

Research Data Management (RDM) Brown Bag Information Series

Research Data Management (RDM) and You

January 18, 2023



Land acknowledgement

“To begin, I would like to acknowledge that Queen’s University is situated on traditional Anishinaabe and Haudenosaunee Territory. I am grateful to live, learn and play on these lands. I acknowledge and respect, the Anishinaabe and Haudenosaunee peoples and I am committed to taking responsibility for redressing the injustices that enabled me to be here today.”



Hello! Meet the Queen's Data Champions



Alicia Cappello
Engineering &
Science Librarian,
Queen's University
Library



Meghan Goodchild
Research Data
Management Librarian,
Queen's University Library



Elise Degen
Communications &
Relations, Centre for
Advanced Computing



Rebecca Pero
Information and Project
Coordinator, Vice-Principal
Research Portfolio



Matt Clapp
Manager, Data Platform
Services, Information
Technology Services

Agenda

- Overview of Research Data Management
- Tri-Agency RDM Policy
- **Pillar 1:** Institutional Strategy
- **Pillar 2:** Data Management Plans
- **Pillar 3:** Data Deposit
- Resources
- Q&A

Let's get to know you!
A few polls


Overview of Research Data Management

What are research data?

Research data may include:

- **experimental**
- **observational**
- **operational**
- **third party data**
- **public sector data**
- **monitoring**
- **processed; or**
- **repurposed data**

Research data are **contextual** and **discipline specific**



"Data that are used as primary sources to support technical or scientific enquiry, research, scholarship, or artistic activity, 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."

[CODATA Research Data Management Terminology, 2022](#)

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.



Why is RDM important?

RDM practices are **integral to conducting responsible research** and can help you save resources by **ensuring your data are complete, understandable, and secure.**

What are the benefits of RDM?

For researchers

- **Efficiency** – minimizes waste and expense
- **Protection** – protect valuable data
- **Quality** – improves data excellence (e.g., reliability)
- **Impact** – increases visibility and effect of research
- **Compliance** – with ethics, journal requirements, funder policies, and legal, commercial and other obligations

...and beyond

- Accelerates research discovery and innovation
- Maximizes public investment
- Enhances collaboration and partnerships
- Increases ability to reproduce and validate research results

Tri-Agency RDM Policy

Tri-Agency Research Data Management (RDM) Policy (2021)

The Tri-Agency released their [policy on Research Data Management](#), March 2021.

Policy 'pillars' assist with:



The responsible and
secure management of
research data collected via
public funds



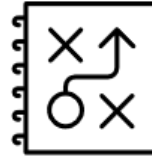
Where possible, the
sharing of data for reuse.

Tri-Agency RDM Policy Pillars



Institutional Strategy

Completed by March 2023



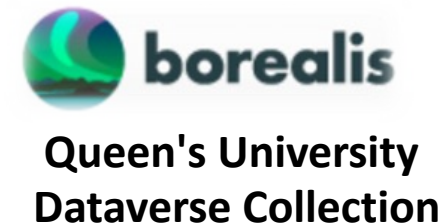
Data Management Plans

Implementation begins Spring 2022



Data deposit

Phased implementation beginning March 2023



Pillar 1: Institutional Strategy

What is an Institutional Strategy?

An Institutional Strategy is meant to

"outline how the institution will provide its researchers with *an environment that enables and supports RDM*" (Tri-Agency RDM Policy 2021, emphasis added).

What is required?

Each eligible institution and hospital is required to:

- create a high-quality institutional RDM strategy;
- publicly post the strategy; and
- notify the agencies when completed.



The agencies recognize that each strategy will reflect the institution's particular circumstances—for example, institution size, research intensity, and existing RDM capacity.

Attention to Indigenous Data Governance and Sovereignty

"Data created in the context of research by and with First Nations, Métis, and Inuit communities, collectives and organizations will be managed according to principles developed and approved by those communities, collectives and organizations, and in partnership with them" (Tri-Agency RDM Policy, 2021).



Queen's Institutional Strategy Development



Shared Vision for RDM at Queen's

"Queen's University will provide a range of clear and accessible tools, technologies and support services to meet the needs of researchers throughout the research data life cycle. Our research-centered approach means we will promote wise practices around data management planning and data deposit, preservation and disposal. Our aim is to identify pathways to research data management, to build on areas of strength and expertise and improve on tools, technologies and service supports that allow Queen's to enhance research excellence and adapt to the research ecosystem."



Components of Queen's Institutional Strategy

The Queen's Strategy aligns with the [Digital Research Alliance of Canada's template for Institutional Strategies](#). This template was developed by a group of experts. Sections of the Strategy include, Scope, Institutional Support and Ethical, Legal and Commercial Considerations.

Special consideration, the [Guiding Principles section](#).



Research excellence



**Open dissemination
of research results**



**Respect for
Indigenous
communities**



**Institutional support
for researchers**



**Strong
collaborations**

We want to hear from you!

The first draft of Queen's Institutional Strategy is now available, and we invite feedback from the research community.



www.queensu.ca/vpr/resources/RDM/strategy

Pillar 2: Data Management Plans

Grants Requiring a Data Management Plan (DMP)

Data management plans (DMPs) will be required for applications to the following Tri-Agency grants, starting in late 2022:

CIHR

- Network Grants in Skin Health and Muscular Dystrophy (late 2022, early 2023)
- Virtual Care/Digital Health Team Grants (late 2022, early 2023)
- Data Science for Equity (late 2022, early 2023)

NSERC

- Subatomic Physics Discovery Grants (individual and project) (summer 2023)

SSHRC

- Partnership Grants Stage 2 (summer 2023)

Data Management Plans - Lifecycle



What is a **Data Management Plan** or DMP?

- It's a formal, but living*, document that outlines the strategies and tools being used to manage data during the active phases of research, AND
- The mechanisms to be used to preserve and share research data once the project is completed.

The DMP is considered a **living** document because it can, and should, be modified throughout the life a project when changes occur. It is **not** set in stone.

Data Management Plans – Benefits/Considerations



BENEFITS

- Compliance with policy
- Proactive / Forward-thinking
- Identify opportunities & challenges
- Easily adapt to unanticipated obstacles
- Engage partners
- Improved efficiency / increased productivity
- Everyone is on the same page



CONSIDERATIONS

- Time consuming up front (but saves time later)
- Review of DMP throughout project
- “Administrative” exercise
- No guarantee of good data management
- Not required after funding

Data Management Plans – Components

What are the components of a Data Management Plan (DMP)?

1. Data Collection

2. Documentation and Metadata

3. Storage and Backup

4. Preservation

5. Sharing and Reuse

6. Responsibilities and Resources

7. Ethical and Legal Compliance

Data Management Plans – Components

1. Data Collection

- Types of data being collected or created
- File formats being saved/used
- Naming conventions for files
- Folder structures
- Versioning

2. Documentation and Metadata

- README files and other docs
- Updates to documentation
- Metadata standard

Data Management Plans – Components

3. Storage and Backup

- Storage requirements
- Storage location during project
- Data backup plan
- Data access

4. Preservation

- Data deposit after project
- Long-term accessibility
- De-identification

Data Management Plans – Components

5. Sharing and Reuse

- Data sharing or data transfer agreements
- End user licenses for data deposit
- Notifying community of data availability

6. Responsibilities and Resources

- Data manager / steward
- Data management tasks required
- Transfer of responsibilities, if needed
- Resources needs for DMP implementation
- Costs of DMP activities

Data Management Plans – Components

7. Ethical and Legal Compliance

- Sensitive data storage and access
- Data sharing and data transfer agreements
- Ethics application
- Data ownership
- Data security and insurance coverage

Data Management Plans – Tools



DMP Assistant – Canadian tool:

- Free and easy to use
- Uses Canadian terminology
- Maintained by University of Alberta
- Can share with others
- Export options
- Can access anywhere
- Public DMPs & templates

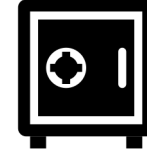
Pillar 3: Data Deposit

Data deposit – Part of the research lifecycle



- Data deposit intersects with the final stages of a research lifecycle where research data can be shared, preserved, and reused.
- “Research data are **valuable assets**, which when properly managed, have the potential to be **reused and recombined in innovative ways** to derive greater value and advance research and scholarship.” ([Current State of Research Data Management in Canada, 2020](#))
- In order to share, preserve, and reuse research data, appropriate steps must be built into the planning process (e.g., ethics approval, consent from participants, appropriate data management and storage).

Data Deposit – Tri-Agency RDM Policy



What is the Data Deposit requirement?

- 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.

Do I need to deposit everything?

- Determining what counts as relevant research data ... is often highly contextual and should be guided by disciplinary norms.

When do I need to deposit?

- The deposit must be made by the **time of publication**.

Data Deposit – Tri-Agency RDM Policy



Am I obligated to share my data?

- Grant recipients are not required to share their data. However, the agencies expect researchers to provide appropriate access to the data where **ethical, cultural, legal and commercial requirements allow**, and in accordance with the FAIR principles and the standards of their disciplines.

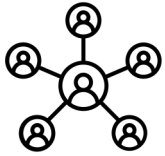
Are there exceptions?

- For research conducted by and with **First Nations, Métis and Inuit communities, collectives and organizations**, these communities, collectives or organizations will guide and ultimately determine how the data are collected, used and preserved, and have the right to repatriate the data. This could result in exceptions to the data deposit requirement.

What is the timeline for this requirement?

- **Phased implementation** beginning after review in March 2023

Data deposit – Why deposit in a repository?



Sharing data by request has many downfalls (discoverability, long-term storage, transfer mechanism, license/citation)



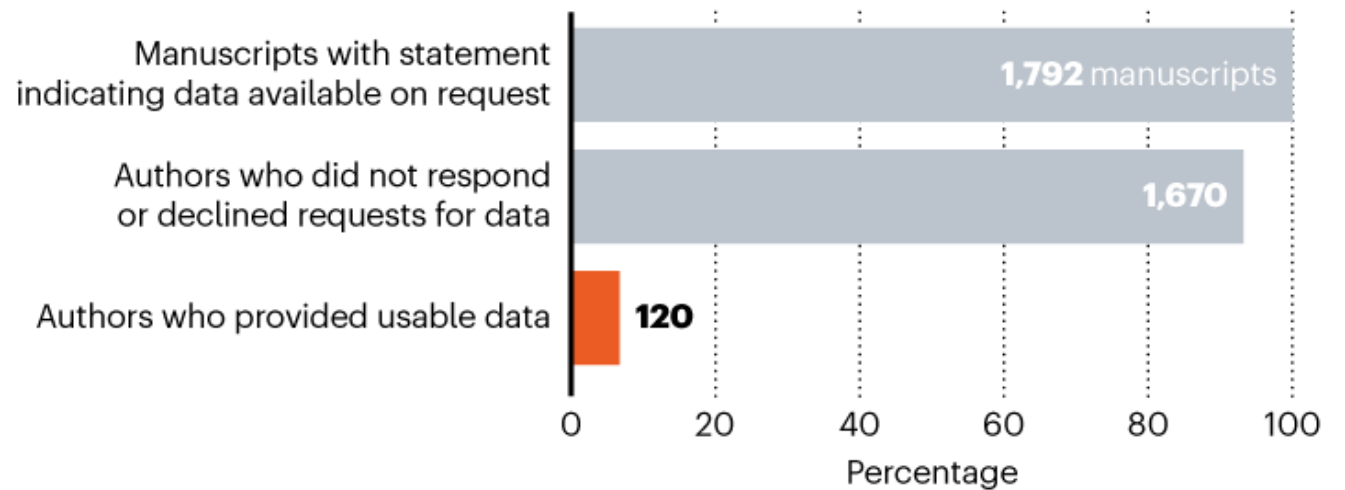
Personal websites are ephemeral



Journal supplementary material is not easily discoverable and can be paywalled

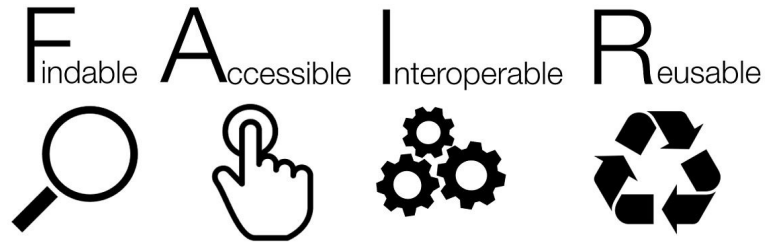
DATA-SHARING BEHAVIOUR

Of almost 1,800 manuscripts for which the authors stated they were willing to share their data, more than 90% of corresponding authors either declined or did not respond to requests for data. Only about 7% of authors actually handed over data.



©nature

Data Deposit – Why deposit in a repository?



<https://www.go-fair.org/fair-principles/>

Findable

- Digital Object Identifier (DOI)
- Indexed in a searchable resource

Accessible

- Ensure controlled access, where appropriate

Interoperable

- Integrate with other data (metadata standards)

Reusable

- Clear and accessible data usage license
- Data are well-described



Repositories also offer secure storage and long-term stewardship

Data Deposit – Which repository?

Disciplinary Repository

- Built to handle specialized datasets
- Storage likely outside of Canada
- Eligibility, pricing, repository functionality vary
- May only accept certain file types



Queen's Dataverse Collection

- Multi-disciplinary
- Canadian storage
- File size <3 GB
- Open to Queen's researchers
- File-level restrictions possible
- Supports versioning



borealis

The Canadian Dataverse Repository
Le dépôt Dataverse canadien

Federated Research Data Repository (FRDR)

- Multi-disciplinary
- Canadian storage
- Big data support
- Open to faculty at Canadian institutions
- No file restrictions
- Limited versioning



Data Deposit – What is Borealis?

- **Borealis, the Canadian Dataverse Repository**, is a bilingual, multidisciplinary, secure, Canadian research data repository
- Shared service provided in partnership with Canadian regional academic library consortia, institutions, research organizations, and the Digital Research Alliance of Canada
- 65+ subscribing institutions across Canada
- Technical infrastructure hosted by Scholars Portal and the University of Toronto Libraries.
- Data stored on the Ontario Library Research Cloud (OLRC)
- Indexed in Datacite search, Google dataset search, FRDR for discoverability



Production: <https://borealisdata.ca>

Demo: <https://demo.borealisdata.ca>

Data Deposit – What is Queen’s Dataverse Collection?

- **Queen’s Dataverse Collection** is managed by your library!
- We provide data curation services to support dataset deposit and sharing
- Check it out at <https://borealisdata.ca/dataverse/queens>

The screenshot shows the Borealis website interface for the Queen's University Dataverse. At the top, there is a navigation bar with the Borealis logo, search, user guide, support, language (English), and login options. Below this is the Queen's University logo and the text "Queen's University Collection (Queen's University)". A "Borealis >" link is also present. On the right side, there are "Contact" and "Share" icons. The main content area contains a paragraph explaining that the Queen's University Dataverse is a research data repository for faculty, students, and staff, held in a secure environment on Canadian servers. It also includes links to "Dataverse Data Deposit Guidelines" and a "Research Data Management guide". A "Need assistance? Contact us." link is at the bottom of this section. Below the text is a carousel of featured datasets, including "Queen's University Biological Station Archive Dataverse", "Laboratoire sure les élections et la démocratie / Elections and Democracy Laboratory", "Culture and Cognition Lab", and "Environmental Fluid Dynamics Laboratory". At the bottom, there is a search bar with the text "Search this dataverse...", an "Advanced Search" button, and an "Add Data" button. The results section shows "1 to 10 of 174 Results" and a list of datasets. The first result is "Culture and Cognition Lab (Queen's University, Department of Psychology)", dated Oct 7, 2022, with a brief description of its research focus.

Data Deposit – What is Queen’s Dataverse Collection?

Data Citation

- Automatic DataCite Canada DOI reservation and minting
- DOI used in standard data citations
- Cross-reference research outputs
 - Establish unbreakable links between scholarly output and associated data

[Borealis](#) > [Toronto Metropolitan University Dataverse](#) > [Social Media Lab](#) >

The State of Social Media in Canada 2022

Version 1.0



Mai, Philip; Gruz, Anatoliy, 2022, "The State of Social Media in Canada 2022", <https://doi.org/10.5683/SP3/BDFE7S>, Borealis, V1

[Cite Dataset](#) ▾ [Learn about Data Citation Standards.](#)

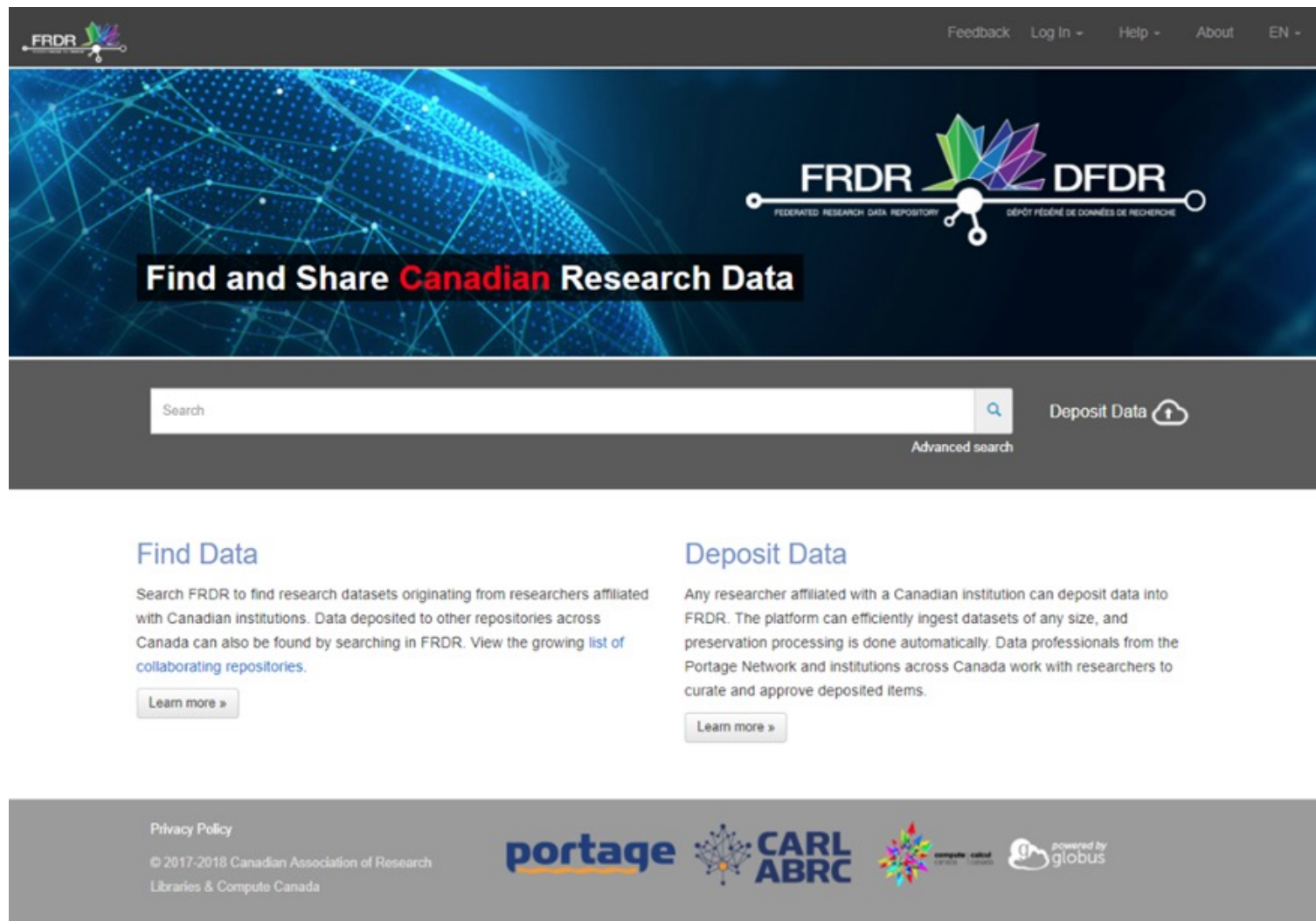
- EndNote XML
- RIS
- BibTeX



Data Deposit – How do I find research data?

Search for data in the national discovery tool and repository

- Federated Research Data Repository (FRDR)
- Consult FRDR for an ever-expanding source of Canadian research data



The screenshot shows the homepage of the Federated Research Data Repository (FRDR) and the Deposited Research Data Repository (DFDR). The header includes navigation links for Feedback, Log In, Help, About, and EN. The main banner features a blue network graphic and the text "Find and Share Canadian Research Data". Below the banner is a search bar with a "Search" button and a "Deposit Data" button. The page is divided into two columns: "Find Data" and "Deposit Data".

Find Data
Search FRDR to find research datasets originating from researchers affiliated with Canadian institutions. Data deposited to other repositories across Canada can also be found by searching in FRDR. View the growing [list of collaborating repositories](#).
[Learn more »](#)

Deposit Data
Any researcher affiliated with a Canadian institution can deposit data into FRDR. The platform can efficiently ingest datasets of any size, and preservation processing is done automatically. Data professionals from the Portage Network and institutions across Canada work with researchers to curate and approve deposited items.
[Learn more »](#)

Footer information includes: Privacy Policy, © 2017-2018 Canadian Association of Research Libraries & Compute Canada, and logos for portage, CARL ABRC, compute.ca, and powered by globus.

<https://www.frdr-dfdr.ca/>

Resources

RDM Resources @ Queen's

Policies

- Tri-Agency [Research Data Management Policy](#) (2021)
- Tri-Agency [RDM Policy FAQs](#)
- Tri-Agency [Statement of Principles on Digital Data Management](#) (2016)

Tools

- [DMP Assistant](#)
- [re3data.org](#)
- [Queen's Dataverse Collection in Borealis](#)
- [Borealis Demo](#)– Try it out!
- [FRDR](#)

Resources

- Queen's Library RDM [Guide](#)
- [FAIR principles](#)
- The First Nations [Principles of OCAP®](#)
- The [CARE Principles](#) for Indigenous Data Governance
- [CARL YouTube Channel](#)

Summary resource document:
<https://guides.library.queensu.ca/rdm/>

Key Takeaways

Institutional Strategy

- Feedback on Queen's draft RDM Strategy currently being accepted: www.queensu.ca/vpr/resources/RDM/strategy

Support for RDM at Queen's

- Data Management Plans
- Data Deposit
- Training, workshops, and consultations:
 - [VPR Portfolio](#)
 - [Queen's Library](#)
 - [Centre for Advanced Computing](#)

Next in series...

Don't miss the opportunity to join the [Queen's Data Champions](#) (qDC) for sessions 2 and 3 of the RDM brown bag informational series.

Register in advance to secure your spot in-person or online:

Session 2: [Developing a Data Management Plan](#) (Feb 15, 12:00-1:00PM)

Get the tools and knowledge you will need to create and maintain a data management plan.

Session 3: [Deposit Your Research Data in a Repository](#) (Mar 22, 12:00-1:00PM)

Learn about the benefits and considerations around depositing your research data into a repository.

Questions?



Please feel free to contact us if you have additional questions

Rebecca Pero, Information & Project Coordinator – pero.rebecca@queensu.ca

Alicia Cappello, Engineering & Science Librarian – alicia.cappello@queensu.ca

Meghan Goodchild, Research Data Management Librarian – meghan.goodchild@queensu.ca

Elise Degen, Communications & Relations – elise.degen@queensu.ca

Matt Clapp, Manager, Data Platform Service – mjpc@queensu.ca

Feedback Survey



Please help us plan for future events and RDM-related services by completing our feedback survey:

<https://tinyurl.com/R4R-RDM-Feedback>



RDM Community of Practice

Are you interesting in joining a Community of Practice at Queen's that's focused on research data management?

If so ... please provide your name and email address [via this link](#) or QR Code to join or learn more information.



Funding Acknowledgement

The qDC team proudly acknowledges the support of funds from The Digital Research Alliance of Canada's ("the Alliance") [Data Champions Pilot Project](#).



Digital Research
Alliance of Canada

Alliance de recherche
numérique du Canada

References

Alliance Research Data Management Working Group. (2020). *The Current State of Research Data Management in Canada*.

https://alliancecan.ca/sites/default/files/2022-03/rdm_current_state_report-1_1.pdf

Bishop, L. (2015). *Benefits of managing and sharing your data. Looking after and managing your research data: An Advanced course*.

UK Data Service. <https://dam.ukdataservice.ac.uk/media/455430/benefits-of-sharing-research-data-180615.pdf>

CODATA. (2022). "Research Data." *Research Data Management Terminology*. <https://codata.org/rdm-terminology/research-data/>

Portage Network. (2020). *Primer - Research Data Management*. Zenodo. <https://doi.org/10.5281/zenodo.4000999>