

# Yukon University Research Data Management Strategy

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## Introduction and Background

In March 2021 the Canadian Tri-Agencies (NSERC, SSHRC and CIHR) formalized and released the Tri-Agency Research Data Management (RDM) Policy. The objective of that policy is to support Canadian research excellence by promoting sound data management and data stewardship practices. It applies to grant recipients and to institutions administering Tri-Agency funds.

Three main components of the Tri-Agency policy include requirements for:

1. the creation of Institutional RDM Strategies;
2. researchers to incorporate Data Management Plans (DMPs) into funding applications. DMP requirements will be rolled out over a period of years across different funding opportunities;
3. data-deposit which will be phased in by the Tri-Agencies.

YukonU needs to be ready to support the development and implementation of DMPs and data-deposit requirements.

Research data management (RDM) is about how data are collected, cared for, used, preserved, and shared to support research. RDM is essential throughout the data lifecycle — from data creation and collection, processing, analysis, preservation, storage and access, to dissemination, sharing and reuse — and an institutional-wide RDM strategy benefits the whole research ecosystem. RDM increases preservation, access, and openness of data from research and scholarly activity, accelerates scholarly progress, enhances collaboration, ensures effective implementation of ethical principles, increases visibility and impact of research and enables reproducibility of research results.

Many academic journals and publishers include requirements for data to be shared as part of the peer-reviewed process. An institutional RDM strategy is intended to ensure the integrity, security, and preservation of research data, and to facilitate the sharing and dissemination of data for the advancement of knowledge and the benefit of society.

## Alignment with University Strategies, Policies and Guidelines

Our approach to Research Data Management is within a broader research and academic culture, specific to our institution. This strategy reflects and compliments the Yukon University vision, mission, values, and commitments.

The 2022-2027 [Strategic Plan](#) is our road map to “Becoming” Yukon University — to realizing the promise and potential of being Canada’s first University North of 60.

Our Vision: **Yukon University will become a thriving learning and research community leading Canada’s North.**

This includes values and commitments to research integrity and scholarly excellence as well as providing high quality programs and services and aligning and building on our research data management program. As our key framing document, this Strategic Plan informs the development of other organizational plans such as the upcoming Indigenization strategy and the Academic Plan. As the RDM strategy evolves it will remain in alignment with the various guidance and planning documents that are developed.

Respectful relationships bind our common purpose. We were built on a foundation of reciprocal relationships with Yukon First Nations, government, community, and other industry partners. This strategy will reflect these relationships and priorities. At YukonU, “we honour and respect the cultures, languages, heritage, Traditional Knowledge and worldviews of Yukon First Nations by proudly walking alongside them on their paths to self-determination and cultural revitalization” (YukonU 2022-27 Strategic Plan).

In our commitment to decolonizing education, we make space for and honour Indigenous knowledge, perspectives, and ways of knowing, being and doing in our programming, research, services, and student life.

Our data management practices will be co-developed for research conducted by and with Yukon First Nations communities to ensure they are in accordance with their rights to control their own data, as reflected by the principles of Ownership, Control, Access and Possession (OCAP®) and the CARE principles for Indigenous Data Governance. The Council for Yukon First Nations is developing a Data Governance Strategy which will be an important guide for Yukon University’s data management practices.

## Vision and principles

**Research Excellence** YukonU commits to supporting research excellence by promoting sound RDM and data stewardship practices. We will share emerging best practices and communicate the benefits of applying them. Recognizing that implementing best practices in alignment with emerging institutional, funder, and disciplinary expectations will require varying degrees and types of effort. We recognize data sharing as an important component of scholarship, and we commit to supporting researchers to make their data as open as possible, but as restricted and protected as necessary. YukonU also reaffirms its commitment to research integrity: To the fullest extent possible, we will foster a culture where research data, the methods and computer code that produced them, and the metadata that describes and connects them are compiled, archived, and sharable to allow

research verification and reproduction. According to the Tri-Agency (2021), RDM practices support research excellence by “ensuring that research is performed ethically and makes good 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” (Tri-agency RDM Policy, Government of Canada).

**Indigenous Data Sovereignty** YukonU commits to upholding/respecting Indigenous data sovereignty and building standards and principles into policies and procedures. Indigenous governments, organizations, and communities have identified the need to control and own data about their people, communities, and lands. YukonU recognizes the colonial history of academic research and is committed to supporting decolonial research that centres reconciliatory processes and respect for Indigenous self-determination in research. Frameworks at multiple levels, including the UN Declaration on the Rights of Indigenous Peoples, the First Nations Principles of OCAP®, the National Inuit Strategy on Research (NISR) and others, outline principles and practices of respectful research that recognizes Indigenous rights, including to data sovereignty, ethical collection and appropriate acknowledgement of contributors and knowledge holders. YukonU is committed to creating ethical space and meaningful engagement with First Nations, Inuit, and Metis governments, communities, and research partners to implement best practices around Indigenous data sovereignty in accordance with the stipulations and processes of our Research Ethics Board and Animal Care Committee – to ensure these policies and procedures evolve together.

**Collaboration & coordination** Developing and implementing RDM best practices requires the collective efforts of the researchers and research groups who apply them, as well as the academic and Information Technology (IT) units that provide advice and support. YukonU is committed to building a culture that promotes effective and lasting partnerships and knowledge sharing between RDM stakeholders across campus, including researchers, administrators, IT, the Research Ethics Board (REB), the Animal Care Committee, the library, and other service units that support our digital research infrastructure. Research activities with external partners, such as other academic institutions, industry, or members of the northern community, are expected to follow RDM best practices as described in this Strategy.

**Research-centered support** To meet the emerging and dynamic digital research support needs of our researchers and scholars, a set of RDM services and training will be available to all members of the institution who require them, regardless of their role or discipline. YukonU will ensure that services that are developed are appropriate for and available to researchers from all disciplines including less traditionally data-intensive disciplines.

**Northern research leadership & impact** There is increasing recognition that northern research needs to be focused on priorities and questions identified by the northern community and that research should be led by the northern community and/or local First Nations as much as possible. As the North continues to expand its post-secondary research

capacity and enhance research partnerships between academic and community researchers and knowledge holders, there is an opportunity for northern researchers to lead the way in producing knowledge about the North that can contribute to solutions on northern priorities. YukonU is Canada's first university north of 60 and recognizes the critical role that research data plays in being able to contribute to the identification and implementation of solutions to northern priorities. We will promote RDM practices that recognize, support and build our northern focused research programs.

**Research security** YukonU recognizes the value of research data and the increased threat environment in which research is conducted, with implications for ethics, intellectual property, and commercial agreements. YukonU will ensure that researchers have access to the knowledge, infrastructure, and support to protect their research instruments and data from unwarranted access, compromise, and loss. Through partnerships between researchers, the Research Services Office (RSO), the REB, and IT, sensitive data will be managed throughout the research lifecycle to preserve individual and community anonymity, and commercial and intellectual property rights where agreements exist. With support from RSO, IT and the library, researchers will receive guidance and support to create information security plans as part of their DMPs that help protect their research infrastructure and data. YukonU will follow security best practices and ensure redundancy and/or backups of all research data are in place.

## Scope & stakeholders

This strategy applies to all research and scholarly activities that take place by staff and students at YukonU. The aim is to support our institution with the systems, services and supports to enable best practices in research data management to positively impact local and global communities. By facilitating best RDM practices for YukonU research and scholarly activities we can be leaders in Canada's North.

### **Description of Research and Scholarly Activity at Yukon University:**

Scholarly activity is an intentional, sustained process of creating, validating, and transferring knowledge. Scholarly activity happens on the land, the water and in the sky, lab, field, and all learning spaces; it reaches a relevant audience and engages community.

In early 2022, the Research Data Management Steering Committee was formed and is sponsored by the Vice-Provost, Academic and Research. The steering committee is made up of key RDM stakeholders from the IT services, Library Services, the Research Services Office and the Research Ethics Office.

Other internal and external stakeholders and rights-holders were consulted as the Draft strategy was developed, including the School of Science, Business and Leadership, YukonU

Research Centre and Indigenous representatives including Council of Yukon First Nations (CYFN).

## The Strategy

### **Goal 1: Build Awareness and Capacity in RDM**

Engage in outreach and training to inform the YukonU community about what research data management is, how it supports scholarship and research, current best practices, and cultivate a culture of data sharing. Provide communications such as outreach and informational guides available on the internal and external YukonU websites, workshops, policy updates. Create a communications plan to inform the YukonU community and external research partners about ongoing best practices and RDM developments. Continue RDM outreach and advocacy with external partners in communities and elsewhere. Data capacity will include establishing data standards; routinely storing data in established repositories in machine-readable formats using open standards in established facilities according to FAIR principles (Findable, Accessible, Interoperability and Reuse).

- Continue to develop institutional readiness for RDM and DMPs
- Continue RDM outreach and advocacy across YukonU and with external partners in communities and elsewhere.
- Provide training and support to research team members to ensure that they are aware of and compliant with institutional and national data management policies and guidelines.
- Create outreach and informational and best practice guides, available on the internal and external YukonU websites.
- Provide training and support to ensure support services and researchers have a knowledge of infrastructure and supports available to them as it relates to data repositories, infrastructure, and access to both internal and external secured networks.

### **Goal 2: Create and support access to RDM tools, resources, and infrastructure.**

After evaluating existing RDM practices and capacity at YukonU, Library Services and the Research Services Office began the setup of an institutional repository (IR). In 2023, the library is populating the IR with current and past research outputs and developing metadata standards and submission procedures. Work has been done to begin to identify appropriate data deposit solutions for the needs of research and scholarly activity practitioners and determine best practices to link data deposits in the Federated Research Data Repository (FRDR) to research output in the IR. IT Services will work with Library Services and the Research Services Office to set up and maintain any internal infrastructure required for local hosting of the IR. RSO and the Innovation and Entrepreneurship department will work

together to identify needs and develop support for researchers who need guidance with data management during commercialization or other entrepreneurial activities related to research data.

An institutional research ecosystem survey and RDM strategy focus group feedback sessions identified gaps that can be filled through supports from the RSO, Library Services and IT Services. These include:

- Creating supports for researchers in developing data management plans (DMP).
- Outlining clear data organization and documentation protocols, including a consistent naming convention and version control.
- Creating template resources such as a draft data sharing agreement, draft research agreements between a YukonU researcher and external partners and support services to negotiate contract terms.
- Funding for training opportunities regarding indigenous data and metadata governance, to support professional development.
- Identified the need for an Institutional RDM Policy that outlines the responsibilities of the institution and researchers regarding secure data storage, data deposit, data management planning, data ethics, support for sensitive data and cybersecurity.

### **Goal 3 Align policies and procedures to support best practices in RDM**

Advancing RDM considerations and strategies requires harmonization with existing and new YukonU policies in other areas. In addition, RDM strategies and policies that account for emerging considerations, such as Indigenous data sovereignty, may require YukonU to review and update existing policies. This strategy and its associated implementation initiatives will help provide guidance to YukonU in reviewing existing policies and protocols to identify opportunities to supplement those policies with elements that reflect best practices in RDM. The strategy will also establish a framework to encourage regular review of policies to identify areas and elements that can be updated to continue to grow and evolve with the emerging landscape of RDM (e.g., technological advancements, political contexts, research needs).

- Consider updates or creation of policies to support RDM.
- Consider dedicated staff capacity to support RDM practices across YukonU.
- Evolve current RDM Steering committee to formalize the implementation of the RDM Strategy.
- Follow and network with other research institutions across Canada to maintain current in best practices.

## Implementation/Application of the Strategy

- Develop an implementation plan that includes information on allocation of resources, responsibilities of different units, and specific requirements around RDM practices.
- Conduct further RDM strategy consultations with external research partners and stakeholders.
- Maintain relevance of the strategy by ensuring that it stays up to date. This may be influenced by internal YukonU planning documents (Indigenization Plan and Research & Academic Plan) or policy changes, external guidance from Tri-Agency or Indigenous data efforts in Yukon and elsewhere in Canada.

## References

Tri-Agency Research Data Management [Policy](#)

OCAP® [link](#)

Digital Research Alliance of Canada (formerly Portage Network) [link](#)