Research Data Management Strategy

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1. Introduction

Ontario Tech University recognizes that Research Data Management (RDM) is a necessary part of research excellence and that it is important to incorporate RDM practices at all stages of the research project lifecycle. Canada's federal granting agencies: the Canadian Institutes of Health Research (CIHR), the Natural Sciences and Engineering Research Council of Canada (NSERC) and the Social Sciences and Humanities Research Council of Canada (SSHRC) — launched the Tri-Agency Research Data Management Policy in March, 2021. The Policy is underpinned by the FAIR principles of data (Findable, Accessible, Interoperable and Reusable) to support Canadian research excellence and integrity, and to ensure best practices and stewardship in Research Data Management for publicly funded research. The following document outlines Ontario Tech's commitment and strategy to integrate management plans for the data that is created as part of research activities at the Institution.

The Ontario Tech University Institutional RDM Strategy, developed through a consultative process, aims to be inclusive and representative of all members of the research community. The strategy will serve as a key building block in establishing the foundation of best practices in research data management at Ontario Tech and will support the goals outlined in the Strategic Research Plan 2020 to 2025.

It is important to note that the RDM Strategy is not a formal policy, rather it is a concise and directive document that will assist the university in identifying current and future institutional capacity needs. In addition, the strategy is a living document that is subject to updating and revision as necessary. As such, feedback is welcomed at any time and can be sent to the Office of Research Services or the Library.

2. Importance of 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. Further definitions can be found in Appendix 2.

RDM is essential throughout the data lifecycle - data creation, processing, analysis, preservation, storage, and access, sharing and appropriate reuse. Data management should be practiced over the entire lifecycle of the data, including planning the investigation, conducting the research, and backing up data as it is created and used, disseminating data, and preserving data for the long term after the research investigation is concluded.

Engagement in RDM best practices can result in several benefits, such as:

- RDM enables researchers to organize, store, access, reuse and build upon digital data.
- RDM supports research capacity building through secure preservation and use of research data throughout the research lifecycle and supports reuse when appropriate.

- RDM can enhance data sharing and collaboration across geographic and disciplinary boundaries and make it accessible to the public, as appropriate.
- RDM can foster innovative reuse of preserved data sets and can lead to increased research impact and can also lead to a reduction in research duplication.

3. Background and Institutional Context

Policy Launch:

In March 2021, the Tri-Agency - Canadian Institutes of Health Research (CIHR), Natural Sciences and Engineering Research Council of Canada (NSERC), and Social Sciences and Humanities Research Council of Canada (SSHRC) – released a policy entitled the *Tri-Agency Research Data Management Policy*. The policy aims to advance Canadian research excellence and to ensure that publicly funded research is supported by sound RDM and data stewardship practices. Specifically:

> "The Tri-Agency Research Data Management Policy aims to support sound RDM and data stewardship practices, and states that "research data collected through the use of public funds should be responsibly and securely managed and be, where ethical, legal and commercial obligations allow, available for reuse by others."

The Tri-Agency Research Data Management Policy identifies three key stages of implementation:

- **Institutional strategies:** By March 1, 2023, research institutions subject to this requirement must post their RDM strategies and notify the agencies when they have done so.

- **Data management plans:** By spring 2022, the agencies will identify an initial set of funding opportunities that will be subject to the data management plan requirement. Before this, the agencies will pilot the requirement through targeted funding opportunities.

- **Data deposit:** After reviewing the institutional RDM strategies, and in line with the readiness of the Canadian research community, the agencies will phase in a data deposit requirement.

The timeline for implementation is:

Oversight and Review:

The Office of Vice-President, Research and Innovation (VPRI), with the help of RDM Working Group, facilitated the creation and implementation of Ontario Tech's Institutional RDM Strategy. The Working Group collaborated closely with the Research Committee - comprised of faculty members - and other representatives from across the university - the Library, IT Services, the Research Ethics Board, faculty members and other interest groups. The Working Group will facilitate annual reviews and ongoing consultation activities to help support the evolution and implementation of the strategy. Opportunities for consultation will be ongoing to ensure continued alignment of the RDM Institutional Strategy with best practices, institutional context and user needs.

Ontario Tech Response:

In response to the Tri-Agency Research Data Management Policy and to ensure an inclusive process, Ontario Tech University conducted the following activities in support of laying the groundwork for RDM support and the development of the Institutional Research Data Management Strategy as follows:

- **Establishment of a Working Group**
  - A Research Data Management Working Group was established in late 2020 with the aim to develop resources and templates and to support the development of the RDM institutional strategy. The Working Group was comprised of representatives from the Office of Research Services, the Library, Research Ethics Board and IT Services at Ontario Tech.
- **Consultation and Awareness Building**
  - Between 2021 and 2023 broad consultation and awareness sessions occurred to inform the research community about the Policy requirements. These included:
    - Presentations to Faculty Councils, Research Committee, Research Ethics Board, Radiation Safety Committee, Biosafety Committee, Animal Care Committee and other key interest groups at Ontario Tech.
    - RDM survey development and deployment
      - An RDM survey tool was co-developed in consultation with the Office of Research Services, the Library, IT Services, targeted faculty members, Research Committee, administrative units, Research Ethics Board and other key interest groups.
      - The survey tool was designed to understand the current RDM knowledge, user needs and to identify potential gaps, as perceived by the research community.
      - The survey was open to all faculty members, graduate students and Postdoctoral Fellows. In total there was a 24% response rate, with representation from all six faculties at Ontario Tech University.
      - The results of the survey reflect the diverse types of research being conducted at Ontario Tech. The research community identified the following requirements:

        - Training and standardized templates and RDM samples.
        - Dedicated data management support and subject matter expertise.
        - Secure data storage and repositories including active and long-term data preservation.
        - Clear and concise guidelines to guide RDM practices during the research lifecycle.
        - Alignment with Research Ethics processes and other compliance requirements to reduce administrative burden.
    - Targeted RDM consultations with faculty members
        - Approximately 20 faculty members from across all six faculties at the university were targeted by the Office of Research Services to provide expert feedback on the survey tool and the RDM template.
- Resource and Educational Material Development
    - Between 2021 and 2023 the Office of Research Services and the Library worked collaboratively with other key interest groups and individuals to develop the following resources:
        - Web pages:
            - Office of Research Services Research Data Management
            - Ontario Tech Library RDM Guide
        - Research Data Management Plans:
            - RDM template for Ontario Tech
                - Posted and developed in consultation with several faculty members across university, Research Ethics Board, Radiation Safety Committee, Biosafety Committee and other key interest groups.
        - Library Research Data Management Assistance:
            - The Library offers training sessions open to the research community at Ontario Tech and provides personalized support accessed through the Library Research Data Management Assistance section on the Library Website.
        - Office of Research Services
            - The Office of Research Services provides RDM support and subject matter expertise to all faculty members to help meet the funding agency requirements and articulate research data management plans as required by the specific funding programs.

- RDM Services and Training
    - Ontario Tech University has a variety of RDM-related services available to researchers. These include:
        - Workshops hosted by the Library on research data management, data visualization, amongst other topics.
        - Consultations:
            - available through the Library for data management plan (DMP) development and discipline specific data repository options.
            - available through IT Services regarding data storage options
            - available through the Research Ethics Board to assist researchers in making informed decisions about sensitive data, Indigenous data, etc.
        - Web-based resources on both the Library and VPRI websites
        - Library RDM best practices guide with detailed information and examples of RDM plans.
- Asset Mapping and Environmental Scan
    - The Office of Research Services, the Library and IT Services conducted an asset mapping exercise to determine what resources were available at Ontario Tech to support Research Data Management. Results are outlined in Appendix 1.
    - Environmental scan of best practices across the university sector to help inform Institutional RDM Strategy.
- Development of Institutional RDM Strategy:
    - The Office of Research Services and the Library, in consultation with the Research Committee, the Research Ethics Board and other key interest groups, developed the Institutional RDM Strategy for Ontario Tech utilizing the available inputs – asset mapping, environmental scan, survey results, external resources and other relevant documents. The Institutional RDM Strategy document is a living document and will be updated on an annual basis.

4. Ethical, Legal and Security Considerations

Ontario Tech University, through the Office of the Vice-President, Research and Innovation (VPRI), offers support to researchers which enables compliance with ethical, legal and commercial requirements through various services. The institution acknowledges that data management practices adopted by researchers must be consistent with ethical, legal and commercial obligations, as well as Tri-Agency requirements, including the Tri-Agency Policy Statement: Ethical Conduct for Research Involving Humans – 2nd edition, the Tri-Agency Framework: Responsible Conduct of Research and other relevant policies.

Indigenous Data Management and Sovereignty:

Ontario Tech University is committed to truth and reconciliation. It has established the President's Indigenous Reconciliation Task Force (PIRT) to work in consultation with the Indigenous Education Advisory Circle (IAEC) to implement goals and recommendations that will action Truth and Reconciliation at Ontario Tech. In addition, Truth and Reconciliation is a key component of the Research Code at Ontario Tech as outlined in the Strategic Research Plan 2020-2025. The Research Ethics Board has Indigenous Advisors and offers support for Indigenous research. We believe that our research must respect and advance Truth and Reconciliation with Indigenous Peoples. The university affirms that Indigenous Peoples and communities have the right to control the collection, ownership, protection, use and sharing of Indigenous data. Ontario Tech supports Indigenous data sovereignty and encourages models for Indigenous data governance such as the First Nations Information Governance Centre's OCAP principles, the Global Indigenous Data Alliance's CARE principles and the TCPS2 (2018) – *Chapter 9: Research Involving the First Nations, Inuit and Métis Peoples of Canada*. In addition, Ontario Tech will continue to align our frameworks and practices with forthcoming Indigenous RDM protocols developed by the Tri-Agencies.

Ethical Considerations for Research Involving Human Participants:

Ontario Tech University provides various forms of support and resources for the research community to comply with ethical requirements. The Office of Research Services supports the administrative aspects of the Research Ethics Board and other compliance-related committees on behalf of Ontario Tech and the Vice-President, Research and Innovation.

Plans for managing research data collected from human participants need to comply with the expectations outlined in the *Tri-Council Policy Statement on the Ethical Conduct for Research Involving Humans - TCPS2 (2022)* as well as with other regulatory requirements that pertain to biosafety, radiation safety, animal care and use in research, and research security.

Through consultations, the research community identified the critical need to align the RDM requirements with the Research Ethics Board and other compliance committees' application and approval processes. Significant consultation and engagement have occurred to ensure alignment of processes with the goal to reduce administrative burden to the research community.

Security and Industry Research Considerations:

Ontario Tech University has a special mandate to conduct industry- and community-relevant research to uncover solutions that relate to all facets of global sustainability and well-being. Embracing "technology with a conscience" to advance knowledge and promote sustainability is a key priority. In addition, the university is involved in research that involves sensitive data which is subject to regulatory requirements for controlled goods, security clearance, radiation and biohazard protection, export controls and others. The Office of the Vice-President, Research and Innovation supports the research security and compliance frameworks and assists the research community with legal, security, industry, and other research considerations as they pertain to RDM.

5. University Plans, Policies and Guidelines

The Ontario Tech University Institutional RDM Strategy is a document to support the priorities as set out in the Strategic Research Plan 2020 to 2025 and the Integrated Academic-Research Plan 2021 to 2023.

The following external and internal policies and guidelines inform the Ontario Tech Institutional RDM Strategy:

- Relevant External Policies:

  Tri-Agency Research Data Management Policy
  Tri-Agency Statement of Principles on Digital Data Management
  Tri-Agency Framework: Responsible Conduct of Research
  Tri-Agency Policy Statement: Ethical Conduct for Research involving Humans
  Tri-Agency Open Access Policy on Publications
  CIHR Health Research and Health-Related Data Framework
  SSHRC Research Data Archiving Policy
  First Nations Information Governance Centre's OCAP principles

- Relevant Ontario Tech Policies:

  Intellectual Property Policy
  Records Classification and Retention Schedule
  Records Disposition Procedures
  Records Management Policy
  Responsible Conduct of Research and Scholarship Policy
  Responsible Conduct of Research and Scholarship Procedure
  Technology Use Policy
  Conflict of Interest in Research
  Policy on the Care and Use of Animals in Research and Teaching
  Controlled Good Policy
  Research Ethics Policy
  Contract Management Policy
  Radiation Safety Policy

6. Scope

This strategy applies to all researchers working in different disciplines across the university and considers the unique needs of students, staff and faculty. The first phase of the strategy will concentrate on identifying existing supports and additional collaborative opportunities, supports, and tools necessary for Tri-Agency-funded researchers at Ontario Tech University to adopt responsible data management practices.

7. Key Interest Groups at Ontario Tech

Supporting responsible stewardship of data at Ontario Tech University requires continued collaboration between different units at the institution. Specifically:

- Researcher Community – faculty members, students and Post-Doctoral Fellows
- Research Committee
- Research Ethics Board, Animal Care Committee, Radiation Safety Committee, Biosafety Committee
- Office of Research Services
- Library
- IT Services
- Office of the General Counsel

8. Institutional Support

Institutional support and resources for the operationalization of data management plans and practices at Ontario Tech University are critical to the Institutional RDM Strategy's success. Several units provide this support, including, the Office of the Vice-President, Research and Innovation, through the Office of Research Services, Ontario Tech Library and IT Services. This collaborative and supportive approach builds on the information in the Tri-Agency Statement of Principles on Digital Data Management. Ontario Tech University leverages internal, regional and national interdisciplinary supports to make Research Data Management Services available to its researchers. To that end, to inform the Institutional Strategy and guide priority setting, an asset map was created. The asset map can be found in Appendix 1 and outlines the main infrastructure currently available at the institution – internal and external – to support RDM at Ontario Tech.

The Ontario Tech VPRI, Library and IT Services will provide guidance about RDM priorities, including Data Management Plans (DMPs). The Library will continue to develop and deliver resources, training and consultation services to support researchers with RDM practices, including data storage, metadata creation and data deposit.

Ontario Tech will also undertake RDM initiatives, engage key interest groups and educate personnel to raise awareness about RDM-related practices, and give or support access to RDM tools, resources and infrastructure to encourage the adoption of our institutional strategy and the implementation of best practices in RDM among researchers.

9. Specific Goals and Strategies

Considerable effort was made to be inclusive in the development of the RDM Institutional Strategy. As a result of targeted consultation, survey data, environmental scans, asset map exercise and other engagement activities Ontario Tech has set out the following initial draft of specific goals and strategies.

Goal	Strategies
Raise Awareness and Increase Knowledge about RDM at Ontario Tech University	• Develop an RDM communications strategy. • Recruit Ontario Tech champions to help promote the value of RDM and provide disciplinary expertise to the Research Community. • Develop, evaluate and promote RDM services and resources to the research community. • Develop a community of practice to improve knowledge and share best practices amongst the research community. • Expand RDM workshops and training opportunities.
Formalize RDM Practices and increase resources and access to enhanced Data Security, Storage, Access and Sharing tools.	• Develop guidelines and resources for researchers to support data storage, security, curation and preservation. • Develop resources to help facilitate responsible data sharing and licensing. • Assist the research community in identifying national, provincial and discipline-specific options for high-capacity storage, trusted deposit and long-term archiving.
Create additional support for the Ethical, Legal and Security Considerations of RDM.	• Expand the services available to consult with researchers on data security issues, threats and controls. • Develop processes and practices to align RDM requirements with the Research Ethics Board and other compliance requirements to reduce administrative burden. • Create support and resources to help the research community identify, manage and utilize sensitive data according to best practices.
Promote Indigenous Data Sovereignty and RDM Practices	• Engagement of Indigenous leaders at Ontario Tech to develop RDM activities and practices. • Ensure that Indigenous data sovereignty is supported through RDM practices. • Develop guidelines, resources and workshops for the research community to support the appropriate inclusion of Indigenous data governance throughout the research lifecycle.

Appendix 1 – Asset Map

Data Repositories		
Asset	**Oversight**	**Description and Location of Asset**
eScholar: institutional repository	Library administered	A digital repository that stores, preserves and disseminates digital copies of the research and scholarly output of the University. These can include monographs, pre- and post-prints of academic journals, theses and dissertations, reports/working papers and conference proceedings, as well as media. May include other content. Storage capacity 100 GB.
Borealis (formerly Scholars Portal Dataverse)	Library administered	A free and secure data repository that supports the deposit and sharing of Ontario Tech University research data. Files are held on Canadian servers. As a researcher you can choose to make the content you upload available to the public, to specific individuals or collaborators, or to keep it locked. Metadata describing the data in Borealis is indexed. Storage capacity 4TB.
Federated Research Data Repository	Library supported.	**Find Data:** Search FRDR to find research datasets originating from researchers affiliated with Canadian institutions. **Deposit Data:** Any researcher affiliated with a Canadian institution can deposit data into FRDR. The platform can efficiently process datasets of any size, and preservation processing is done automatically.
Ontario Library Research Cloud	Library supported	Secure long-term storage and preservation of digital content such as archival data, static websites, instructional videos and learning modules. The following universities are OLRC partners: Carleton, Guelph, Laurier, McMaster, Ontario Tech, Ottawa, Queen's, Toronto Metropolitan, Toronto, Waterloo, Windsor, York. The Ontario Tech Library team has access to a current maximum of 4TB, of which 1TB is being used to backup archival holdings. Additional storage costs are $276/year per 1TB, $2604/year per 10TB and $12272/year per 50TB.
RE3DATA	Library Supported	A global registry of research data repositories that covers research data repositories from different

		academic disciplines. It includes repositories that enable permanent storage of, and access to, data sets to researchers, funding bodies, publishers, and scholarly institutions. re3data.org promotes a culture of sharing, increased access and better visibility of research data.
IC/ES	Library Supported	The IC/ES Data Repository consists of record-level, coded and linkable health data sets. It encompasses much of the publicly funded administrative health services records for the Ontario population eligible for universal health coverage since 1986 and is capable of integrating research-specific data, registries and surveys. Currently, the repository includes health service records for as many as 13 million people.
Data Management Plans and Tools		
DMP Assistant	Library Supported	The DMP Assistant is a national, online, bilingual data management planning tool developed by the Digital Research Alliance of Canada in collaboration with host institution University of Alberta to assist researchers in preparing data management plans (DMPs). It is freely accessible to all researchers. A Ontario Tech data management plan template has been co-created with the REB and the research community.
Training Resources	Library Supported	Resources developed by the Digital Research Alliance of Canada.
Information Technology (IT) Data Systems		
Cloud Storage Options	IT Supported	Workspace for Information Sharing and Collaboration (WISC/Microsoft SharePoint)
Google Drive	IT Supported	Storing files that are specific to an individual. Storage is available as follows: 15GB Employees, 5GB Students, 1GB Alumni and additional storage available upon request and approval. Files are encrypted at rest with a unique AES 256 key. TLS encryption for data in transit. Recommended for personal files only and should not be used for sensitive data storage. For support, contact the Service Desk.
Microsoft OneDrive and Teams	IT Supported	For support, contact Ontario Tech OneDrive Support. Microsoft OneDrive has automatic backup of important files on your device to prevent data loss. Base storage is 1TB and it can be increased to 5TB for

		free. Increase to 25TB for free (requires ticket to Microsoft current rates would apply). It is not intended for sharing files and is not recommended to store sensitive data. Other Specifications: File Size - 250GB max file size. 20GB max file size within a zip. 400-character max file path + file name. Encryption: Files encrypted at rest with a unique AES 256 key. TLS encryption for data in transit. Microsoft Teams for Collaboration: Project collaboration with internal and external users. Online Chat with colleagues. The project lifecycle has end-of-life—single document real-time collaboration.
ORION	IT Supported	ORION provides high-speed, fibre-optic network services to support research, education and innovation. Note: Orion does not provide Cloud options or collaboration to the university.
SynaMan	IT Supported	Sharing of confidential data with external users. SynaMan is an ideal remote file transfer/sharing solution for individuals. An effective way to transfer files of any type and size quickly and easily to any machine running various operating systems. No storage available. No cost to use the services. Confidential data or large file sizes. Can be used by anyone at Ontario Tech. For support, contact the Service Desk.
High Performance Computing (HPC)		
Digital Research Alliance of Canada	External	At a national level, The Digital Research Alliance of Canada coordinates the national level supports of advanced computing (ARC), research data management (RDM) and research software. Ontario Tech is an active member of the Digital Research Alliance of Canada and makes use of the services offered.
Compute Ontario Resources	External	Digital Research Infrastructure (DRI) is the ecosystem of compute and data storage, high speed networks, experts and software that powers artificial intelligence, advanced research and high-tech industry. DRI-based research is being applied in every field, from the design of next-generation materials and cancer

		treatments to film and media creation, curation and preservation.
SciNET	External	SciNET (consortium at the University of Toronto) is Canada's largest supercomputing centre, providing Canadian researchers with computational resources and expertise necessary to perform their research on scales not previously possible in Canada.
SharcNET	External	SharcNET is a consortium comprising 18 colleges, universities and research institutes operating a network of high-performance computer clusters across south western, central and northern Ontario.
Centre for Advanced Computing	External	The Centre for Advanced Computing at Queen's University specializes in secure, advanced computing resources and support for academic and medical researchers.
HPC4Health	External	HPC4Health is a consortium of health providers who are working together to build the next-generation of compute engine for clinical research.
IT Support and Services		
Cloud Storage	IT Supported	Researchers can work with IT Collaboration services and investigate cloud storage solutions such as Google Drive or Microsoft OneDrive, which provide a cost-effective way to store and share data.
Collaboration tools	IT Supported	Researchers can access collaboration tools like Google Workspace or Microsoft Teams, which provide real-time document editing, video conferencing, and team messaging capabilities.
Remote access	IT Supported	IT Services can assist in providing remote access solutions, such as virtual private network (VPN) access, to enable researchers to securely access the university's IT resources from remote locations.
Grant or research application assistance	IT Supported	IT resources will work with Research Grant Officers and researchers. Driven by the Grants Officer. Support includes help with IT costs around hardware and software required to do the research. An example would be providing IT management oversight to complete IT needs for grants and CFI applications.

Management of IT	IT Supported	Any IT asset procured through IT will be asset tagged and supported by the IT team. Anything outside that process cannot be supported and will receive best-effort support only. Unfortunately, with so much tech availability in the marketplace, it is impossible to have the technical knowledge to support it all. University technology also meets a standard and generally lasts longer than consumer-based technology.

Appendix 2 – Definitions and Abbreviations

1. **Research Data**[1]

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.

2. **Sensitive Research Data**[2]

Information that must be safeguarded against unwarranted access or disclosure is considered sensitive. May include: confidential personal information, trade secrets, intellectual property, Indigenous research data, health information, information protected from unauthorized access by institutional policy, contracts/agreements etc.

3. **Indigenous Research Data**

The Tri-Agency RDM Policy 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”.

4. **Research Data Management (RDM)**[3]

RDM is the concept of actively organizing research data through the life cycle of a research project or program. RDM is both a field within the academic discipline of Information Science and a set of methodological guidelines that involve the planning, organization, description, storage, and sharing of research data in a secure fashion. Good RDM practices are also expected to improve the dissemination and reproducibility of research outcomes.

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[1] https://www.science.gc.ca/eic/site/063.nsf/eng/h_97609.html#1b

[2] Sensitive Data Toolkit for Researchers (2020) Retrieved from https://www.mtroyal.ca/Research/EthicsCompliance/HREB/GuidanceDocuments/Portage-Sensitive-Data-Toolkit-Glossary.pdf

[3] https://www.mcgill.ca/drs/files/drs/mcgill_rdm_strategy_-_draft_v1.0.pdf

5. **FAIR principles**[4]

The FAIR principles improve the discoverability, accessibility and reuse of digital assets by establishing best practices for Scientific Data Management.

- **Findable:** The first step in (re)using data is to find them. Metadata and data should be easy to find for both humans and computers. Machine-readable metadata are essential for automatic discovery of data sets and services.
- **Accessible:** Once the user finds the required data, the user needs to know how they can be accessed, possibly including authentication and authorization.
- **Interoperable:** The data usually need to be integrated with other data. In addition, the data need to be interoperable and able to function with applications (including computer software and hardware) or workflows for analysis, storage and processing.
- **Reusable:** The ultimate goal of FAIR is to optimize the reuse of data. To achieve this, metadata and data should be well-described so that they can be replicated and/or combined in different settings.

Find more information about FAIR principles on the GO FAIR website.

6. **Tri-Agency**

The three Canadian funding agencies are CIHR, NSERC and SSHRC.

Abbreviations:

- VPRI: Office of Vice-President, Research and Innovation, Ontario Tech
- ITS: Information Technology Services, Ontario Tech
- DMP: Data Management Plan
- RDM: Research Data Management

[4] https://www.science.gc.ca/eic/site/063.nsf/eng/h_97609.html#4m