**DOUGLAS**COLLEGE

**Context**

The [Tri-Agency Research Data Management (RDM) Policy](#) was released in March 2021. The objective of this policy is to support Canadian research excellence by promoting sound RDM and data stewardship practices.  This policy highlights the need for all institutions eligible for Tri-Agency funding – including Douglas College – to bolster local RDM supports in order to meet the following three current and forthcoming requirements:

- The creation of an institutional RDM Strategy by end of Summer 2023 in order to be compliant with the policy and receive future research funding. The College must notify the agencies when our strategy is complete as well as make it publicly available via our institutional website.
- The incorporation of Data Management Plans (DMPs) into future Tri-Agency funding applications.
- The phased in requirement for researchers to deposit their data in a repository in line with open access policies where possible and safeguard their data as needed. This requires that faculty have access to systems and services to store, describe, and archive their data in a way that other researchers/students can access and  use.

According to section 3.1 of the Tri-Agency RDM Policy, RDM strategies should include items such as:

- recognizing data as an important research output;
- supporting researchers in their efforts to establish and implement data management practices that are consistent with ethical, legal and commercial obligations, as well as tri-agency requirements, including the [Tri-Council Policy Statement: Ethical Conduct for Research](#) [Involving Humans – 2nd edition,](#) the [Tri-Agency Framework: Responsible Conduct](#) [of Research](#), and other relevant policies;
- promoting the importance of data management to researchers, staff and  students;
- guiding their researchers on how to properly manage data in accordance with the principles outlined in the [Tri-Agency Statement of Principles on Digital Data Management,](#) including the development of data management plans;
- committing to the adoption of established best practices when developing institutional standards and policies for data management  plans;
- providing, or supporting access to, repository services or other platforms that securely preserve, curate and provide appropriate access to research  data;
- recognizing that data created in the context of research by and with First Nations, Métis, and Inuit communities, collectives and organizations will be managed according to living principles developed, approved, and updated by those communities, collectives and organizations, and in partnership with them;
- recognizing 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.

See the [Statement of Principles on Digital Data Management](#), which outlines expectations and responsibilities for RDM in the academic community. For definitions of RDM terms in this document, please refer to the last page and/or [CODATA Research Data Management Terminology.](#)

**Purpose**

The purpose of the Douglas College RDM Strategy is to ensure that research data is preserved, kept secure, and made accessible as appropriate, valuing and further enriching the work done by Douglas College researchers.  Its goal is also to articulate the College's commitment to RDM and to data management best practices at an institutional level. This strategy is based on research, benchmarks, and data collected via various means from our College community.

The Library, in consultation with the Provost, the Research and Innovation Office (RIO), the Research Ethics Board (REB), CEIT, and other key College stakeholders, began work on developing our College strategy in September 2022.  A key element of this work has been assessing the current state of RDM practices here at Douglas.  In addition to stakeholder meetings and select one-on-one interviews with researchers from each of the faculties, a survey about RDM practices, challenges, and needs at the College was completed.

Based on these inputs, this strategy outlines the approach that will be used to build a foundation for RDM support at Douglas College over the next two years, after which time the impact of our efforts will be reviewed and any necessary improvements made.

This strategy applies to all scholarship, research, and creative activity undertaken by employees and students at Douglas College. The aim is to support the College community with the systems, services, and supports required to enable best practices in research data management to elevate the discovery of knowledge outputs originating within the institution.

**Importance of Research at Douglas College**

The Douglas College research community is a thriving group of faculty, students, and community partners who are eager to bring new knowledge to the forefront.  Research at the College includes scholarly work that is undertaken in all faculties, including disciplinary, interdisciplinary, and applied research, the scholarship of teaching and learning, and creative and/or artistic research.

RIO supports faculty in pursuit of their research goals in the context of a teaching-oriented institution, helping them apply for funding, including students in their research programs, and taking applied research into the community. RIO conducts workshops on innovative research practices, methods, and applications, and organizes events where community researchers share their latest developments.  RIO also coordinates the work of the Research Adjudication Committee and the High Impact Practices in Education Committee, whose *Building Research Capacity and Infrastructure at Douglas College* outlines the vision for research at the College, along with a range of specific long-term outcomes for both students and faculty.

The REB ensures that ethical principles are applied to all research involving human subjects. The REB also serves as an independent consultative body on research ethics and assists in educating employees and students about research ethics.  It is responsible for the independent multidisciplinary review of research proposals to determine if they meet ethical requirements for approval, continuation, and/ or modification. In addition to reviewing and monitoring research proposals and projects, the REB has a role in educating researchers and reviewing and monitoring research proposals and projects.

The Library supports faculty in their research through its print and digital collections, interlibrary loan and reciprocal borrowing services, and reference assistance.  The Library also manages the Douglas College Open Repository (DOOR) which makes faculty and student research publications and digital archival collections openly available online.  DOOR is one of many BC post-secondary repositories that are part of Arca, a collaborative

initiative of the BC Electronic Library Network, and as such is optimized to host a wide range of format types, *excluding data.* A key priority outlined in this strategy in section 2.2 below will be identifying and providing support for appropriate data repository services for the College community.

## Guiding Principles

- Douglas College recognizes that data are an important research output and as such, the College is committed to providing its research community with the knowledge, tools, services, and supports to create, manage, store, and share research data.
- The College supports the [FAIR principles](#) and aims to ensure that our data management processes and policies are created to support discovery. We recognize that data have to be secure and accessible well into the future.
- The College recognizes the importance of [The First Nations Principles of Ownership, Control, Access, and Possession (OCAP)](#) and [CARE Principles for Indigenous Data Governance](#) as they relate to Indigenous data and research.
- Data management planning represents a significant change for researchers and the College aims to support its development through open communication, collaboration, and user-centered service provision.

## The Strategy

To develop this strategy, the College undertook the following activities in four stages identified in the Digital Research Alliance of Canada's Institutional Research Data Management Strategy Development Template.

In an effort to build awareness of and capacity in research data management, the College engaged in the following range of activities:

- In Summer 2022, RIO and the Library began meeting to discuss how to address requirements of the Tri-Agency policy.
- In Summer 2022, the Library recruited a half-time Research Data Management/Open Journal Publishing Librarian for one year to assist with development of institutional RDM strategy, service model, and resources to support faculty researchers in meeting requirements.
- In Fall 2022, the Library team attended a range of BC, regional, and national RDM information sessions to support institutions developing their strategies and learn about the tools, resources, and expertise required to support this work.

To assess the current state of research data management, including services, resources, staffing, and supports, the Library conducted a more detailed analysis of existing RDM supports and services. In 2022/23, the Library met with the Vice President Academic Council, the High Impact Practices in Education Committee, CEIT, Research Ethics, other key stakeholders, as well as a range of individual faculty from different disciplines to share information about the policy, its requirements, and RDM experiences, needs, challenges, and possible solutions.

In Fall 2022, the Library created an online survey to assess current practices, awareness, and needs in research data management that was shared with faculty. The data collected provided insight into the types of supports that Douglas College researchers need to have in place to support their role in meeting Tri-Agency requirements.

Based on the above analysis and survey, a draft institutional strategy was drafted by the Library to

capture and articulate the future state of RDM at Douglas College.  This draft was shared with a range of key stakeholders in Winter 2023, including RIO and the College HiPE Committee, Research Ethics, CEIT, and the Provost.  It was then presented to the Vice President's Academic Council and the College's Senior Management Team (SMT) for input in May 2023.

Once approved, the RDM strategy was shared internally with the College community as well as externally on our Research Data Management webpages. Relevant Tri-Agency and Compliance bodies were notified via email in July 2023.  Additional targeted strategies to raise awareness and share resources for different campus stakeholder communities are embedded within the strategy.

*Goal 1: Build awareness and capacity in research data management planning*

| OBJECTIVES | ACTIONS | LEADS |
|---|---|---|
| 1.1 Build awareness of Tri-Agency RDM requirements. | • Develop a communications plan targeted at building awareness and compliance with the research community by September 2023. | LIB |
| | • Incorporate RDM into all internal DC grant submissions for faculty by spring 2024. | RIO, REB |
| 1.2 Create a RDM community of practice. | • Identify champions to help promote RDM by summer 2023. | RIO, LIB REB |
| | • Create an RDM Advisory Committee by summer 2023, which includes representatives from RIO, the Library, REB, and CEIT. | Provost |
| | • Identify and promote RDM case studies to highlight best practices to the DC community on Library RDM site by fall 2023. | LIB |
| 1.3 Create training program and materials to increase data literacy of College research community. | • Develop a series of user-friendly handouts/guides to support faculty and student research assistants with the design and implementation of DMP's by fall 2023. | LIB |
| | • Offer RDM and workshops starting in fall 2023. | LIB |
| | • Update REB website to include RDM related procedures and resources relevant to the research ethics application process in fall 2023. | REB |
| | • Offer training and resources for the Cayuse and RISE, the harmonized research platform, by fall 2023 | REB |
| | • Develop a module targeted towards faculty and student research assistants to build foundational knowledge and skills in RDM and DMPs by end of winter 2024.  This will recognize that data created in the context of indigenous research will be managed according to living principles developed in partnership with relevant communities. | LIB |
| | • Offer training on existing software to support data use and storage (SPSS, Nvivo, Qualtrics, Zotero, ORCID) by winter 2024. | LIB |
| 1.4 Support staff professional | • Offer an expanded suite of training on topics identified in the faculty RDM survey, such as survey design, appropriate management of | RIO, LIB |

| development in DMP. | sensitive and/or private research data, metadata best practices, and research ethics for student research assistants by Summer 2024. | |
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| | • Identify and support ongoing training and professional development among faculty and staff to implement this strategy. | LIB |
| | • Continue to participate in Tri-Agencies RDM consultations and professional development opportunities. | LIB |
| | • Collaborate to offer professional development targeted towards faculty teaching data management in their courses. | RIO, LIB, REB |
| | • Develop resources to support instruction in data management for research student assistants by fall 2024. | LIB |

**Goal 2: Create sustainable supportive systems and infrastructure**

| OBJECTIVES | ACTIONS | LEADS |
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| 2.1 Align Research Ethics Board application process to integrate data management planning. | • Incorporate DMP questions into the form using a consultative process with researchers by January 2024. | REB |
| 2.2 Develop a local and cloud compute strategy for research purposes which includes secure access to research computing resources. | • Communicate faculty and student options for secure storage for their research data by summer 2023. | CEIT, LIB, REB |
| | • Provide, or support access to, data repository services or other platforms that securely preserve, curate and provide appropriate access to research data by winter 2024. | LIB |
| | • Investigate ways to expand access to the College's suite of enterprise tools to increase researchers' ability to work with external colleagues on shared projects, including colleagues from outside Canada by summer 2024. | LIB, CEIT |
| 2.3 Create and communicate streamlined processes to obtain access to software. | • Provide user centered processes and communicate methods to access existing software for researchers and student research assistants. | CEIT |
| | • Provide instructions on how to access research software (data collection and storage) via Library RDM website by fall 2024. | LIB |
| 2.4 Coach researchers in DM during grant applications to set | • Guide researchers on how to properly manage data in accordance with the principles outlined in the Tri-Agency Statement of Principles on Digital Data Management, including the development of data management plans. | LIB, RIO, REB |

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| them up for success. | • Provide exemplar DMPs for faculty to utilize during the grant application process as well as a guide to communicate best practices by fall 2023. | LIB, REB |
| | • Work with CEIT to provide material to communicate what tools and resources exist at DC for faculty to embed into their DMPs by winter 2024. | LIB, REB |
| 2.5 Develop a local strategy to provide secure, long-term storage for physical research outputs, e.g., notebooks, photographs, etc. | • Investigate the feasibility of expanding the College Archives to provide long-term, secure storage and preservation of physical research outputs, including format-shifting to newer formats as existing formats become obsolete by summer 2024. | LIB, ARCH |

**Goal 3: Align policies and resources to support best practices in data management**

| OBJECTIVES | ACTIONS | LEADS |
|---|---|---|
| 3.1 Identify and secure resources to support the implementation of this strategy to ensure the RDM program is sustainable. | • Identify a key point person in each faculty that will be the contact on DM for researchers by summer 2023 and post to Library RDM guides. | LIB, RIO, CEIT |
| | • Identify resources to support the implementation of this strategy in the 2023-24 fiscal year. | LIB, RIO, CEIT, REB |
| | • Prepare a 2024-25 budget planning submission aligned to this strategy proposing ongoing support to meet RDM requirements. | LIB, RIO, CEIT |
| | • Ensure secure and stable funding for support, access to data storage and sharing (e.g. Dataverse, Borealis, FRDR) and data collection (analysis software and referencing systems). | Provost |
| 3.2 Identify and utilize existing resources where available. | • Identify resources developed at other colleges, universities, federal agencies, and communities of practice to incorporate into our Douglas College strategy (e.g. exemplar DMP's to share with researchers in grant proposals, training slide decks). | LIB |
| 3.3 Update or create policies, processes, and procedures, to support research data management. | • Scan external policies and procedures associated with supporting RDM and review existing College policies and procedures to identify and address gaps in winter 2024. | LIB, RIO, REB |
| | • Create new and/or update existing College policies and procedures as needed by summer 2024. | LIB, REB |
| | • Explore processes and best practices regarding research data access and secure storage when collaborating with international partners in summer 2024. | LIB, CEIT, REB |

**Implementation, Oversight and Review**

To move from a planning focus to an implementation focus, a terms of reference for a Research Data Management Advisory Committee will be created to monitor progress and report out on the Research Data Management Strategy to SMT. The Research Data Management Advisory Committee will incorporate representatives from the Library, RIO, REB, CEIT as well as two faculty representatives.

The Committee will meet three times each year to monitor the progress on the strategy, to identify and coordinate its resourcing, and to prepare updates for SMT.

**Definitions**

The following definitions are helpful to create a shared understanding of key terms in this strategy. The definitions were obtained from the [Tri-Agency Research Data Management Policy.](#)

*Data*
*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, soft- ware, programming languages, code, or statistical records.*

*Research data*
*Research data are data that are used as primary sources to support technical or scientific enquiry, research, scholarship, or creative practice, 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. Research data may be experimental data, observational data, operational data, third party data, public sector data, monitoring data, processed data, or repurposed data. What is considered relevant research data is often highly contextual, and determining what counts as such should be guided by disciplinary norms.*

*Research Data Management*
*Research data management (RDM) refers to the processes applied through the lifecycle of a research project to guide the collection, documentation, storage, sharing and preservation of research data. RDM is essential throughout the data lifecycle—from data creation, processing, analysis, preservation, storage and access, to sharing and reuse (where appropriate), at which point the cycle begins again. Data management should be practiced over the entire lifecycle of the data, including planning the investigation, conducting the research, backing up data as it is created and used, disseminating data, and preserving data for the long term after the research investigation has concluded.*

*Data Management Plan*
*A 'data management plan' (DMP) is "a living document, typically associated with an individual research project or program that consists of the practices, processes and strategies that pertain to a set of specified topics related to data management and curation. DMPs should be modified throughout the course of a research project to reflect changes in project design, methods, or other considerations. DMPs guide researchers in articulating their plans for managing data; they do not necessarily compel researchers to manage data differently" (Tri-Agency Research Data Management Policy, Frequently Asked Questions, Government of Canada 2021).*

***Data Deposit***

*Data deposit" refers to when the research data collected as part of a research project are transferred to a research data repository. The repository should have easily accessible policies describing deposit and user licenses, access control, preservation procedures, storage and backup practices, and sustainability and succession plans. The deposit of research data into appropriate repositories supports ongoing data-retention and, where appropriate, access to the data. Ideally, data deposits will include accompanying documentation, source code, software, metadata, and any supplementary materials that provide additional information about the data, including the context in which it was collected and used to inform the research project. This additional information facilitates curation, discoverability, accessibility and reuse of the data.*