

# Research Data Management Institutional Strategy

**OFFICE OF THE VICE-PRESIDENT (RESEARCH AND INTERNATIONAL)**

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# Background

The Research Data Management Institutional Strategy Working Group (RDM-IS-WG) was formed in 2018 in response to the anticipated release of the [Tri-Agency Research Data Management Policy](#).<sup>1</sup> As stated in the policy: “The agencies expect the research they fund to be conducted to the highest professional and disciplinary standards, domestically and internationally. These standards support research excellence by ensuring that research is performed ethically and makes effective use of public funds, experiments and studies are replicable, and research results are as accessible as possible. Research data management (RDM) is a necessary part of research excellence.”

## Purpose

In accordance with the first pillar of the RDM Policy, the RDM-IS-WG’s mandate is to develop and implement an RDM Institutional Strategy (RDM-IS) for Carleton University. Through the RDM-IS, we seek to empower Carleton researchers (faculty members, graduate and undergraduate students, and postdoctoral fellows) with the information about existing tools, infrastructure, and services they require to practice effective and responsible RDM, and to meet current and future RDM capacity, challenges, and opportunities. This includes, but is not limited to, the Research Computing and Development Cloud (maintained by Research Computing Services (RCS)), ShareFile, accessing resources from the Digital Research Alliance of Canada (the Alliance), Data Management Plans, and library expertise. In doing so, the RDM-IS will foster a culture of responsible RDM practices while developing capacity that supports researchers in adopting these methods.

This document will be accessible through a dedicated [Research Data Management \(RDM\) page](#) on the University’s website. It will serve as a valuable resource for multiple stakeholders, including the library’s RDM team, which consists of librarians, library staff, archivists, and systems developers. Additionally, Faculties and central research offices will make extensive use of this document, particularly research facilitators, contracts specialists, front-line support staff (including computer and laboratory employees), and management. Furthermore, Information Technology Services (ITS) colleagues will refer to it while developing and reviewing services and policies.

The strategy will also inform the Research Data Management policy development, which will follow at a later date.

## Scope

This document outlines the first pillar (Institutional Strategies) of the [Tri-Agency Data Management Policy](#) and, as such, does not address the other two pillars (Data Management Plans and Data Deposit). The second pillar is focused on the project-specific content, functionality, and format of the data management plans (DMPs) that, as of spring 2023, are required for select funding applications, and that will be required for other funding applications in the future. This document also does not address the third pillar, which is focused on the technical functionality or processes related to the data deposit requirement, as the phase is pending requirements from the Tri-Agency.

In relation to both DMPs and Data Deposit, the University strongly affirms its role and responsibility in providing the Carleton community with the appropriate available resources (e.g., training, administrative support, and technical support) and materials to deliver effective RDM services. In providing these broad

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<sup>1</sup> The Tri-Agency Research Data Management Policy was released March 15, 2021.

tools and materials, Carleton recognizes the critical role of researchers to ensure the data management plans included in these funding applications are appropriate to the project, including addressing privacy, storage requirements, and confidentiality (IP protection, ethics requirements). Researchers are responsible for ensuring that DMPs submitted with their specific funding applications are implemented. Moreover, the University strongly affirms its commitment to this role without jeopardizing other current or future commitments (financial or otherwise) that will support researchers in meeting their research goals and objectives.

## Institutional Strategy Working Group

The RDM-IS-WG is composed of employees from core services that are directly implicated in the RDM-IS's working implementation or maintenance: the library, ITS, and the Office of the Vice-President (Research and International) (OVPRI). The members will serve for the length of time required to develop the RDM-IS. In fulfilling the mandate of this working group, the members agree to:

- Attend all meetings of this working group;
- Express their opinions openly and respectfully;
- Collaborate actively in identifying and consulting with key experts and stakeholders;
- Adhere to the guiding principles and methodologies in developing a comprehensive RDM-IS.

Once the RDM-IS is approved and posted, the RDM-IS-WG will be disbanded. A new RDM Institutional Strategy (RDM-IS) Standing Committee will be struck to review progress on RDM-IS and consider ongoing feedback from the Carleton community. This committee will be comprised of representatives from OVPRI, Library, and ITS/RCS, and will meet at least annually.

## Advisory Committee

The RDM-IS Advisory Committee (RDM-IS-AC) membership reflects the key stakeholders within the Carleton Community. The RDM-IS-AC's mandate is to provide advice to the RDM-IS-WG in view of achieving the Working Group's mandate to develop and implement an Institutional Strategy (IS) for Carleton University that empowers Carleton researchers (faculty members, graduate and undergraduate students, and postdoctoral fellows) with the information about existing tools, infrastructure, and services they require to practice effective RDM, and to meet current and future RDM capacity, challenges, and opportunities. The responsibilities of the RDM-IS-AC include providing written feedback on drafts of the IS to the best of their abilities in a timely manner and expressing their opinions openly and respectfully. The AC includes the following Carleton administrative heads, offices, or group representatives:

Associate Deans, Research (one from each Faculty)	Faculty Members (min one from each Faculty)
Faculty Research Facilitators	Graduate Students (min one from each Faculty)
MacOdrum Library	Center for Indigenous Initiatives
General Counsel and Privacy Office	Office of the VP (Research and International)
ITS Information Security	Legal
Office of Research Ethics	Corporate Records and Archives Library
Industry and Partnership Services (IPS)	

## Guiding Principles

The strategy will:

- Be grounded in all aspects of the applicable section of the [Tri-Agency Research Data Management Policy](#).
- Use appropriate and existing resources, including, but not limited to, those provided by [the Alliance](#), such as templates<sup>2</sup> and guidelines.<sup>3</sup>
- Consider the current and future RDM needs of faculty members, graduate and undergraduate students, and postdoctoral fellows.
- Integrate considerations of equity, diversity, and inclusion (EDI).
- Follow the [FAIR Guiding Principles](#) for scientific data management and stewardship<sup>4</sup> to make research data findable, accessible, interoperable, and reusable.
- Align with the Government of Canada’s commitment to [Open Science](#).
- Follow the [CARE Principles for Indigenous Data Governance](#) (collective benefit, authority to control, responsibility, and ethics); [The First Nations Principles of OCAP®](#) (ownership, control, access, and possession)<sup>5</sup>; and the Inuit Tapiriit Kanatami’s [National Inuit Strategy on Research](#), which includes data management strategy guidance; as well as the Tri-Agency RDM Policy which states: “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.”<sup>6</sup>
- Align with relevant University policies and objectives, such as Carleton’s [Digital Strategy](#), [Digital Governance](#), and the [Strategic Integrated Plan](#). The strategy will also align with relevant external policies at the national and international levels (see “Formalize RDM Practices” below).
- Act as a living document recognizing that RDM is a rapidly evolving field and, thus, new developments may require an evolution in the approach to the strategy, for instance, as RDM services, infrastructure, and practices evolve.
- Respect University budgetary planning and work within the limitations of the current fiscal situation.

## Methodology

1. Create an overall project timeline.
2. Develop an initial draft using the above guiding principles.
3. Present the draft to the RDM-IS-AC for expert feedback (see below).
4. Analyze the feedback, and integrate all that aligns with improvement of the RDM-IS.
5. Present the RDM-IS to the VPRI for approval.
6. Make the RDM-IS publicly available on the Carleton [website](#).

<sup>2</sup> Digital Research Alliance of Canada. (2021). Institutional research data management strategy template document. <https://zenodo.org/record/5745906>

<sup>3</sup> Digital Research Alliance of Canada. (2020). Institutional research data management strategy guidance: Video series. Retrieved from: [https://www.youtube.com/playlist?list=PL2jE\\_DQZemnXbTrmzOv3rMaWgRfMPk23G](https://www.youtube.com/playlist?list=PL2jE_DQZemnXbTrmzOv3rMaWgRfMPk23G).

<sup>4</sup> Wilkinson, M. D., et al. (2016). The FAIR Guiding Principles for scientific data management and stewardship. *Scientific Data*, 3, 160018. <https://doi.org/10.1038/sdata.2016.18>.

<sup>5</sup> First Nations Information Governance Centre. (n.d.) The First Nations Principles of OCAP. Retrieved from <https://fnigc.ca/ocap-training/>.

<sup>6</sup> Government of Canada (2021). Tri-Agency Research Data Management Policy. Retrieved from [http://www.science.gc.ca/eic/site/O63.nsf/eng/h\\_97610.html](http://www.science.gc.ca/eic/site/O63.nsf/eng/h_97610.html).

7. Inform the Tri-Agency when the strategy is complete.
8. Disband the RDM-IS-WG and RDM-IS-AC.
9. Form new RDM-IS Standing Committee.

## Consultation and Approval Process

The RDM-IS-WG's draft will receive input from the wider Carleton community via input from the RDM-IS-AC. The RDM-IS will be approved by the VPRI. The RDM-IS Standing Committee will be responsible for changes to the strategy, which will be made on an as-needed basis to support new or changing needs, services, and policies. Changes to the strategy will be recommended by the RDM-IS Standing Committee, following a public consultation period, and approved by the VPRI. A full review of the strategy should be within 5 years of its acceptance by the Tri-Agency.

## Roadmap

This section outlines the major objectives for raising RDM awareness, assessing institutional readiness on the ideal state for RDM, and formalizing RDM policies connected to this strategy.

### 1. Raising RDM Awareness

To deliver effective RDM services, it is essential to identify stakeholders and provide appropriate available materials and resources (e.g., training, administrative support, and technical support). Faculty RDM Champions at Carleton University, such as researchers and staff, are instrumental in helping to promote the value and best practices of RDM and can assist in outreach and communication. Examples at Carleton University include the MacOdrum Library, Faculty Research Offices, Research Computing Services (RCS) in ITS, the Carleton Office for Research Initiatives and Services (CORIS), Industry and Partnership Services (IPS), Carleton International, the Office of Research Ethics, and other research support personnel, such as laboratory managers. The MacOdrum Library is the coordinating unit for RDM services and infrastructure because librarians and library staff have skills and responsibilities in copyright, data, scholarly communications, RDM, and storage and preservation technologies. The library is also involved in national and international RDM initiatives, thereby linking Carleton to international standards and best practices.

#### *Objective 1: Identify stakeholder communities on campus*

##### ONGOING PRACTICES AND SUPPORTS

The RDM-IS-AC was formed with stakeholders from across the University (see above). Recruitment for the RDM-IS-AC considered EDI to the extent possible, without collecting self-identification data on all participants.

##### GAPS AND RESOURCES REQUIRED

None currently identified.

##### TIMELINE

Completed in 2022.

##### RESPONSIBILITY

Library, ITS/RCS, and CORIS.

## *Objective 2: Recruit Champions at Carleton to help promote the value of RDM and engage with various communities*

### ONGOING PRACTICES AND SUPPORTS

Between the RDM-IS-WG and the RDM-IS-AC there are representatives from various services and communities (undergraduate, graduate, faculty), who may be recruited to act as RDM Champions, including the RDM Librarian who works with units across the University. These RDM Champions will be asked to raise awareness about RDM through information and individual training sessions, and making referrals to update RDM best practices and resources, e.g., the Alliance, Dataverse, DOIs, and Carleton University's ShareFile. There is also administrative support available from the Faculty Research Offices, and infrastructure support available from RCS.

### GAPS AND RESOURCES REQUIRED

Ensure continued consultation and communication with the campus communities and services.

Expand, through active recruitment, the current roster of RDM Champions to ensure, wherever possible, membership of individuals from equity-deserving groups.

Add contact information for RDM Champions and resource people on the CORIS RDM website.

### TIMELINE

Within 6 months.

### RESPONSIBILITY

RDM-IS Standing Committee.

## *Objective 3: Develop awareness materials and resources for different communities*

### ONGOING PRACTICES AND SUPPORTS

The library hosts [an RDM website](#) and subject guide with links to the Alliance's resources, including videos for the DMP Assistant, and repository resources. The RDM Librarian engages in a variety of outreach, including individual consultations, online webinars, and in-person class or group instruction for graduate students and research assistants (RAs), faculty members, research facilitators, and research groups.

ITS/RCS supports the ShareFile application, a secure, online file sharing platform for research data, and institutionally manages secure storage space for active projects. It uses multi-factor authentication and is regularly backed up locally in Carleton data centers. The division also manages [different software packages](#) needed at various stages of the research lifecycle.

A [Data Champions Pilot grant](#) was received from the Alliance and was used to update and develop new instructional self-guided RDM materials based on a series of webinars presented in Winter 2023. Existing resources will also be used, when applicable.

### GAPS AND RESOURCES REQUIRED

A consolidated, sensitive data deposit location that provides secure data deposit and restricted access upon completion of research projects is needed. The Alliance is currently developing such a platform. Further recommendations will be forthcoming, when appropriate.

Additional capacity is required for consultation processes with Indigenous researchers, Indigenous communities, and the Indigenous Advisory Council, as well as with Inuit communities and the Inuit Tapiriit Kanatami to develop specific recommendations or a separate policy focused on Indigenous research data.

Additional capacity is required for consultation processes with other equity-deserving groups to develop specific recommendations around considerations of equity, diversity, and inclusion with regards to the RDM-IS.

#### TIMELINE

Started in 2022 and ongoing.

#### RESPONSIBILITY

The Alliance, with communication to Carleton community led by Library and ITS/RCS.

RDM-IS Standing Committee to solicit additional consultations with Indigenous stakeholders, as well as from stakeholders from equity-deserving groups, with regards to the RDM-IS.

### *Objective 4: Determine and apply the appropriate delivery mechanisms for outreach*

#### ONGOING PRACTICES AND SUPPORTS

The RDM Librarian provides outreach on request and during events held by the Library as described above. Online options and recording of sessions extend the reach. Events and information sessions are also communicated through the library and RDM website, OVPRI weekly newsletter, and the bi-weekly Research Office Sharing Information (ROSI) meetings, which gather research support staff from across the campus.

#### GAPS AND RESOURCES REQUIRED

No formal outreach, communications plan, or awareness of outreach preferences currently exist. Coordinating the promotion of outreach efforts by RDM-IS-WG members will be a cooperative effort based on effective communication.

Develop a comprehensive communication strategy to promote RDM to all faculty and staff in regular information channels, including Academic Heads Roundtable, CU TOP 5, the welcome sessions for new faculty, and other publications, etc.

#### TIMELINE

6 months.

#### RESPONSIBILITY

Library (posting on the RDM information/resource page), CORIS (posting on RDM-IS page and in OVPRI Newsletter, linking to library RDM resources on the website), and RCS (posting on ShareFile page).

RDM-IS Standing Committee will review and approve the communications strategy, with staff support from OVPRI for its development.

### *Objective 5: Participate in any future Tri-Agency consultations around RDM*

#### ONGOING PRACTICES AND SUPPORTS

The RDM Librarian and CORIS representatives participate in Tri-Agency RDM webinars and consultations as opportunities become available.

#### GAPS AND RESOURCES REQUIRED

Public consultations will be required to adequately reflect all perspectives and RDM needs.



Ensuring that the information and feedback provided via Tri-Agency consultations around RDM is informed by and shared with stakeholders across campus via communications strategy.

#### TIMELINE

Started in 2015 and ongoing.

#### RESPONSIBILITY

Library and CORIS representatives to engage in Tri-Agency consultations and share information via existing communications channels.

RDM-IS Standing Committee to receive ongoing feedback and input from Carleton community, and review RDM-IS appropriately.

### *Objective 6: Participate in national RDM consultations and events*

#### ONGOING PRACTICES AND SUPPORTS

Vice-President (Research and International) (VPRI), CORIS Director, University Librarian, RDM Librarian, and Manager, Research Computing Services (RCS), as well as faculty members and Associate Deans attend national fora and Innovation, Science, and Economic Development (ISED) Canada consultations.

#### GAPS AND RESOURCES REQUIRED

To be determined as opportunities arise.

#### TIMELINE

Started in 2012 and ongoing.

#### RESPONSIBILITY

OVPRI (CORIS, IPS, Carleton International, Ethics), RCS/ITS, Library, and Faculties.

## **2. Institutional Readiness and the Ideal State for RDM**

An institutional RDM strategy includes an assessment of institutional readiness. This includes identifying and reviewing the data landscape at Carleton University (including types of data requirements, and administrative and technical support), and assessing existing capacity for RDM, including strategies, policies, practices, and assets already in place. Defining the current ideal state for RDM (and revising it as the environment evolves) informs the gaps and resources required. At Carleton University, we aspire to a state in which researchers are aware of the supports available to assist them in best data management practices and planning, and in which they are able to implement these best practices by using the most current data management planning tools, repositories, and resources.

### **ASSESS INSTITUTIONAL READINESS**

*Objective 1: Undertake a survey of institutional data assets and data management practices on campus*

#### ONGOING PRACTICES AND SUPPORTS

In September 2021, the RDM-IS-WG completed an internal environmental scan of RDM policies, practices, and processes to leverage as building blocks for this strategy and to shape future services and supports.

Data management needs and practices vary widely across campus. Institutional data assets include infrastructure (Dataverse, DMP Assistant, ShareFile), and consulting and training services (offered by the Library and ITS/RCS).

#### GAPS AND RESOURCES REQUIRED

Due to changing user needs, it must be determined if additional capacity in institutional data assets will be required for researchers to continue to follow best practices in RDM.

Additional capacity is required to conduct consultations to understand evolving user needs and to support project-specific data management walkthroughs with faculty and students to better understand procedural problems, information, and knowledge gaps. We will seek to continuously improve our ability to meet these needs through continual efforts to identify and seek out external funding to support gaps in capacity.

Adding an RDM question to the electronic Approval Form for research projects is being explored.

#### TIMELINE

Ongoing.

#### RESPONSIBILITY

Library, OVPRI, and ITS/RCS.

### *Objective 2: Institutional policies, guidelines, and procedures*

#### DESCRIPTION

Carleton University has implemented the following policies and guidelines in relation to DMPs:

ITS/Cybersecurity Responsible Conduct of Research and [Research Ethics Board](#) (REB) guidelines. The Library has also developed guidelines for [creating DMPs](#).

#### GAPS AND RESOURCES REQUIRED

Additional capacity is required to develop policies for data deposit (i.e., data collection, long-term data preservation, etc.).

Additional investments to continuously evaluate and improve the user experience of utilizing available RDM information, tools, infrastructure, and services.

#### TIMELINE

5 years.

#### RESPONSIBILITY

RDM-IS Standing Committee.

### *Objective 3: Identifying gaps in the existing RDM environment*

#### DESCRIPTION

The RDM-IS-WG surveyed the University's policies, assets, and practices, and identified gaps to be addressed with the campus stakeholders represented in the RDM-IS-AC. Once the RDM-IS is approved, this ongoing work will be taken up by the new RDM-IS Standing Committee.

## GAPS AND RESOURCES REQUIRED

Awareness of active storage solutions.

## TIMELINE

Started in 2022 and ongoing.

## RESPONSIBILITY

RDM-IS Standing Committee.

**EVALUATE EXISTING RDM SERVICES***Service 1: Data Management Plans*

## DESCRIPTION

The library created an RDM resource webpage and adopted the Alliance's DMP Assistant tool, including custom templates. The library also conducts regular training sessions on RDM and DMPs and holds individual RDM and DMP consultations.

## GAPS AND RESOURCES REQUIRED

All grant proposals submitted to the Tri-Agency should include methodologies that reflect best practices in RDM. Materials for sharing current best practices must be in place by 2023, when DMPs will be required. Materials will need to be updated to stay abreast of evolving context.

Dedicated personnel are required to develop incentives and policy/procedures to encourage RDM best practices and develop custom guidance on DMPs.

Formal procedures for DMP submission with Tri-Agency funding applications must be determined.

Continued resources to support sustained improvement to provide a high-quality user experience to deliver ease-of-use when navigating the existing RDM information, tools, infrastructure, and services.

## TIMELINE

Started in 2012. Ongoing and subject to budget constraints.

## RESPONSIBILITY

Library and OVPRI.

*Service 2: Institutional Support and Training*

## DESCRIPTION

The RDM-IS-WG members participate in regional and national groups such as the [Canadian Association of Research Libraries](#) (CARL), the [Digital Research Alliance of Canada](#), and the [Canadian Association of Research Administrators](#) (CARA). Members are internationally involved with the [Research Data Alliance](#) (RDA) and the [International Association for Social Science Information Service and Technology](#) (IASSIST).

The library provides training on request, as well as during each term, and the training sessions are advertised across campus through the Library and RDM website, OVPRI weekly newsletter, and the bi-weekly ROSI meetings.

Library staff, ITS/RCS, and OVPRI Services have expertise in the areas of copyright, scholarly communications, data, geographic information system (GIS), and academic technology. Moreover, the University provides expert advice in legal, ethical, and intellectual property, through the General Counsel and Privacy Office and Office of Research Ethics (ORE).

## GAPS AND RESOURCES REQUIRED

Dedicated personnel are required to continue to develop and deliver training materials and participate in regional and national organizations.

Financial resources may be required to fund permanent positions and train in the areas of metadata and data anonymization.

## TIMELINE

Started in 2012 and ongoing.

## RESPONSIBILITY

Library and CORIS.

*Service 3: Data Repositories and Archiving*

## DESCRIPTION

Carleton University is a participating member of [Borealis](#) and the Federated Research Data Repository ([FRDR](#)), hosts one research data file sharing platform (ShareFile), and has an archiving policy.

ITS/RCS supports ShareFile for secure data storage.

## GAPS AND RESOURCES REQUIRED

Additional capacity is needed to manage the data file sharing platform upgrades, which can be time consuming and frequent. This depends on budget availability.

Additional capacity is needed to provide training on how to use data repositories.

Sensitive data repository options are being considered by the Alliance.

Continued resources to evaluate RDM webpages, learning materials, and outreach efforts.

## TIMELINE

Ongoing.

## RESPONSIBILITY

Library, ITS/RCS, and OVPRI.

**3. Formalize RDM Practices**

The Tri-Agency RDM Policy is not an open data policy. However, it does require formalized RDM practices, as do other funding agencies, publishers, and some research ethics applications. Carleton University has policies that may contain aspects related to RDM, including Archive Policy; Data Access Policy; Records Management Policy; Responsible Conduct of Research Policy; Scholarly Misconduct Policy; Acceptable Use of IT Policy; Access to Information and Privacy Policy; Cloud Computing Security Policy; Data and Information Classification and Protection Policy; Information Security Policy; and Mobile Technology Security Policy.

To formalize responsible RDM practices, Carleton University may want to develop additional policies related to RDM. Some of these policies could be related to the data repository, and could include data quality and standards, data retention, and long-term data preservation. With respect to creating data management plans, Carleton University, through the OVPRI Services (CORIS, IPS, Carleton International, and Ethics) and the library, will document RDM supports available for researchers and the process researchers must follow to confirm that funding agency RDM requirements have been met. The resulting inventory will be posted on the RDM website and shared with appropriate stakeholders, namely

faculty RDM Champions and faculty research offices, for further dissemination and sensitization within the Carleton community. In addition, the University may wish to develop policies related to unfunded research and training research, including that undertaken by undergraduates, graduates, and postdoctoral fellows. Another means to formalize and encourage RDM best practices is to suggest its addition to curriculum development in research-related courses, including, but not only through, engagement with Teaching and Learning Services (TLS). Additionally, the University may want to develop a University-wide strategy or approach to encourage the incorporation of RDM in curriculum development and training.

Some gaps in the strategy can be filled by continuing to work with regional and national groups that are collaboratively developing resources, services, infrastructure, and policies related to RDM and to Indigenous Data Governance initiatives, including the [Global Indigenous Data Alliance](#) and the [First Nations Information Governance Centre](#). Strategy development is a long-term goal that will be developed in partnership with various groups across campus.

## Glossary of Terms

**Carleton Community:** Carleton Community refers to all stakeholders on the Carleton campus, from undergraduate to graduate students, postdoctoral fellows, faculty members (regular full-time and adjuncts), as well as administrative staff (administrative assistants to deans), and includes members of all units, both services and centers.

**Data Management Plan (DMP):** A formal statement describing how research data will be managed and documented throughout a research project and the terms regarding the subsequent deposit of the data with a data repository for long-term management and preservation.<sup>7</sup>

**Research Data:** 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 or are commonly accepted in the research community as necessary to validate research findings and results. All other digital and non-digital content has the potential to become research data. Research data may be experimental data, observational data, operational data, third party data, public sector data, monitoring data, processed data, or repurposed data.<sup>8</sup>

**Open Data:** Structured data that are accessible, machine-readable, usable, intelligible, and freely shared. Open data can be freely used, re-used, built on, and redistributed by anyone—subject only, at most, to the requirement to attribute and share alike.<sup>9</sup>

**Open Science:** Making science more accessible, inclusive, and equitable for the benefit of all.<sup>10</sup>

**Research Data Management (RDM):** Data management refers to the storage, access, and preservation of data produced from a given investigation. Data management practices cover the entire lifecycle of the data, from planning the investigation to conducting it, and from backing up data as it is created and used to long-term preservation of data deliverables after the research investigation has concluded. Specific activities and issues that fall within the category of data management include file naming conventions; data quality control and quality assurance; data access; data documentation (including levels of uncertainty); metadata

<sup>7</sup> CODATA. (n.d.) Research Data Management Terminology. Retrieved from: <https://codata.org/initiatives/data-science-and-stewardship/rdm-terminology-wg/rdm-terminology/>

<sup>8</sup> ibid

<sup>9</sup> ibid

<sup>10</sup> UNESCO. (2021). UNESCO Recommendations on Open Science Retrieved from: <https://unesdoc.unesco.org/ark:/48223/pf0000381148>

creation and controlled vocabularies; data storage, data archiving and preservation; data sharing and reuse; data integrity; data security; data privacy; data rights; and notebook protocols (lab or field).<sup>11</sup>

**Research Data Management Champions:** RDM Champions are faculty members who have agreed to act as ongoing channels of communication and engagement between the RDM-IS-WG group and their faculties. They facilitate the sharing of information that promotes awareness of available RDM resources and materials. They also gather valuable feedback that contributes to the development of RDM materials and delivery of services and that informs strategies for raising awareness about RDM.

## Resources

CODATA. Research Data Management Terminology. <https://codata.org/initiatives/data-science-and-stewardship/rdm-terminology-wg/rdm-terminology/>

Digital Research Alliance of Canada. (2021). Institutional research data management strategy template document. v. 3.0. <https://zenodo.org/record/5745906>

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<sup>11</sup> CODATA. (n.d.) Research Data Management Terminology. Retrieved from: <https://codata.org/initiatives/data-science-and-stewardship/rdm-terminology-wg/rdm-terminology/>