R4R@Q: Managing your data throughout the research lifecycle

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Agenda

Introduction to Research Data Management (RDM)

New Tri-Agency RDM Policy

Support for Meeting the Policy Requirements

Meet the Experts
What are research data?

Is experimental data, observational data, operational data, third party data, public sector data, monitoring data, processed data, or repurposed data

All other digital and non-digital content have the potential to become research data

Primary sources supporting research, scholarship or artistic endeavours

Can be used as evidence to validate findings and results
What is research data management (RDM)?

Processes applied throughout the **lifecycle of a research project** to guide the collection, documentation, storage, sharing, and preservation of research data.
“Research data collected through the use of public funds should be responsibly and securely managed and be, where ethical, legal and commercial obligations allow, available for reuse by others”
How Does the New Policy Impact You?

Requirements:

1. Institutional Strategy: By March 1, 2023 each institution must develop and post an institutional strategy and notify the agency;

2. Data Management Plan (DMP): By spring 2022 the agencies will identify the initial set of funding opportunities subject to a DMP requirement;

3. Data Deposit: A data deposit requirement will be phased in.
How is Indigenous Data Addressed in the Policy?

“Data related to research by and with the First Nations, Métis, or Inuit whose traditional and ancestral territories are in Canada must be managed in accordance with data management principles developed and approved by these communities, and on the basis of free, prior and informed consent.”

• [OCAP](#) Principles (The First Nations Information Governance Centre)
• [Chapter 9](#) of the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans - Research Involving the First Nations, Inuit and Métis Peoples of Canada
Requirement #2 - Data Management Plans
What’s a DMP?

DMP

Data Collection

Documentation & Metadata

Sharing & Reuse

Storage & Backup

Preservation

Responsibilities & Resources

Ethics & Legal Compliance

Image Credit: James Doiron
Write a data management plan

Use the Portage DMP Assistant tool to develop your own data management plan. It is freely available to all researchers in Canada and provides step-by-step guidance through a series of questions based on a general template for research data stewardship.
Planning how research data will be stored and backed up throughout and beyond a research project is critical in ensuring data security and integrity. Appropriate storage and backup not only helps protect research data from catastrophic losses (due to hardware and software failures, viruses, hackers, natural disasters, human error, etc.), but also facilitates appropriate access by current and future researchers.

What are the anticipated storage requirements for your project, in terms of storage space (in megabytes, gigabytes, terabytes, etc.) and the length of time you will be storing it?

- 2 gigabytes

Guidance

Storage-space estimates should take into account requirements for file versioning, backups, and growth over time.

If you are collecting data over a long period (e.g. several months or years), your data storage and backup strategy should accommodate data growth. Similarly, a long-term storage plan is necessary if you intend to retain your data after the research project.

How and where will your data be stored and backed up during your research project?

- On my computer
- OneDrive
- Regionally in the Ontario Library Research Cloud

Guidance

The risk of losing data due to human error, natural disasters, or other mishap can be mitigated by following the 3-2-1 backup rule:

- Have at least three copies of your data.
- Store the copies on two different media.
- Keep one backup copy offsite

Data may be stored using optical or magnetic media, which can be removable (e.g. DVD and USB drives), fixed (e.g. hard drives), or in a cloud service.
Library Support for Data Management Planning Includes:

- Guidance on preparing your DMP
- Training on how to use the Portage DMP Assistant
- Support for locating relevant resources
  - On-campus (e.g. Research Ethics, ITS)
  - Externally (e.g. Portage)
- Guidance on best practice approaches to managing research data
Active Data Management? Come Talk to Us

QUL RDM can help you:

• Review data files
  – coding, formatting, anonymizing
  – converting to non-proprietary file formats

• Organize your data
  – help create meaningful file structure
  – file naming

• Document/describe data
  – describing variables so others understand it
  – creating user guide, methodology, codebook, data dictionary
Queen’s active data storage resources

Secure file storage
• 5 TBs cloud storage through OneDrive
• Teams collaborative platform
• Centre for Advanced Computing: Frontenac & Katarokwi Platforms
Requirement #3 - Depositing data

“Grant recipients are required to deposit into a digital repository all digital research data, metadata and code that directly support the research conclusions in journal publications and pre-prints that arise from agency-supported research”

A Data Repository Should:

• Provide continued stewardship of data after a project is finished.

• Assign persistent identifiers that support consistent and unambiguous data citation and linking.

• Ensure controlled access to data, where appropriate.

• Convert files to formats appropriate for both preservation and sharing.
Discovery of Research Data in Repositories

• Repositories Provide Context, Descriptive Metadata and Persistent Discoverability of data.

Data is most useful when it is:
• Findable
• Accessible
• Interoperable
• Re-usable
How do I share my research data?

Deposit your data in a disciplinary repository
Consult the Registry of Research Data Repositories
https://www.re3data.org/

The library supported repository:
Scholar’s Portal Dataverse
https://dataverse.scholarsportal.info

Use a nationally supported repository:
Federated Research Data Repository
https://www.frdr-dfdr.ca/repo/
When you use Dataverse:

• Your data receives a DOI and a standard citation
• Data stored on secure Canadian servers
• You control access to your data
• Your data files are version controlled
• Increase discovery of your work
• And much more: Scholar’s Portal Dataverse
How do I find Canadian research data?

Search for data in the National repository
Consult FRDR for an ever expanding, curated source of Canadian research data
When you use FRDR as a Repository

- Supports file sizes larger than 2.5 Gb
- Data stored on secure Canadian servers
- Open to Principal Investigators and their designates at Canadian Universities
- Use if institution does not have its own repository or you have large data needs
- Your data receives a DOI and a standard citation
- Supports embargos, but otherwise data must be openly available under a Creative Commons license
Library Support for Data Deposit Includes:

• Guidance for finding an appropriate repository to host your work
• Local support and training for using Scholar’s Portal Dataverse
• Review of your data
• Data deposit
  • Mediated deposit of your data
  • Self-serve deposit of your data
Resources

Library Resources
• **QUL Research Data Management Guide**
• **Dataverse Data Deposit Guidelines**

Canadian Repositories
• **Federated Research Data Repository**
• **Scholars Portal Dataverse**

Portage Network Resources
• **DMP Assistant**
• **RDM Primer**
• **‘Good Enough’ Research Data Management**
National Support for RDM

portage

“Fostering a community of practice for research data”

- Training Resources
- Network of expertise
- Tools and Infrastructure for RDM

https://portagenetwork.ca/training-resources/
Contact information

Contact us about RDM

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Data Services Coordinator

Meghan Goodchild
Acting Head, Discovery and Technology Services
Research Data Management Systems Librarian, Scholars Portal / Queen’s

Contact your Subject Librarian for help with:

Research – Develop research strategies, manage data, publish research

Instruction – Support for teaching and learning, information literacy, course related sessions and programs

Resources – Access to information to support research and teaching