Conestoga College Research Data Management Strategy

2023/09/01

Introduction

In March of 2021, the Tri-Agencies published the [Tri-Agency Research Data Management (RDM) Policy](#) with the intent of "support[ing] Canadian research excellence by promoting sound RDM and data stewardship practices."[1] The policy applies to all postsecondary institutions and research hospitals eligible to administer funds from either CIHR, SSHRC, or NSERC.

The Tri-Agency RDM Policy describes three areas with which institutions and researchers will be expected to comply to maintain eligibility status for Tri-Agency funding. These areas are as follows:

1. Institutional Strategy:
    a. Each institution must create an institutional RDM strategy and inform the agencies of completion of the strategy.
    b. The strategy must be publicly available on the institution's website and contain information about whom to contact regarding the strategy.
    c. The strategies must be available by March 1st, 2023.
2. Data management plans (DMPs):
    a. Every grant proposal submitted to the agencies to receive funding must describe methods that reflect best practices in RDM.
    b. Specific funding opportunities will require DMPs to be submitted as part of an application.
        i. These DMPs will be appraised as part of the adjudication process.
        ii. Funding opportunities requiring DMPs will begin to be identified in the autumn of 2021.
3. Data Deposits:
    a. Grant recipients will be required to entrust to a digital repository all digital research data, code, and metadata that has been used to directly support conclusions for research published in pre-prints or a journal when the research was Tri-Agency funded.
        i. Deposits must be made by the time of publication.
        ii. There is currently no date for implementation.

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[1] Tri-Agencies, "Tri-Agency Research Data Management Policy," Government of Canada, Innovation, Science and Economic Development Canada, Office of the Deputy Minister, Communications and Marketing Branch (Government of Canada, March 15, 2021), https://science.gc.ca/site/science/en/interagency-research-funding/policies-and-guidelines/research-data-management/tri-agency-research-data-management-policy.

To fulfil its obligations per these requirements, Conestoga College commits to supporting researchers in their attempts to adopt RDM best practices. This support will include, but is not limited to, the provision of educational resources; planning assistance; and guidelines, policies, and procedures. Conestoga College regards strong RDM practices and supports as a vital component of achieving our strategic vision of being a recognized leader in applied research.

Importance of Research Data and RDM

Research data is defined in the following manner:

> 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 and/or commonly accepted in the research community as necessary to validate research findings and results. All other digital and non-digital content have the potential of becoming 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.[2]

Conestoga College recognizes that research data are a valuable product of the research process, and, as such, recognizes that RDM is a necessary and worthwhile tool for preserving the value of research data.

RDM refers to the techniques and processes used to direct the collection, analysis, documentation, security, preservation, and sharing of research data throughout its lifecycle.[3] RDM processes are invaluable when responsibly conducting research and provide benefits to the entire research community. Conestoga College recognises that RDM is not a 'one-size fits all' set of practices and that RDM needs to be proportional to the sensitivity of the managed data.

Scope

This strategy is relevant to all researchers, including students, who conduct research under the auspices of Conestoga College. Furthermore, the strategy will apply to all data, digital or not, created by research projects conducted under the auspices of Conestoga College. Specific RDM requirements described by the strategy will only apply to researchers who conduct research with funding received from the Tri-Agencies.

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[2] "Research Data," CODATA, The Committee on Data for Science and Technology, accessed January 2, 2023, https://codata.org/rdm-terminology/research-data/.

[3] "Research Data Management," Digital Research Alliance of Canada, accessed January 2, 2023, https://alliancecan.ca/en/services/research-data-management.

Oversight and Review

This institutional strategy is part of the portfolio of Research, Innovation, and Entrepreneurship, under the purview of the Vice-President (Research). The RDM Working Group (RDMWG) is comprised of partners from the following areas, and was responsible for drafting the strategy:

- Office of Research Services
- Information Technology
- Library Services
- Corporate Services
- Research Ethics Board (REB)
- Institutional Research
- An Indigenous researcher representative
- A non-Indigenous researcher representative

As part of developing this strategy, the RDMWG assessed the current state of Conestoga College's RDM supports and services. This assessment was performed using a modified version of the [Maturity Assessment Model in Canada (MAMIC)](#), provided by the Digital Research Alliance of Canada. This initial assessment provided a foundation for development and will be used as a benchmark for future assessments.

Membership of the working group may expand or contract dependent on the requirements of future research data management initiatives.

This strategy will propose the implementation of supports within a three-to-five-year timeline. Due to the nascent status of the strategy, the working group will reconvene after one year to assess the initial implementation and impact of the strategy and to revise the strategy if appropriate. After this year, the group will meet at least biennially to perform a review and revise the strategy.

The Conestoga College RDM strategy is a living document and, as described, will be frequently reviewed and revised by the RDMWG. The RDMWG will perform a maturity assessment of Conestoga College's RDM supports every five years and compare it against the initial maturity assessment to determine how effective improvement efforts have been.

Existing Supports

The finding of the RDMWG's assessment of the current state of Conestoga College's RDM supports was that supports are largely informal and provided on an *ad-hoc* basis. This is unsurprising due to the newness of RDM as an area of focus. As this strategy evolves, this section will be expanded to capture the movement of supports from proposed to existing.

Proposed Supports

This section outlines the activities proposed by the RDMWG to help the College reach its desired future state of RDM supports. These activities are intended to be implemented within the medium term (three-to-five years):

Area of Development	Proposed Activities	Year and Semester
Institutional Policies and Processes	1. Develop a communication and outreach plan to better deliver RDM information to the campus community. 2. Develop an RDM policy and procedure that is compliant with Tri-Agency requirements on data management plans and data repository use for data preservation. 3. Formalize policies and procedures related to RDM with compliance tracking controls.	Y1 S Y1 F Y2 W
IT Infrastructure	1. Provide further enhancements for College identities and role-based access controls. 2. Provide funding and resourcing for high-performance computing needs on a case-by-case basis. 3. Formalize active storage strategy and continue implementation and outreach activities.	Ongoing Ongoing Ongoing
Support Services	1. Provide an RDM communications site to researchers for outreach purposes. The site will contain learning resources and contact details for ad-hoc inquiries. 2. Provide at least one general purpose RDM information session per academic year, rising to one per semester dependent on demand. 3. Provide and advertise consultation services for people/groups interested in learning more about RDM.	Y1 F Y1 F Y1 F Y2 W

	4. Provide at least one DMP-specific information session per academic year, rising to one semester dependent on demand.	Y2 W
	5. Provide and advertise consultation services for people/groups interested in creating data management plans.	Y2 S
	6. Provide educational material on data curation on the RDM communications site.	Y2 S
	7. Provide and advertise consultation services for people/groups interested in data curation.	Y2 F
	8. Provide educational material on RDM-related software on the RDM communications site, as well as one communication session, within five years.	Y2 F
	9. Provide and advertise consultation services for people/groups interested in RDM-related software.	
Financial Support	1. Seek and apply for, or encourage applications to, RDM-related funding opportunities to develop RDM services and materials.	Ongoing
	2. Assess opportunities for further College investment into RDM support capacity.	Ongoing
Indigenous Data	1. Encourage greater, meaningful, engagement with Indigenous partners.	Ongoing
	2. Provide educational material on managing Indigenous data on the RDM communications site, as well as one communication session, within five years.	Y4 W
	3. Provide and advertise consultations on managing Indigenous data for people/groups interested in data curation.	Y2 S
	4. Develop procedures for research partnerships with Indigenous communities that respect community wishes regarding their data.	Y3 F

Tentative Implementation Timeline

Category	Task	Year 1			Year 2			Year 3			Year 4			Year 5		
		Winter	Spring	Fall	Winter	Spring	Fall	Winter	Spring	Fall	Winter	Spring	Fall	Winter	Spring	Fall
Institutional Processes & Procedures	• Develop a communication and outreach plan to better deliver RDM information to the campus community.		■													
	• Develop an RDM policy and procedure that is compliant with Tri-Agency requirements on data management plans and data repository use for data preservation.			■	■											
	• Formalize policies and procedures related to RDM with compliance tracking controls.				■	■										
IT Infrastructure	• Provide further enhancements for College identities and role-based access controls. • Provide funding and resourcing for high-performance computing needs on a case-by-case basis. • Formalize active storage strategy and continue implementation and outreach activities.	Ongoing														
Support Services	• Provide an RDM communications site to researchers for outreach purposes. The site will contain learning resources and contact details for ad-hoc inquiries		■													
	• Provide at least one general purpose RDM information session per academic year, rising to one per semester dependent on demand.		■		■		■		■		■					
	• Provide and advertise consultation services for people/groups interested in learning more about RDM.		■	■	■	■	■	■	■	■	■	■	■	■	■	■
	• Provide at least one DMP-specific information session per academic year, rising to one semester dependent on demand.			■		■		■		■		■				
	• Provide and advertise consultation services for people/groups interested in creating data management plans.			■	■	■	■	■	■	■	■	■	■	■	■	■
	• Provide educational material on data curation on the RDM communications site.				■											
	• Provide and advertise consultation services for people/groups interested in data curation.				■	■	■	■	■	■	■	■	■	■	■	■
	• Provide educational material on RDM-related software on the RDM communications site, as well as one communication session, within five years.					■										
	• Provide and advertise consultation services for people/groups interested in RDM-related software.					■	■	■	■	■	■	■	■	■	■	■
Financial Support	• Seek and apply for, or encourage applications to, RDM-related funding opportunities to develop RDM services and materials. • Assess opportunities for further College investment into RDM support capacity.	Ongoing														
Indigenous Data	• Encourage greater, meaningful, engagement with Indigenous partners.	Ongoing														
	• Provide educational material on managing Indigenous data on the RDM communications site, as well as one communication session, within five years.										■					
	• Provide and advertise consultations on managing Indigenous data for people/groups interested in data curation.								■	■	■	■	■	■	■	■
	• Develop procedures for research partnerships with Indigenous communities that respect community wishes regarding their data.										■					

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Ethics Considerations

Conestoga College remains firmly committed to upholding all legal and ethical obligations in its pursuit of research excellence. The Research Ethics Board (REB) is an independent panel of College faculty and staff that reviews all proposed research involving human participants. The REB has the power to approve, fully or conditionally, or reject proposals depending on the risks to participants' welfare. The REB's mandate to review proposed research is in accordance with the Tri-Agency Policy Statement: Ethical Conduct for Research Involving Humans – TCPS 2 (2018).

The College will ensure that the REB is educated in all RDM requirements and developments to guarantee the continued high standards of the REB.

Indigenous Data Considerations

Conestoga College recognizes that a distinctions-based approach is needed to acknowledge, affirm, and implement the unique rights, interests, and circumstances of First Nations, Métis, and Inuit peoples. Furthermore, Conestoga College recognizes that data created by, and in partnership with, Indigenous communities, collectives, and organizations must be managed according to principles developed and approved by those groups, and in partnership with them.

Conestoga College is committed to respecting and observing the Ownership, Control, Access, and Possession (OCAP) principles for First Nations data governance, as described by the First Nations Information Governance Centre (FNIGC). The College also recognizes that the OCAP principles are not broadly applicable to the data governance of all Indigenous groups and will endeavour to establish approved principles in collaboration with other Indigenous groups.

Relevant Policies, Procedures, and Reference Documents

- Tri-Agency Research Data Management Policy: https://science.gc.ca/site/science/en/interagency-research-funding/policies-and-guidelines/research-data-management/tri-agency-research-data-management-policy
- Conestoga College Applied Research Policy: https://www-assets.conestogac.on.ca/documents/www/about/policies/applied-research/applied-research-policy.pdf
- Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans – TCPS 2 (2022): https://ethics.gc.ca/eng/policy-politique_tcps2-eptc2_2022.html
- First Nations Information Governance Centre Principles of OCAP: https://fnigc.ca/ocap-training/