



2020-2021 Research Support Fund

Public Acknowledgement, Objectives & Outcomes

Office of the VP (Research & International)

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The University of Manitoba received **\$8,591,435** 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
\$3,696,164	\$717,713	\$2,697,142	\$1,071,114	\$409,302

Research Facilities

- Initiate/complete various lab renovations:

Dr. Sabine Kuss' Laboratory for Bioanalytics and Clinical Chemistry in the Faculty of Science. Dr. Kuss' research focuses on electrochemistry and its application to biological systems in the fields of endocrinological diseases, antibiotic drug resistance in pathogens, mitochondrial dysfunctions and cancer development.

Dr. Jacob Burgess laboratory in Physics and Astronomy improved the functionality of his research. Dr. Burgess leads the Ultrafast Microscopy and Magnetism Research Group in studies on spin and carrier dynamics in magnetic thin films, nanomagnetic elements, and correlated electron systems using time-resolved scanning tunneling microscopy in concert with optical measurements including magneto-optical magnetometry and THz spectroscopy.

- Supports for 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.

- Operating costs of research space for the Childrens' 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

Accountability & Public Acknowledgment

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

- Upgrades to the Manitoba Centre for Health Policy computer servers. This province-wide administrative research database is extensively used by health policy researchers and is a major centre to the Department of Community Health Sciences. The maintenance is vital for maintaining confidentiality and providing researchers with timely information.
- 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 7,780 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 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

Accountability & Public Acknowledgment

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 32 grants (\$3.6 million) in new research funding. This included a total of 8 tri-agency grants (6 CIHR and 1 SSHRC). In addition, a total of 6 provincial, 17 internal and 2 other grants were awarded. This represents a significant growth in tri-agency grants awarded over the past three years.

- 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.

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 included:

- Improving the Swine facilities by installing single stall feeders to provide fresh, clean feed to all swine housed in hospital pens, adult & piglet enrichment to allow more natural behaviors.
- Improving the Poultry Unit Layer Barn with broiler feeders to maintain high biosecurity in between flocks and allows staff to properly disinfect them.
- Improving the safety for animal holding and feed quality in the Dairy Barns with young stock troughs to increase feeding and decrease strains on the animal, and calf enrichment brushes and feeding bottle with nipple for each pen.
- Upgrading the T.K. Cheung Centre for Animal Science Research to ensure the University meets or exceeds standards set by the CCAC and to maintain the highest levels of animal health and welfare.
 - Improvements to the fencing surrounding the areas used to load/unload live animals
 - Repairs to concrete flooring
 - Support for animal technician staff
- A water chemistry monitoring equipment and a recirculating biofiltration system in Bio Science required by CCAC.
- Replace the dechlorinating charcoal from the pre-filter tanks for fish water and refurbished the steel tank and fittings.

Accountability & Public Acknowledgment

These 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.

- 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 oversees an Intellectual Property estate of over 400 patents covering 300 university developed technologies. They manage over one-hundred technology-based alliances with local and global partners.

The Office of Fair Practices and Legal Affairs drafts technology commercialization agreements in consultation with the OPI. The University receives royalties for inventions and works with OPI to prepare and negotiate technology commercialization agreements and incorporate 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.

A comprehensive list of 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/

Accountability & Public Acknowledgment

- 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/>

2020-2021 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 Ongoing technical support for laboratories, offices and other facilities.	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"> • Faculty of Science Dr. Sabine Kuss' Laboratory for Bioanalytic and Clinical Chemistry renovations. • Max Rady College of Medicine and the Faculty of Health Sciences maintenance of various Core Facilities used by over 60 principal investigators.
Research Resources	Improve and manage research data information & analysis by upgrading databases and access to electronic resources	% change of data usage and downloads for research purposes Purchase of electronic resources, databases, online access to journals and upgrades to cables and wireless technologies	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"> ○ 1.7M page views & 7.8K in users on the UM Digital Collections Site -Access to Historical Canadian Documents ○ 1.5M successful article requests from electronic resources • Renewal of Scival Research metrics tool used as identifying potential collaborators nationally and internationally who publish in specific research areas. • Maintain a province-wide research database used by health policy researchers in the Department of Community Health Sciences and the Manitoba Centre for Health Policy

Accountability & Public Acknowledgment

Eligible Expense Category	Performance Objectives	Performance Indicators	Target Outcomes	Outcomes Reported at Year End
Management and Administration	<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"> • # 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"> ○ 1,386 Applications ○ 737 Awards ○ 53.2% success rate • Contracts <ul style="list-style-type: none"> ○ 398 non-funded (28% increase) ○ 381 funded (6% increase) ○ 389 Mixed (43% increase) ○ 92 proposals/LOI/NIH applications • Industry Partners <ul style="list-style-type: none"> ○ 87 Potential Partners ○ 67 Participating Partners ○ 77% success rate
Regulatory Requirements and Accreditation	<p>Comply with regulatory requirements</p> <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 	<p>Improved compliance with regulatory requirements as measured by laboratory inspections, incident investigations and regulator’s audits.</p> <p># of certificates issued to trained faculty and research personnel</p>	<p>Research facilities & equipment meet regulatory requirements</p> <p>Trained faculty and research personnel</p> <p>Fewer incident investigations</p>	<ul style="list-style-type: none"> • Animal Care <ul style="list-style-type: none"> ○ 250 new Protocols and renewals (4% increase) ○ 125 Wet labs were delivered (COVID effects) ○ 101 people completed the animal user online training course (COVID effects) ○ 580 Post Approval Monitoring (PAM) visits- 23% increase (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"> ○ 670 in new Protocols ○ 1,433 Amendments (1% increase) ○ 326 Study Closures ○ 598 Safety Reports (2% increase) • Human Ethics Fort Gary Campus <ul style="list-style-type: none"> ○ 331 new Protocols ○ 417 Amendments (23% increase) ○ 418 Study Closures (57% increase) <p>CCAC full compliance (certificate received)</p> <ul style="list-style-type: none"> • Maintained the Certificate of Good Animal Practice

Accountability & Public Acknowledgment

Eligible Expense Category	Performance Objectives	Performance Indicators	Target Outcomes	Outcomes Reported at Year End
Intellectual Property	<p>Sustain the Technology Transfer Office</p> <p>Increase the institution's research base by identifying collaborative research opportunities</p>	<ul style="list-style-type: none"> • # Patents filed • # Invention Disclosures • # Licenses • % change in Startups • \$ in Royalty Revenue 	<p>Value-added growth of new research partnerships</p> <p>Continued support to researchers in their commercial endeavors and industry linkages</p>	<ul style="list-style-type: none"> • 39 Invention Disclosures • 38 Patents filed (65% increase) • 16 Patents issued (300% increase) • 209 Agreements signed (32% increase) • 4 exclusive Licenses issued • \$570K in Royalty Revenue <p>Mitacs</p> <ul style="list-style-type: none"> • 413 Accelerate Program submissions (13% increase) • 8 Globalink awarded • 26 Business Strategy Interns • 80 Projects started (23% increase)