Set yourself up for research success: Manage your data like a pro, and get your own ORCiD profile

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Research data management services

We can help you with any questions about:

- Data storage & backup
- Data security
- Data organization and documentation
- Data publishing, sharing, archival, and preservation

- Check out our online resources: library.mcmaster.ca/services/rdm
- Email us at rdm@mcmaster.ca or book an appointment with me

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Today's session

Three Research Data Management top tips

1. *Create a Data Management Plan (DMP)*
2. *Safely store and backup your data*
3. *Keep your files organized*

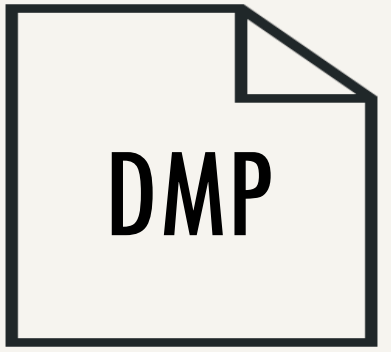
Become a 'Distinguished' Researcher and build your scholarly profile with an ORCiD ID

1. *What is an ORCiD ID and why should I make one?*
2. *Follow along and create your own ORCiD ID today*

Why should I spend my time on research data management?

- If your supervisor asked you to share your data with another student, would they be able to make sense of your work?
- If you needed to locate your data files from 5 years ago, how easy would they be to find and use?
- What will happen to your data when you graduate/move/retire?

1. Data Management Plans

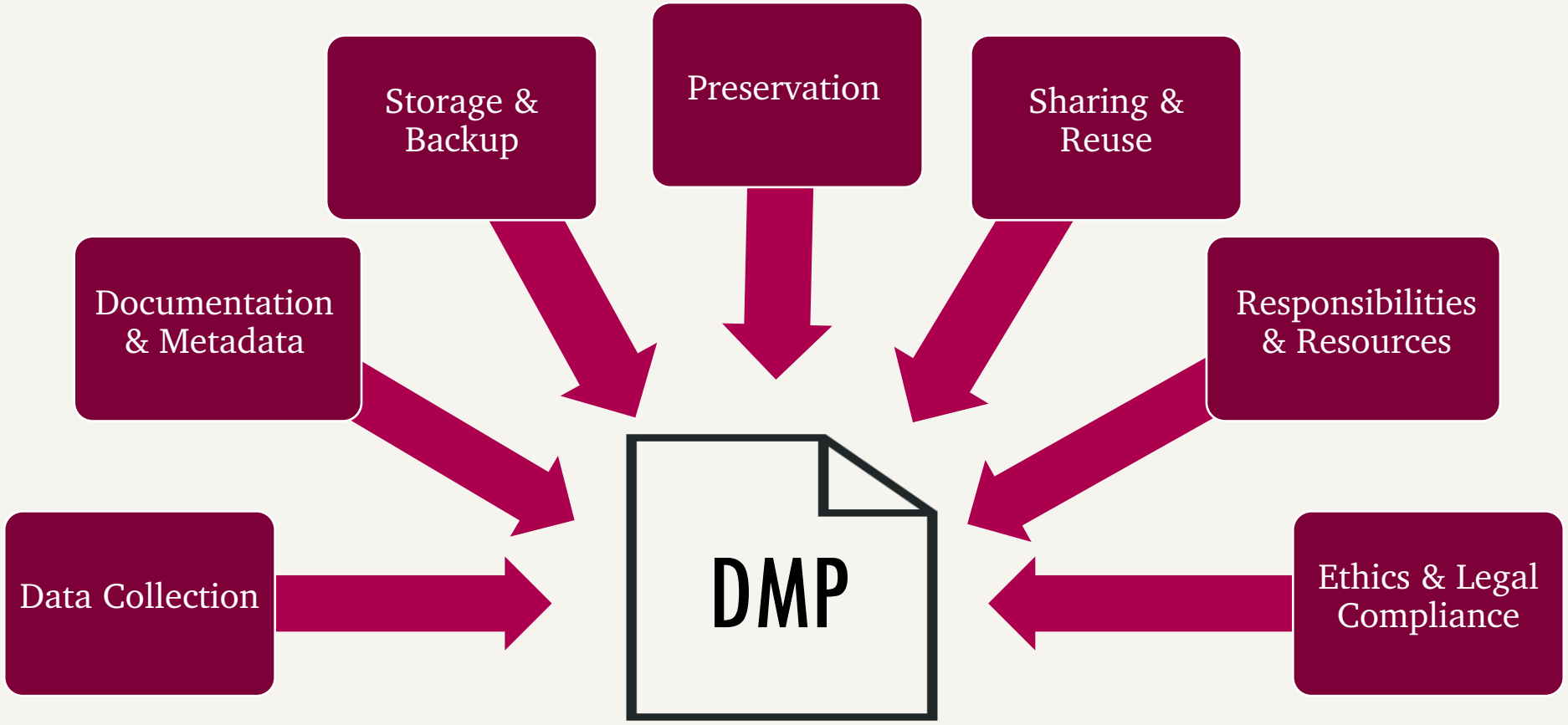


- A **Data Management Plan (DMP)** is your plan for how you will create, store, organize, document, secure, preserve, and share your research data.
- A document which speaks to the management of data both **during** the active phases of your research and **after** the completion of the research project.

Why create a DMP?

- Think through important questions prior to starting your research
- Identify the strengths & weaknesses of your current practices and integrate effective data management practices into your research project
- An excellent way to engage partners and collaborators in ongoing conversation about how to best manage research data
- Many research funders require grant applicants to submit a DMP – Including Tri-Agency (starting 2022)

What goes into a DMP?



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

DMP ASSISTANT PGD

DATA MANAGEMENT PLANS
PLANS DE GESTION DES DONNÉES

- 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

assistant.portagenetwork.ca

Learn more about DMPs

- Watch my recorded webinar "*Building a Data Management Plan for your research project.*" from this May:

  scds.github.io/intro-rdm/dmp

- Look at some award winning DMPs from the US:

  blog.dmptool.org/2021/05/19/dmp-competition-winners-dmps-so-good-they-go-to-11/

2. *Your data is vulnerable*

- There are 2 major risks that you need to mitigate to keep your data safe:

1. Hardware failure or loss
    - Theft or loss of devices, accidental damage or destruction
2. Malicious attacks
    - Computer viruses, malware, ransomware

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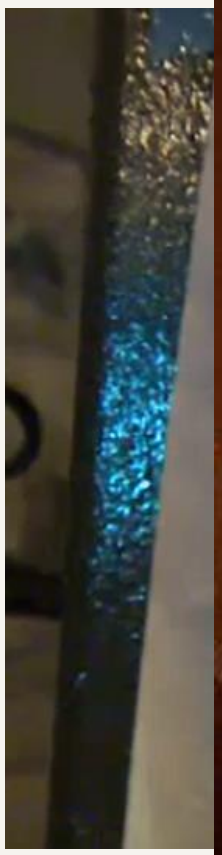


How to meet the risks:

1. Hardware failure or loss

- Make sure you have **more than one** copy of your data.
- Follow a data backup strategy like the 3-2-1 rule:

3 Copies of your data on **different platforms/devices**

2 Copies are on-hand
- a **production** copy (this is the data you are working on)
- a **backup** copy

1 Copy is in another location (“off-site”), with a ***trusted*** service provider

Where should I store my data?

Features to look for when deciding on a storage platform:

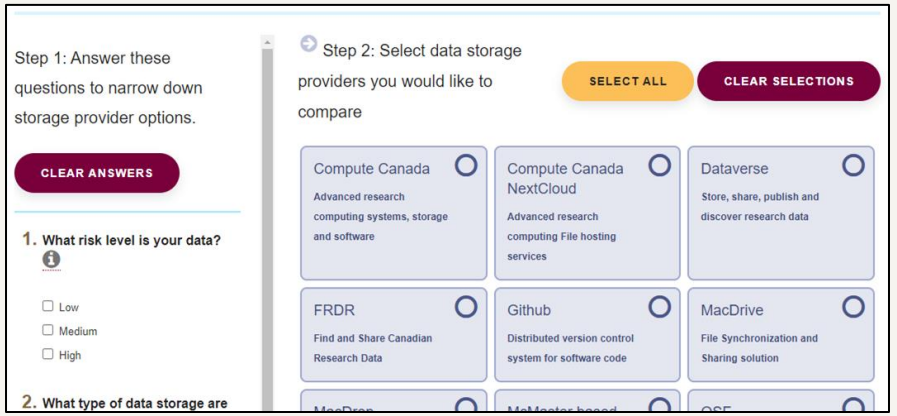
- Version control
- File recovery
- Security features (2FA, encryption)
- Collaboration features
- Storage provided
- Cost
- Storage location

Special considerations: Sensitive data, indigenous data, computational needs, code

Where should I store my data?

- If you're looking for a good place to store your research data, try our **Research Data Storage Finder** webtool, where you can get personalized recommendations

u.mcmaster.ca/storagefinder



- Check out my recorded webinar on data storage:

https://scds.github.io/intro-rdm/storage.html

How to meet the risks:

2. Malicious attacks

- Enable **Multi-Factor Authentication (MFA)** when you can
  - Also known as 2 Factor Authentication (2FA)
  - MFA is when you need more than one code or 'Factor' to login – typically 2 factors: password and a security code sent to your phone number or generated by a linked authenticator app
  - MFA can be enabled for your McMaster Microsoft account here https://office365.mcmaster.ca/mfa/

How to meet the risks:

2. Malicious attacks

- Follow good password practices everywhere:
  - Choose a new **unique** password for each important website/service
  - Make a **strong** password by combining a series of numbers, letters, and symbols
    - The longer the better
    - Try to combine them into something memorable – like L1br@ryt1pS
  - If you're forgetful, consider using a password manager
  - **Never** share your password with anyone or send it in an email
  - Use a strong password on your computer **and** phone

3. Keep your files organized

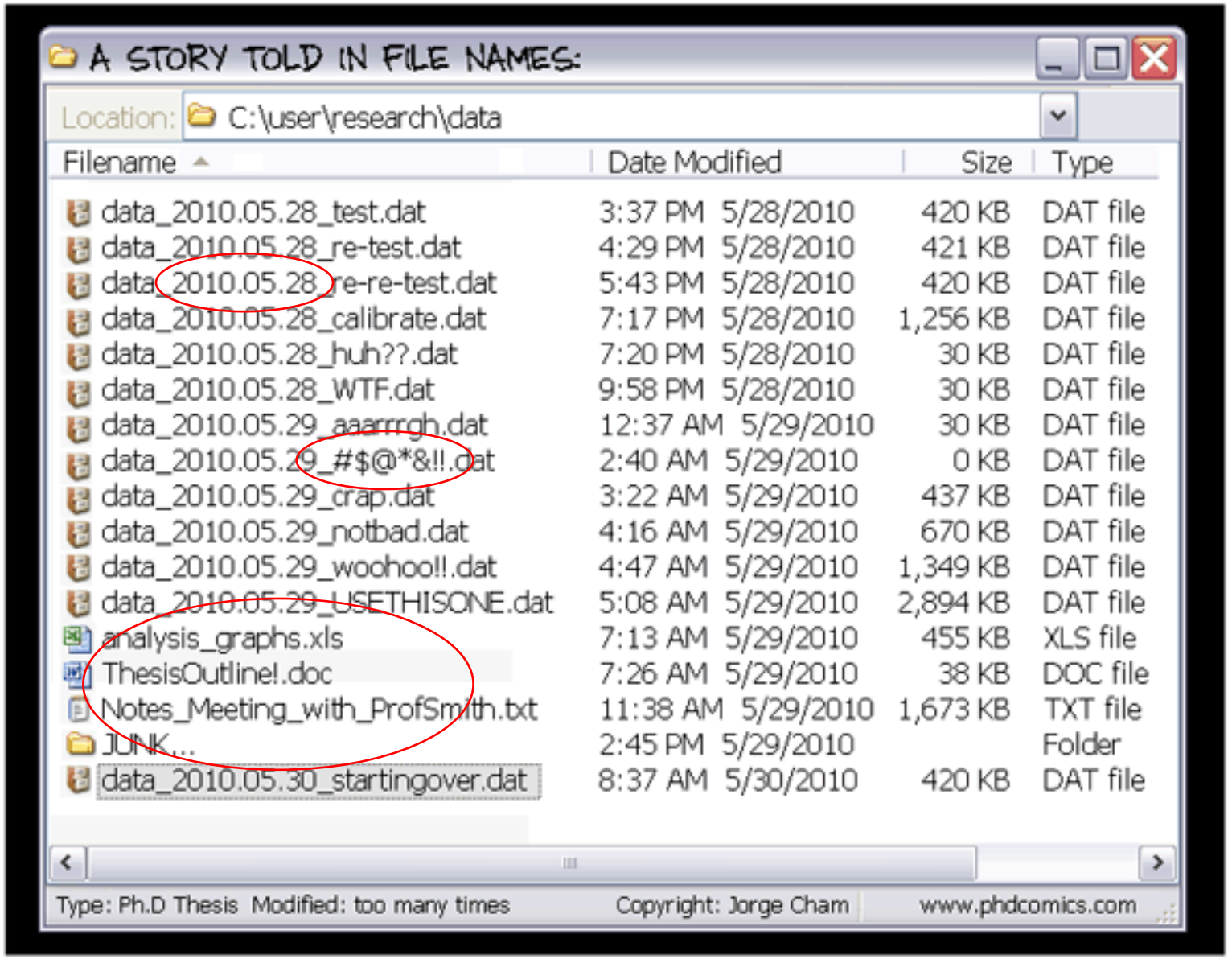
Your files should be **easy to find** and **easy to recognize**

Research projects create a lot of files, often with similar names:

- Your work – including **data files**, coursework, publications, conference presentations, and your thesis
- Other people's work – including research literature, citations, presentation, etc

Do you have files named like this?

Is this a good file name system?



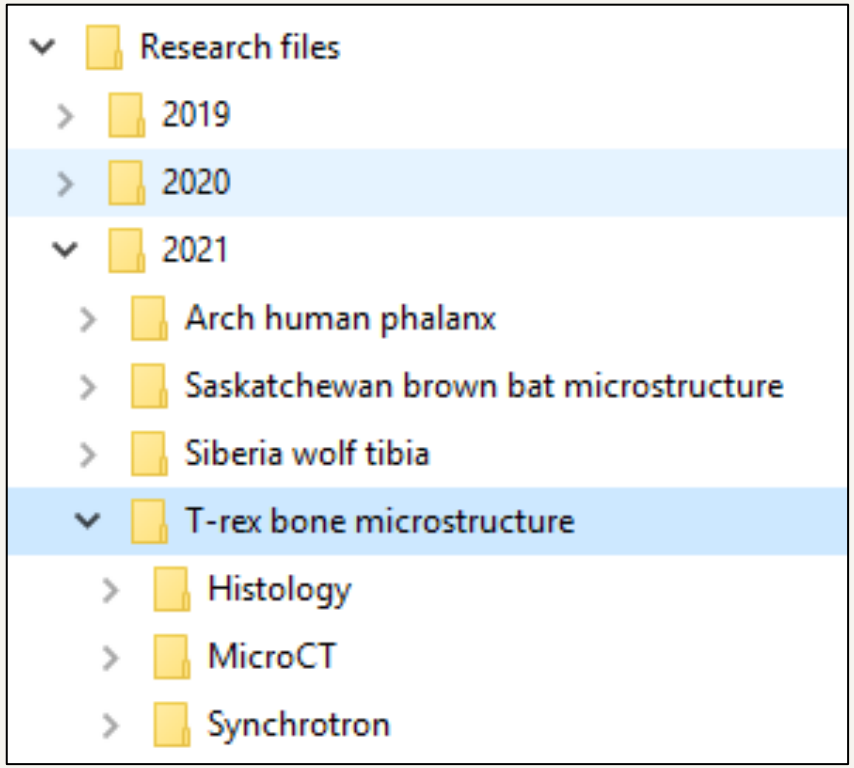

Does your desktop look like this?

Create a file organization scheme

The key to organizing files is to make it a **habit**. Make it easy to know files go.

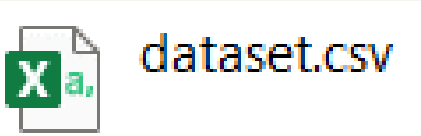
Files can be organized:

- *By project*
- *By researcher*
- *By experiment type*
- *By date (often year)*
- *By some combination of the above*
- *(ie a two level structure of year -> project)*



Give your files good names

A good file name makes it **easy to recognize** a file's contents



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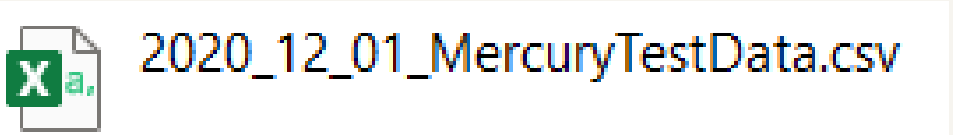

File naming schemes can include:

- *A short description of file contents*
- *The date the file was created (try using YYYY_MM_DD)*
- *File version (if applicable)*
- *Initials of researcher (if working on a collaborative file)*

Try to keep names **short** and avoid special characters such as:

& , * % # * ( ) ! @$ ^ ~ ' { } [ ] ? < > -

3. Keep your files organized

- The most important aspect of documentation is doing it!
- Whatever file naming and organization scheme you choose, make sure it's **descriptive**, use it **consistently** and **document** it (in a readme.txt file).
- Collaboration software like Electronic Lab Notebooks, Reference Management software, or the Research Project Management Software can help.

Thank you!

If you have questions, reach out to me at:

rdm@mcmaster.ca