

Olds College

Institutional Research Data Management Strategy

1. Definitions

Data Management Plan: A 'data management plan' (DMP) is "a living document, typically associated with an individual research project or program that consists of the practices, processes and strategies that pertain to a set of specified topics related to data management and curation. DMPs should be modified throughout the course of a research project to reflect changes in project design, methods, or other considerations. DMPs guide researchers in articulating their plans for managing data; they do not necessarily compel researchers to manage data differently" (Tri-Agency Research Data Management Policy, Frequently Asked Questions, Government of Canada 2021).

Metadata: Metadata is data about data and is the information needed to make a dataset discoverable, citable, and usable by others.

OCAP Principles: The First Nations principles of OCAP® establish how First Nations' data and information will be collected, protected, used, or shared. Standing for ownership, control, access and possession, OCAP® is a tool to support strong information governance on the path to First Nations data sovereignty. Given the diversity within and across Nations, the principles are expressed and asserted in line with a Nation's respective world view, traditional knowledge, and protocols.

Primary Data: Primary data is data that is collected by a researcher from first-hand sources, using methods like experiments performed by the researcher, surveys, or interviews specially designed for understanding and solving the research problem at hand.

Research: Research is creative and systematic work that is undertaken to increase knowledge in a particular area or discipline. It involves the collection, organization and analysis of information to increase understanding of a topic or issue.

Research and Scholarship Committee: The Olds College Research and Scholarship Committee provides a governance function for the coordination of research and scholarly activity across campus. The Committee provides advice and direction for the development of relevant policies and procedures and oversees the annual action plan for research and scholarly activity. Representing faculty, the academic Schools, the Teaching and Learning Centre of Innovation, and the Olds College Centre of Innovation, the committee facilitates the ongoing coordinated development of research and scholarship at the college.

Research Data: 'Research data' are data that are used as primary sources to support technical or scientific enquiry, research, scholarship, or creative practice, and that are used as evidence in the research process and/or are commonly accepted in the research community as necessary to validate research findings and

results. Research data may be experimental data, observational data, operational data, third party data, public sector data, monitoring data, processed data, or repurposed data. What is considered relevant research data is often highly contextual, and determining what counts as such should be guided by disciplinary norms.” (Tri-Agency Research Data Management Policy, Frequently Asked Questions, Government of Canada 2021).

Research Data Lifecycle: The points throughout the research process where data is conceived, created, collected, manipulated, stored, shared, archived and destroyed where Research data management practices must be considered and implemented.

Research Data Management: ‘Research data management’ is “the storage of, access to and preservation of data produced from one or more investigations, or from a program of research. Research data management practices cover the entire lifecycle of the data, from planning the investigation to conducting it, and from backing up data as it is created and used to preserving data for the long term after the research has concluded. It also includes data-sharing, where applicable” (Social Sciences and Humanities Research Council Definition of Terms, Government of Canada 2021).

Secondary Data: (also known as second-party data) refers to any dataset collected by any person other than the one using it. It is data gathered from studies, surveys, or experiments that have been run by other people or for other research. Existing data can be analyzed to generate new hypotheses or answer critical research questions than what were originally conceived or the purpose of the original research question(s)..

SRCA (Scholarship, Research and Creative Activities): An inquiry/investigation or activity conducted by an Olds College Employee and/or Student that makes a productive, intellectual or creative contribution which advances the knowledge base and adds to developments in their fields.

2. Introduction and/or Background

The Tri-Agency (which consists of Canada's three main federal research funding agencies) launched a *Tri-Agency Research Data Management Policy* in March 2021. A requirement of that policy is that by March 1, 2023, each postsecondary institution and research hospital eligible to administer CIHR, NSERC or SSHRC funds must create and share, with the agencies and on its website, an institutional research data management strategy that describes how the institution will provide its researchers with an environment that enables and supports RDM (Research Data Management). Olds College is one such institution and as a result, has performed an extensive consultation and development process to fulfill this obligation. This document is the first iteration of this strategy and will be reviewed and updated annually.

The three main components of the policy include:

- Development of an Institutional RDM Strategy (March 2023);
- Requirement for researchers to complete Data Management Plans for specific grants (anticipated to start 2022); and,
- Institutions to provide infrastructure for Data Deposit (TBD)

The Olds College Research Data Management Advisory Committee ("RDM Advisory Committee") was struck to respond to the requirements of the new Tri-Agency RDM expectations, with the initial Terms of Reference focused primarily on gathering information and developing the Institutional Strategy. This Committee is made up of key stakeholder functions from across Olds College:

- Olds College Research
- Library Services
- Legal Services
- Research Ethics Board
- IT Services
- Research and Scholarly Activities Committee (to represent faculty for early engagement)
- Researchers
- Indigenous community

The Olds College Marketing & Communications department will be utilized by the RDM Advisory Committee for communications to the campus community and external partners to ensure information in the strategy and its implementation is disseminated widely and coherently.

Olds College has taken a long-range view as we build capacity and implement Research Data Management. We recognize that achieving a mature state of supporting infrastructure and resources at the institution will continue to grow over the next five years. While we have identified the broader areas of focus to achieve that long-term goal, we consider this strategy document as iterative.

This current version is focused on activities during the period of November 2022 – March 2025 and will be updated as we continue to grow and identify future areas of priority focus. This strategy will ultimately result in defining a roadmap that uses information gathered in the process to create a "Implementation Plan" for the next three years based on identified institutional gaps and Olds College researcher needs that will move us towards our ideal end state.

3. Importance of Research Data and Research Data Management

Many funders like the Tri-Agencies have **policies** requiring researchers to preserve and share data that support research findings. The College supports these policies and will require researchers, wherever possible, to deposit data that support published research findings in a suitable data repository for long-term preservation and sharing.

What is Research Data Management?

Research data management (RDM) encompasses the collection, management, preservation and sharing of research data throughout the research lifecycle. It includes **planning for data management** at the grant application and research development stage, **managing data on a day-to-day basis** during the research project, and **preserving and sharing data** for the long term on completion of the research and publication of findings (Figure 1).

RDM requirements apply to any data that are collected or used in the research process. This includes both **primary and secondary data**, and **research software and code** that may be created to generate, process and analyze research data.

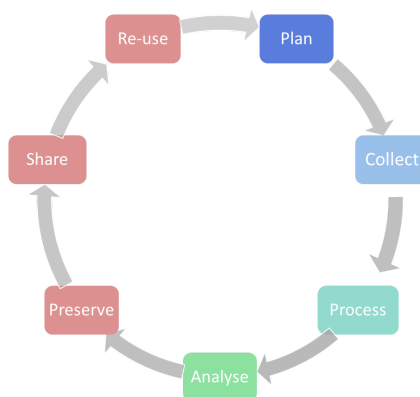


Figure 1. Research Data Management Process

Purpose of the Strategy

The purpose of the Research Data Management (RDM) Institutional Strategy is to foster a culture, and develop capacity, that supports researchers in adopting responsible RDM practices, aligned with the requirements of the Tri-Agency RDM Policy and following the internationally recognized FAIR Data Principles¹ to make research data findable, accessible, interoperable and reusable.

¹ Findability, Accessibility, Interoperability, and Reuse of digital assets. The principles emphasize machine-actionability (i.e., the capacity of computational systems to find, access, interoperate, and reuse data with

Within the context of the college research ecosystem, where funded research is usually undertaken in partnership with external industry/community partners who often own the resulting intellectual property, Olds College upholds the importance of supporting researchers' capacity to securely preserve and use their research data throughout their research projects, reuse their data over the course of their careers, and when appropriate, share their data. In instances of research undertaken with external partners, the Olds College research office and Olds College's legal services support researchers with advice and resources for safeguarding research including, data sharing, non-disclosure and other research agreements.

As an acknowledgement of our commitment to research excellence, strong RDM practices will support Olds College researchers in achieving scientific rigor, enable collaboration in their fields and create opportunities to build greater impact for the research that is created across the college.

4. Scope

This strategy applies to all Olds College researchers, including students, staff, and faculty in all disciplines and across our Schools and research centres. For awareness building, we have assumed a broad application of RDM best practices given the diverse nature of Olds College's research and innovation ecosystem that extends beyond only Tri-Agency-funded research activities. However, given the need to abide by the policy direction of the Tri-Agencies, the strategy (and implementation) will have a phased-in approach with the initial focus ensuring that our Tri-Agency-funded researchers have the tools, technologies and service supports in place to aid their work and demonstrate strong data management practices as leaders in this transition in RDM best practices. Subsequent phases will include all other researchers at the College in utilizing RDM best practices.

5. Oversight and Review

Progress against this Strategy will be monitored regularly by the RDM Advisory Committee, and the Strategy will be updated on an annual basis. An annual reporting on progress will be provided to the VP Development & Strategy, Vice President, Academic & Student Experience, and Vice President, Corporate Services & Chief Financial Officer.

6. Institutional Support

To support the adoption of Olds College's RDM Institutional Strategy and the implementation of RDM practices amongst researchers, Olds College will diligently work towards achieving our desired RDM state. Over the next three years (until March 2025) we have committed to focus on the following Strategic Priorities and activities (specific dates and timelines will be included in the Implementation Plan):

none or minimal human intervention) because humans increasingly rely on computational support to deal with data as a result of the increase in volume, complexity, and creation speed of data. Source: <https://www.go-fair.org/fair-principles/>

I. Enhance Awareness of RDM across Olds College

- Implementation of communications plan, and development and dissemination of RDM education products (Tips Sheets, FAQs) to Olds College community
- Develop and promote Library's RDM Guide & RDM Tutorial to the community
- Develop a targeted faculty and student engagement strategy

II. Enhance RDM Training and Capacity-building for Faculty and Staff

- Develop and disseminate "RDM Wise Practice Guidelines"
- Provide internal training and education:
 - Workshops, Lunch and Learns and other training for faculty, students and staff on aspects of RDM (e.g. DMP Assistant training; data sharing deposit and preservation, etc.)
 - Disseminate 'RDM 101' Presentation through the Olds College website and research workshops
 - Partner with Olds College's Teaching and Learning Centre of Innovation (TLCI) to offer RDM capacity building training to new and existing faculty members .
- Provide access to external Professional Development:
 - Specifically build capacity of College librarian and library staff to be able to support faculty and staff in good data management practices, discoverability, and access.
 - OCAP training to enhance understanding and competency for participation in research and data collection with Indigenous peoples.
- Build access to tools and supports to enhance strong data management practice.

III. Strengthen RDM Governance:

- Evolve current RDM Advisory Committee to formalize implementation of Olds College's RDM Strategy, including engaging other stakeholders across the college.
- Develop and publicize the new Olds College Research Data Governance Policy and Procedures (the "Implementation Plan") that will establish institutional standards and processes related to the management of research data.
- Update or create other Olds College policies as required to reflect RDM practices (e.g. Access to Electronic Data Policy).
- Establish more streamlined RDM communications and processes with external research partners.
- Consider dedicated staff capacity to support RDM in accordance with data privacy legislation.

IV. Provide and/or Support Access to RDM Tools, Resources, and Infrastructure:

- Identify repository storage option for Olds College faculty and staff for data deposit use with appropriate access controls.
- Implement data management planning, discovery and access tools, including offering training on such tools as the DMP Assistant Tool offered by the Digital Research Alliance of Canada
- Investigate new tools for data deposit, discovery and access including Dataverse (Borealis), and the Federated Research Data Repository (FRDR).

- Work with Olds College's/Red Deer Polytechnic's Research Ethics Board to update application form and other tools to capture RDM practice details.

7. Stakeholders

There are a number of stakeholders key to the success of the Olds College RDM Institutional Strategy. Most are represented on the RDM Advisory Committee (membership noted above).

Other areas of the College that will also be important to engage include:

- Olds College's Research and Scholarship Committee – The Olds College Research and Scholarship Committee provides a governance function for the coordination of research and scholarly activity across campus. The Committee provides advice and direction for the development of relevant policies and procedures and oversees the annual action plan for research and scholarly activity. Representing faculty, the academic Schools, the Teaching and Learning Centre of Innovation, and the Olds College Centre of Innovation, and reporting to the Vice President Academic and Student Experience, the committee facilitates the ongoing coordinated development of research and scholarship at the college.
- Olds College (Red Deer Polytechnic) Research Ethics Board
- Financial Services
- Indigenous representation at Olds College
- Academic Deans
- Institutional Research
- Teaching and Learning Centre of Innovation
- Students Association of Olds College (SAOC) representing Olds College students
- External research partners, including industry and community organizations

As part of our priorities over the next three years, we will develop an engagement strategy to ensure stakeholders are aware of and contributing to the efforts to build a strong RDM environment.

8. Ethics Considerations

Research projects involving human participants are reviewed by the Red Deer Polytechnic Research Ethics Board (on behalf of Olds College) which also includes an ethical review of RDM strategies as part of the REB submission. In addition, the Tri-Agency's Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans - TCPS2 (2018) is a resource for researchers to consider ethical conduct in research involving human participants.

9. Indigenous Data Considerations

Olds College is in consultation with Indigenous representatives on the principles of how First Nations' data and information is collected, protected, used, or shared. The strategy will be updated upon completion of this consultation.

10. Other Relevant Strategies and Policies

As part of the regular policy review cycle at Olds College, the policies identified below will be considered for updating, as needed, to ensure consistency with RDM expectations. Please visit the [Olds College Policy](#) page to search and access the policies listed below:

- Access and Protection of Privacy - A18
- Institutional Animal Care and Use - A20
- Code of Conduct - A25
- Supply of Goods and Services Policy - B300
- Purchase Card System - B300
- Travel Expense with Rate Sheet - B300
- Applied Research - D9
- Academic Integrity - D31
- Responsible Conduct of Research - D38
- Research Involving Animals Policy - D44
- Research Involving Humans Policy - D45
- Academic Freedom - D47
- Scholarly Activity - D48
- Intellectual Property Policy - under development

External Policies

- [Tri-Agency Research Data Management Policy](#)
- [Tri-Agency Framework on the Responsible Conduct of Research](#)
- [Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans](#)

11. Timelines

The Strategy will be promoted and implemented over the next three years, after which it will be updated with new priority focus areas for continually moving towards our ideal end state.

12. Looking Ahead

We recognize that RDM is quite new in the college context and it will be several years for us to establish a level of staff expertise, researcher understanding and capacity, and infrastructure that is required to reach our “ideal” state. This Strategy outlines planned activities over the next three years to keep Olds College moving towards an end state. Beyond that, we will plan future areas to address based on evolving requirements from Tri-Agency, the needs of Olds College researchers and the type of research that is undertaken at the college.

13. References

Digital Research Alliance of Canada (formerly Portage Network):
<https://alliancecan.ca/en/services/research-data-management>

Red Deer Polytechnic
<https://rdpolytech.ca/sites/default/files/uploads/documents/Research%20Data%20Management%20Strategy%20FINAL.pdf>

Sheridan College Research Data Management (RDM): RDM Institutional Strategy:
<https://sheridancollege.libguides.com/c.php?g=720640&p=5261074#:~:text=In%20drafting%20Sheridan's%20Institutional%20RDM,over%20the%20next%20five%20years>

Tri-Agency Research Data Management Policy: https://science.gc.ca/eic/site/063.nsf/eng/h_97610.html

University of Reading Research Data Archive: <https://researchdata.reading.ac.uk/>

University of Reading Research Data Management:
<https://www.reading.ac.uk/research-services/research-data-management>