



# 2022-2023 Research Support Fund

Public Acknowledgement, Objectives & Outcomes

Office of the VP (Research & International)

## Accountability & Public Acknowledgment

The University of Manitoba received **\$8,540,818** in Federal RSF support.

The following provides an overview of how the funds were spent under each of the five expenditure categories (including the affiliated institutions):

<b>Research Facilities</b>	<b>Research Resources</b>	<b>Management &amp; Administration</b>	<b>Regulatory Requirements &amp; Accreditation</b>	<b>Intellectual Property</b>
\$ 3,683,673	\$ 773,607	\$ 2,589,446	\$ 1,159,792	\$ 334,300

### *Research Facilities*

- Initiate/complete various research lab renovations:
  - Upgrade the ventilation system in the Animal Science sample processing area. This sample grinding/processing area is essential for all-nutrition related projects in Animal Science. Adequate ventilation of this space is essential to ensure students, technicians, postdoctoral fellows and research associates who use it are protected from the fine particulate material produced while grinding feed and biological samples. It was critical as feedstuff processing and subsequent evaluation are the cornerstone of nutrition-based research.
  - Design, sourcing and renovation of existing walk-in cooler/freezers, essential space for chemical storage requirements to elevate the quality of research conducted in Plant Science. The functional walk-in freezer rooms, utilized by several NSERC-funded members such as Duncan, Stasolla, Li, Daayf, Gulden, McCartney and Fernando, support the current research programs and the research of HQPs including students, post-doc fellows/research associates, and technicians. The original scope of the work was to replace the doors and frames of the freezer rooms with new metal insulated doors and replace the damaged/deteriorated plaster sections of the walls and ceilings with new panels. Costs increased during the abatement due to deterioration and mold/asbestos containing materials.
  - Repairs to the soil elevator to bring the area up to safety standards. Safety related amendments were made to the original design of the facility as the soil elevator is a work alone area. The facility allows for crop specific and research treatment specific soil development and is used by most programs within the Department and the Faculty.

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- Supports various Core Facilities across the Max Rady College of Medicine and the Rady Faculty of Health Sciences. These Core Facilities are a Lentiviral Viral Vector Production Facility, a Histology, Histomorphology and Ultrastructural Imaging Facility, a Flow Cytometry Core Platform, a Core Platform in Mass spectrometry, a Central Animal Care Facility and a Central Animal Core Imaging and Transgenic Core Facility. These core platforms support research activities of over 70 principal investigators.
- Operating costs of research space for the Childrens' Hospital Research Foundation, and Health Science Centre's Research Foundation located in the John Buhler Research Centre (Levels 500-800)
- Upgrades, annual maintenance/service contracts of research equipment and the technical supports in the research laboratories are required across the University of Manitoba & Affiliates. These investments are vital for researchers to maintain their ongoing research programs by preventing irreversible damage to state-of-the-art equipment, enhance their knowledge and expertise to sustain research productivity and maximize the success of faculty members.

### *Research Resources*

- In the Departments of Accounting and Finance and Business Administration, the research support funds provide continue support to a data research platform, and Bloomberg Terminals. This allows for the renewal of the annual license for Qualtrics, an online software for primary data collection. It is used extensively in the Assurance of Learning tracking in the Asper Ph.D. and M.Sc. programs.
- CANARIE and MRnet memberships provides researchers access to Compute Canada and affiliated research institution resources.
- Annual software fees from InfoEd Global, a software company, to provide Research Services with modules to track research projects (Proposal Tracking) at all stages (requested to awarded) and for university reporting. Research Services combined research project information and the corresponding financial information in university-built software (My Research Tools) to allow for complete reporting.

The Human Ethics and Lab Animals Management modules allow Research Services to track necessary research project compliance for university accreditation purposes. InfoEd tracks the protocol approval process and connects the approvals to the research projects and able to track ethics approval expiry, renewal, etc.

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- Renewal of the Elsevier Inc. SciVal research evaluation tool. It offers quick, easy access to the research performance of 9,400 research institutions and 230 nations worldwide. SciVal is a ready-to-use solution with unparalleled power and flexibility to visualize research performance, benchmark relative to peer institutions, develop strategic partnerships, identify and analyze new, emerging research trends, and create uniquely tailored reports.
- Document Delivery provides research material, not owned by the University of Manitoba, at no cost to the University faculty and graduate students who are the majority users. The Document Delivery is very dependent on the number of requests for material received from researchers and equally dependent on the Libraries being able to fulfill those requests from within its own collections. Libraries received 6,012 requests for materials not held in our collections and 1.5 million successful article requests for electronic resources.

### *Management and Administration*

- The RSF contributes towards the considerable number of salaries, maintenance of information systems, financial and auditing costs and research planning. We use RSF to support promotional costs of sharing research and knowledge mobilization activities with external and internal communities, and to support costs of development of grant applications and research proposals for the University's research enterprise.
- These funds are vital to the affiliated institutions' researchers and research programs because they lend to the capability of attracting and carry out novel, innovative research of high quality, outcome producing, impact and of scholarly excellence. These activities are important for the advancement, translation and mobilization of knowledge and interventions given to patients in Manitoba and contributes the ongoing training clinicians, allied health professionals, scientists and research support personnel. Without investments through this grant, there would be a loss in capacity to provide these support services, thus diminishing the capacity for clinical and basic research to occur within the hospital environment.
- The Manitoba Centre for Nursing and Health Research (MCNHR) is the key infrastructure supporting nursing research in the College of Nursing. RSF provided partial support of two highly qualified research associates to assist faculty members in the development of competitive research grant proposals. The College of Nursing was successful in a total of 22 grants (\$2.4 million) in new research funding. This included a total of 6 tri-agency grants (4 CIHR and 2 SSHRC) led by the College of Nursing faculty. In addition, 1 national, 1 international, 2 provincial and 12 internal grants were awarded.

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- The continued management and administrative support in the Office of Research Services, the Office of Fair Practices and Legal Affairs, the Office of Research Security, the Office of Partnership, Knowledge Mobilization & Innovation, and the Major Projects Office, along with the Central Administration are part of the success at securing large collaborative, inter-disciplinary research contracts and grants.

These offices provide services such as identifying funding opportunities, making sure that grant applications are compliant to agency guidelines and helping with preparing regulatory documents such as animal use protocols, human ethics and environmental health and safety protocols.

This administrative support allows our researchers to focus more on important research activities. Thus, investment in administrative and management support is vital for our researchers to remain competitive and at the cutting edge of research.

### *Regulatory Requirements and Accreditation*

- Research Support funding was used to perform animal facility upgrades to various areas in the Faculties of Agricultural and Food Sciences, Science, Arts and the Central Animal Care Services in the Rady Faculty of Health Sciences.

These upgrades include:

- Improving the Glenlea Facilities by upgrading the Winter Water Infrastructure, the Broiler Environment Control System to provide fresh clean water to birds of all sizes, the Silage bunker fencing, heat mats for farrow, meshing to Barn B ceiling, tenderfoot flooring for nursery, and sweeper attachment.
- Maintaining the Genetic Models Centre, a barrier facility to protect valuable and unique genetically modified mouse models in the Central Animal Care Services by upgrading 2 autoclaves for cage and accessory processing.
- Bio Science upgrades to animal enclosures/holding facilities – replace composite beams under aquatic tanks, installation of reverse osmosis water line, and general maintenance to floors, ceilings and walls.

The upgrades were performed to ensure the University meets or exceeds standards set by the Canadian Council on Animal Care, their Codes of Practice and national and provincial worker safety regulations.

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- The Central Animal Care Services office (as well as the Environmental Health and Safety Office) play important roles in supporting research activities of our researchers at the RFHS. All Tri-Agencies (CIHR, SSHRC, NSERC) and other national and international funding agencies require the sponsoring academic institution to maintain appropriate certifications and to ensure that regulations and ethics are complied with.
- The continued management, technical and administrative support in the Office of Research Ethics and Compliance, the Environment, Health and Safety Office and other animal facilities are all part of the success in securing large collaborative contracts and research grants.

### *Intellectual Property*

- The continuous support towards the Tech Transfer Specialists' salary costs of the Office of Partnerships, Knowledge Mobilization and Innovation (OPKMI) and an employee in the Office of Fair Practices and Legal Affairs is critical to the high-quality prudent management of the university's intellectual property.

The OPKMI works toward increasing the number of partnerships between our researchers and groups outside the University of Manitoba and moving inventions from research labs into practical applications used around the world.

Such areas include:

- Capturing value of research
  - Intellectual property and licensing
  - Working with partners in the community to create startup companies.
- Increasing economic impact of UM
  - Identifying and building collaborative partnerships with industry
  - Management of Mitacs programs at the UM
- Developing entrepreneurs and entrepreneurial thinking
- Education around partnerships and intellectual property
  - Ensuring common expectations
  - Assisting with process questions

The Office of Fair Practices and Legal Affairs drafts technology commercialization agreements in consultation with the OPKMI. The University receives royalties for inventions and OPKMI prepares & negotiates technology commercialization agreements and helps in incorporation of start-up companies.

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### Affiliated Institutions

The University of Manitoba and the network of affiliated institutions have a mutual interest in achieving excellence in research activities.

This integration establishes the basic principles and objectives of an affiliation regarding the administration, regulation and accountability of research carried out by various groups of individuals with university appointments, and by others associated with the University, including students.

UM affiliated institutions include:

- Cancer Care Manitoba [www.cancercare.mb.ca](http://www.cancercare.mb.ca)
- St. Andrew’s College (MB) [https://www.umanitoba.ca/colleges/st\\_andrews/](https://www.umanitoba.ca/colleges/st_andrews/)
- St. John’s College [http://umanitoba.ca/colleges/st\\_johns/](http://umanitoba.ca/colleges/st_johns/)
- St. Paul’s College [http://umanitoba.ca/colleges/st\\_pauls/](http://umanitoba.ca/colleges/st_pauls/)
- University College (UofM) <http://umanitoba.ca/colleges/uc/>
- St. Boniface General Hospital <https://www.saintboniface.ca/>
- Winnipeg Regional Health Authority <http://www.wrha.mb.ca/>
- Canadian Centre for Policy Alternatives – Manitoba Office  
<https://policyalternatives.ca/offices/manitoba>
- Sunnybrook Research Institution <https://sunnybrook.ca/research/>

### 2022-2023 Performance Indicators and Outcomes

Eligible Expense Category	Performance Objectives	Performance Indicators	Target Outcomes	Outcomes Reported at Year End
<b>Research Facilities</b>	Strengthen researcher retention and quality of research by upgrading and maintaining research facilities and equipment.	Specific lab renovations to attract potential research funding.  Annual research equipment maintenance and service contracts	Modern and dependable research facilities & equipment.  Efficient and productive research activities.  Attraction of potential research funding	<ul style="list-style-type: none"> <li>• Updated ventilation system in the Animal Science sample processing area</li> <li>• Design, sourcing and renovation of existing walk-in cooler/freezers, essential space for chemical storage to elevate the quality of research conducted in Plant Science.</li> <li>• Operating costs of research space for the Childrens’ Hospital Research Foundation, and Health Science Centre’s</li> </ul>

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Eligible Expense Category	Performance Objectives	Performance Indicators	Target Outcomes	Outcomes Reported at Year End
<b>Research Resources</b>	<p>Improve and manage research data information &amp; analysis by upgrading databases and access to electronic resources</p>	<p>Percentage change of data usage and downloads for research purposes</p> <p>Purchase of electronic resources, databases, online access to journals and upgrades to cables and wireless technologies</p>	<p>Enhance research with up-to-date data management systems and information</p>	<p>Research Foundation located in the John Buhler Research Centre.</p> <ul style="list-style-type: none"> <li>• Library data usage               <ul style="list-style-type: none"> <li>○ 6K requests for materials not held at University of Manitoba</li> <li>○ 1.5M successful article requests from electronic resources (59% increase)</li> </ul> </li> <li>• Renewal of Scival Research metrics tool used for identifying potential collaborators nationally and internationally who publish in specific research areas.</li> <li>• Continued support to a data research platform, and Bloomberg Terminals in the Departments of Accounting and Finance and Business Administration.</li> </ul>
<b>Management and Administration</b>	<p>Provide research administrative support for processing new grants and contracts.</p> <p>Monitor expenses and review processes to ensure research compliances are meeting external agency guidelines</p>	<ul style="list-style-type: none"> <li>• # grants</li> <li>• # contracts</li> <li>• # industry partners</li> </ul>	<p>Maintain success rates in research grants, contracts and industry partners.</p>	<ul style="list-style-type: none"> <li>• Grants               <ul style="list-style-type: none"> <li>○ 1,148 Applications</li> <li>○ 685 Awards</li> <li>○ 59.7% success rate (3% increase)</li> </ul> </li> <li>• Contracts               <ul style="list-style-type: none"> <li>○ 518 non-funded (65% increase)</li> <li>○ 388 funded (7% increase)</li> <li>○ 416 Mixed (48% increase)</li> <li>○ 138 proposals/LOI/NIH applications (16% increase)</li> </ul> </li> <li>• Industry Partners               <ul style="list-style-type: none"> <li>○ 85 Potential Partners</li> <li>○ 66 Participating Partners</li> <li>○ 77.6% success rate</li> </ul> </li> </ul>
<b>Regulatory Requirements and Accreditation</b>	<p>Comply with regulatory requirements.</p> <ul style="list-style-type: none"> <li>• Upgrade and maintain research facilities</li> <li>• Train faculty and other research</li> </ul>	<p>Improved compliance with regulatory requirements as measured by laboratory inspections, incident investigations and regulator's audits.</p>	<p>Research facilities &amp; equipment meet regulatory requirements.</p> <p>Trained faculty and research personnel</p>	<ul style="list-style-type: none"> <li>• Animal Care               <ul style="list-style-type: none"> <li>○ 248 new Protocols and renewals (16% increase)</li> <li>○ 214 Wet labs were delivered.</li> <li>○ 204 people completed the animal user online training course (4% increase)</li> </ul> </li> </ul>



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<b>Intellectual Property</b>	personnel in health & safety, animal care, ethics review, handling radiation & biohazards and environmental assessments • Ongoing support for staff & technician salaries	# of certificates issued to trained faculty and research personnel	Fewer incident investigations	<ul style="list-style-type: none"> <li>○ 452 Post Approval Monitoring (PAM) visits- includes follow-ups only, no lab inspections.</li> <li>○ Maintaining demands for meeting guidelines and CCAC changes</li> <li>• Human Ethics Bannatyne Campus                             <ul style="list-style-type: none"> <li>○ 574 in new Protocols (2% increase)</li> <li>○ 1,601 Amendments</li> <li>○ 764 Study Closures (98% increase)</li> <li>○ 496 Safety Reports</li> </ul> </li> <li>• Human Ethics Fort Gary Campus                             <ul style="list-style-type: none"> <li>○ 374 new Protocols</li> <li>○ 527 Amendments (2% increase)</li> <li>○ 214 Study Closures</li> </ul> </li> </ul>
	Sustain the Technology Transfer Office  Increase the institution's research base by identifying collaborative research opportunities	<ul style="list-style-type: none"> <li>• # Patents filed</li> <li>• # Invention Disclosures</li> <li>• # Licenses</li> <li>• Percentage change in Startups</li> <li>• \$ in Royalty Revenue</li> </ul>	Value-added growth of new research partnerships  Continued support to researchers in their commercial endeavors and industry linkages	<ul style="list-style-type: none"> <li>• 43 Invention Disclosures (30% increase)</li> <li>• 24 US Patents filed (14% increase)</li> <li>• 6 Patents issued (50% increase)</li> <li>• 172 Agreements signed.</li> <li>• \$706K in Royalty Revenue (8% increase)</li> <li>• Lab2Market 54 trainees since initiated in 21-22</li> </ul> Mitacs <ul style="list-style-type: none"> <li>• 311 Accelerate Program submissions</li> <li>• 81 Globalink Research Internship (71% increase)</li> <li>• 18 Business Strategy Interns (80% increase)</li> </ul>