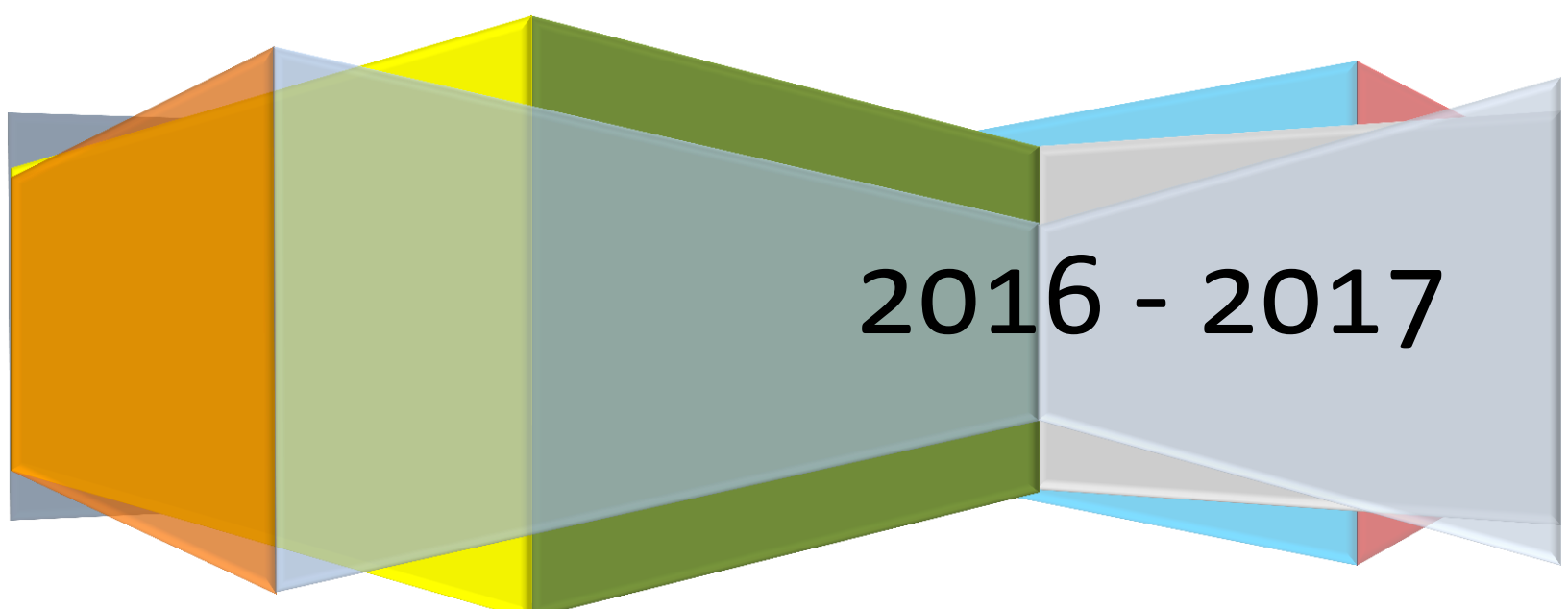


University of Manitoba

Research Support Fund

**Public Acknowledgement, Objectives &
Outcomes**

Office of the VP (Research & International)



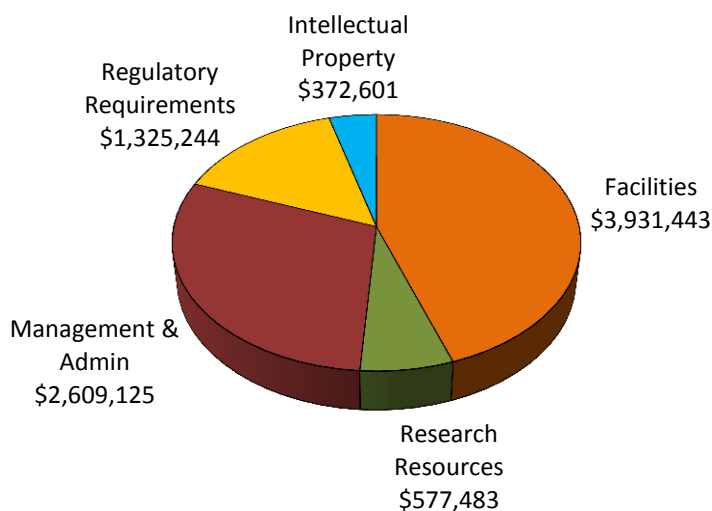
2016 - 2017

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2016 - 2017 Research Support Fund Outcomes Report

The University of Manitoba received **\$8,815,895** in Federal RSF support.

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



Research Facilities

- Renovations to the I. H. Asper School of Business graduate student research (Ph.D. and M. Sc.) area. The graduate program has experienced tremendous growth over the past three years from 14 to 34 students. This allowed Asper to offer graduate students a facility at par with other research-intense Canadian business schools and to compete for high-quality students.
- Renovations to Dr. Dave Herbert's lab in Chemistry for functionality and safety issues for students. Dr. Herbert's areas of research are in inorganic polymers and small-molecule/organic polymer/inorganic nanostructure conjugate and designing extended N-heterocyclic ligands for cooperative bond-activation and building new emissive materials.
- Renovations of the Near Eastern and Biblical Archaeology Laboratory within St. Paul's College. The facility provides for hands-on mentoring and research training experience for undergraduate and graduate students through physical contact with

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actual collections from Near Eastern archaeological sites. The NEBAL is the administrative and research center for the \$2.7 million SSHRC Partnership Grant awarded to Dr. Haskel Greenfield for a seven year excavation in Israel with Bar-Ilan University. It provides lab space for students to work on related research projects and currently consists of two staff, seven graduate students and at least four undergraduate students.

- Renovations to Dr. Gregg Tomy's Lab in Chemistry where high resolution mass spectrometry is used to unearth previously reported chemicals in the environment. Dr. Tomy co-founded Canada's only Centre for Oil and Gas Research and Development (COGRAD) where his team studies the effects of petrochemicals on our water supply and its living creatures. COGRAD's goal is to improve and standardize testing methods, making analysis times shorter, more accurate and more cost-effective.

Research Resources

- The Qualtrics, online survey software program supports research projects within Manitoba Centre for Nursing and Health Research (MCNHR) and of other College of Nursing researchers. The program allows at least 5000 survey responses per year, unlimited questions per survey and unlimited number of surveys. In 2016, 10 online surveys used this online survey platform. It is anticipated more researchers will make use of this critical research resource in the upcoming years. The minimal cost, ease of data collection, the automation of data input and handling and flexibility in design are some of the many advantages to using Qualtrics versus traditional paper or face to face surveys.

- The Human Ethics and Lab Animals Management modules allow Research Services to track necessary research project compliance for university accreditation purposes. Through InfoEd Global, the software company used by Research Services, they can track the protocol approval process and connect the approval to the research project as well as track ethics approval expiry, renewals, etc.

- 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 supply those requests from within its own collections. In

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2016, Libraries received 5,924 requests for materials not held in our collections and 2.2 million successful article requests for electronic resources.

Management and Administration

- The RSF contributes towards the considerable amount 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 for 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 the publications.
- The University of Manitoba has added 2 additional Research Facilitators in the Faculty of Science and the Riddell Faculty of Earth Environment and Resources. A total of 7 Research Facilitators aid with the identification and implementation of collaborative funding proposals to enhance research administration, improve communication with researchers and administrators, thus ensuring accountability to all stakeholders.
- The Faculty of Kinesiology & Recreation Management maintained a full time lab/research coordinator position. This position implements and manages an inventory system for lab and research equipment for the entire Faculty, provide oversight and training for the health and safety regulations and aids in coordinating a research day involving undergrad and graduate students through knowledge translation. The Lab Coordinator has helped to promote, enhance and further research in the Faculty.
- The continued management and administrative support in the Office of Research Services, Office of Legal Counsel, Central Administration and the Technology Transfer Office 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

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- The T.K. Cheung Centre for Animal Science Research (TKCC) is a research facility with flexible space designed for intensive and metabolic studies with ruminant and monogastric livestock species. TKCC was upgraded to conform to the new Health Canada requirements for Level 2 containment for studies involving disease challenge models. Research programs on nutrition and gut health interactions (led by Dr. Martin Nyachoti) and investigations into the gut microbiome (led by Dr. Ehsan Khafipour) could not continue without this upgrade.
- Upgrades to the Beef Research Laboratory (Barn B Lab) at Glenlea Research station recommended by the University Animal Care Committee were completed. The facility is the primary animal handling unit for the University's beef research. This is the only large ruminant lab and handling facility within the University and the province, and without the renovation and upgrades the research could not occur. Drs. Kim Ominski and Emma McGeough, Department of Animal Science (two tri-Council grant holders), specializing in feed efficiency in ruminants (specifically beef animals) and their impact on greenhouse gas emissions, will primarily benefit from the RSF-enabled upgrades. Over the last 15 years the facility has supported the training of 20 MSc students and 3 PhD students, as well as 17 NSERC students. The Beef Endowment Fund contributed \$100,000 to complete the renovation project, so there was extremely good leverage of RSF funds. The renovation brought the facility into a first class animal handling and laboratory area, and we are proud to showcase it to visitors and industry partners.
- Research Support Funds has permitted the University of Manitoba to address laboratory support systems, safety concerns, failing infrastructure, limited capabilities, and building deficiency issues that were previously not possible to complete using existing budgets.

Intellectual Property

- The continuous support towards the salary and operating costs of the Technology Transfer Office 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 Technology Transfer Office (TTO) 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.

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A current milestone is the launch of the Game Changer Competition. This is designed to increase the amount of entrepreneurial activity across the University by problems identification and figuring out their solutions. The Competition is intended to be an annual competition and will expand to include other Manitoba post-secondary institutions, and citizens of Manitoba.

The Office of Fair Practices and Legal Affairs drafts technology commercialization agreements in consultation with the Technology Transfer Office. The University receives royalties for inventions and works with TTO to prepare and negotiate technology commercialization agreements and incorporate start-up companies.

Metrics 2016 - 2017:

- 39 Invention Disclosures
- 25 Patents filed; 8 issued patents
- 5 exclusive Licenses and 2 non-exclusive licenses issued
- 88 Agreements signed
- \$1.45M in Royalty Revenue

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/

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- 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/>

2016 - 2017 Performance Indicators and Outcomes

Eligible Expense Category	Performance Objectives	Performance Indicators	Target Outcomes	Outcomes Reported at Year End
Research Facilities	<p>Strengthen researcher retention and quality of research by upgrading and maintaining research facilities and equipment</p> <p>Ongoing technical support for laboratories, offices and other facilities.</p>	<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> <p>Attraction of potential research funding</p>	<ul style="list-style-type: none"> • Faculty of Science Dr. Gregg Tomy's lab renovations – co-founded Canada's only Centre for Oil and Gas Research & Development (COGRAD) • I.H. Asper School of Business graduate student research area renovations – offering a facility at par with other research intense Canadian business schools & compete for high-quality students.- 41% increase in graduate student research over the last three years. • Faculty of Science Dr. Dave Herbert's lab renovations – improve functionality and safety issues for students
Research Resources	<p>Improve and manage research data information & analysis by upgrading databases and access to electronic resources</p>	<p>% 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>	<ul style="list-style-type: none"> • Library data usage annual comparison <ul style="list-style-type: none"> ○ 7.2% increase in page views & 3.2% increase in users on the Theses Digitization Project ○ 77.2% increase in page views & 12.8% increase in users on the UM Digital Collections Site - Access to Historical Canadian Documents ○ 2.2M successful article requests from electronic resources

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Eligible Expense Category	Performance Objectives	Performance Indicators	Target Outcomes	Outcomes Reported at Year End
Management and Administration				<ul style="list-style-type: none"> • Finance & Accounting WRDS usage data <ul style="list-style-type: none"> ○ 393% increase in data extracted (GB) ○ 200% increase in queries ○ 16% increase in users
	Provide research administrative support for processing new grants and contracts Monitor expenses and review processes to ensure research compliances are meeting external agency guidelines	<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"> ○ 1,180 Applications ○ 630 Awards ○ 53.4% success rate • Contracts <ul style="list-style-type: none"> ○ 241 Applications ○ 145 Awards ○ 60.2% success rate • Industry Partners <ul style="list-style-type: none"> ○ 88 Potential Partners ○ 60 Participating Partners ○ 68.2% success rate
Regulatory Requirements and Accreditation	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"> ○ 2.6% increase in new Protocols and renewals ○ 115 Wet labs were delivered ○ 195 people completed the animal user online training course ○ 397 Post Approval Monitoring (PAM) visits (includes follow-ups and 22 lab inspections) ○ Increasing demands for meeting guidelines and CCAC changes • Human Ethics Bannatyne Campus <ul style="list-style-type: none"> ○ 35% increase in new study submissions ○ 15.1% increase in annual reviews ○ 24.2% increase in

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Eligible Expense Category	Performance Objectives	Performance Indicators	Target Outcomes	Outcomes Reported at Year End
				<ul style="list-style-type: none"> ○ amendment packages ○ 2.9% decrease in new protocols ● Human Ethics Fort Gary Campus <ul style="list-style-type: none"> ○ 6.49% decrease in new Protocols ○ 6.07% decrease in Amendments ○ 56.78% increase in Renewals CCAC full compliance (certificate received) <ul style="list-style-type: none"> ● Maintained the Certificate of Good Animal Practice
Intellectual Property	Sustain the Technology Transfer Office Increase the institution's research base by identifying collaborative research opportunities	<ul style="list-style-type: none"> ● # Patents filed ● # Invention Disclosures ● # Licenses ● % change in Startups ● \$ in Royalty Revenue 	Value-added growth of new research partnerships Continued support to researchers in their commercial endeavors and industry linkages	<ul style="list-style-type: none"> ● 39 Invention Disclosures ● 25 Patents filed; 8 issued patents ● 88 Agreements signed ● 5 exclusive Licenses issued ● \$1.45M in Royalty Revenue Game Changer Competition- Year 2 <ul style="list-style-type: none"> ● 189 Phase 1 Problem Submissions (60% increase) ● 14 Phase 2 Solutions Submissions