

Library Impact Practice Brief
**Developing and Delivering New
Research Services at the University of
Manitoba Libraries**

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Introduction

This practice brief provides an overview of lessons learned in developing and deploying a new research services unit at the University of Manitoba Libraries (UML). The University of Manitoba (U of M) is a research-intensive medical and doctoral-level university, the only one of its kind in the province of Manitoba, and a member of the U15 Group of Canadian Research Universities.¹ The UML comprises 11 libraries distributed over two campuses that support over 100 academic programs.

Why It Matters to Research Libraries

The report aims to offer research libraries of comparable size and scope an overview of our experience developing three research support services over a three-year period. Libraries' support of research in their parent academic institutions should undoubtedly be informed by local contexts and demonstrated need but should also be highly perceptible and accessible by faculty and students. Below, we present a case study of the development of three different services that fall within the Research Services & Digital Strategies (RSDS) unit of the UML.

Background

When RDS became a unit in 2017, significant organizational changes took place within the UML and within the larger university. As new projects and priorities arose during 2017–2019, the pace at which RSDS could deliver on its service goals was impacted. Research support initiatives were reprioritized to address new objectives that were deemed more immediate and time-sensitive. Consequently, some RSDS initiatives were suspended or slowed in development, and the unit has since recalibrated its focus and goals with these shifting priorities.

Objectives

This practice brief will:

- Review and assess the initial delivery and outcomes of three existing research support services
- Determine next steps for these three existing research support services

Key Performance Indicators

Our key performance indicators are limited in some areas due to the fact that many of these research services are still new, and measuring their “success” at this juncture would be overly speculative. Our final section on Recommendations for the Future discusses the importance and necessity of quantifiably measuring the impact and performance of our research services.

Data

Quantitative data was drawn primarily from the UML repository systems while the qualitative data was derived from personal files and team and vendor correspondence, as well as project documents. Our institution has not collected indicator data that would serve as drivers for our research services.

One of the future priorities for the unit includes a more coordinated, efficient, and purposeful gathering and reporting of the unit’s activities and impact.

Research Services at University of Manitoba Libraries

1. Research Data Management

To date, research data management (RDM) support has been focused on our instance of Dataverse,² as well as our MSpace institutional repository.³ In addition to hosting and supporting these two data repositories, the University of Manitoba Libraries offers additional RDM support in the forms of data management planning and data deposit assistance (data transfer, metadata assistance, and data publishing and discovery), as well as RDM consultation that involves librarians working with faculty members and/or research teams at various phases of the research project life cycle. Most of this work occurs leading up to or during research deposit within our data repositories.

1a. Research Data Repositories

The implementation and ongoing maintenance of MSpace and Dataverse occurred sometime before the promotion of these repositories to researchers began in earnest. MSpace, which serves as the institutional repository, is populated primarily by electronic theses and dissertations. Until very recently, faculty researchers have

deposited their work at a much lower and less frequent rate. Though the open access (OA) movement was adopted by the UML early on through the establishment and then dissolution of an OA fund, uptake of open scholarship at our institution has been slow—but it is steadily increasing.⁴

We attribute the recent surge of faculty research deposit in our MSpace repository to two key factors. First, an increasing number of grant-funding agencies are now requiring that research findings be made freely and publicly available via preprint or publisher-format deposit. In terms of meeting funder mandates, of principal concern for U of M researchers is Canada's Tri-Agency Open Access Policy, which requires that any publications resulting from the research the Agency funds must be made freely and publicly available.⁵ Second, rights management is an ongoing issue. UML librarians aim to educate researchers before publication to encourage both financially prudent and mandate-compliant choices. Rights management considerations also impact asset management decisions by library and developer staff. To address education and planning needs, the RSDS unit, together with electronic resources librarians, has endeavored to gather and present the institutional offsets to article processing charges (APCs) by managing, tracking, and promoting discounts obtained through institutional license arrangements via collection purchases or memberships. This information is made available on the RSDS website together with a referral service for both researchers and librarians to request advanced information support from RSDS team members. In addition to this informational support, the RSDS has produced instructional videos, available on the UML YouTube channel, on various aspects of deposit, rights management, and open publishing.⁶ These outreach endeavors seek to communicate beyond the necessities of mandates to highlight the dissemination impact and function of open scholarship and its ecosystem through the adoption and use of persistent identifiers (Handle.Net and digital object identifier registries), alternative metrics available within the repository and other analytic software, and uptake to the global community via robust metadata.

Supporting the growing needs and awareness of these benefits requires constant attention from both RSDS and UML systems staff, both in terms of understanding and responding to the national currents regarding repository infrastructure and restructuring the present MSpace milieu. This ongoing work includes updating our metadata support to meet OpenAIRE version 4 compliance requirements to enable harvesting by OpenAIRE Explore, redesigning the communities so that faculties and departments can better discover and report their various deposit activities, creating a public-facing dashboard to demonstrate the visual impact and value of assets deposited in MSpace, and defining and documenting workflow and human resource capacity requirements for ongoing maintenance of the repository. As we recently

discovered in conversations with colleagues also involved in repository support across Canada, meeting rights management and related metadata needs requires human-mediated intervention at the point of or prior to deposit. There are various models for this type of support, ranging from a team in charge of these specific responsibilities, to more diffuse support across multiple units in an institution (e.g., libraries, copyright office), to a small team responsible for many aspects related to repository support. In both MSpace and the UM Dataverse repository, the UML capacity model can be placed in the last category.

In support of data deposit, UM Dataverse was launched in 2016. It could be said that its launch anticipated the need. With RSDS established a year later, one immediate priority was to promote and provide support for data deposit. In tandem with this support was an institutional gap: for a time, there was no reasonably secure data file-share option available to researchers that was not a third-party cloud service. As a stopgap measure, researchers were using UM Dataverse to meet that need. Consequently, the majority of research data deposited in UM Dataverse was restricted to the research teams responsible for the content. This places the UM Dataverse repository uniquely in the active stages of many research projects, where data is actively being created and manipulated, and less at the preservation/archival stage of the research life cycle, where data should theoretically be published openly.⁷ This situation is not necessarily a negative one and has been more of an opportunity to better understand how researchers are using Dataverse.

Policy deliberations and capacity constraints at the university related to sensitive data (personal and/or health information) are also of concern. While UM Dataverse houses data from 10 of the 15 faculties at the university, there is an additional data repository at the university operating outside of the libraries that purports to address the seemingly unique security needs for health sciences research data. Consequently, there are many discussions related to the definition and other criteria that differentiate what data repositories are or what their function serves. RSDS seeks to develop better-articulated data workflows and harmonized data procedures across all stakeholders at the institution.

While UM Dataverse is a locally hosted system (the repository software and data reside on servers at the university data center), the use of third-party data repositories by university researchers is a reality the libraries must accept in the interest of respecting the autonomy, rights, and academic freedoms of researchers. The importance of data residency—specifically that research data created at the university is stored on servers hosted within Canadian borders—has been declared an absolute requirement for many, if not all, of the researchers we have worked with to date. This researcher “peace of mind” is something we address at the outset of our conversations

with them through a concise and uncomplicated description of how data is securely deposited, managed, and stored within Dataverse.

1b. Data Management Plans (DMPs)

For approximately four years, the University of Manitoba Libraries has been working in anticipation of the Canadian government mandating the inclusion of a data management plan (DMP) as a condition of funding. While the mandate may be still far off, the Tri-Agency's Research Data Management Policy is reasonably imminent, and it is likely that DMPs will be introduced as recommended.⁸ To that end, we have started to see some research groups develop DMPs as part of their overall project planning.⁹

Our DMP service is largely based on the successful building and promotion of DMP Assistant, which was created by the Canadian library consortial group Portage Network¹⁰ and is now integrated into the Digital Research Alliance of Canada.¹¹ DMP Assistant is an online tool containing DMP templates that guide researchers through a series of questions in order to generate and export a DMP for grant purposes. At present, UML has created one generic DMP template using this online application, and we are working on adapting the DMP exemplars and discipline-specific templates developed by Portage for the UM community. The UML can also draw on the expertise of the National Centre for Truth and Reconciliation, hosted at the University of Manitoba to develop data management principles for research involving Indigenous peoples, both for the university and the broader Portage community.

University research involving Indigenous peoples in Canada has a troubled past in terms of informed consent of participants, as well as ensuring the outcomes of research with Indigenous peoples benefits those communities in genuine and meaningful ways. Being aware of this history, the UML has entered into conversations with Indigenous researchers at the university, as well as non-Indigenous researchers, to discuss how DMPs might be created within this context. The starting point for this initiative follows the First Nations principles of ownership, control, access and possession (OCAP), which “affirms that First Nations, their communities, and representative bodies are within their rights in seeking to control over all aspects of research and information management processes that impact them.”¹² We understand this statement to include the creation of DMPs that involve research with Indigenous peoples in Canada. In adherence to the principles put forth by OCAP, the libraries have and will continue to listen to, acknowledge and include the perspectives of Indigenous peoples throughout the entire development of DMPs related to research that involves those individuals and communities.

2. Digitization

The University of Manitoba Libraries has engaged in the digitization of paper-based material and other analog content for approximately 20 years. The purpose of digitizing our collections is to make them more accessible to researchers across many academic disciplines. While use of digitized collections has primarily occurred in social sciences and humanities research, it has also extended to research in the health sciences, law, music, and architecture. In short, making digitized collections more accessible for research projects across the university still holds potential, and we hope to increase our digitization activities in the near future.

2a. Digitization of Legacy Material

For almost 20 years, UML's digitization activities involved library employees scanning material and publishing that digitized content online via websites and content management systems. During that time, little if any consideration was given to the long-term preservation for much of this digitized material, and while we worked to migrate that legacy content to contemporary formats, we were also faced with a growing backlog of collections that we had committed to digitizing for researchers both within and external to the institution.

In 2018, the UML began to address its digitization backlog in earnest and commissioned a third-party digitization service. Due to the fragile nature of the materials within these collections, we required that the vendor perform their work onsite within one of our libraries. While the project was ultimately a success in that we processed the collection backlog within one calendar year, there were a number of unforeseen challenges. Notable challenges included coordinating library staff to assist in the project start-up phase and dedicating adequate and secure space in the library so the work could proceed, while at the same time not interrupting the many other faculty and student services offered in the library.

We initially believed that our facilities could easily accommodate the digitization equipment required for this project in terms of physical space, security and internet connectivity. However, a number of obstacles in these areas only became evident in the final weeks leading up to the project start date. Meeting our anticipated start-date required the support of the head of the library unit where we intended to house the equipment and the staff working on the digitization project. As such, the head of the unit in question quickly reallocated staff, resources, and space from other areas to support our need for a digitization space adequate for our light, security, and connectivity needs. For example, the physical maneuvering of the equipment required the removal of 20 microfilm cabinets and their contents as well as changes

to physical structures. Without the authority to make changes to physical spaces, we relied on the head of the unit to ensure all the required changes would be made ahead of the arrival of the equipment, and because of the time we had taken early on to create relationships built on shared understanding and trust, our timeline and needs were met.

The successful completion of this digitization project has helped us move forward with new digitization initiatives. An added benefit was the comradery the project created among our colleagues, as the project was in the truest sense a very successful team-building exercise. Realizing that it is difficult to quantify the value of a respectful and cooperative inter-institutional project, we nevertheless feel that this was an unintended but most welcome project outcome.

2b. Digitization Service

The UML has worked diligently to modernize how it delivers on digitization requests. In what is best described as digitization-on-demand, we have typically scanned images and textual documents not only for faculty and students, but also for clients outside of our institution. Our most frequent requests are to digitize collections held by the libraries when that content is not already available online through one of our content management systems. Given that the UML has some of the best digitization equipment in the province, as well as the employee expertise to support it, we also receive requests to digitize material held externally by private individuals and commercial entities.

As part of our efforts to modernize our digitization service, we researched how comparable institutions structure cost-recovery fees, particularly with regard to how those fees contribute to scanning equipment maintenance and upgrades. We ultimately decided on a modest fee structure for external clients, while internal patrons (faculty and students) are not charged for digitization requests.

Breaking-down the costs for a fee structure also made us recognize the amount of labor that goes into digitization. From the time and care required to scan fragile documents and stitch large-format scans to the post-production work of image adjustment, OCR, and content delivery, digitization (especially for long-term preservation and access) involves a considerable amount of time, money, and effort.

3. Research Impact

The evolution of a research impact service at the UML grew organically through demand from faculties and departments who required specific indices primarily for accredited program requirements, grant funding agency requirements, and, to a lesser degree, promotion and tenure. The demand for bibliometrics and related services grew dramatically within the College of Medicine and some of the research-based basic medical sciences in and around 2013. Health sciences librarians, specifically, began to assume a new role and responsibility for keeping on top of developments and tools that would provide the information required, and the UML was involved in early institutional conversations about the acquisition of research performance and analytics tools.

Emerging demand for research impact services is linked to larger external forces within academia, such as funder requirements and inter-institutional competition through rankings based on a number of differing metrics. These forces have given rise to many faculty perception evaluations, case studies, and analyses in the literature on the use and misuse of research metrics and the inequity that their application may cause. To address these concerns, quantitative metrics have sometimes been coupled with qualitative measures, including discipline-specific “quality” evaluations used by promotion and tenure committees; however, there is no overall governance or policy assuring this practice.

Current faculty perceptions of research metrics at the University of Manitoba are largely informed by the recent history of the 2016 labor action and the report on research metrics that came out of that labor action.¹³ As a result of the report, the importance of a formal library service for research impact has been recognized. As part of our work in developing research impact services, the UML seeks to create a responsible use statement to support transparency, consistency, and efficient workflows. Organizationally, we have and will continue to strive toward a “community of practice” approach to share the workload equitably across the institution.

As with the other services discussed in this brief, institutional research impact or bibliometrics support services would benefit from a team-based or centralized committee governance structure. To our knowledge, the Canadian universities that have successfully implemented such an approach in the last few years have done so in part because their senior administrations understood the necessity for centralized and standardized delivery of research impact services, while also acknowledging disciplinary nuance.

Resources Required

As discussed above, there are many areas where additional resources are required to extend the reach and impact of research data services. In terms of human resources, skills training and librarian expertise at UM Libraries have increased incrementally through discrete projects, while formalized and ongoing training is forthcoming. Technical resource acquisition, most notably in the areas of hardware and software purchases, has also occurred incrementally. Additional technology is a persistent challenge with often expensive solutions—a problem shared by all institutions supporting research. A hidden, or not as perceptible, human-resource requirement relates to the time required for librarians to engage with outside communities of practice and in frequent and rigorous professional development opportunities. Librarian skills development in research data management, digitization, and research impact is not a one-time event, nor is it a one-time cost especially given the pace and tempo of development in these research services areas.

Value through Lessons Learned

Two key lessons emerged from this project. First, in the area of research data management, we expected to learn that our data repositories require more support than they currently receive. However, while we did anticipate that training more librarians to work on our data repositories would allow us to provide better service, we did not conduct enough upstream training nor reinforce the necessary supports needed to accommodate increases in service demands.¹⁴ The same could be said for our digitization and research impact services; the uptake and adoption of our services by researchers could have been better met with more appropriate and accommodating human and technological resources.

A second key takeaway from this project relates to the role librarians play in informing and advising the university community on national and international changes within the research industry that will impact work here at home. For example, when major grant-funding agencies implemented new requirements related to open scholarship, libraries were called on to assist in meeting those requirements in terms of resources and education. In addition to hosting and supporting data repositories and providing online resources and educational sessions for researchers, the libraries were (and continue to be) called upon to present on such matters to senior-level researchers and university administration to help inform decision-making. This point is well articulated in our work on research impact and bibliometrics. Dispelling the misconception that research metrics may only be applied

to the detriment of some academic disciplines while other disciplines prosper is not an easy task. However, through our research impact service (as exiguous as it may be at present) and presentations, the libraries have become a strong voice on the topic of research metrics and their proper use and application within our institution.

Researchers and administrators are not unaware of these types of changes within the research industry, but their focus is understandably not often on the intricacies of data repositories, the rigor of digitization standards, or the complexities of bibliometric analysis. That being said, if this reflective exercise has yielded anything, it has undeniably shown that the libraries are critical to the success of the institution's research objectives and are major partners in research projects across all academic disciplines. Though this was tacitly understood and agreed upon by the practice brief team at the beginning of the project, our work here strongly affirms that libraries go well beyond being purveyors of research tools and services. In this sense, "research services" is somewhat of a misnomer in that what libraries provide in the support of research is much more than a reductionist catalog of utilities. True research support provided by the libraries involves an incredible amount of human labor by highly skilled academic librarians and archivists, as well as support staff, over months (and sometimes years) with any given research project. This is something we are keenly aware of as our libraries move toward determining, collecting, and reporting on key performance indicators in the near future.

Recommendations for the Future

Institutions looking to offer RDM, digitization, or research impact services should be aware that researchers will often not see or realize the value of these services until external factors—for lack of a better word—*force* them to. For example, the UML actively campaigned to educate our research community on the importance of research data management for a period of approximately four years with little to no success. Repeated attempts to inform researchers that data management planning and data deposit were soon to be made mandatory by some grant-funding agencies did not result in researchers taking these matters seriously. However, when Canada's major grant-funding agencies ratified a formal RDM policy with mandatory requirements for research data as a condition of funding, RDM became a priority for researchers and our senior administrators almost overnight. This highlights an important point for libraries who seek to offer new research services: libraries can predict researcher needs by developing new tools and services, but the parent institution and its research community must see these tools and services as an absolutely essential part of their success for there to be any genuine engagement and uptake.

Library education and outreach on new research services may at times seem like a Sisyphean task until the point where a research group or senior university administrator sees the unquestionable value of these new services, integrates these services into their workflows, and promotes these services to their peers. In addition to more traditional library outreach (such as presentations and education sessions), we have found that regular interactions and work with principal investigators of research projects and senior university administrators have resulted in those individuals taking the work we do to support research more seriously. As the result of this work, libraries are now called on to advise senior faculty and administrators on issues related to research data, open scholarship, digital preservation, and research metrics. In conclusion, regular and unrelenting library outreach to senior faculty and administrators has paid significant dividends in the adoption of our new research services. While the price of this outreach is high in terms of time and effort, the cost of not performing this outreach is undeniably higher. Without it, our services are unlikely to gain any real foothold from which future progress can be made.

The immediate next step for the three research services reviewed in this practice brief is to more rigorously collect and analyze quantifiable data associated with our research services. While our key performance indicator initiative is still in an early stage, our intent is to use the data we collect to better inform and direct our research services. Counts of data and publication deposits, the tally of items digitized, and the number of bibliometric analysis projects completed are undeniably important indicators to review for future planning. That being said, the more qualitative elements—such as ongoing and meaningful engagement with research teams, establishing rapport with administrators, and day-to-day support and consultation for research services—are also factors to be recorded in our future performance analysis. This is easier said than done, but we will endeavor to bring this less-perceptible element of research support to the forefront in our review of performance indicators.

There is much UML could do to improve on what we have reported on in this practice brief. For instance, more quantitative data would certainly have benefitted our analysis and reporting. Analyzing research support beyond the RSDS unit would also have added considerable depth to this report, as there is much more we could have included to make this report a more holistic review of libraries research support at our institution. Developing and launching new research services for all academic disciplines within our institution has and continues to be rewarding and beneficial for both the libraries and researchers, and yet, it has been a challenge to take a pause and reflect. With that in mind, we feel that the work we have done here for this practice brief could possibly be revisited in the future as part of a more longitudinal study.

Endnotes

- ¹ U15 Group of Canadian Research Universities (website), accessed December 9, 2021, <https://u15.ca/>.
- ² University of Manitoba Dataverse, accessed February 2, 2022, <https://dataverse.lib.umanitoba.ca/>.
- ³ MSpace, University of Manitoba Libraries, accessed February 2, 2022, <https://mspace.lib.umanitoba.ca/>. MSpace is built on the open source repository software, DSpace. MSpace came online in 2004–2005 at the University of Manitoba.
- ⁴ The University of Manitoba institutional repository (MSpace) had 44 research publications deposited in 2005, 47 in 2010, 120 in 2015, and 140 in 2019.
- ⁵ Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, and Social Sciences and Humanities Research Council of Canada, “Tri-Agency Open Access Policy on Publications,” Government of Canada, December 21, 2016, https://www.ic.gc.ca/eic/site/063.nsf/eng/h_F6765465.html.
- ⁶ University of Manitoba Libraries YouTube Channel, accessed December 9, 2021, <https://www.youtube.com/user/UManitobaLibraries/videos>.
- ⁷ It is also possible that the research projects currently within Dataverse are still very much in their active stages and therefore haven’t reached the point where sharing data publicly is a consideration. This would suggest that private research projects hosted in Dataverse are started at the outset of the research project, and we may not see the public results of that research for another one to two years.
- ⁸ Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, and Social Sciences and Humanities Research Council of Canada, “Tri-Agency Research Data Management Policy,” Government of Canada, March 15, 2021, http://www.science.gc.ca/eic/site/063.nsf/eng/h_97610.html.
- ⁹ In 2017, there were 2 users of DMP Assistant at the University of Manitoba. In 2019, there were 92 users of DMP Assistant.
- ¹⁰ DMP Assistant (website), accessed February 2, 2022, <https://assistant.portagenetwork.ca/>.
- ¹¹ Digital Research Alliance of Canada (website), accessed February 2, 2022, <https://alliancecan.ca/en>.
- ¹² “The First Nations Principles of OCAP®,” First Nations Information Governance Centre, accessed February 2, 2022, <https://fnigc.ca/ocap-training/>.
- ¹³ University of Manitoba and University of Manitoba Faculty Association, Letter of Understanding Re: Joint Committee on Metrics, 2017, http://www.umfa.ca/images/pdfs/member-resources/Appendix_H.pdf.
- ¹⁴ For example, in 2017, there were 61 datasets deposited in UM Dataverse. In 2019, there were 296 datasets deposited. There is a substantial amount of librarian consultation time associated with data deposit.