



Fleming College Research Data Management Strategy

Background:

In March 2021, the Tri-Agency launched a Research Data Management (RDM) policy with the objectives of promoting RDM and data stewardship practices amongst Canadian researchers. The Tri-Agency RDM Policy will be implemented with an incremental approach, in step with continuing development of RDM practices and capacities in Canada and internationally.

Three key deployment phases have been communicated by the Tri-Agency:

- Institutional strategies: By March 1st, 2023, each post-secondary institution and research hospital eligible to administer Tri-Agency funds is required to create an institutional RDM strategy, publicly post the strategy, and notify the agencies when completed.
- Data management plans: By Spring 2022, the agencies will identify an initial set of funding opportunities where researchers will be required to submit a data management plan with their grant proposal.
- Data deposit: After reviewing institutional RDM strategies, and in line with the readiness of the Canadian research community, the agencies will phase in the data deposit requirement. In addition to any existing sponsor requirements, grant recipients will be required to archive all digital research data, metadata and code that directly support research conclusions in journal publications and pre-prints into a digital repository. There is no current timeframe for this requirement.



Fleming College (Fleming) is committed to meeting these Tri-Agency RDM requirements and supporting its researchers in adopting these practices. Fleming therefore aims to provide researchers with the best possible support in terms of project planning, guidelines, policies and infrastructure, to foster research excellence across the institution.

The present RDM Strategy outlines the approach Fleming will take over the next 3 to 5 years to equip its research community with the knowledge, tools and support to adopt meaningful and robust RDM practices. The RDM Strategy is intended to be a living document that will be reviewed and adopted in pace with the evolving needs and policies in terms of research data management.

Importance of Research Data and Research Data Management:

RDM is a framework for actively organizing research data through the life cycle of a research project or program (please see Appendix A for a list of definitions). RDM is both a field within the academic discipline of Information Science and a set of methodological guidelines that involve the planning, organization, description, storage, and sharing of research data in a secure fashion. Good RDM practices are also expected to improve the dissemination and reproducibility of research outcomes.

Recognizing research data as a major research asset is an important steppingstone in the pursuit of academic excellence. Research activities in many domains create increasingly larger volumes of data that are challenging to manage and analyze effectively. Making research outputs discoverable, reproducible, and reusable, are foundations and principles of modern scholarship. While not all research data are suited to be shared broadly, for ethical, legal, or commercial reasons, adopting best practices in research data management applicable within and between research units is crucial to maintain and maximize public trust in academic research. Governments, funders,



institutions, and research communities ubiquitously recognize that RDM best practices are essential to raise research standards and increase the potential impact and relevance of the research conducted. Properly managed data have both practical and financial benefits to research, such as reducing research duplication, lowering unnecessary burdens on participants due to repetitive sampling, increasing accountability and transparency, allowing replication of research results, fostering collaborations, and accelerating new discoveries.

RDM is an integral part of research. RDM practices enable compliance with fast evolving ethical, legal, and commercial requirements and are a key factor in safeguarding research when necessary. Therefore, it is critical to strive to equip researchers, staff, and trainees with sound RDM practices and stewardship to achieve scientific rigor and enable collaboration.

Scope:

The RDM Strategy is relevant to all Fleming researchers, as defined in the *Fleming College Policy 9-903 Integrity in Research and Scholarship* (will add hyperlink).

Fleming will take reasonable measures to ensure that all researchers are made aware of this strategy and kept informed of changes to it.

Oversight and Review:

Led by the Executive Vice-President, Academic and Applied Research & Innovation, the Office of Applied Research & Innovation in collaboration with Fleming's RDM working group is responsible for overseeing the creation of the Fleming College Institutional RDM Strategy.



Institutional Support:

Recognizing the significance and value of research data, an RDM Working Group will be established to provide guidance to Fleming College researchers on RDM, research software, and advanced research computing. The RDM Working Group will be represented by employees in the following areas: Office of Applied Research & Innovation, Library Services, Information Technology Services, and the Institutional Research Office. As needed the following groups will be consulted: Indigenous Educational Council, Research Ethics Board, and the Animal Care Committee.

A portfolio of training and consultations on a variety of RDM-related topics, including data curation and RDM-related research software will be offered and organized by the Office of Applied Research & Innovation.

The Office of Applied Research & Innovation, Library Services and Information Technology Services will partner to offer researchers an institutional data repository, which facilitates making research data FAIR (Findable, Accessible, Interoperable, and Reusable).

Ethics Consideration:

Fleming's Research Ethics Board will provide consultation on the RDM Strategy ensuring that any guideline or procedures related thereto are in compliance with the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans. Additionally, Fleming Policy 9-905: Ethical Conduct for Research Involving Humans will be updated to reflect related provisions in Fleming's RDM Strategy.



Indigenous Data Considerations:

The Tri-Agency Research Data Management Policy recognizes that a distinctions-based approach is needed to ensure that the unique rights, interests and circumstances of the First Nations, Métis and Inuit are acknowledged, affirmed, and implemented.

Research 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 the First Nations, Métis, or Inuit communities, and on the basis of free, prior and informed consent. This includes, but is not limited to, considerations of Indigenous data sovereignty, as well as data collection, ownership, protection, use, and sharing. The principles of Ownership, Control, Access and Possession (OCAP®) are one model for First Nations data governance, but this model does not necessarily respond to the needs and values of distinct First Nations, Métis, and Inuit communities, collectives and organizations.

Fleming College's Research Data Management Strategy recognizes these rights and promotes that a distinctions-based approach is needed to ensure that the unique rights, interests and circumstances of the First Nations, Métis and Inuit are acknowledged, affirmed, and implemented.

A guiding principle of Fleming's RDM strategy is to promote a flexible RDM model that is adaptable to all research domains. Fleming's RDM strategy will ensure that the unique rights, interests and circumstances of the First Nations, the Metis Nation and Inuit are respected by adopting a distinction based RDM approach for research involving Indigenous communities and their data.



Timelines:

March, 2023 - Fleming's RDM Strategy will be completed, approved and posted publicly

Fall, 2023 - the college's RDM Working Group will be established

Spring, 2024 – RDM Policy will be established or RDM will be incorporated into a revised Applied Research Policy

Annually – revisions will be made to the RDM strategy based on the RDM Working Group recommendations

As needed - Data management plans will be created and submitted with the required funding proposals as advised by the Tri-Agency.

Although there is no set timeline imposed by the Tri-Agency as of yet, a data repository will be established at Fleming once directed.

Looking Ahead:

Fleming's RDM Strategy will remain a living document subject to recurring evaluation, review and updates as required. The next phase of Fleming's RDM implementation will be to ensure that the college is well equipped to assist researchers with the Tri-Agency's RDM requirements and provide a solid foundation to adapt to the evolving requirements and legislations in Ontario, Canada and internationally.

Fleming is committed to working in partnership with the Tri-Agency, the Digital Research Alliance of Canada, colleagues at other colleges and other stakeholders to ensure the success in adopting innovative RDM practices at the institutional level and beyond.



Appendix A: Definitions

Data are facts, measurements, recordings, records, or observations collected by researchers and others, with a minimum of contextual interpretation. Data may be in any format or medium taking the form of text, numbers, symbols, images, films, video, sound recordings, pictorial reproductions, drawings, designs or other graphical representations, procedural manuals, forms, diagrams, workflows, equipment descriptions, data files, data processing algorithms, software, programming languages, code, or statistical records

Data Stewardship refers to knowledge and skills required to effectively manage data assets. Data stewardship is often described as data governance in action. This includes the oversight of data to ensure fitness for use, the accessibility of the data, and compliance with policies, directives and regulation.

Research Data Management refers to the processes applied through the lifecycle of a research project to guide the collection, documentation, storage, sharing and preservation of research data.

Researcher means any employee of Fleming College, any student enrolled in Fleming College and/or partaking in research, or anyone else engaged in research in the institution in any capacity whatsoever.

Tri-Agency is the umbrella term used to describe the three Canadian Government research funding agencies: Canadian Institutes of Health Research (CIHR), Natural Sciences & Engineering Research Council (NSERC) and Social Sciences and Humanities Research Council (NSERC).