

From Ideas to Market – Advancing Research and Innovation in Manitoba \$2.1M in Research Funding for Local Researchers and Companies

August 26, 2021 – Winnipeg, Manitoba. Research Manitoba is proud to announce \$2,094,900 in research funding to support seventeen Innovation Proof-of-Concept Grants. Research Manitoba’s investment leverages \$2.13M and supports Manitoba-based projects in Biosciences, ICT, Advanced Manufacturing, and Infrastructure and Transportation Industries and Technologies.

These funds will foster research innovation and development in the Technology Readiness Levels 3-7 range, economic development and commercialization of products, and the movement of innovations from ideas to market usability.

“The Innovation Proof-of-Concept Grant provides funding for commercialization research that supports an inspiring level of collaboration, advances discovery, and propels local companies and industries toward market usability,” said **Hon. Minister Jon Reyes, Minister of Economic Development and Jobs**. This type of growth and development is vital to our province’s future as this type of research creates jobs and strengthens Manitoba’s research enterprise and innovation ecosystem with solutions that will help people across this province and beyond.”

“This new program brings together government, researchers, local companies and academic institutions, which fosters community development and provides local companies and industry the opportunity to enhance their skills, products, and technologies,” said **Karen Dunlop CEO, Research Manitoba**. “I congratulate each stakeholder group on their efforts and commitment to expand our province’s innovative capacities. Our team looks forward to seeing these projects unfold and the many outcomes that will follow.”

“This Research Manitoba funding is very important for our research as it allows us to extend industry collaborations at a larger scale with a research commercialization opportunity. This will also help in creating industry-based research and learning opportunities for our students. **Saman Muthukumarana, Director - Data Science Nexus**.

“Research Manitoba’s funding could not have come at a more critical time. Due to COVID-19 and the global climate crisis there is an urgency to better identify indoor environmental quality and airborne disease transmission gaps in buildings, ensuring increased energy efficiency while remaining safe and healthy for occupants. This financial support enables us to accelerate our applied research with both the University of Manitoba and Red River College, and to develop our data intelligence solution that helps improve the internal environment of commercial buildings.” **Matt Schaubroeck, CEO – ioAirFlow**.

“This funding supports research and development that leverages academic capacity for direct application to the commercial sector. DecisionWorks Consulting is our commercial partner on this project along with Hudson Bay Railway as the industrial partner for validation of results. Hudson Bay Railway is a critical piece of Manitoba infrastructure that provides a vital link for communities along the rail and access to the Port of Churchill which is strategic for the province as it represents sea access that will soon be ice-free on a year-round basis. This project seeks to mitigate and minimize potential rail outages using remote sensing (via satellites and drones), machine learning, integrated environmental and hydrological outflow data. The ultimate goal is to provide an AI-enabled

operational dashboard, georeferenced to areas of interest, that will assist in dispatching remediation crews directly to the source of potential issues before they become issues.” **Dr. Christopher Storie, Department of Geography, The University of Winnipeg, and Grant Barkman, DecisionWorks.**

These innovative projects will contribute to the training of Manitobans; attract and retain talent; grow Manitoba’s reputation as a nexus of medical device innovation; allow manufacturers to further develop and expand their businesses globally; and provide employment opportunities and economic benefits for Manitoba.

Here are just a few potential impacts and outcomes for Manitoba and Manitobans:

- Create an adaptable Phosphorus Removal System that could be used as a mobile phosphorus removal service.
- Reduce by up to 80% the number of decommissioned bridges out of service for truck traffic and create vast savings of taxpayer dollars by not replacing aging bridges.
- Design a new road inspection system, which will provide an explicit visual record of road damage and accurately quantified damage information, making it reliable, accurate, and cost-efficient.
- Enable early screening of patients with risk factors for Peripheral artery disease (PAD) (smoking, diabetes), decrease costs and morbidity associated with amputations and treatment of complications due to PAD.
- Mitigate impacts of water on northern and remote infrastructure.
- Advance the local aerospace, transportation, biomedical, and energy industries.

Congratulations to the recipients!

Stream 1: Manitoba-Based Consortium:

- **Cubresa Inc**, Academic: Andrew Goertzen, University of Manitoba
- **Cuneyt Akcora**, University of Manitoba, Industry: Protegra Inc.
- **Matt Khoshdarregi**, University of Manitoba, Industry: Magellan Aerospace, Canfair Composites, Triple E RV & Eastside Industrial
- **Aftab Mufti**, University of Manitoba, Industry: Vector Corrosion
- **Saman Muthukumarana**, University of Manitoba, Industry: ioAirFlow
- **Olanrewaju Ojo**, University of Manitoba, Industry: Precision ADM
- **Bram Ramjiawan**, University of Manitoba, Industry: OmniLyte
- **Anuraag Shrivastav**, The University of Winnipeg, Industry: VastCon Inc.
- **John Sorensen**, University of Manitoba, Industry: KGS Group
- **Christopher Storie**, The University of Winnipeg, Industry: DecisionWorks & Arctic Gateway Group
- **Peter Zahradka**, University of Manitoba, Industry: Koven Technology Canada Inc.

Stream 2: Manitoba Post-Secondary Researchers:

- **Young Jin Cha**, University of Manitoba
- **Chase Figley**, University of Manitoba
- **Pooneh Maghoul**, University of Manitoba
- **Aftab Mufti**, University of Manitoba
- **Tony Szturm**, University of Manitoba
- **Qiuyan Yuan**, University of Manitoba

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Research Manitoba:

Research Manitoba promotes, supports, and coordinates the funding of research excellence and innovation in health, natural and social sciences, engineering, and the humanities in Manitoba. [Research Manitoba](#) supports local talent development by providing research support to early career researchers and graduate students, along with fostering strategic partnerships to strengthen research and innovation in Manitoba.

About the Innovation Proof-of-Concept (IPoC) Program:

- **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. Industry matching funds in the form of cash and in-kind support is required.
- **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. Matching funds are not required for this Stream. [Learn More Here!](#)

The Technology Readiness Level (TRL) scale 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. The Innovation Proof-of-Concept Grant supports activities with Intellectual Property (IP) development between TRL 3 and 7.

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.

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.