applicant to:
    - Apply for and hold peer-reviewed funds as a principal investigator or research professional (colleges only)
    - Be a research supervisor for undergraduate, graduate, and/or post-graduate trainees
    - Publish their research results
- Conduct the majority of the proposed research and commercialization activities in Manitoba
- Not currently hold, or be a co-applicant on, a *Stream 2* grant for the same innovation/discovery

College researchers only: These are institutional grants and must be applied for via the Research Office at your institution

Industry partners are eligible to partner on a maximum of two (2) Innovation Proof-of-Concept Grants per fiscal year (April 1 – March 31).

7. Application Deadline

The Innovation Proof-of-Concept Grant program consists of a two-stage process:

Stage 1 – Expression of Interest (EOI) – Deadlines: June 15, September 15, December 15, March 15

Stage 2 – Full Proposal – submitted by invitation only following the EOI stage. A specific deadline, approximately 6-8 weeks, will be given when invited to submit a full proposal.

The Grants Management System (GMS) will be closed for one week following each Expression of Interest (EOI) deadline to process the submitted applications. Applications which are 'in-process' at the EOI deadline will remain active in the system and be available once the GMS is reopened.

Applications which are 'in-progress' as of the March 15 EOI deadline will not be available after this date and a new application will need to be started in the GMS under the new fiscal year.

8. Technological Readiness

The Innovation Proof-of-Concept Grant supports promising discoveries or inventions which are in the space between research and development for concept validation (i.e. proof-of-principle) and a successfully demonstrated product or technology in a relevant environment. The Technology Readiness Level (TRL) scale below[1] is used to gauge the maturity level of a discovery or innovation. TRLs are based on a scale from 1 to 9, with 9 being the most technologically mature. As illustrated in the figure below, **the Innovation Proof-of-Concept Grant supports activities with IP development between TRL 3 and 7**.

Technology Readiness Level	Description
TRL 1 – Basic principles of concept are observed and reported	Scientific research begins to be translated into applied research and development. Activities might include paper studies of a technology's basic properties
TRL 2 – Technology concept and/or application formulated	Invention begins. Once basic principles are observed, practical applications can be invented. Activities are limited to analytic studies.
TRL 3 – Analytical and experimental critical function and/or proof of concept	Active research and development is initiated. This includes analytical studies and/or laboratory studies. Activities might include components that are not yet integrated or representative.
TRL 4 – Component and/or validation in a laboratory environment	Basic technological components are integrated to establish that they will work together. Activities include integration of 'ad hoc' hardware in the laboratory
TRL 5 – Component and/or validation in a simulated environment	The basic technological components are integrated for testing in a simulated environment. Activities include laboratory integration of components.
TRL 6 – System/subsystem model or prototype demonstration in a simulated environment	A model or prototype that represents a near desired configuration. Activities include testing in a simulated operational environment or laboratory.

[1] Adapted from Innovation, Science and Economic Development Canada (https://www.ic.gc.ca/eic/site/080.nsf/eng/00002.html)

TRL 7 – Prototype ready for demonstration in an appropriate operational environment	Prototype at planned operational level and is ready for demonstration in an operational environment. Activities include prototype field testing.
TRL 8 – Actual technology completed and qualified through tests and demonstrations	Technology has been proven to work in its final form and under expected conditions. Activities include developmental testing and evaluation of whether it will meet operational requirements.
TRL 9 – Actual technology proven through successful deployment in an operational setting	Actual application of the technology in its final form and under real-life conditions, such as those encountered in operational tests and evaluations.

9. Intellectual Property Assessment and Ownership

Research Manitoba does not claim any rights to intellectual property arising from projects funded by the Innovation Proof-of-Concept Grant program.

Stream 1: Manitoba-Based Consortium

Research Manitoba recommends that the consortium follow best practices by signing an intellectual property agreement that defines the intellectual-property rights and obligations of all the partner organizations involved in the project. The agreement must be aligned with NSERC's Policy on Intellectual Property. Consortia members are responsible for ensuring IP arrangements are in order and agreed to by all in advance of applying.

As per NSERC's Policy on Intellectual Property, students involved in the funded research must maintain their right to defend their thesis without delays or impediments. It is also strongly encouraged that industry partners allow students to include work on this project, specifying the company name, on their CVs. All participants, including any trainees, should consult this policy to ensure that they are aware of their rights and obligations.

Stream 2: Manitoba Post-Secondary Researchers

All applicants must abide by their respective host institution's policies governing patent, copyright and design protection for intellectual property derived from work originating within said institution, if applicable.

10. Application Requirements

An Expression of Interest (EOI) is required as the first stage of the Innovation Proof-of-Concept Grant. Applications to the Full Proposal will only be accepted from those invited to apply.

Expression of Interest (EOI)

- ***New*** **Budget Table and Budget Justification (maximum 1 page):** Examples of eligible expenses can be found in Appendix A.

- **Abstract (maximum 200 words):** Provide a non-technical summary of your proposal written in simple and clear language suitable for a lay audience.
- **Research Proposal (maximum 3 pages):**
    - **Project Overview:** Provide an overview of the proposed project and the discovery/innovation being developed. Include the project's objectives, major activities planned, partners, and timeline.
    - **Innovation:** Demonstrate that the discovery/innovation being developed is innovative and unique, not a derivative of or minor improvement on existing products. ***New*** Clearly indicate where the discovery/innovation is on the Technology Readiness Scale (TRL) and where it will be at the completion of the grant.
    - ***New*****Training of Highly Qualified Personnel (HQP):** Describe how the project and partnership (if applicable) offer opportunities for enriched training experiences that will allow HQP or partners staff members (if applicable) to develop relevant technical skills, as well as professional skills such as leadership, communication, collaboration, and entrepreneurship.
    - **Benefits to sector and Manitoba:** Explain how the discovery/innovation will provide broad and tangible benefits to the related sector(s), and how the proposed discovery/innovation will benefit relevant stakeholders and/or the Province of Manitoba.
    - **Path to Commercialization:** Outline a feasible path towards commercialization. ***New*** Provide an overview of the plan to bring the developed technology to market, along with information on similar existing or known items currently in the marketplace, and considerations for market adoption and market size. Indicate the ability to protect Intellectual Property of the discovery/innovation through patent and/or trade secret.
- **Signature Page**: Signatures are required from the academic researcher's home institution. Once you have received all of the required signatures, please upload the completed form into your GMS application.
- **Canadian Common CV (CCV)**: An updated Research Manitoba Canadian Common CV (no older than six months) is required for all academic applicant and co-applicant(s) for submission. Applications cannot be submitted without at least one CCV attached.

Full Proposal (by invitation only)

- **Budget Table and Budget Justification (maximum 1 page):** Examples of eligible expenses can be found in Appendix A.
- **Abstract (maximum 200 words):** Provide a non-technical summary of your proposal written in simple and clear language suitable for a lay audience.

- **Summary of the Proposal (maximum 1500 words):** Provide background, objectives, activities planned, and how the results of the project will be implemented in the long-term to create positive impacts to the Province of Manitoba
- **Research Proposal (maximum 6 pages):**
    - Project Design: Describe in detail how the project will be carried out to reach its objectives. Include the following:
        - Detailed description of work required and deliverables
        - Project timeline
        - Further research & development or commercial activities planned for after the Research Manitoba funding period
    - Risks: Identify and discuss potential risks in developing and implementing the proposed innovation/discovery. Specify if there are any regulatory risks or hurdles. Include a table of risks identified, likelihood, severity, and mitigation strategies.
    - Research Capacity: Demonstrate the applicants' capacity to carry out the project, and the research environment/infrastructure the applicant(s) will have access to. Provide a list of personnel, if applicable, who will be involved in the project and brief biographies.
    - Consortium *(Stream 1 Only)*: Describe the core activity of the partner organization(s) and their experience related to the research project, such as any efforts to date that the partner organization(s) have invested towards addressing this problem. Explain how the consortia members have been actively involved in co-designing the research program, and how they will continue to be involved in the implementation of the research project.
    - Training of Highly Qualified Personnel (HQP):
        - Indicate how the knowledge and experience gained by research trainees and the partners' staff members (if applicable), are relevant to the advancement of the field, to applying knowledge, or to strengthening the partner organization (if applicable).
        - Describe how the project and partnership (if applicable) offer opportunities for enriched training experiences that will allow HQP to develop relevant technical skills, as well as professional skills such as leadership, communication, collaboration, and entrepreneurship.
- **Supporting letters *(Stream 1 Only)*:** A letter of support is required from each non-academic consortia organization which clearly outlines the following:
    - The need for this research project to be carried out in collaboration with an academic researcher and the potential benefits this research will have on their organization

    - The cost-sharing breakdown, including the value added through in-kind contributions and how these are important to realizing the project's intended outcomes
- ***New*** **Suggested Reviewers:** Suggest the names of three (3) independent experts competent to assess the technical aspects of the proposal. This list can include experts from the academic community and/or non-academic community (ie. public/private sector). If possible, please include at least one expert from Manitoba. Suggested external reviewers should not be in a conflict of interest with the applicant or any member of the research team (if applicable).
- **Signature Page**: Signatures are required from the academic researcher's home institution. Once you have received all of the required signatures, please upload the completed form into your GMS application.
- **Canadian Common CV (CCV)**: An updated Research Manitoba Canadian Common CV (no older than six months) is required for all academic applicant and co-applicant(s) for submission. Applications cannot be submitted without at least one CCV attached.

For support completing the Research Manitoba GMS Application and CCV see the *PI GMS User Guide*.

11. Assessment Criteria (Full Proposal Only)

Applications are evaluated in a competitive peer-review process, involving members of the academic and industry communities, which considers the following criteria:

- Research Excellence
    - Objectives of the project are focused and coherent, and the proposal communicates a clear direction and strategic focus
    - Project leader, and team members if applicable, have the capacity and qualifications to ensure the project's overall success
    - The project will incorporate or drive innovation in its proposed methods or tangible outcomes

- Potential Impact
    - The degree to which planned outcomes demonstrate commercial potential
    - The proposed plan for future commercialization is detailed, feasible, and timely
    - The degree that new products, processes or services can be commercialized in a manner that will enhance productivity and contribute to long-term economic growth and/or social benefits of Manitoba
    - Establishes new, or further strengthens existing, collaborations between Manitoba researchers and industry partners, including Manitoba based SMEs *(Stream 1 Only)*

- Partnership *(Stream 1 Only)*
    - The project leverages resources through the sharing of equipment, research facilities, databases, and personnel
    - The project involves meaningful and direct collaboration amongst the consortium members

- Development of Highly Qualified Personnel
    - The project contributes to the attraction retention, development and training of outstanding HQP

12. Reporting, policies and other information

Research Manitoba reserves the right to determine the eligibility of applications, based on the information therein. Research Manitoba also reserves the right to interpret the regulations and policies governing its funding opportunities.

All applicants and grant holders must comply with the regulations set out in the Research Manitoba Finance and Administration Guide.

Research funds are to be spent according to budgets approved during the review and decision process. Occasionally, it may be necessary to reallocate grant funds between approved categories if the needs or circumstances of the research project have changed. Grant holders need Research Manitoba approval for such reallocation only if the change involved is 25% or more of the grant's total.

Grant recipients are to report the outputs and outcomes of their funded research project at the completion of their award. Grant recipients will be informed by Research Manitoba when the reports are to be completed. You can view the report templates on Research Manitoba's website under the 'Funding' tab.

13. Contact Information

For questions regarding the application and submission process, please contact:

Jennifer Cleary
Manager, Programs
jennifer.cleary@researchmb.ca
204.924.7070

For support with GMS, please contact:
Research Manitoba Helpdesk
helpdesk@researchmb.ca
Monday – Friday – 8:30AM – 4:30PM

Appendix A – Examples of Eligible and Ineligible Costs

This is not an exhaustive list. If you are uncertain of the eligibility of an expense, please consult with the Manager, Programs. Applicants are expected to clearly justify expenses in the budget justification attachment.

Eligible Costs	Examples of Eligible Costs
Salaries, wages and benefits	Salaries and benefits, research stipends, or hourly wages of postdoctoral students or research assistants directly involved in the research and commercialization activities Salaries and wages of technicians/research engineers/research scientists directly involved in the research and commercialization activities
Professional Services/Fees	Clinician research release stipend - up to $9000 (PI only) Course load reduction support - up to $9000 (College primary researcher only) Project management, legal fees, consultant fees, business development expenses, and administrative support
Materials and Supplies	Items directly related to the research activities (i.e. chemicals, consumables, lab supplies, etc) Small equipment (up to $10,000, unless special permission from Research Manitoba)
Travel expenses – related to research project activities	Travel and accommodation for commercialization activities and collaborative purposes integral to the advancement of the proposed research and/or commercialization plan. This includes items such as travel to field sites and to host 'real-world' demonstrations of the innovation/discovery for potential users/buyers. Funds cannot be spent for travel to academic conferences, workshops or seminars.

Ineligible Costs	Examples of Ineligible Costs
Salaries, wages and benefits	Payments paid to primary applicant, co-applicant(s) and/or collaborators as consulting fees, honoraria, or salary Release time stipends/course load reduction support (exception to college primary researcher and clinicians)
Professional Association Fees	Professional association fees and/or dues
Materials and Supplies	Equipment over $10,000 (without permission of Research Manitoba) Home internet costs Standard monthly connection or rental costs of telephones
Capital assets and equipment	Costs of the purchase, construction, renovation or rental of laboratories or supporting facilities
Travel expenses – related to academic seminars, conferences and workshops	
Indirect costs of research (overhead)	

Appendix B – Consortia Requirements

Although private companies are the most obvious means of exploiting research results commercially, other kinds of organizations my also be appropriate partners. At a minimum, any proposed partner, whether an established company, a start-up, or an industry association must have a credible plan for exploiting research results for the benefit of Manitoba.

The following are general guidelines that consortium members must meet:

- Consortia may be formal or informal but must have a clearly defined partnership between the academic and industry partner(s) in advance of applying
- Consortia members are responsible for ensuring IP arrangements are in order and agreed to by all in advance of applying
- If the consortium is pre-existing, there must be active involvement in the research project from two or more members
- The consortium can include members from outside Manitoba (including multinational and foreign member organizations) providing the majority of the team is from Manitoba, that an eligible Manitoba organization maintains the leading role throughout the project, results will be exploited in Manitoba, and the contributions of non-Manitoba members to meet the program objectives are clearly demonstrated.
- A researcher's own consulting company or sole proprietorship is **not** eligible as an industrial partner to collaborate on a project in which the researcher is the applicant or co-applicant.

Industry Partner Requirements

- In general, an industry partner is defined as a Manitoba-based business providing products or services that derives the majority of its revenues from the sale of these products and services and not from government aid.
- Multinationals may be eligible if they have commercial activities that take place in Manitoba, such as research and development or manufacturing related to the proposed project
- Foreign firms may be eligible as a partner, provided an eligible Manitoba-based private sector partner plays a major role in the project and will exploit the research results for the economic benefit of Manitoba
- Public utilities in Manitoba
- Start-up companies (companies in the research and development phase) that have sound business plans and secure financial backing may be accepted as industry partners. However, they must demonstrate that they have the financial, managerial, and strategic business capability to exploit the research results. If a start-up company is serving as the primary industry partner, it is highly recommended that an additional industrial partner that is either an end user, first customer, channel partner or capable of market validation also be included in the consortium.