Link to this presentation: https://goo.gl/vkoCCl

From Planning to Preservation:

Openly accessible resources for managing research data.

Open Access Week Workshop - 25-Oct, 2016

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McMaster University LIBRARY

MAPS DATA GIS

Link to this presentation: https://goo.gl/vkoCCl

McMaster University LIBRARY

Outline

- What is Research Data Management?
- Why should I care?
- What resources exist to help me manage my data?
- Where can I find more information?

If you shared your data another researcher or collaborator, would they be able to:

a. Interpret and understand it?
b. Use it in new analyses?

Would someone (including you) be able to find, interpret and use your data 20 years from now?

Research Data Management (**RDM**) is…

… the active organization & maintenance of data

… the application of best practices to ensure data security, accessibility, usability, and integrity

… a set of activities resulting in self-describing data sets that can be discovered and reused.

Applying RDM best practices will benefit...

Researchers and their collaborators

- ✧ Improves research efficiency and productivity
- ✧ Provides extra credit for research work
- ✧ Increases research impact
- ✧ May help to meet funding requirements

Research Communities

- ✧ Accelerates discovery
- ✧ Enables validation and verification

Funders, governments and the public

- ✧ Improves return on investment
- ✧ Increases research transparency
- ✧ Data as a public good

Partnerships and Projects
- Meet Canada's scientists and professionals
- Canadian High Arctic Research Station
- Northern Contaminants Program
- Canada's Extended Continental Shelf Program
- Health Canada: Centre for Vaccine Evaluation
- Science and Technology Data
- Research Funding Collaboration
  - Co-operative Funding Programs
  - Policies and Guidelines
    - Open Access
    - Selecting the Appropriate Federal Granting Agency
    - Research Ethics
    - Responsible Conduct of Research

Tri-Agency Statement of Principles on Digital Data Management

1. Preamble

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) (the agencies) are federal granting agencies that promote and support research, research training, knowledge transfer and innovation within Canada.

As publicly funded organizations, the agencies are strong advocates for making the results of the research they fund as accessible as possible. In promoting access to research results, they aspire to advance knowledge, avoid research duplication and encourage reuse, maximize research benefits to Canadians and showcase the accomplishments of Canadian researchers. These aspirations align with the Government of Canada's commitment to open science, as described in *Seizing Canada's Moment: Moving Forward in Science, Technology and Innovation*(2014).

Research data include observations about the world that are used as primary sources to support scientific and technical inquiry, scholarship and research-creation, and as evidence in the research process.[1] Research data are gathered through a variety of methods, including experimentation, analysis, sampling and repurposing of existing data. They are increasingly produced or translated into digital formats. When properly managed and responsibly shared, these digital resources enable researchers to ask new questions, pursue novel research programs, test alternative hypotheses, deploy innovative methodologies and collaborate across geographic and disciplinary boundaries. The ability to store, access, reuse and build upon digital research data has become critical to the advancement of science and scholarship, supports innovative solutions to economic and social challenges, and holds tremendous potential for Canada's productivity, competitiveness and quality of life.

Tri-Agency Statement of Principles on Digital Data Management: **Expectations**

- Data management planning
- Constraints and obligations
- Adherence to standards
- Collection and storage
- Metadata
- Preservation, retention and sharing
- Timeliness
- Acknowledgement and citation
- Efficient and cost-effective

Tri-Agency Statement of Principles on Digital Data Management
http://www.science.gc.ca/default.asp?lang=En&n=83F7624E-1

Tri-Agency Statement of Principles on Digital Data Management: **Responsibilities**

Researchers

-incorporating best practices
-developing DMPs
-adhering to policies and standards

Research Institutions

-supporting best practices
-providing access to resources
-creating guidance and policies

Research Communities

-developing & promoting standards
-fostering excellence
-selecting repositories

Research Funders

-developing policies & guidance
-promoting data management
-providing peer reviewers

RDM capacity development at various scales

Institutional

RDM @McMaster

MacDATA INSTITUTE

RHPCS
Research & High-Performance Computing Support

Provincial / National

Scholars Portal
A Service of the Ontario Council of University Libraries

DataCite

portage

International

RDA
RESEARCH DATA ALLIANCE

ARL
Association of Research Libraries

SHARE

McMaster
University
LIBRARY
RDM
@McMaster

McMaster University LIBRARY | RDM @McMaster

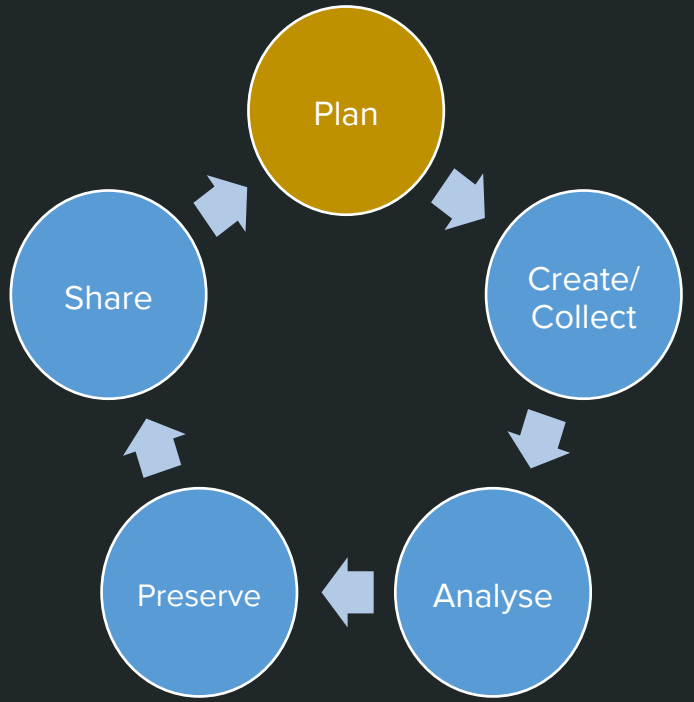
What are researchers' data management obligations?

What challenges do researchers face in managing their data?

How can the library help researchers address their data management needs?

Data Management Resources

I. Planning for RDM



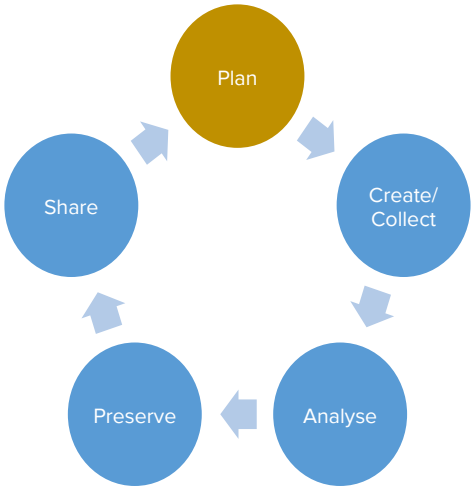
...it all starts with a (good) plan

A research Data Management Plan (**DMP**) should:

- ✧ Describe how you will manage data through all stages of your research
- ✧ Communicate a strategy for creating share-worthy data products

A **good** DMP will**:**

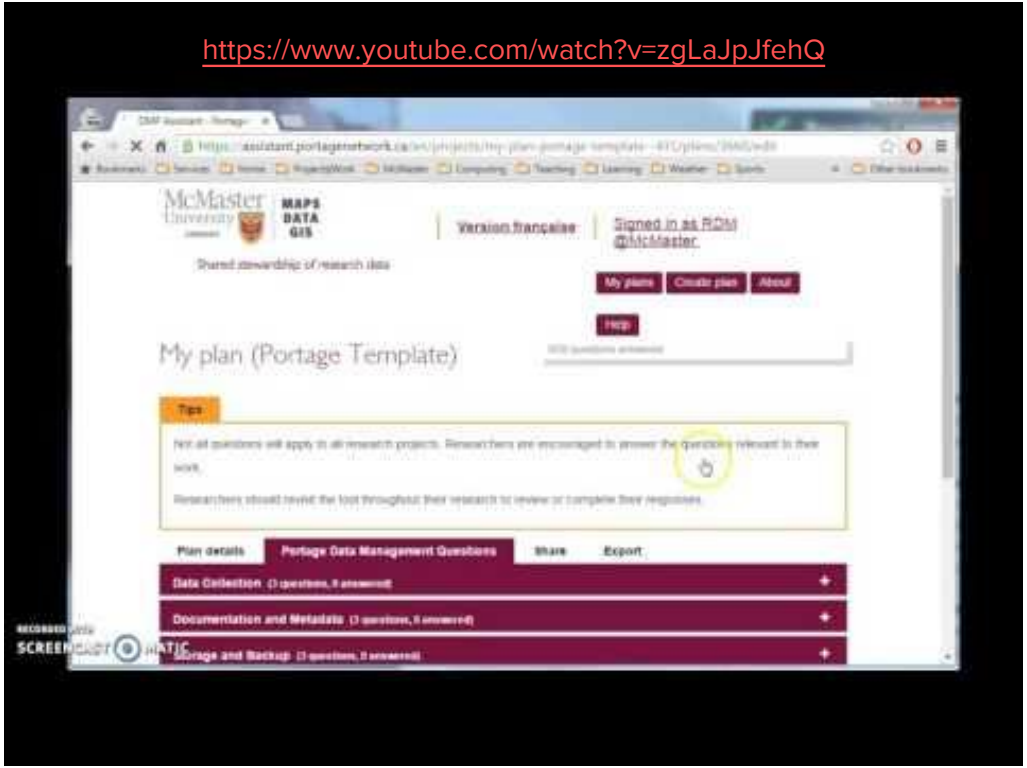
- ✧ Be completed at the time of study design
- ✧ Ensure compliance with policies / obligations
- ✧ Document and organize research activities
- ✧ Help identify support requirements
- ✧ *(Likely)* evolve with your study...



Portage DMP Assistant

- A web-based, bilingual data management planning tool.
- Available to all researchers in Canada.
- A guide for best practices in data stewardship.
- Exportable data management plans.

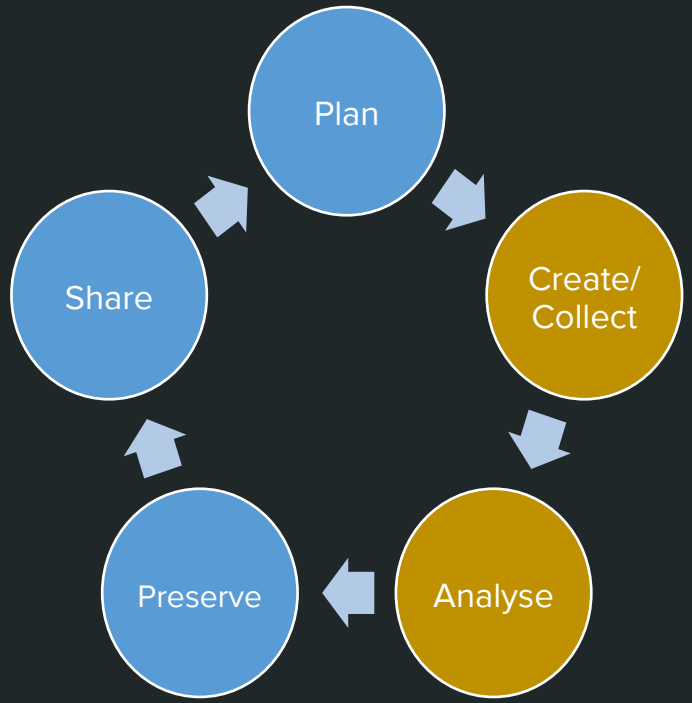
https://www.youtube.com/watch?v=zgLaJpJfehQ



https://assistant.portagenetwork.ca/

Data Management Resources

II. In-project data management



Things to consider...

How will you manage digital data in your research?

- What types of data will you collect and how much?
- How will you ***organize*** and ***secure*** your data?

How will you share data between collaborators?

- How will you ***describe*** your data so that others understand it?
- How will you control ***access*** to this data?

Open Science Framework

https://osf.io/

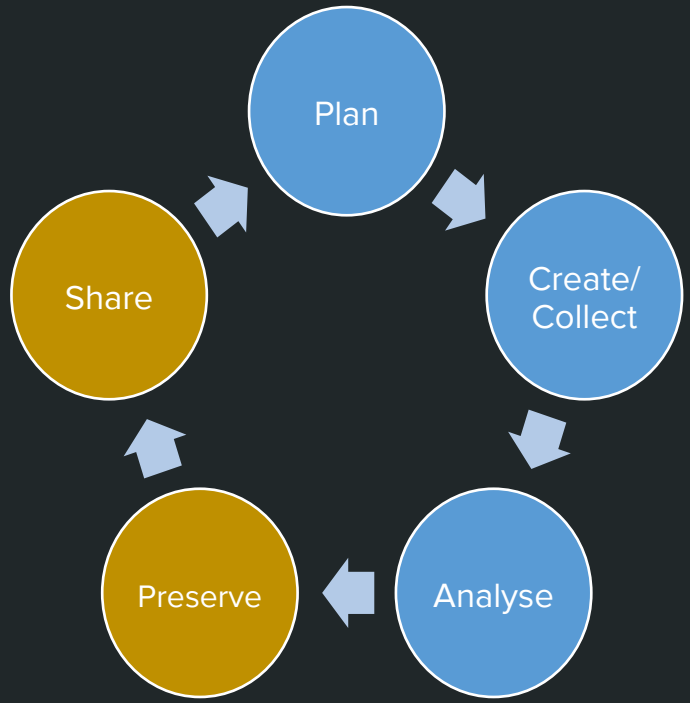
- Free, open source web application
- Connects and supports the research workflow
- Integrates with existing services (e.g. Google Drive, Dropbox, etc.)
- Supports collaborative workflows
- Facilitates data publishing to selected data repositories

https://youtu.be/2TV21gOzfhw

Workshop demo: https://osf.io/muq5f

Data Management Resources

III. Preserving and sharing data products



Things to consider...

How will your data products be stored in the long-term?

- How to ensure that it remains ***integral*** and ***secure***?
- Who will assume long-term ***responsibility*** for your data?

How will others access your data products?

- What data should be shared?
- How will you manage legal, commercial & ethical constraints?

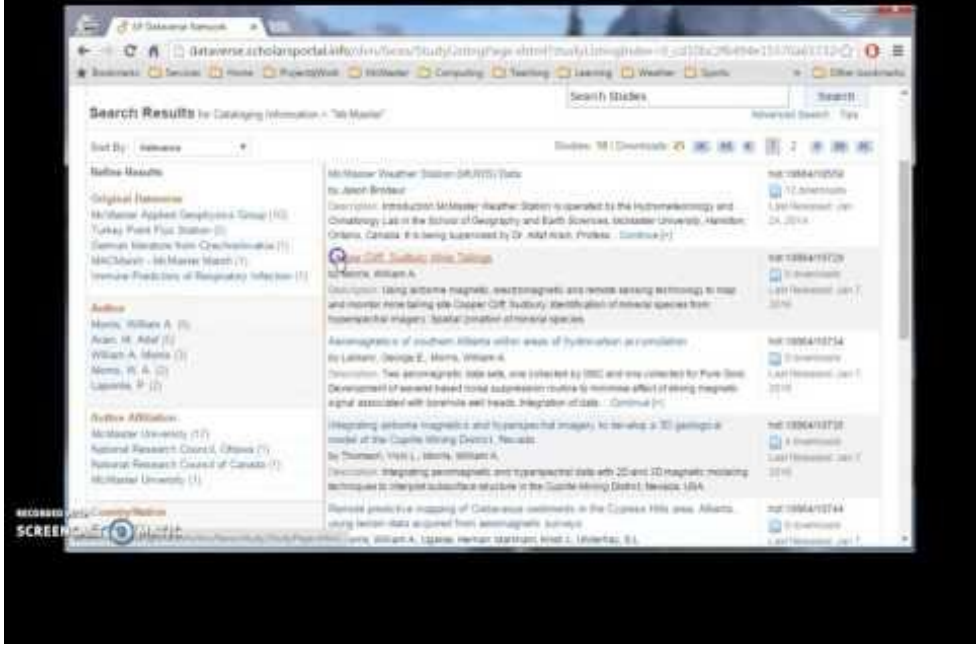
How to maximize credit for sharing your data?

- How to ensure that your data is ***findable***, ***accessible*** and ***citable***?

Scholars Portal Dataverse

- A data repository for researchers at Ontario's universities.
- An online platform to share, preserve, cite, explore and analyze research data.
- Allows researchers to control how they share their data.
- Supports data DOI registration through Datacite Canada.

https://www.youtube.com/watch?v=UDFGqRY61fQ



http://dataverse.scholarsportal.info

Thank You.

For more information:

RDM @McMaster

library.mcmaster.ca/rdm
rdmgmt@mcmaster.ca

McMaster Library's RDM webpage and primary contact

portage
SERVICES PARTAGÉS POUR LES DONNÉES DE RECHERCHE
SHARED STEWARDSHIP OF RESEARCH DATA

portagenetwork.ca/

CARL Portage Network page: Access to RDM information and DMP Assistant

Other Links

https://portagenetwork.ca/ - CARL Portage Network page: RDM information and access to DMP Assistant

http://www.science.gc.ca/default.asp?lang=En&n=83F7624E-2 - Statement of Principles on Digital Data Management

http://library.mcmaster.ca/rdm - RDM@McMaster homepage

http://www.re3data.org/ - Registry of research data repositories

http://dataverse.scholarsportal.info/dvn/ - Scholars Portal Dataverse