

The background of the slide features a soft-focus photograph of a field of tall grass with delicate, pinkish-purple flowers, possibly fountain grass or similar. The colors are warm and pastel-like.

Introduction to Research Data Management

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February 11, 2026



Overview

- Introduction to Research Data Management (RDM)
- Emerging Requirements for RDM
- Data Management Planning

Activity: Research Context?

Please share your research context in the chat.

- Does your program have a research component? (project, thesis, dissertation, etc.)
- What is your research topic (and method(s) if you've decided on them)?
- What tools do you use to plan your research and manage your data?



Research Data Management

An Introduction

What is Research Data Management (RDM)?



Research data management is a general term for how you plan for and carry out the handling of your data for your research project from the planning stages through data gathering/generation, active analysis, and into data deposit or long-term storage and preservation as a project is completed.

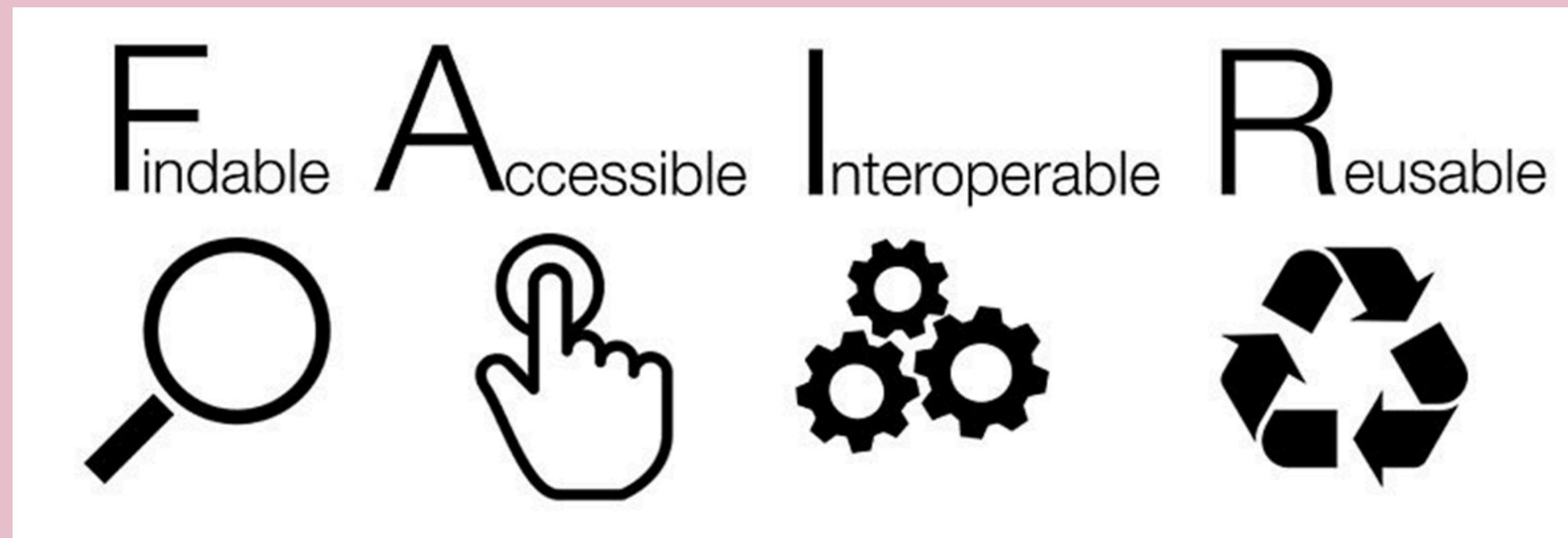
Research Data

Lifecycle

1. **Plan** - during funding applications
research proposals
2. **Create/Collect** - where data is stored?
3. **Process**
4. **Analysis**
5. **Disseminate**
6. **Preserve**
7. **Re-Use** - depositing your data?



Fair Principles



AS OPEN AS POSSIBLE. AS CLOSED AS NECESSARY.

CARE and OCAP Principles

Global Indigenous Data Alliance; First Nations Information
Governance Centre

CARE

- Collective Benefit
- Authority to Control
- Responsibility
- Ethics

OCAP

- Ownership
- Control
- Access
- Possession

Benefits & Advantages of RDM

1. Operational Efficiency & Organization

- Standardization
- Reference Documentation
- Smooth Transitions
- Long-term Clarity

2. Visibility & Impact

- Increased Recognition
- Formal Citation
- Contribution to Open Scholarship

3. Integrity & Compliance

- Replicability
- Policy Compliance
- Responsible Stewardship



Takeaways: Tools and Resources

- Library Guides on Research Data Management
- RDM PD course on PowerEd (free)
 - Access code: researchfree
- FAIR Principles
- CARE Principles
- OCAP Principles

Emerging RDM Requirements Funders, Publishers, Institutions

Tri-Agency RDM Policy

The policy was released in March of 2021. It has several requirements that will be phased in:

For institutions:

- An institutional strategy by March 2023
- AU's Strategy

For researchers:

- Data Management Plans (DMPs) requirement is being piloted on calls with requirement
- Data Deposit - TBD

Publishers' Requirements/Recommendations

A formal statement in a manuscript explaining where the data associated with the research can be found and the specific conditions for access.

- **Persistent Identification:** A DOI is a unique, permanent web link that ensures a dataset can always be found, even if the repository URL changes.
- **Open Access (Standard Template):** "The data that support the findings of this study are openly available in Athabasca University's Data Repository Collection in Borealis at [https://doi.org/\[doi\]](https://doi.org/[doi])".

Data Availability Statement

Major publishers like Taylor & Francis, Springer Nature, and Wiley provide their own templates and guidance for writing these statements.

EXAMPLE

PRO-Seq data were deposited into the Gene Expression Omnibus database under accession number GSE85337 and are available at the following URL: <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE85337>.



Takeaways: Tools and Resources

- Tri-Agency (CIHR, SSHRC, NSERC)
- Publisher Data Availability Statements and Data Sharing

Data Management Planning Considerations for DMPs

Data Management Plans

A DMP is a living document
describing how data will be handled.

- DMP Assistant: A free national tool with templates to help researchers write DMPs
- Templates that walk you through key questions about how you'll collect, document, and store your data



Ethics & Research Data Management (RDM)

Integration with TCPS 2 (2022)

- **Consent for Re-use:** Participant consent is required if you plan to use data beyond the current project.
- **Broad Consent:** The updated TCPS 2 now includes sections on "Broad Consent" for the long-term storage of data for future, unspecified research.
- **Project Alignment:** Many data handling processes required for your ethics application (like storage and security) should be mirrored in your DMP.



Takeaways: Tools and Resources

- Ethical Conduct for Research Involving Humans – TCPS 2 (2022).
- Portage Sensitive Data Tools

Data Documentation

Documentation & Metadata

- Always include a **Readme.txt** file in your top-level folder explaining your project and naming conventions
 - See [Readme template from FRDR](#)
- Use **Data Dictionaries** or **Codebooks** to define variables in your datasets.

File Naming

- **File Naming:** Use descriptive, consistent formats like 20250802_ADSM_survey_v2.csv
- Naming Tips: Use underscores or CamelCase; avoid spaces and special characters
- See [File-Naming and Organization Worksheet](#)

Documentation Types

- Data dictionaries
- Survey instruments
- Code books
- Lab notebooks (print or electronic)
- Field notes and memos
- Scripts or code
- Documented computing environments
- Readme files



Takeaways: Tools and Resources

- File naming advice (AU Library Guide) and worksheet
- Research Data Alliance Metadata Standards Catalog
- Readme Templates (for documenting your data)

Active Storage, Long-Term Storage, & Data Deposit

Active Storage

- Use enterprise-reviewed cloud storage or networked drives.
- Consult with the AU IT Research Tools Squad for storage needs. Email helpdesk@athabascau.ca, and ask for help from “Research Tools Squad”
- Note that cloud services use geographically distributed data centres, which may affect legal jurisdiction.

Active Storage (con't)

- The **3-2-1 Backup Rule:**

Have 3 copies of data in at least 2 different locations using more than one type of storage media.

Storage Types:

- Networked Drives
- Cloud Storage
- Portable Storage Media
 - e.g., DVDs, CDs, USBs, external hard drives
- Your computer's hard drive

Storage Service Provider Considerations

- **Terms of Service & AI:** Review policies to ensure data isn't used for unauthorized purposes, such as training AI models.
- **Security Standards:** Confirm the provider uses recognized security standards like ISO 27001 or 27002.
- **Data Residency:** Cloud data is often geographically distributed; be aware of the laws in different legal jurisdictions.
- **Institutional Support:** Consult AU IT (helpdesk@athabascau.ca) and request the "Research Tools Squad" for security and privacy reviews.
- **Advanced Computing:** Access national storage via the Digital Research Alliance of Canada; students require faculty sponsorship.



Takeaways: Tools and Resources

- Technical Support (AU IT)
- Email helpdesk@athabascau.ca
- Ask for help from “research tools squad”
- Digital Research Alliance of Canada ARC
[previously Compute Canada]

Long-Term Storage

- **Definition:** Keeping a copy of your research data for yourself or your institution after the project ends.
- **Purpose:** To demonstrate the integrity of your findings if contacted by other researchers or to comply with retention mandates.
- **Duration:** Common practice and funder policies (like CIHR) often require retention for 5 to 10 years.
- **What to Keep:** Usually involves the de-identified master dataset and documentation; identifiers are often destroyed per ethics protocols.

Data Deposit (Stewardship)

- **Definition:** Formally transferring your data to a research data repository for long-term stewardship and potentially public access.
- **Purpose:** To make your data FAIR (Findable, Accessible, Interoperable, Reusable) and citable via a DOI.
- **Added Value:** Repositories provide professional curation, ensuring files are in accessible formats and accompanied by metadata for future re-use

Data Deposit (Stewardship) con't

- **Data Deposit** is the formal transfer of research data to a repository for long-term stewardship, making your work more "FAIR".
- **Why Deposit?**: It ensures safe storage, curation, and preservation while providing a DOI (Digital Object Identifier) for formal citation in publications.
- **What to Include**: Deposit the data, metadata, and code required to support your research findings.

Data Deposit (Stewardship) con't

Repository Types:

- **Disciplinary:** Best for visibility within your specific field (e.g., GenBank).
- **Institutional:** AU provides a local repository for research outputs.
- **Generalist/National:** Use the Federated Research Data Repository (FRDR) for medium to large datasets (up to 1TB).

Selection Criteria: Choose a repository based on disciplinary fit, provision of persistent identifiers, and clear preservation policies.



Takeaways: Tools and Resources

- AU Data Repository.
- Federated Research Data Repository (FRDR).
- Registry of Research Data Repositories
 - For finding repositories
 - NIH Desirable Repository Characteristics

Activity: Research Context?

Based on the research context you shared earlier:

- Are there any tools or tips you want to try?
- Do you have other tips to share?



Thank-you! Any Questions?

From Memorial University?

Reach out to Alison Farrell at
alisonr@mun.ca

Memorial University Library's
RDM Guide:

Your paragraph text

Want to follow up? I can be reached at:
library@athabascau.ca

You can also check out our AU Library Guide:
<https://libguides.athabascau.ca/rdm>

Or, book an appointment:

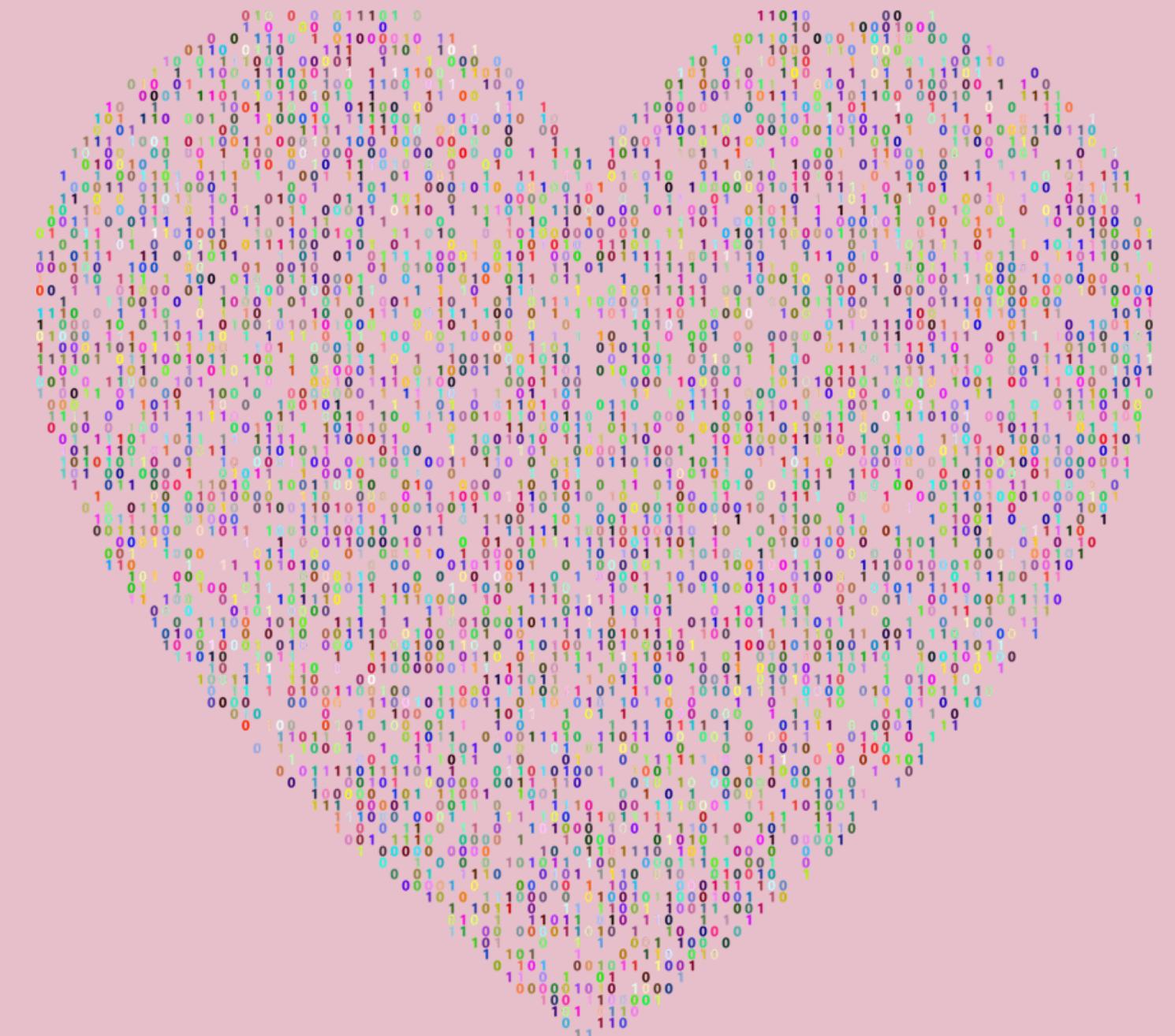


Love Data Week

Other AU Events

- Data Management Plan, Feb 18
- Understanding Data Deposit,
Feb 25

Data and RDM Community: Viva engage page to post data resources and RDM updates in Canada.



ICPSR Love Data Week

- Event calendar

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