



2021-2022 Research Support Fund

Public Acknowledgement, Objectives & Outcomes

Office of the VP (Research & International)

Accountability & Public Acknowledgment

The University of Manitoba received **\$8,579,184** 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):

Research Facilities	Research Resources	Management & Administration	Regulatory Requirements & Accreditation	Intellectual Property
\$3,112,487	\$834,609	\$2,714,697	\$1,506,180	\$411,211

Research Facilities

- Initiate/complete various research lab renovations:

The Department of Soil Science is going through a massive faculty renewal which will see seven new faculty members recruited between 2019 and 2023. The department's facilities were renovated to enhance their ability to attract top candidates and ultimately strengthen researcher retention and the quality of our research. Soil Science has hired five assistant professors, all of whom are occupying the newly renovated research spaces.

Renovations to dedicated research space at the Health Sciences Research Centre to allow for the expansion of a COVID-19 clinical research program.

Renovations to Drs. Stephen Pistorius and newly hired Jessica Rodgers laboratory in Physics and Astronomy to support the development of the Medical Physics research group primarily focused on addressing problems in Diagnostic Imaging and Radiation Oncology. Exciting and award-winning research is being carried out in such diverse areas as: breast imaging using magnetic resonance (MR), microwaves and x-ray scattering, portal image dosimetry and treatment verification, image processing, radiation therapy treatment delivery optimization, spectroscopic MRI, stereotactic radiosurgery, and the modeling, simulation and analysis of radiation transport.

- 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.

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- Operating costs of research space for the Children's' 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

- InfoEd Global is the software company that provides Research Services with modules that allow the University to track research projects (Proposal Tracking) at all stages (requested to awarded). They in turn share back this information with the faculties for university reporting. This has eliminated duplication of effort for the faculties as they had been struggling to keep track of similar information. Research Services has 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. Through InfoEd they can track the protocol approval process and connect the approval to the research project and then track ethics approval expiry, renewal, etc.

- 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 7,085 requests for materials not held in our collections and 2.3 million successful article requests for electronic resources (59% increase).

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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 as a whole.
- The Research Life Magazine is a publication of the Office of the Vice-President (Research & International). The magazine highlights the quest for knowledge that artists, engineers, scholars, scientists and students at the University of Manitoba explore every day. It is published twice annually with winter (January) and summer (July) issues. RSF supports the costs associated with its publication.
- 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 27 grants (\$2.1 million) in new research funding. This included a total of 4 tri-agency grants (3 CIHR and 1 SSHRC New Frontiers Research). In addition, a total of 4 provincial, 18 internal and 1 other grant were awarded.
- The continued management and administrative support in the Office of Research Services, Office of Legal Counsel, Central Administration, and the Office of Partnership & Innovations along with the efforts of the Research Facilitators are part of the success at securing large collaborative contracts and research grants.

These individuals 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.

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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 installing broiler water system to provide fresh clean water to birds of all sizes, hot water pressure washer, young stock trough, calf enrichment and concrete floor repairs.
- A water chemistry monitoring equipment and a recirculating biofiltration system in Bio Science required by CCAC
- Bio Science upgrades to animal enclosures/holding facilities – installation of sealed, washable ceilings

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

- 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 salary and operating costs of the Office of Partnership and Innovations (OPI) and an employee in the Office of Fair Practices and Legal Affairs has been critical to the high-quality prudent management of the university's intellectual property.

The OPI 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.

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Such areas include:

- Intellectual Property
- Working with partners in the community to create startup companies
- 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 OPI. The University receives royalties for inventions and OPI prepares & negotiates technology commercialization agreements and helps in incorporation of start-up companies.

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 includes:

- Cancer Care Manitoba www.cancercare.mb.ca
- St. Andrew's College (MB) https://www.umanitoba.ca/colleges/st_andrews/
- St. John's College http://umanitoba.ca/colleges/st_johns/
- St. Paul's College 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>

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2021-2022 Performance Indicators and Outcomes

Eligible Expense Category	Performance Objectives	Performance Indicators	Target Outcomes	Outcomes Reported at Year End
Research Facilities	Strengthen researcher retention and quality of research by upgrading and maintaining research facilities and equipment	<p>Specific lab renovations to attract potential research funding</p> <p>Annual research equipment maintenance and service contracts</p>	<p>Modern and dependable research facilities & equipment.</p> <p>Efficient and productive research activities.</p>	<ul style="list-style-type: none"> • Health Sciences Research Centre dedicated research space for the expansion of the COVID-19 research program. • Physics & Astronomy research laboratory renovations to support the Medical Physics Research Group under Dr. S. Pistorius. • Max Rady College of Medicine and the Faculty of Health Sciences maintenance of various Core Facilities used by over 60 principal investigators.
	Ongoing technical support for laboratories, offices and other facilities.		Attraction of potential research funding	
Research Resources	Improve and manage research data information & analysis by upgrading databases and access to electronic resources	<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>	Enhance research with up-to-date data management systems and information	<ul style="list-style-type: none"> • Library data usage <ul style="list-style-type: none"> ○ 7K requests for materials not held at University of Manitoba ○ 2.3M successful article requests from electronic resources (59% increase) • Renewal of Scival Research metrics tool used for identifying potential collaborators nationally and internationally who publish in specific research areas. • Software maintenance of the province-wide administrative research data repository extensively used by health policy researchers in the Department of Community Health Sciences and the Manitoba Centre for Health Policy
Management and Administration	Provide research administrative support for processing new grants and contracts	<ul style="list-style-type: none"> • # grants • # contracts • # industry partners 	Maintain success rates in research grants, contracts and industry partners	<ul style="list-style-type: none"> • Grants <ul style="list-style-type: none"> ○ 1,309 Applications ○ 733 Awards ○ 56.0% success rate • Contracts <ul style="list-style-type: none"> ○ 394 non-funded (27% increase) ○ 386 funded (7% increase) ○ 409 Mixed (50% increase) ○ 155 proposals/LOI/NIH applications (30% increase)
	Monitor expenses and review processes to ensure research compliances are meeting external agency guidelines			

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Eligible Expense Category	Performance Objectives	Performance Indicators	Target Outcomes	Outcomes Reported at Year End
Regulatory Requirements and Accreditation				<ul style="list-style-type: none"> • Industry Partners <ul style="list-style-type: none"> ○ 110 Potential Partners ○ 83 Participating Partners ○ 75.5% success rate
	Comply with regulatory requirements <ul style="list-style-type: none"> • Upgrade and maintain research facilities • Train faculty and other research personnel in health & safety, animal care, ethics review, handling radiation & biohazards and environmental assessments • Ongoing support for staff & technician salaries 	Improved compliance with regulatory requirements as measured by laboratory inspections, incident investigations and regulator’s audits. # of certificates issued to trained faculty and research personnel	Research facilities & equipment meet regulatory requirements Trained faculty and research personnel Fewer incident investigations	<ul style="list-style-type: none"> • Animal Care <ul style="list-style-type: none"> ○ 214 new Protocols and renewals ○ 214 Wet labs were delivered (71% increase) ○ 163 people completed the animal user online training course (61% increase) ○ 529 Post Approval Monitoring (PAM) visits- includes follow-ups only, no lab inspections ○ Maintaining demands for meeting guidelines and CCAC changes • Human Ethics Bannatyne Campus <ul style="list-style-type: none"> ○ 563 in new Protocols ○ 1,647 Amendments (15% increase) ○ 386 Study Closures (18% increase) ○ 523 Safety Reports • Human Ethics Fort Gary Campus <ul style="list-style-type: none"> ○ 324 new Protocols ○ 516 Amendments (24% increase) ○ 312 Study Closures
Intellectual Property	Sustain the Technology Transfer Office	<ul style="list-style-type: none"> • # Patents filed • # Invention Disclosures • # Licenses 	Value-added growth of new research partnerships	<ul style="list-style-type: none"> • 33 Invention Disclosures • 21 US Patents filed • 4 Patents issued • 175 Agreements signed • \$654K in Royalty Revenue (15% increase) • Lab2Market initiated in 21-22
	Increase the institution’s research base by identifying collaborative research opportunities	<ul style="list-style-type: none"> • Percentage change in Startups • \$ in Royalty Revenue 	Continued support to researchers in their commercial endeavors and industry linkages	Mitacs <ul style="list-style-type: none"> • 375 Accelerate Program submissions (\$6M value) • 49 Globalink Research Internship (\$588K value) • 10 Business Strategy Interns