

McGill University Research Data Management Strategy

- DRAFT v1.0 -

Background

In March 2021, the Tri-Agency¹ 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:

- **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 the 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.

McGill University is committed to meeting these Tri-Agency RDM requirements and supporting its researchers in adopting these practices. McGill 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.

¹ The Canadian Institutes of Health Research (CIHR), the Natural Sciences and Engineering Research Council (NSERC) and the Social Sciences and Humanities Research Council (SSHRC)

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

33 **What is Research Data Management (RDM)?**

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

40 **Why is Research Data Management Important?**

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

49 Governments, funders, institutions, and research communities ubiquitously recognize that
50 RDM best practices are essential to raise research standards and increase its potential
51 impact and relevance. Properly managed data have both practical and financial² benefits
52 to research, such as reducing research duplication, lowering unnecessary burdens on
53 participants due to repetitive sampling, increasing accountability and transparency,
54 allowing replication of research results, fostering collaborations, and accelerating new
55 discoveries.

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

² European Commission, Directorate-General for Research and Innovation, *Cost-benefit analysis for FAIR research data: cost of not having FAIR research data*, Publications Office, 2019, <https://data.europa.eu/doi/10.2777/02999>

59 with sound RDM practices and stewardship to achieve scientific rigor and enable
60 collaboration.

61 Vision

62 As part of its strong commitment to research excellence, McGill will lead in the
63 development of tools, support, and guidance to enable researchers to manage their
64 research data to the highest standards across the research data lifecycle. McGill will
65 support researchers in incorporating meaningful RDM practices and stewardship by
66 leveraging relationships with stakeholders at the institutional, provincial, national, and
67 international levels.

68 Guiding Principles

- 69 • **Research Excellence**
 - 70 ○ Advance impactful RDM practices as an integral part of cultivating research
 - 71 excellence.
- 72 • **Researcher-oriented**
 - 73 ○ Support all researchers towards the adoption of RDM practices by leveraging
 - 74 the best possible services and tools.
 - 75 ○ Focus on reducing barriers throughout the research data lifecycle.
- 76 • **Context-based Approach**
 - 77 ○ Recognize that different domains have different needs.
 - 78 ○ Promote a flexible RDM model that is adaptable to all research domains.
 - 79 ○ Align the institutional approach with recognized frameworks such as the
 - 80 FAIR Principles³ (Findable, Accessible, Interoperable, and Reusable).
 - 81 ○ Ensure that the unique rights, interests and circumstances of the First
 - 82 Nations, the Métis Nation and Inuit are respected by adopting a distinction

³ Wilkinson, M. D., Dumontier, M., Aalbersberg, I. J., Appleton, G., Axton, M., Baak, A., ... & Mons, B. (2016). The FAIR Guiding Principles for scientific data management and stewardship. *Scientific data*, 3(1), 1-9. <https://doi.org/10.1038/sdata.2016.18>.

83 based RDM approach for research involving Indigenous communities and
84 their data (e.g., OCAP⁴ and CARE⁵).

85 Scope

86 The RDM Strategy is relevant to all McGill researchers, as defined in the [McGill Regulation](#)
87 [On The Conduct Of Research](#). McGill University will take reasonable measures to ensure
88 that researchers are made aware of this strategy and kept informed of changes to it.

89 Oversight and Review

- 90 • The Office of the Vice Principal - Research and Innovation (VP-RI) is responsible for
91 overseeing the creation of the McGill Institutional RDM Strategy.
- 92 • The [RDM Working Group](#) is leading the writing and consultation efforts for the
93 McGill Institutional RDM Strategy.

94 Existing Institutional Support for RDM

95 Recognizing the significance and value of research data, the McGill Digital Research
96 Services (DRS) Hub was formed in 2021 as a resource to provide guidance to McGill
97 researchers on RDM, Research Software (RS), and Advanced Research Computing (ARC).
98 McGill DRS is a collaborative effort between VP-RI, McGill Library, and IT Services. A
99 portfolio of training and consultations on a variety of RDM-related topics, including data
100 curation, RDM-related research software, software development and sharing, and ARC
101 use, is offered and organized by McGill Library, DRS Hub and by the National ARC Platform
102 in collaboration with Calcul Québec (CQ).

103 New events are added regularly based on researchers' needs (see **Appendix B** for a full list
104 of current RDM services and support provided by DRS, Library, and IT services). In
105 alignment with the Tri-Agency RDM Policy priorities, Data Management Plan (DMP)
106 guidance is a key focus of current institutional training and support. In addition, the McGill

⁴ OCAP[®] is a registered trademark of the First Nations Information Governance Centre (FNIGC).
<https://fnigc.ca/ocap-training/>

⁵ Research Data Alliance International Indigenous Data Sovereignty Interest Group. (September 2019). *CARE Principles for Indigenous Data Governance*. The Global Indigenous Data Alliance. www.gida-global.org/care

107 Library partners with national RDM service providers to offer researchers an institutional
108 data repository ([McGill University Dataverse](#)), which facilitates making research data FAIR.

109 Goals and Objectives

110 Goal #1: Increase Awareness

111 Promote McGill's Institutional RDM Strategy to research community members.

- 112 • **Obj. 1.1:** Provide forums for feedback to advance RDM efforts at McGill
- 113 • **Obj. 1.2:** Empower researchers to adopt robust RDM practices by leveraging
114 institutional resources
- 115 • **Obj. 1.3:** Foster domain-specific communities of practice through symposia,
116 workshops, targeted outreach, and partnerships

117 Goal #2: Expand RDM Support and Training

118 Champion an RDM institutional support model that embraces continuous assessment and
119 innovation.

- 121 • **Obj. 2.1:** Provide RDM training programs for researchers and students aligning with
122 collaborative efforts both nationally and internationally
- 123 • **Obj. 2.2:** Work with the research community and key stakeholders (e.g., ethics, IT
124 services, procurement, and legal) to improve the following core RDM service
125 domains:
 - 126 ○ **Obj. 2.2.1:** Data management plans (DMPs)
 - 127 ○ **Obj. 2.2.2:** Data sharing, deposit and preservation
- 128 • **Obj. 2.3:** Leverage existing networks of research support professionals, including
129 the McGill [DRS Hub](#), [liaison librarians](#), and the [Digital Research Alliance of Canada](#)
130 (the Alliance), to expand frontline RDM consultation capacity
- 131 • **Obj. 2.4:** Improve support and training services based on evidence-based
132 evaluations and reviews
- 133 • **Obj. 2.5:** Increase RDM skills and competencies training across the academic
134 curriculum

135 Goal #3: Strengthen RDM Governance

136 Establish a governance structure for research data at McGill.

- 137 • **Obj. 3.1:** Form an advisory research data committee to the VP-RI, comprised
138 primarily of faculty members with representatives from key stakeholders (e.g., IT,
139 Library, VP-RI, Provost, Research Ethics Boards, etc.) to:
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- 141 ○ **Obj. 3.1.1:** Complete an analysis of relevant policies to ensure our
142 institutional RDM framework is both coherent and in compliance with
143 applicable laws and regulations
- 144 ○ **Obj. 3.1.2:** Establish roles and responsibilities for compliance with the Tri-
145 Agency RDM policy
- 146 ○ **Obj. 3.1.3:** Propose revisions to, and updates of, existing research data-
147 related policies
- 148 ○ **Obj. 3.1.4:** Support departments and faculties in revising tenure and
149 promotion processes to value good RDM practices and ethical data sharing
- 150 ○ **Obj. 3.2:** Strengthen communication and coordination with Affiliated
151 Hospitals and research institutes in establishing more streamlined RDM
152 workflows and processes
- 153 ○ **Obj. 3.3:** Pursue a research data stewardship model that positions McGill as
154 a leader within the larger ecosystem of national and international RDM
155 organizations
 - 156 ■ **Obj. 3.3.1:** Recommend the hiring of a data privacy officer to oversee
157 institutional capacity in accordance with applicable privacy laws and
158 regulations

160 **Goal #4: Develop RDM Services Through Partnerships**

161 Seek commitments and investments from RDM service providers, funders, and
162 governmental agencies, to ensure the long-term sustainability of RDM support and enable
163 the agile development of innovative RDM resources.

- 164 ● **Obj. 4.1:** Establish long-term partnerships
 - 165 ○ **Obj. 4.1.1:** Partner with provincial and national RDM infrastructure providers
166 (e.g., [Calcul Québec](#), [the Alliance](#) and its [FRDR](#) repository, [Scholars Portal](#),
167 etc.) and existing research community platforms to address gaps in
168 repository technologies for managing, sharing, depositing, and archiving
169 sensitive data and large data
- 170 ● **Obj. 4.2:** Grow institutional RDM capacity
 - 171 ○ **Obj. 4.2.1:** Develop expertise in RDM amongst research support staff (e.g.,
172 grant officers and IT support staff), REB staff and members, and librarians
 - 173 ○ **Obj. 4.2.2:** Promote integrated interoperable systems for research-related
174 records (e.g., DMPs, REB protocols, and institutional grant management)
 - 175 ○ **Obj. 4.2.3:** Focus on ensuring equitable, diverse, and inclusive
176 representation in RDM-related roles

177 Looking Ahead

178 Digital technologies are profoundly transforming academic research across all disciplines.
179 The RDM Strategy will remain a living document subject to recurring evaluation and
180 reviews. The next phase will be to ensure that McGill is well equipped to assist researchers
181 with the Tri-Agency's RDM requirements and provide a robust foundation to adapt to the
182 evolving requirements and legislations in Quebec, Canada and internationally.

183 Building on existing initiatives, McGill will continue to lead in developing and leveraging
184 national and international RDM resources to broaden the global impact of McGill
185 researchers. We will continue strengthening our collaborative efforts with recognized RDM
186 organizations and service providers to expand McGill's portfolio of RDM resources. McGill
187 is committed to working in partnership with the Tri-Agency, the Digital Research Alliance of
188 Canada, and other stakeholders to ensure the success in adopting innovative RDM
189 practices at the institutional level and beyond.

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Appendix A: Definitions

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- **Community of Practice (CoP)** refers to a group of people who share a common concern, a set of problems, or an interest in a topic and who come together to fulfill both individual and group goals. CoP often focuses on sharing best practices and creating new knowledge with ongoing interactions in meetings or collaborative platforms to communicate, connect and conduct community activities. (Adapted from: communityofpractice.ca)
 - **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. (Adapted from: [Tri-Agency RDM Policy FAQ](#))
 - **Data Lifecycle** refers to all the stages in the existence of data from creation to destruction. The data lifecycle provides a high-level overview of the stages involved in successful management and preservation of data for use and reuse. This broadly includes the following stages: Plan, Create, Process, Analyze, Disseminate, Preserve and Reuse. (Adapted from: CASRAI [Definition of Data Lifecycle](#), [DataOne](#), & [Alliance-Portage](#))
 - **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 regulations. (Adapted from: [Statistics Canada Data Literacy Training](#))
 - **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. (Adapted from: [Tri-Agency RDM Policy FAQ](#) and [Alliance-Portage Definition](#))
 - **Researcher** means any member of the University community who engages in or supervises research. (Adapted from: [Regulations on Conduct of Research at McGill](#))

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Appendix B: Currently Offered Services and Support

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- **General Guidance and Questions**

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- [McGill Digital Research Services Hub](#)

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- **RDM Training and Support**

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- RDM guidance: [Library RDM Web Guide](#) & [DRS FAQ](#)

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- McGill [RDM Learning Program](#) – DRS & Library

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- RDM [instructional videos](#) in En and Fr – DRS & Library

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- RDM, RS & ARC general consultations – DRS Helpdesk via drs@mcgill.ca and Library via rdm.library@mcgill.ca

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- DRS [drop-in sessions](#) – DRS, Library, ITS, Ethics

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- OCAP® workshop training, in partnership with [First Nations Information Governance Centre](#)

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- **Data Management Plan (DMP) Resources and Support**

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- DMP reviews – Library & DRS

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- DMP consultation for grants and research contracts – DRS

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- [DMP Assistant Tool](#) – Library

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- DMP workshops – Library

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- **Data Deposit Resources and Support**

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- [McGill University Dataverse](#) – Library

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- Data deposit and preservation consultations – Library

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- Data deposit workshops – Library

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- **Ethics**

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- [Forms and Guidelines](#) - McGill Research Ethics Board (REB) Office

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- [Submission Process](#) - McGill Research Ethics Board (REB) Office

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- [Medicine REB](#) - [Medicine IRB](#) - Research Ethics Office (Institutional Review Board)

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- **Cybersecurity**

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- [Cloud Directive](#) – IT Services

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- [Secure Your Journey](#) – IT Services

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- Cybersecurity plan consultation for large grants – DRS

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- Enterprise [software for secure data storage](#) – IT Services

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- [Available software at McGill](#) – IT Services

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- **Advanced Research Computing**

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- [Infrastructure and Services](#) - Calcul Québec

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- [User Support](#) – Calcul Québec

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- [Training](#) – Calcul Québec

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- [ARC Services](#) – The Digital Research Alliance of Canada

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Resources

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274 C25F.PDF)
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