



Teaching with Digital Tools and Approaches

u.mcmaster.ca/scds-events

May 24, 2023 | 2:30-4pm
Virtual Roundtable

DMDS

SCDS

Library

McMaster
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In respect of your privacy, participant lists will not be shared outside of this session, nor will question or chat transcripts.

We will not share the recording of the Q&A period.

Code of Conduct

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As a participant in this session, you agree to support and help cultivate an experience that is collaborative, respectful, and inclusive, as well as free of harassment, discrimination, and oppression. We reserve the right to remove participants who exhibit harassing, malicious, or persistently disruptive behaviour.

Please refer to our code of conduct webpage for more information:

scds.ca/events/code-of-conduct/

Certificate Program

The Sherman Centre offers a Certificate of Completion that rewards synchronous participation at 7 workshops. We also offer concentrations in Data Analysis and Visualization, Digital Scholarship, and Research Data Management.

Learn more about the Certificate Program: <https://scds.ca/certificate-program>

If you would like to be considered for the certificate, verify your participation in this form: <https://u.mcmaster.ca/verification>

At an unspecified point during the workshop, a code will be read aloud. This is the answer to the third question of the form.



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Agenda

2:30-3:20 Prefatory Material + Meet a New Digital Tool

- **Subhanya Sivajothy (Data Analysis and Visualization Librarian)**
on how Gephi and Data Visualizations support Active Learning
- **Jay Brodeur (Associate Director of Digital Scholarship Services)**
on bringing Interactive Coding and Analysis to Class with Jupyter Notebooks
- **Veronica Litt (Digital Scholarship Coordinator)**
on Creative Assignments with Twine Games and Podcasts
- **Danica Evering (Research Data Management Specialist)**
on Teaching Research Data Management Best Practices with **DMP Assistant**

Agenda

3:20-3:40 Case Studies

How Can Digital Tools Can Support Specific Learning Outcomes?

- Gephi reveals gaps in knowledge
- Jupyter Notebooks develop students' confidence in coding
- Podcasts teach students to make scholarship clear and engaging
- DMP Assistant makes research best practices visible.

3:40-4:00 Discussion and Q&A

Learning About You

Which digital tools have you integrated into your teaching?

What went well?

What were the challenges?

Presentations: Meet a New Digital Tool

“Using Data Visualizations for Active Learning”

**Subhanya Sivajothy
(she/her)**

**Data Analysis and
Visualization Librarian**
sivajos@mcmaster.ca

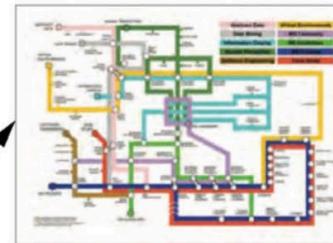


What is Data Visualization?

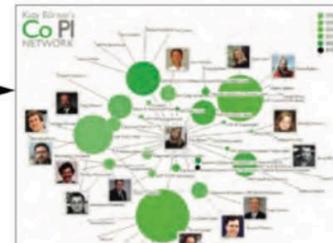


Terabytes of data

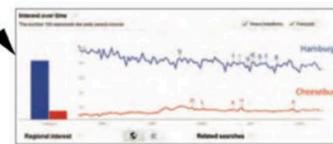
Macroscope
Tools



Find your way



Find collaborators, friends



Identify trends

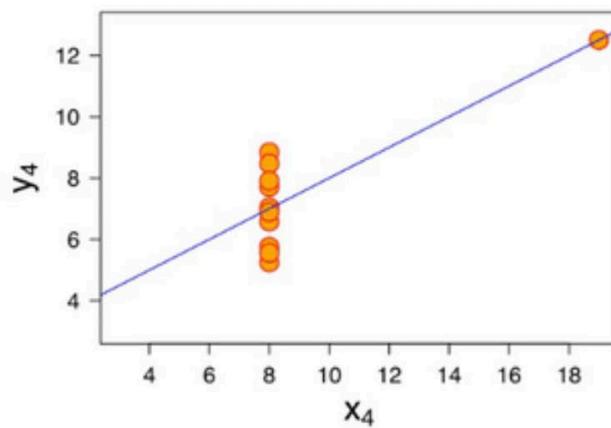
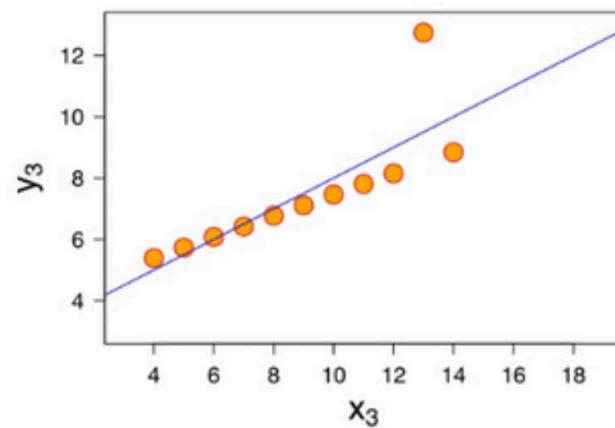
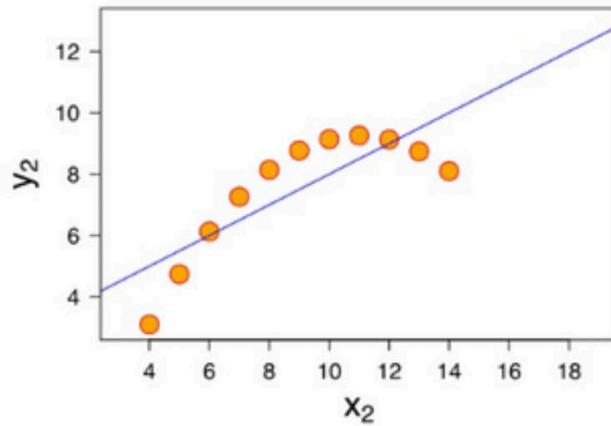
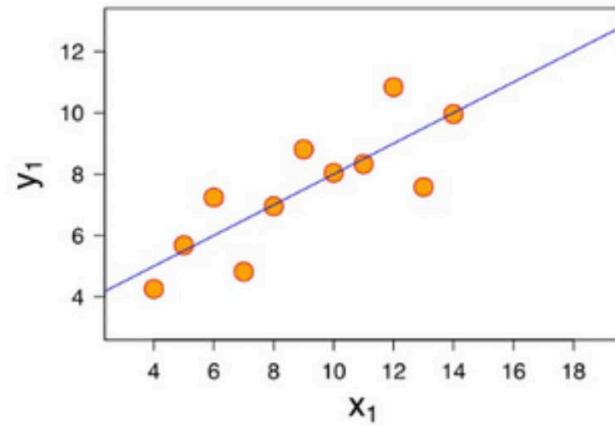
Why Use Data Visualizations?



It's all about you!

Anscombe's Quartet

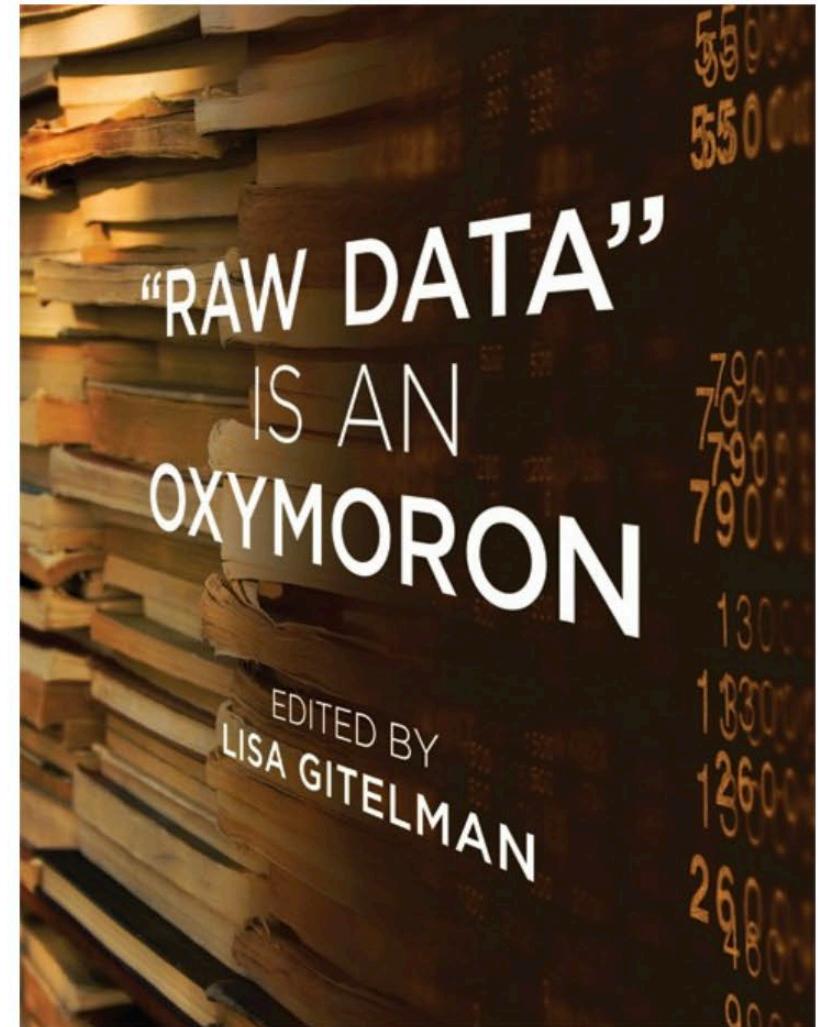
Anscombe's Data									
Observation	x1	y1	x2	y2	x3	y3	x4	y4	
1	10	8.04	10	9.14	10	7.46	8	6.58	
2	8	6.95	8	8.14	8	6.77	8	5.76	
3	13	7.58	13	8.74	13	12.74	8	7.71	
4	9	8.81	9	8.77	9	7.11	8	8.84	
5	11	8.33	11	9.26	11	7.81	8	8.47	
6	14	9.96	14	8.1	14	8.84	8	7.04	
7	6	7.24	6	6.13	6	6.08	8	5.25	
8	4	4.26	4	3.1	4	5.39	19	12.5	
9	12	10.84	12	9.13	12	8.15	8	5.56	
10	7	4.82	7	7.26	7	6.42	8	7.91	
11	5	5.68	5	4.74	5	5.73	8	6.89	
Summary Statistics									
N	11	11	11	11	11	11	11	11	11
mean	9.00	7.50	9.00	7.500909	9.00	7.50	9.00	7.50	
SD	3.16	1.94	3.16	1.94	3.16	1.94	3.16	1.94	
r	0.82		0.82		0.82		0.82		



"The world does not spontaneously quantify, curate, or data-mine itself. Rather, the process of observing the world and quantifying it is a political act, and deserves ethical consideration"

- Michael Correll

Michael Correll. 2018. "Ethical Dimensions of Visualization Research."
<https://arxiv.org/pdf/1811.07271.pdf>



Make the Invisible Visible

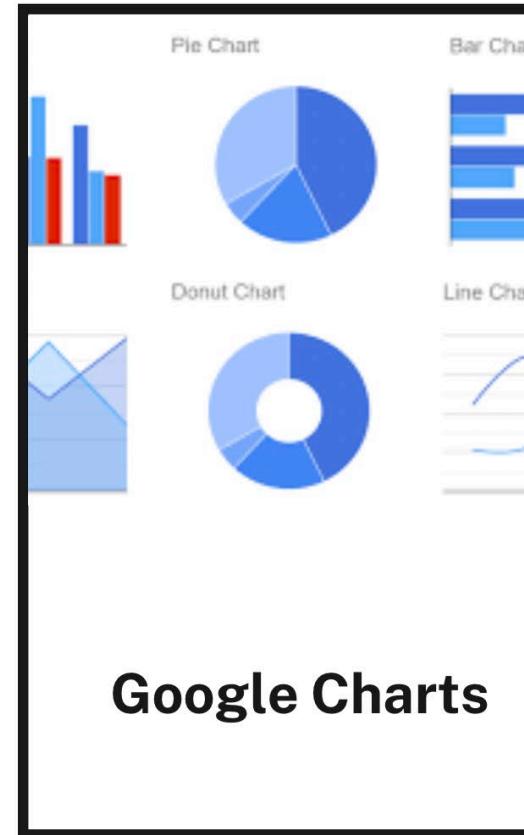
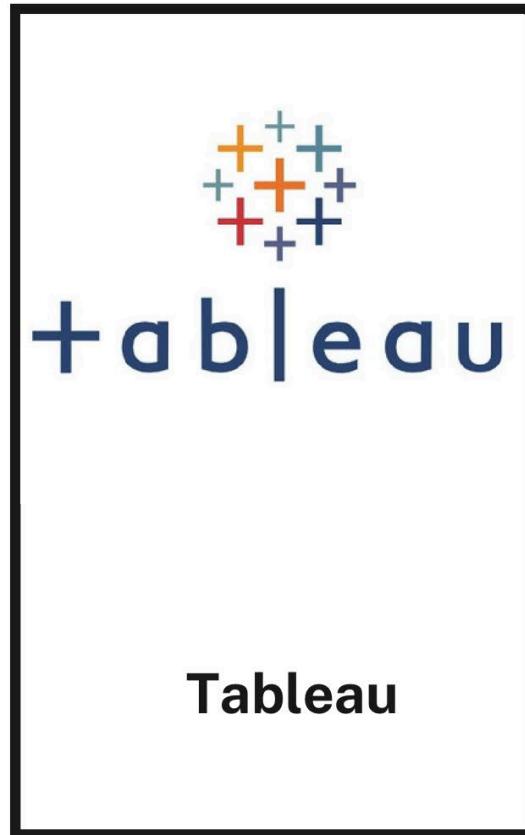
**Visualize Hidden
Labour**

**Visualize Hidden
Uncertainty**

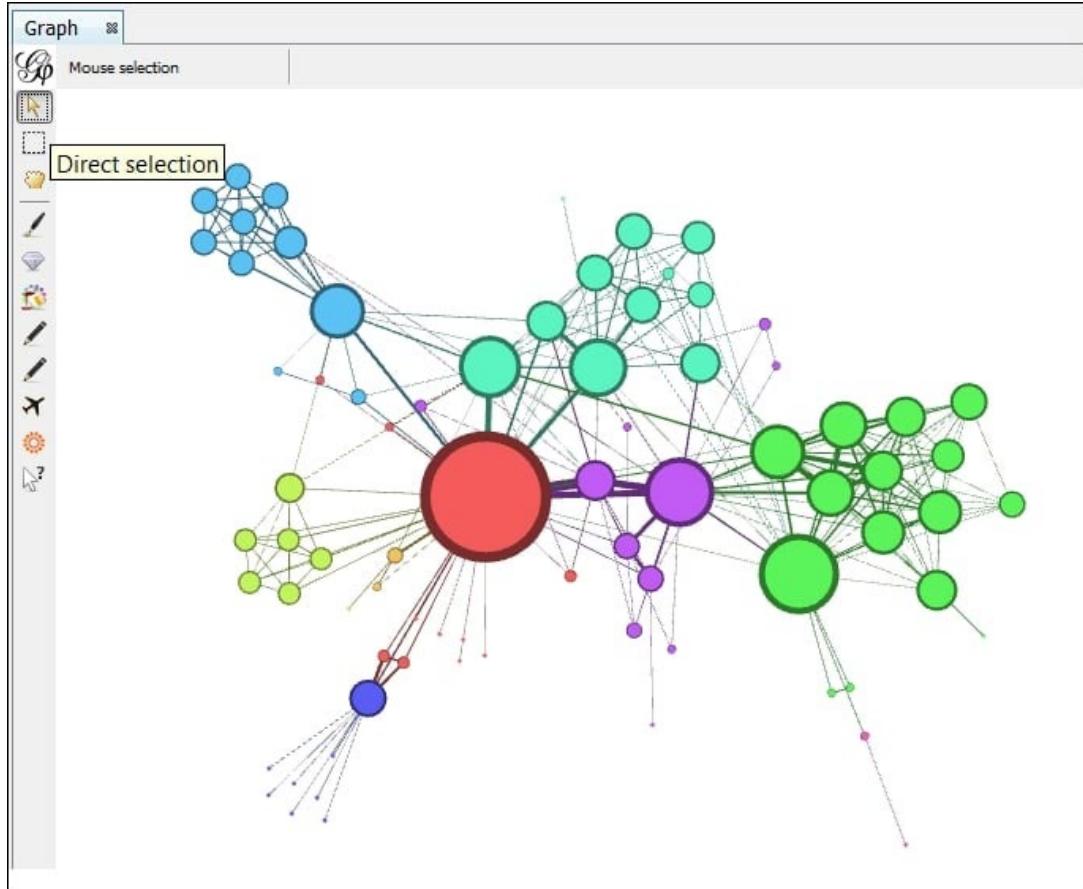
**Visualize Hidden
Impacts**

... Managing Complexity?

Tools for Data Visualization



Network and Text Visualizations:



Gephi



Voyant

TL;DR

Advantages:

- It enhances retention and engagement: it frees our cognition to focus on other things such as outliers or differences in the data.
- Often there is a very easy learning curve, or there are a lot of software where it will just create a basic visualization for you without you having to create it from scratch.
- People often have at least basic data literacy when it comes to understanding visualizations esp. graphs such as bar graphs, pie charts etc.
- Can be interactive and be used for storytelling with the data that you're sharing.

Potential Pain Points:

- Could be easy to overload visualizations with too much information—requires a balance.
- Software can be expensive, especially the ones that have more or better aesthetic features for visualizations.
- With more complicated data and analysis that you want to show the learning curve can get steep.

"Bringing Interactive Coding into the Classroom using Jupyter Notebooks"

Jay Brodeur
(he/him)

**Associate Director of
Digital Scholarship
Infrastructure & Services**

brodeujj@mcmaster.ca

May 24, 2022



Teaching programming in an interactive environment has value for learners.

Instructor to learner and peer-to-peer interactions allows for:

- Timely and targeted feedback.
- Additional context, explanation, and rationale.
- Support and encouragement.
- Collaborative knowledge-building.

But doing it effectively can be challenging.

Synchronous, hands-on coding instruction should aspire to:

- Provide a barrier-free entry to the uninitiated or hesitant.
- Accommodate learners' differing baseline knowledge and proficiencies.
- Maximize time on task by mitigating hardware, OS, software discrepancies and issues.

Interactive computing & Jupyter Notebooks

Interactive computing applications contain both computer code and rich text elements like formatted text, images, figures, equations, hyperlinks, etc.

- **Human-readable and executable:** Users can develop and run code, comment their work, describe methodology, communicate results.
- Article + Code + Processing environment

Jupyter Notebook is a widely-used, open-source, interactive coding app

- Web-based, and can be run locally or on cloud services.
- Core languages = **Julia** + **python** + **R**, but supports **kernels** for dozens of language (C, NodeJs, SQL, Stata, Rust, Octave, etc.).
- Notebook files are created in an open JSON format and can be executed via the application and shared with others.



The Jupyter logo is a circular emblem. It features the word "jupyter" in a lowercase, sans-serif font, centered within the circle. The circle is divided into four quadrants by thick, curved bands of orange and yellow. There are also small dark gray circles at the intersections of these bands.

jupyter

How it works

An illustrative example:

<https://u.mcmaster.ca/jupyter-example>

Setting up Jupyter Notebooks for instruction



1. Identify where you and your students will work on their notebooks:

- Installed on local machines (requires Python): <https://jupyter.org/install>
- Using a cloud-based hosted service
 - a. Jupyterlite: <https://jupyter.org/try>
 - b. Google Colab: <https://research.google.com/colaboratory>
 - c. Syzygy (Compute-Canada platform available to researchers across Canada):
<https://syzygy.ca/>
 - d. Constellate (Available to McMaster users on-campus or connected to the VPN):
<https://constellate.org/>
 - e. GitHub and Binder: <https://mybinder.org/>

Setting up Jupyter Notebooks for instruction



2. Create the starter notebook

- Integrate rich text introductory elements
 - Exercise description
 - Learning objectives
 - Background information (with hyperlinks)
 - Embedded media
- Develop code blocks with explanation and comments.
 - Completed or incomplete with instructions.

The screenshot shows a Jupyter Notebook interface with the following details:

- Title:** sentimental-programming.ipynb
- Content:**
 - A rich text introduction: "# Lesson: Introduction to Sentiment Analysis by Jay Brodeur and Devon Mordell for [DMDS 2023] (<https://github.com/scds-github.io/dmds-22-23/ComputationalText.html>)". It describes the exercise as exploring Sentiment Analysis, a natural language processing technique to ascribe a sentiment valence to language. It mentions VADER (Valence Aware Dictionary and sEntiment Reasoner) as a lexicon and rule-based sentiment analyzer.
 - A code block:

```
# Lesson: Introduction to Sentiment Analysis
# by Jay Brodeur and Devon Mordell for [DMDS 2023] (https://github.com/scds-github.io/dmds-22-23/ComputationalText.html)
In this exercise we're going to explore Sentiment Analysis, a natural language processing technique to ascribe a sentiment valence to language.

For this work, we are going to use a tool ominously called [VADER] (https://github.com/cjhutto/vaderSentiment) -- a lexicon and rule-based sentiment analyzer that is specifically targeted towards social media data, but also good for other forms of text and media.

VADER is built into the NLTK library (which we've used in previous lessons) and comes pre-trained, meaning you can get started quickly with sentiment analysis. It also means that you should be critical of the results, especially if you don't know how the analyzer works. i.e., reading the documentation is a good idea!

And before we begin, a shout out to some excellent tutorials that inspired parts of this exercise:
- Real Python's [Sentiment Analysis: First Steps With Python's NLTK Library] (https://realpython.com/python-nltk-sentiment-analysis/)
- The [VADER documentation] (https://github.com/cjhutto/vaderSentiment)
- Towards Data Science's [Social Media Sentiment Analysis In Python With VADER] (https://towardsdatascience.com/social-media-sentiment-analysis-in-python-with-vader-no-training-required-4bc6a2ie87b8)
```
- Code Cell:**

```
[ ] 1 pip install nltk matplotlib numpy
2 import nltk
3 # Download the lexicon and a variety of other resources
4 nltk.download(["stopwords", "state_union", "twitter_samples", "movie_reviews", "averaged_perceptron_tagger", "vader_lexicon", "punkt"])
5 # Import the lexicon
6 from nltk.sentiment.vader import SentimentIntensityAnalyzer
```

3. Share the notebook file with your students.

4. Develop / execute it together in class.

5. Invite students to share their notebooks with others, where applicable.

“Computers for Creativity! Making Podcasts and Video Games in HUM2DH3”

**Veronica Litt
(she/her)**

**Digital Scholarship
Coordinator**
littvs@mcmaster.ca

May 24, 2022





HUM2DH3
Undergraduate Course

Creative, Collaborative, Critical: Introduction to Digital Scholarship

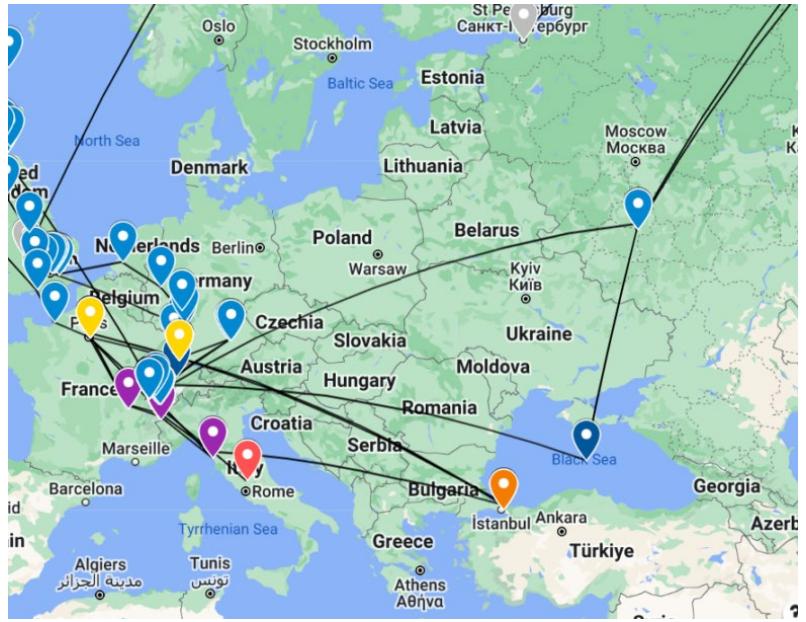
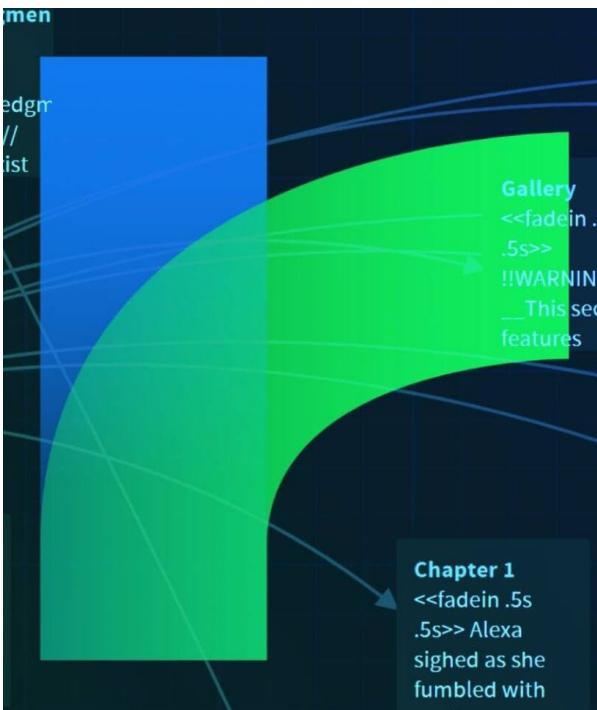
Winter 2023

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Victor:



I am the assassin of
those most innocent victims;
they died by my own machinations.

During these last days I have been occupied in
examining my past conduct; nor do I find it blameable.



Victor

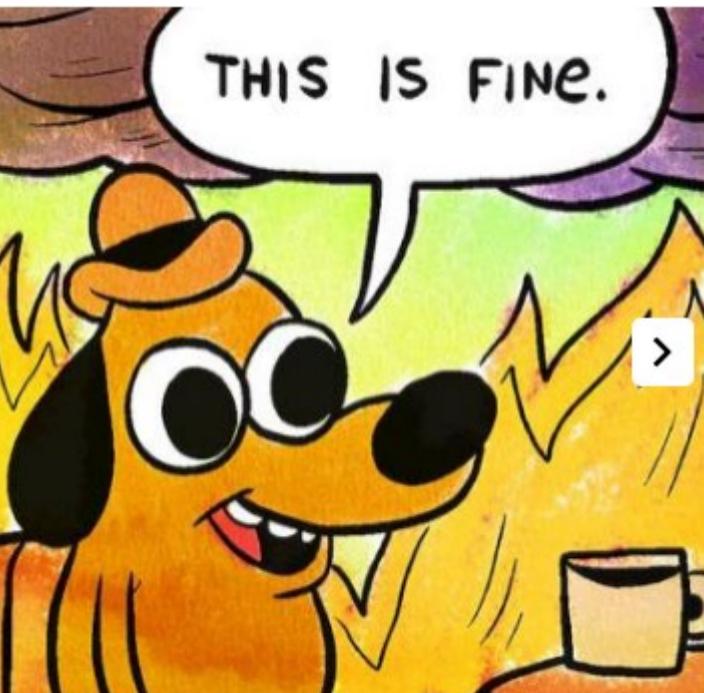


Also Victor



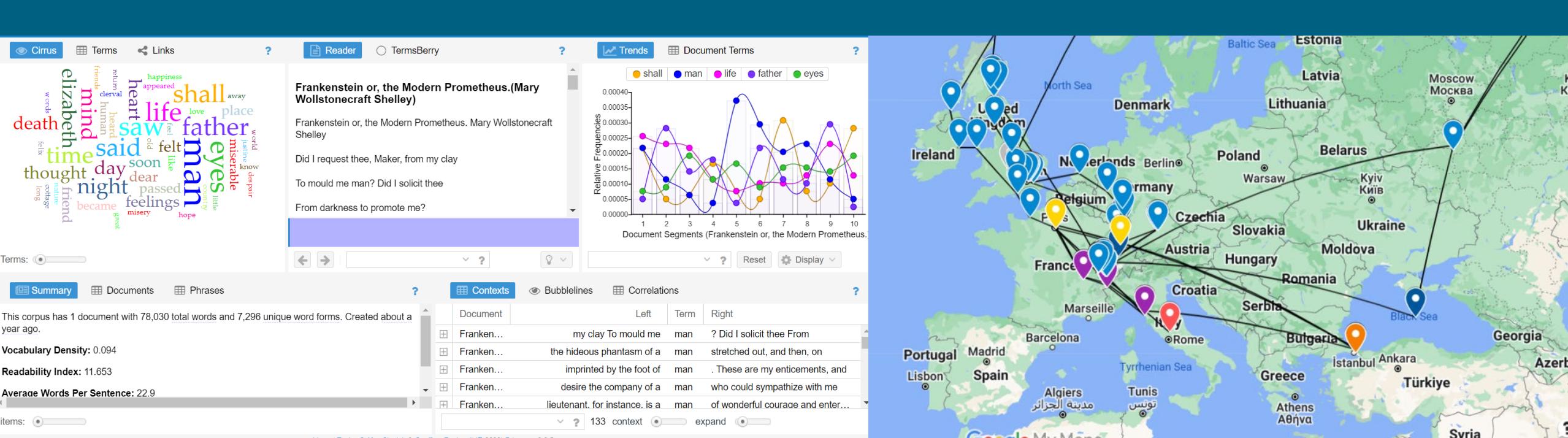
Making friends
when your
lonely

Creating a
monster



List of Victors smart decisions:





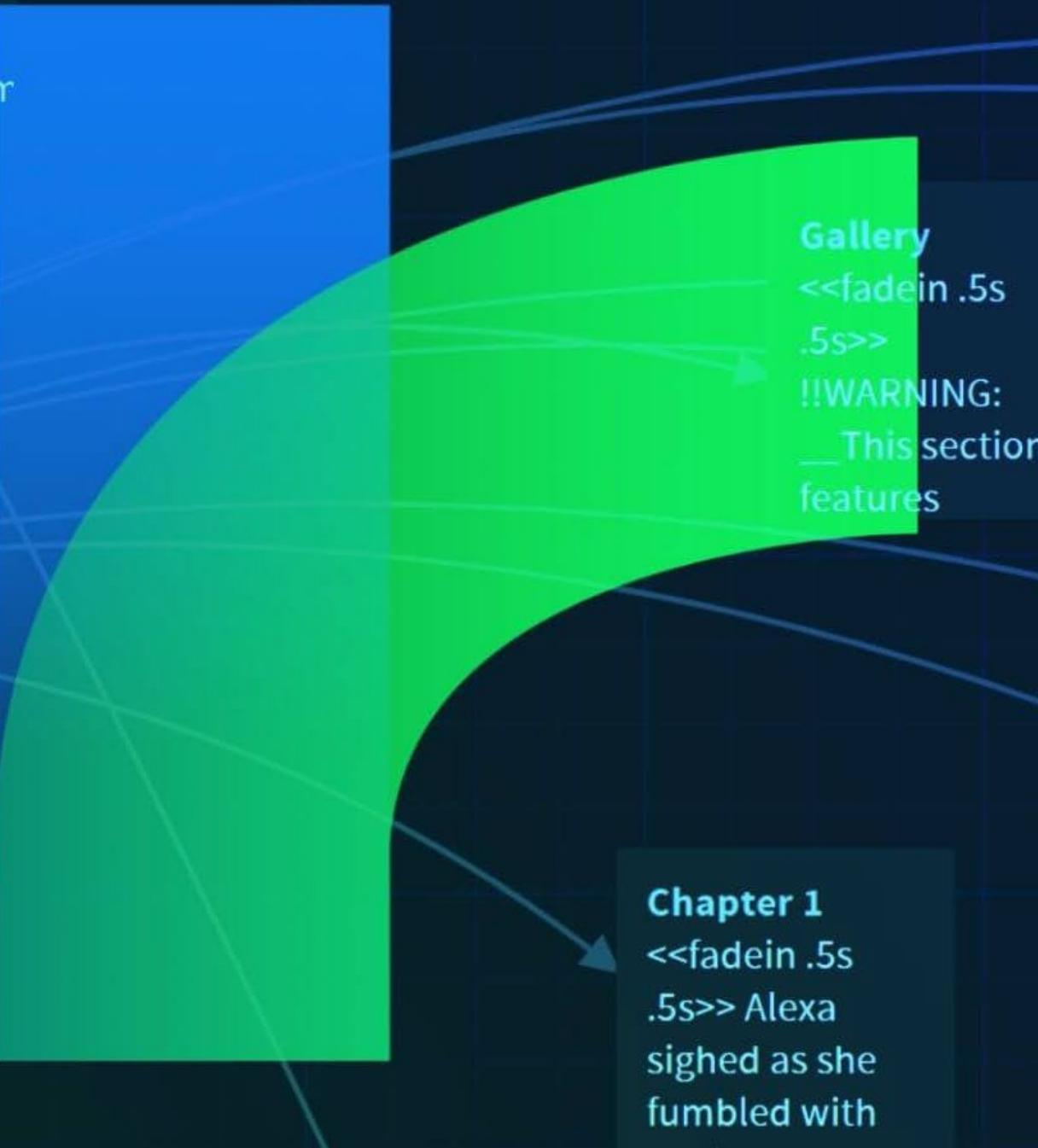
Left to right: Saman Goudarzi (Cartographic Resources Librarian), Christine Homuth (Spatial Information Specialist), Subhanya Sivajothy (Data Analysis and Visualization Librarian)

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**"Victor's Pursuit" by
Julia Araujo,
Khushi
Gawri,
Inaara
Ladha, and
Paige Tepsa**

"I thought our close ties would make us a perfect match, as our love for the sciences and knowledge flood our every thought. We could have been a power couple, but your inability to support yourself no longer makes me consider our potential love."

Willing to seek another love?

Introduction

Or decide to give up...

Final Results!



"POV: You Are Felix DeLacey" by Hiru Batepola, Risha Khosla, and Maya Ventresca

After fleeing from France to Germany you, your father, and Agatha have managed to find a small cabin in the woods, in the middle of nowhere. You're starving, but do not have the means to go into town and buy any food.

What do you do?

Scavenge



<u>Name</u>	Victor
<u>Reputation</u>	
<u>Communication</u>	
<u>Charisma</u>	

"My dear Victor, what, for God's sake, is the matter?" he cried concernedly, "I found you lying on the streets, looking dreadfully ill. How fortunate that I should pass by you on my coach! Whatever would have happened had I not seen you? What is the cause of all of this?"

You try your best to imitate their fancy way of speaking and reply to Henry.

You remain silent, thinking that it'd be better not to say anything so that you won't give away that you're not the real Victor.

*Wait, hold on a second. Why do I only have these options?
Can't I do anything I want?*

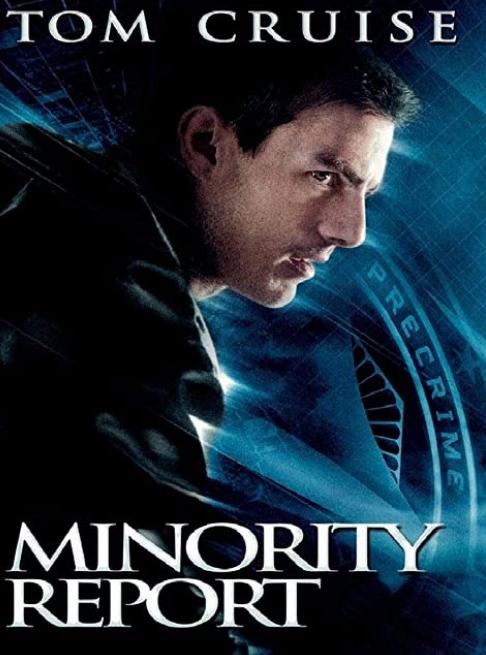
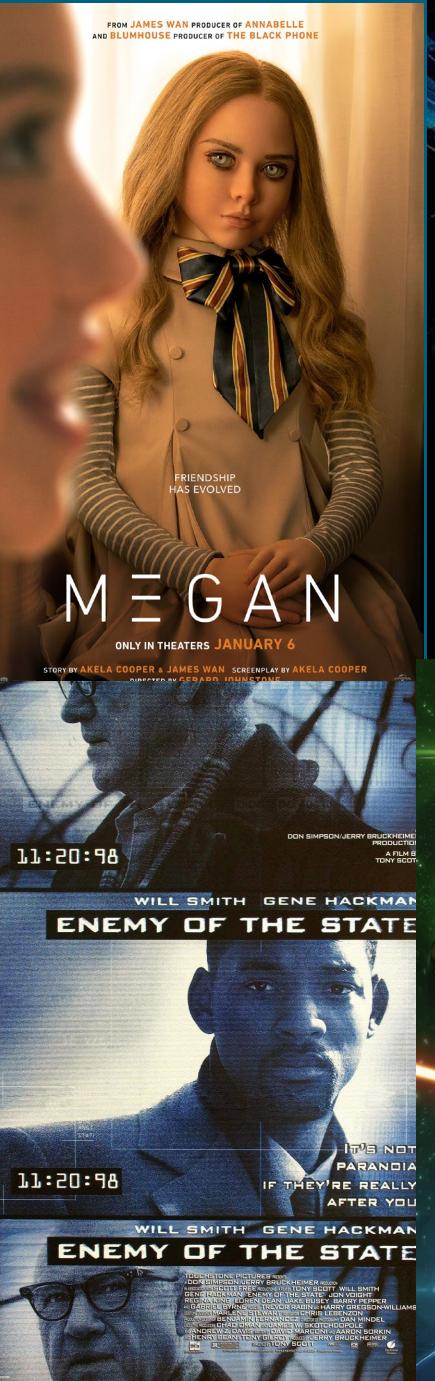
"Halo x Horn"
by Jenny Chau and Skade Fernando

Twine Tips

- Start early and get comfortable with the software
- Manage expectations for yourself and students
 - Keep things beginner-friendly with the Harlowe story format (no HTML or CSS needed)
- Provide instructions in multiple formats
 - Text guides, video tutorials, classroom demos, office hours
- Collaborate with colleagues and use existing resources

.5s>> Alexa
signed as she
fumbled with

THE CYBER CINEMA PODCAST



Making “The Cyber Cinema Podcast”

Week One: Planning and Scripting

Class One: Keynote on Podcasting as Public Scholarship

Activity: Comparing Three Scholarly Film Podcasts

Brainstorm: What do we want our show to sound like?

- Collaboratively Decide on title, tone, sign-off, theme music, whether we want to include clips, etc

Class Two: Lesson on Scripting and Work Period

Making “The Cyber Cinema Podcast”

Week Two: Recording Audio

Class One: Demo and
Practice Time: How to
Record Audio

Class Two: Asynchronous
Work Period at Lyons New
Media Centre



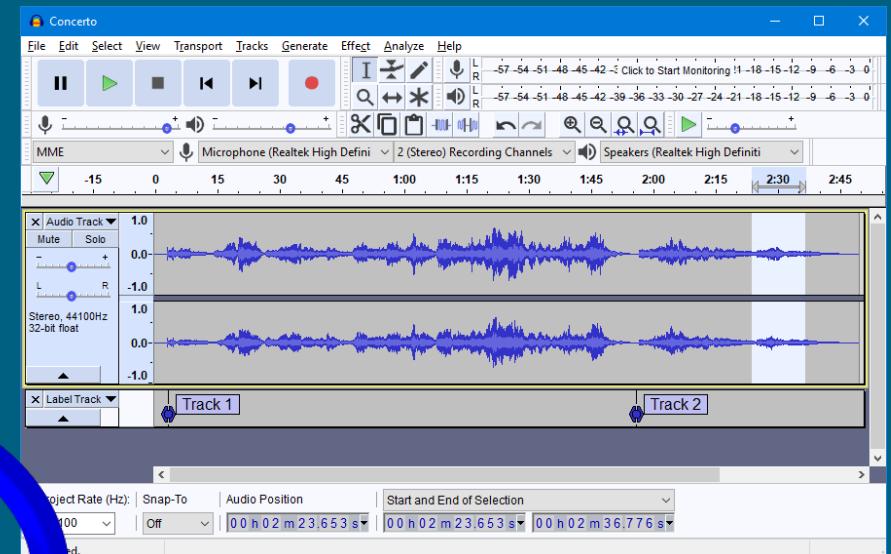
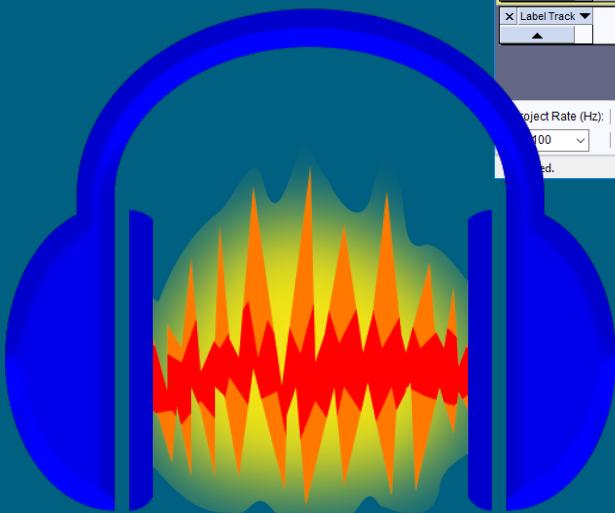
Making “The Cyber Cinema Podcast”

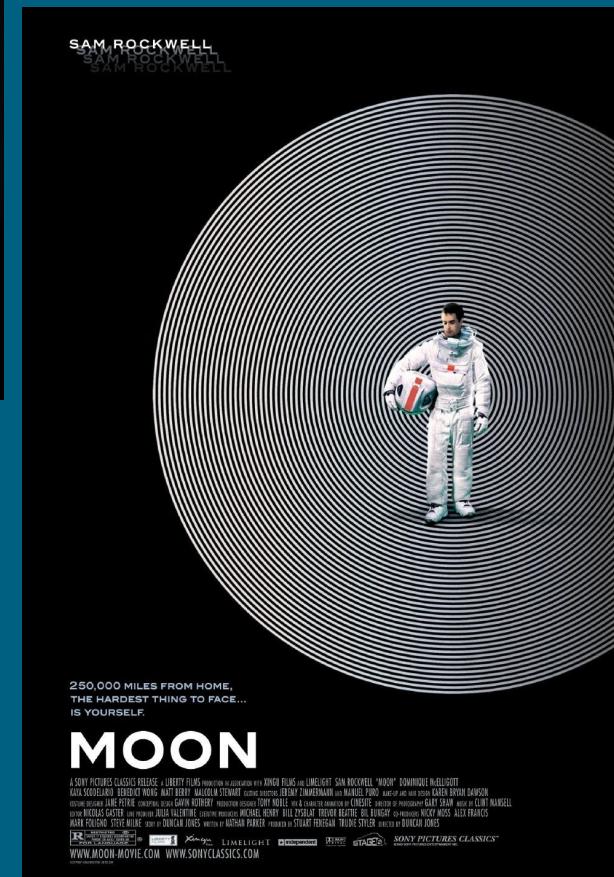
Week Three: Editing Audio

Class One: Demo and Practice

Time: How to Edit Audio

Class Two: Work Period





THE CYBER CINEMA PODCAST



Podcasting Tips

- Go in knowing that podcasting is a *process* and that each step hones different skills. You may not need to go through the whole workflow to achieve your ends
- Know that this is not a single-class activity
- Use resources on campus like the Lyons New Media Centre
- Request a guest lecture from moi

TL;DR

Potential Pain Points:

- Multi-modal tutorials take *time* to create
- Some software is not easily collaborative which makes group projects difficult
- Proprietary software needs to be factored in as a potential cost for students
- McMaster computers may not allow users to download some software
- Note that audio mediums (podcasts) can struggle with visual topics (a podcast on art where seeing the paintings is key, for instance, may not be the best fit)

TL;DR

Advantages:

- Podcasts require students to communicate in a clear and engaging manner; and express themselves as scholars beyond the 5-paragraph essay
- When co-hosted, podcasts hone collaboration skills
- Twine games urge students to think expansively and move beyond “one unified thesis” to explore ambiguity and multiplicity
- Being able to use software is a strength in an increasingly technological workforce
- These projects can be shared online in much more engaging and accessible ways than traditional essays, giving students a portfolio of work that will assist as they exit school and enter the workforce
- Also a great opportunity to network and collaborate with experts in the McMaster community! Shameless plug: If you would like to chat about integrating these kinds of digital tools into your classroom, email scds@mcmaster.ca ☺

Certificate Program

The code for today's session is “Click.”
Enter the code at <https://u.mcmaster.ca/verification>

“Teaching Research Data Management Best Practices with DMP Assistant”

**Danica Evering
(they/them)**

**Research Data
Management Specialist**
everingd@mcmaster.ca



RDM Services - Teaching Support



Consultations: Available for students, postdocs, faculty, and staff with any RDM-related questions



Class Visits + Course Modules: For graduate and undergraduate levels.



Training: Introductory and focused training workshops. [Current events series for 2022-23](#) and [previous recordings available for asynchronous learning](#).



Website: Overview and resources through the research cycle: Secure, Plan, Find, Organize, Store, Publish, and Archive data.



Data Storage Finder: McMaster-specific interactive tool - find a vetted storage provider based on risk, volume, and more.



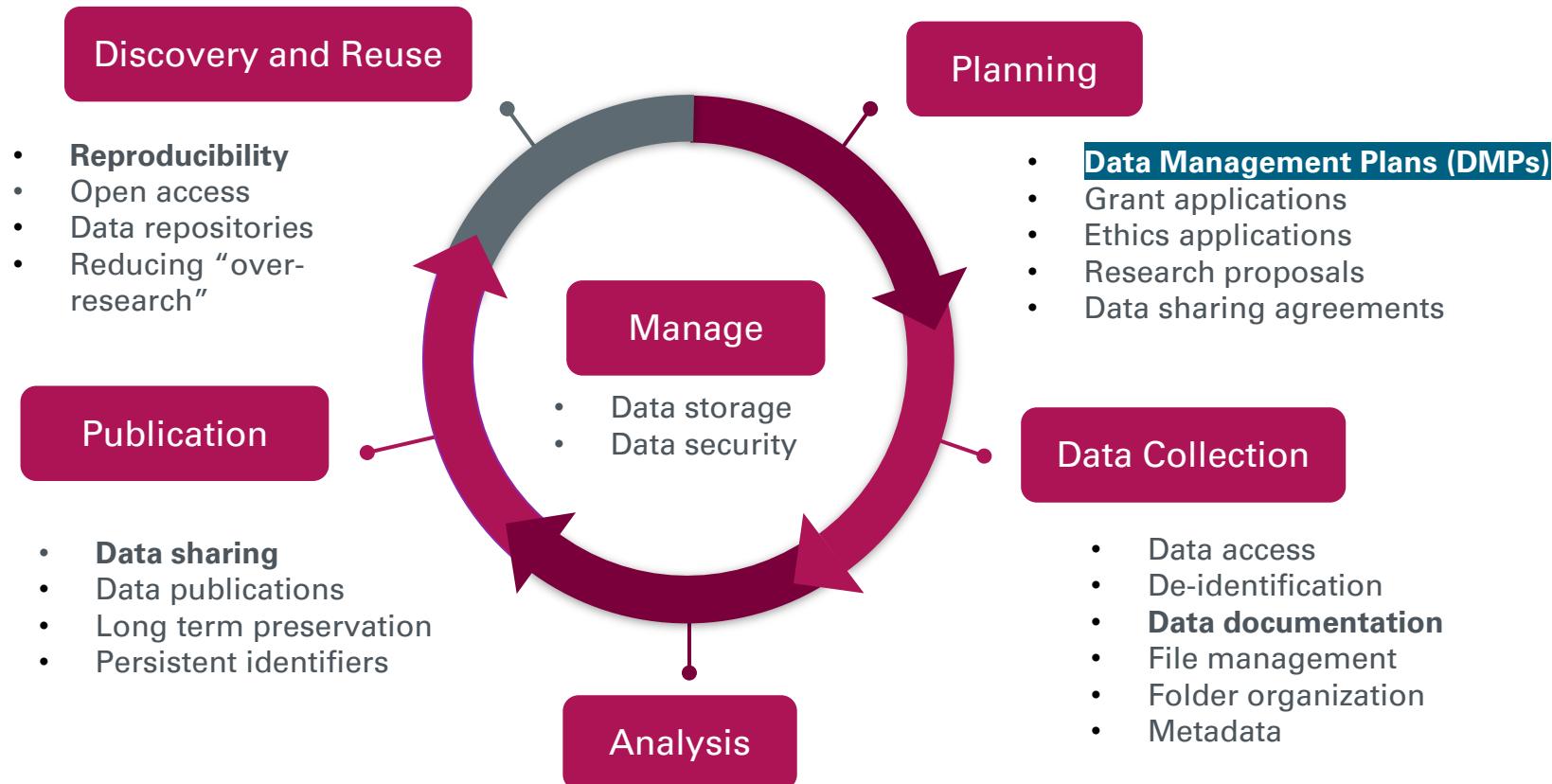
DMP Assistant: interactive tool for data management plan creation - templates and exportable plans to fulfill grant requirements.



McMaster Dataverse: Institutional data repository for sharing research data. Part of the Canada-wide Borealis Repository.

What is Research Data Management (RDM)?

Research Data Management is the active organization & maintenance of data throughout the research data lifecycle to ensure its **security**, **accessibility**, **usability**, and **integrity**.



For a fuller introduction to RDM see our other webinars including “Best Practices for Managing Data in your Research” - <https://scds.github.io/intro-rdm/intro.html>

Data Management Plans: An open hand of cards.

- A Data Management Plan (DMP) describes **practices and processes** for collecting, storing, organizing, documenting, securing, preserving, and sharing research data for a project or program.
- DMP tools **ask pointed questions** of researchers to help them articulate their plans for managing data; *they do not compel researchers to manage data differently.*
- DMPs outline how you will manage data both **during** the active phases of your research and **after** the completion of the research project.

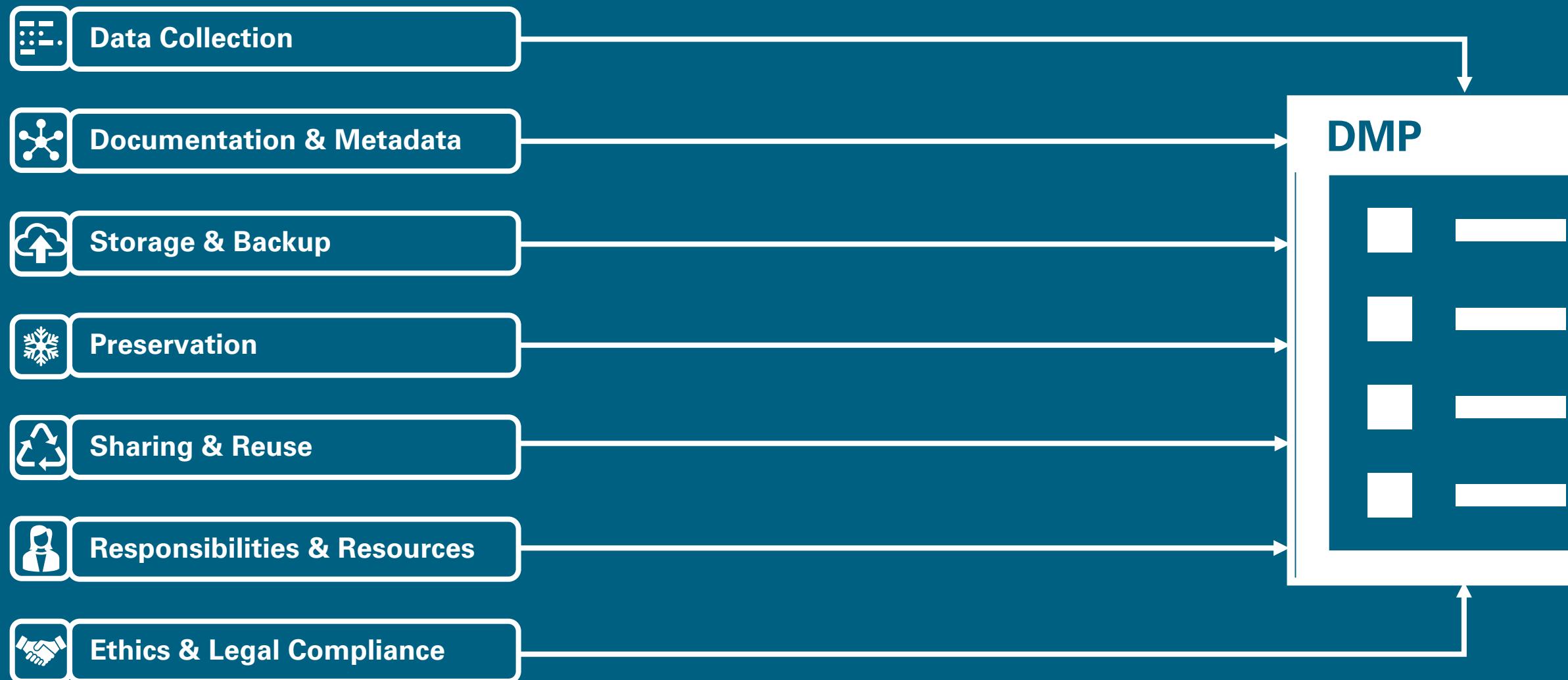


DMP Assistant

- A web-based, bilingual data management planning tool.
- Available to all researchers in Canada.
- Templates and exportable plans – format used by SSHRC, CIHR, and NSERC.
- McMaster-specific guidance and instructions.
- Send to RDM Services for review!
- Access at rdm.mcmaster.ca/plan

The screenshot shows the DMP Assistant web application. At the top, there's a logo consisting of three blue circles with the letters 'D', 'M', and 'P' respectively, followed by a horizontal bar with the word 'ASSISTANT'. Below the logo is a navigation bar with links: 'My Dashboard', 'Create plans', 'Reference', 'Help', and 'About'. To the left of the main content area is a sidebar with the McMaster University logo. The main content area is titled 'Data Management Plan: Testing DM'. It features a navigation bar with tabs: 'Project Details' (which is active), 'Contributors', 'Plan overview', 'Write Plan', and 'Research Outputs'. Under the 'Project Details' tab, there's a form field for 'Project title' containing 'Data Management Plan: Testing DMP Assistant', and a checkbox for 'mock project for testing, practice, or educational purposes'. There's also a rich text editor for the 'Project abstract'.

What goes in a Data Management Plan?



Why should students create a DMP?



Set out consistent strategies **prior to starting your research** for how data will be managed, shared, and archived.



Identify the **strengths & weaknesses** in your current practices.



Ensure **quality assurance** and decide how to integrate effective data management practices into your research.



Make sure your data stay safe and align with **ethical responsibilities**.



Tri-Agency RDM Policy 2021

Government of Canada Gouvernement du Canada

Search Canada.ca

MENU ▾

Home > Interagency research funding > Policies and Guidelines > Research Data Management

Research Data Management

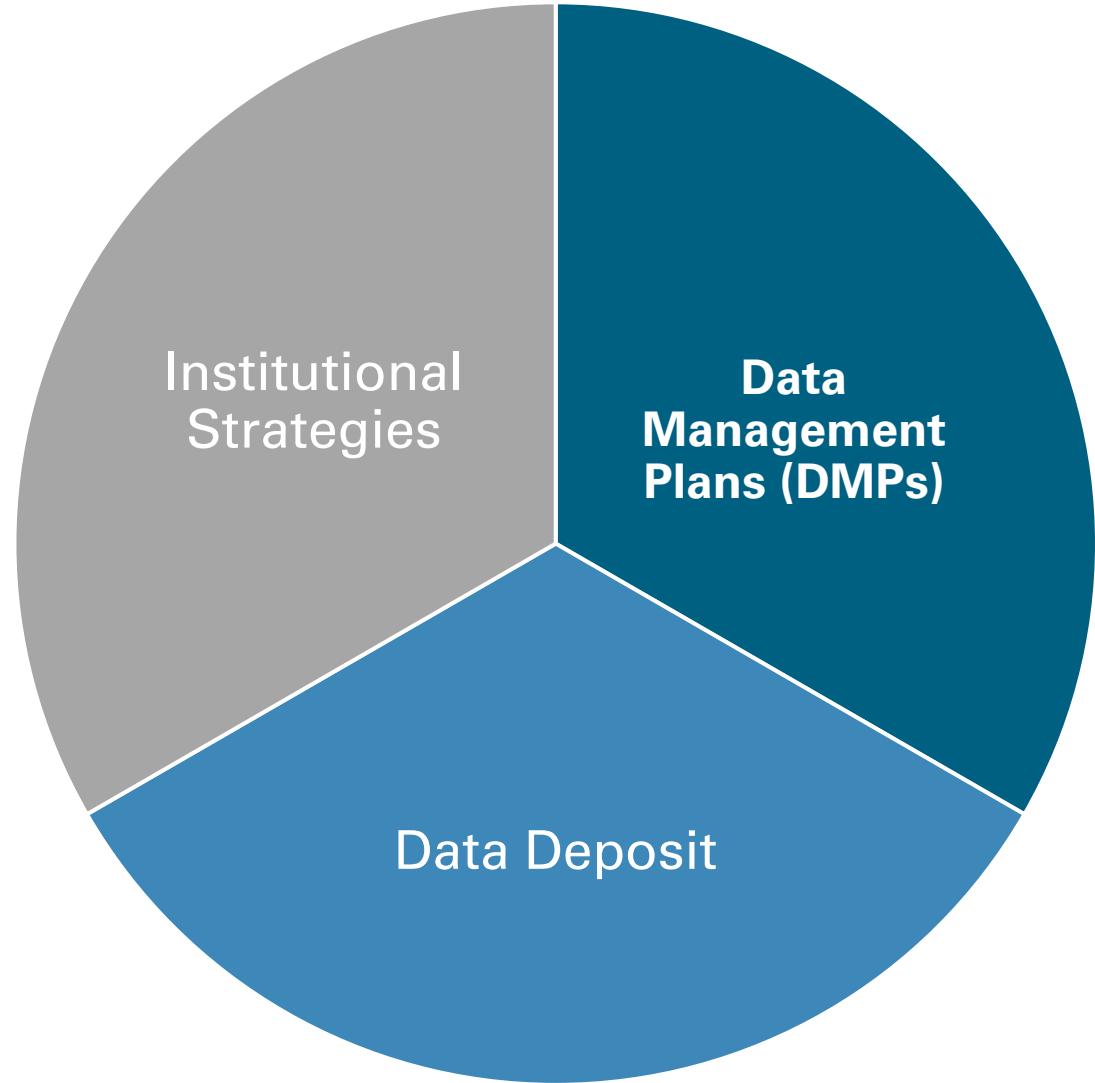
Tri-Agency Statement of Principles on Digital Data Management

Tri-Agency Research Data Management Policy

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.

The agencies expect the research they fund to be conducted to the highest professional and disciplinary standards, domestically and internationally. These standards support research excellence by ensuring



Data Management Plans are “living documents”

- A **living document** is edited and updated on an ongoing basis.
- **Not just a grant or ethics requirement**
– a DMP can describe positionality, workflows, and other important research considerations.
- Emphasize **change and iteration** in research practices.
- DMPs are not submitted once, they’re a useful, ongoing **research tool**.



Waves breaking at the Fox Island boat launch with Shaws Cove in the background, animated.
By Thorsten Lindner on Wikimedia Commons

TL;DR

Advantages:

- DMPs make students' invisible research choices, practices, and processes visible.
- Because they are increasingly a requirement for grants and ethics, teaching DMPs helps students prepare for work in the field.
- Hands-on tool for teaching – “prismatic” connections to best research practices, care in research, open research, and the value of data as a research output.

Potential Pain Points:

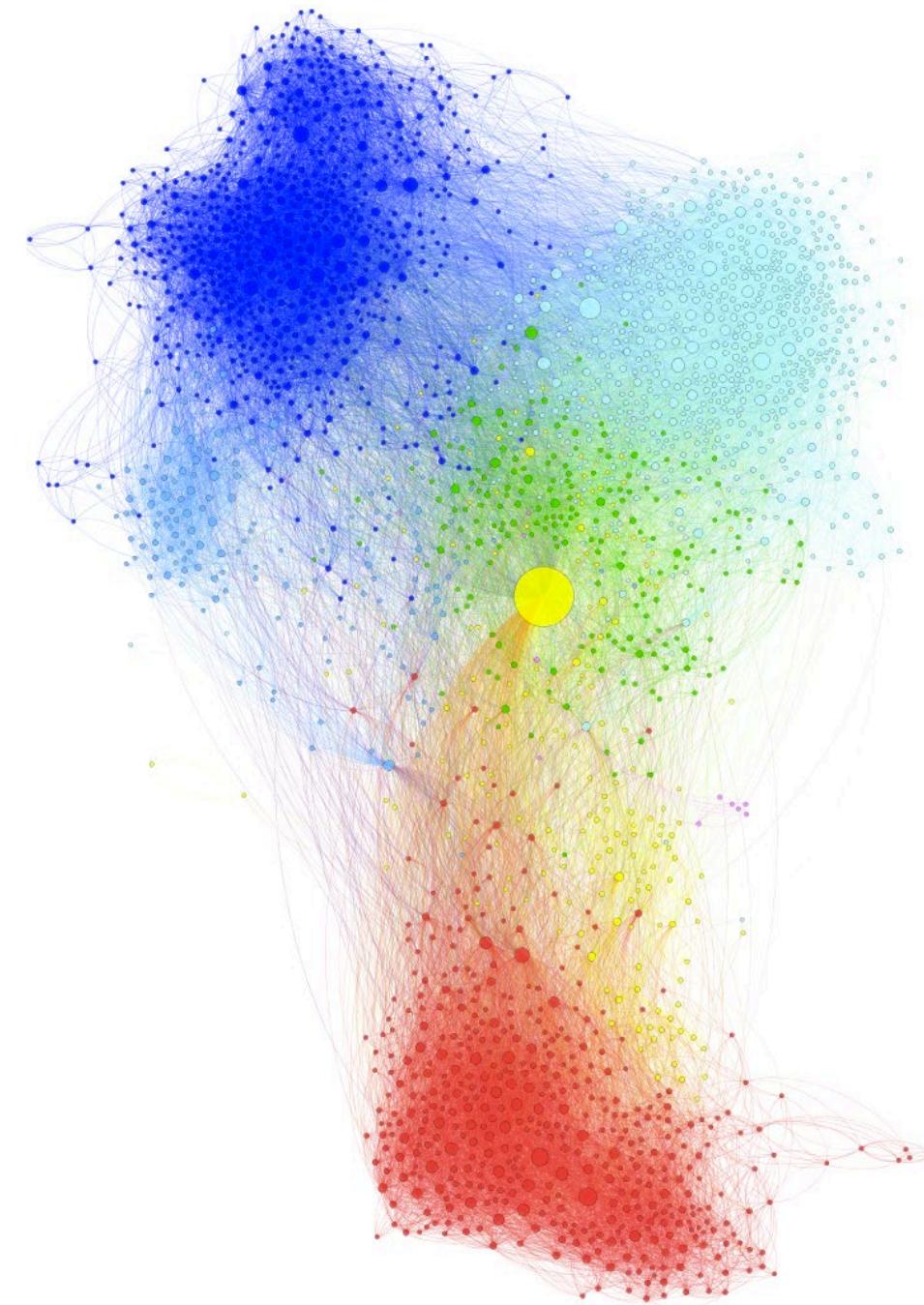
- Require some groundwork and time to teach other aspects of Research Data Management – data storage, security, sharing, archiving.
- Could be overwhelming to introduce students to the intricate web of research requirements and support all at once: *i.e. research offices, ethics boards, libraries, departmental resources, Indigenous research support, IT security units, high-performance computing, research software, grants across levels of government/industry/non-profits, etc.*

Case Studies: How can digital tools support specific learning outcomes?

Gephi

**Subhanya Sivajothy,
Data Analysis and
Visualization Librarian
sivajos@mcmaster.ca**

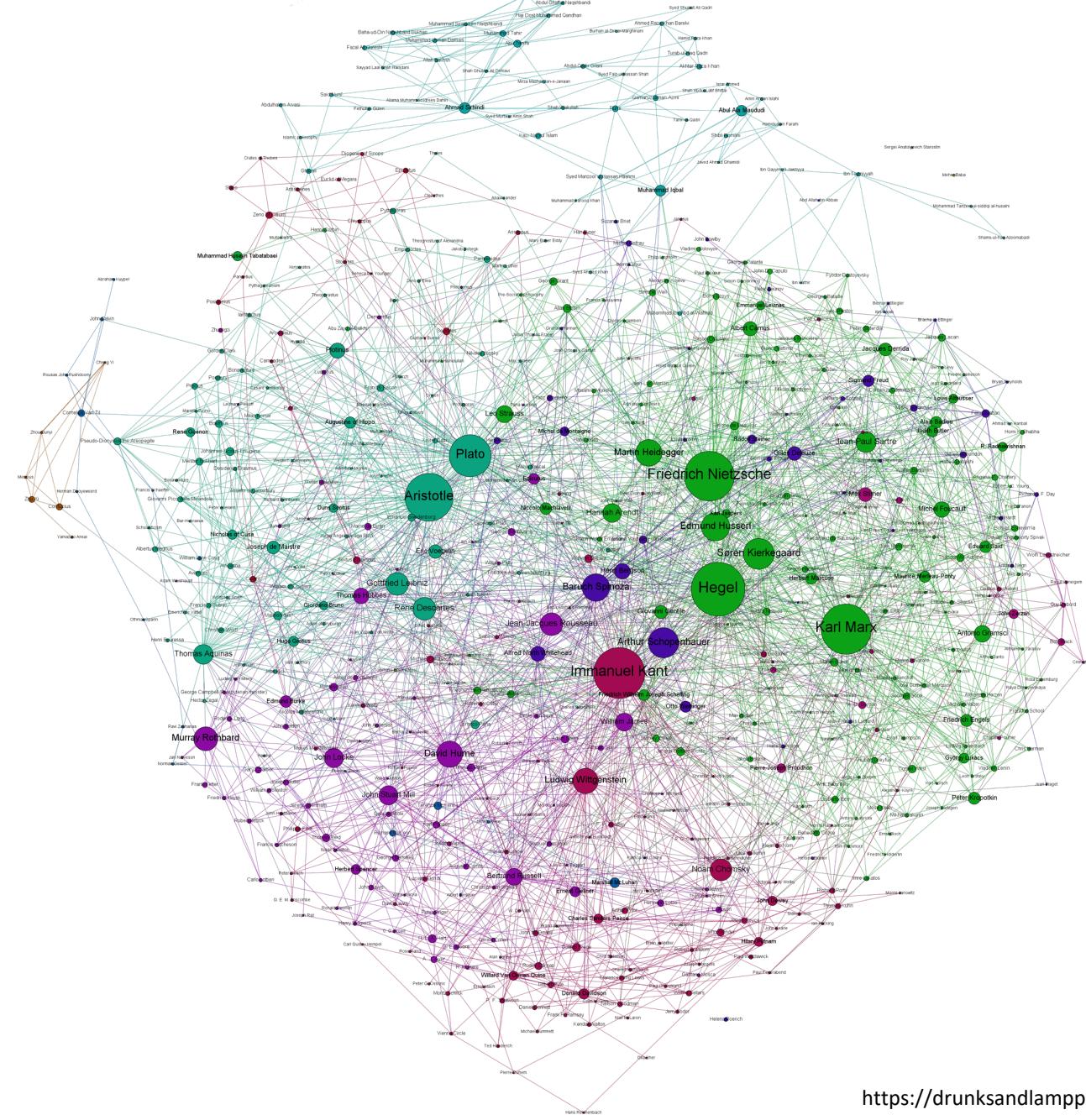
May 24, 2022

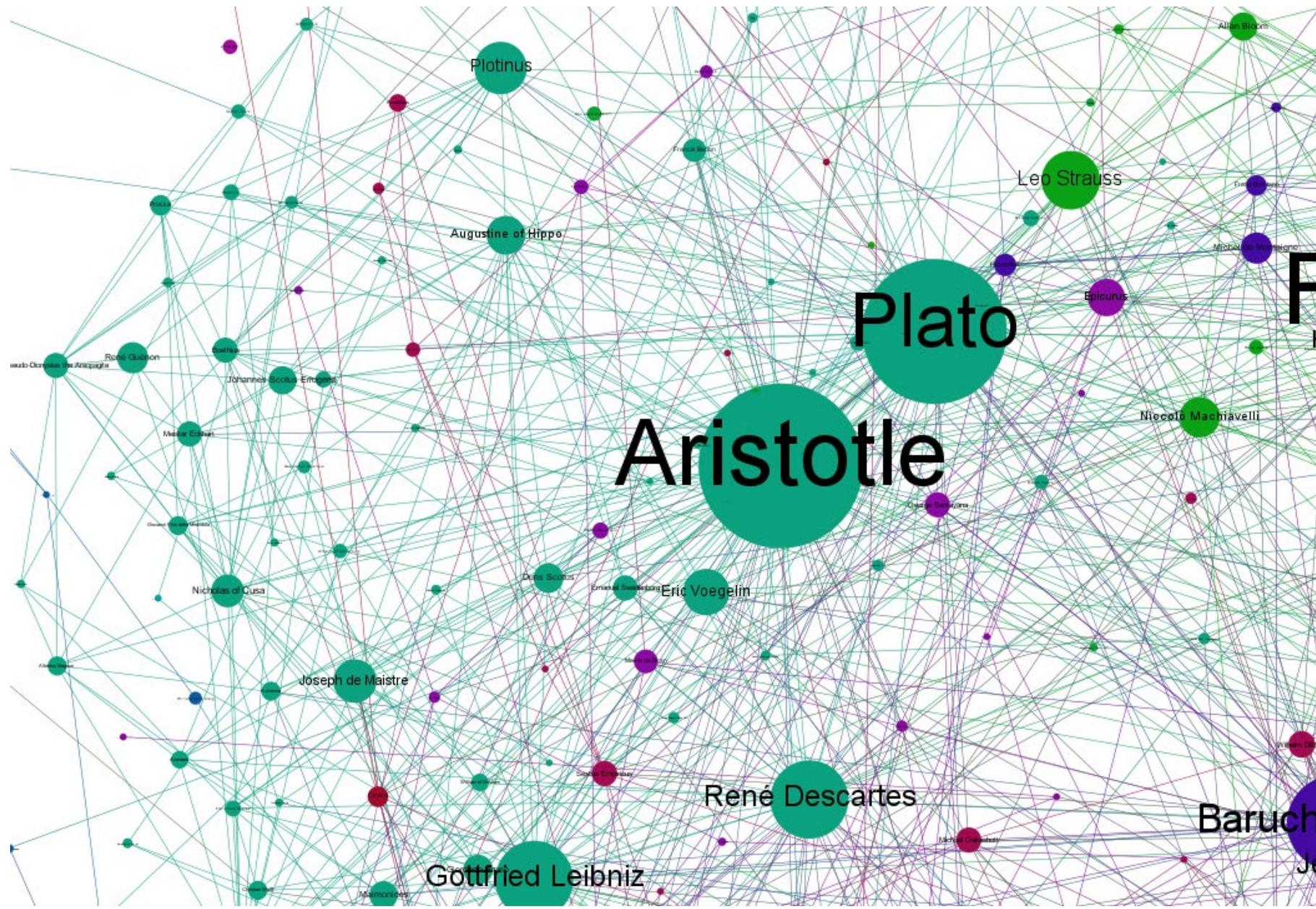


Graphing The History Of Philosophy

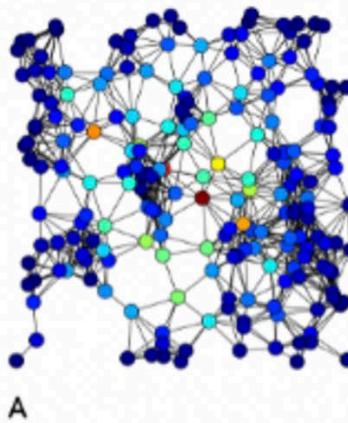
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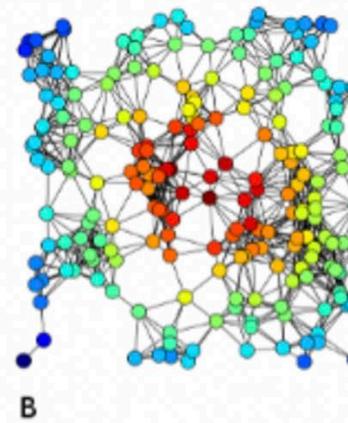


A. Betweenness



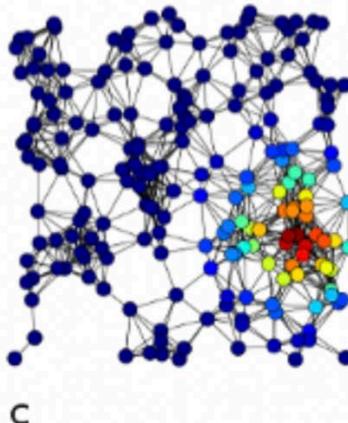
A

B. Closeness



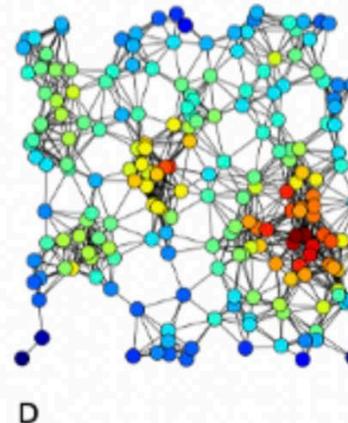
B

C. Eigenvector



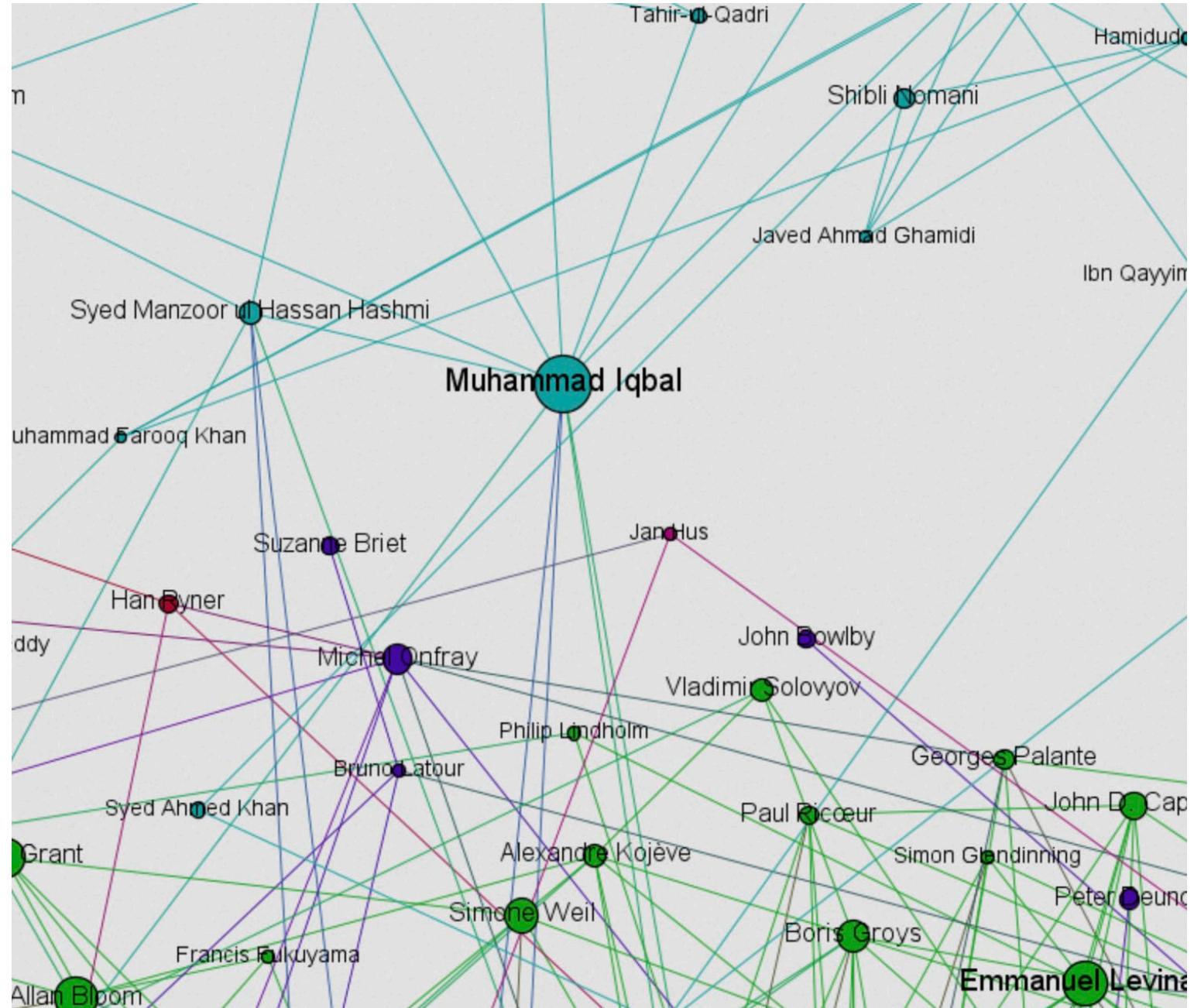
C

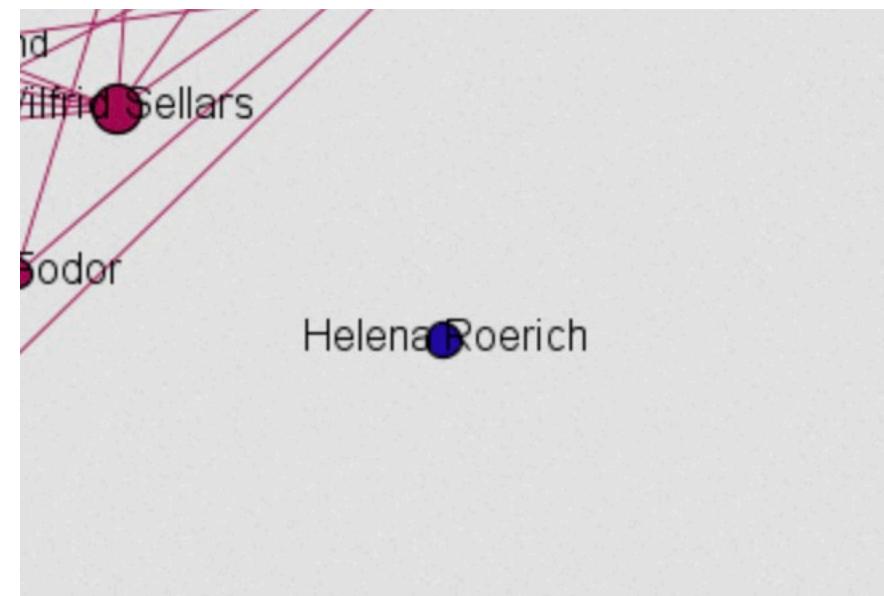
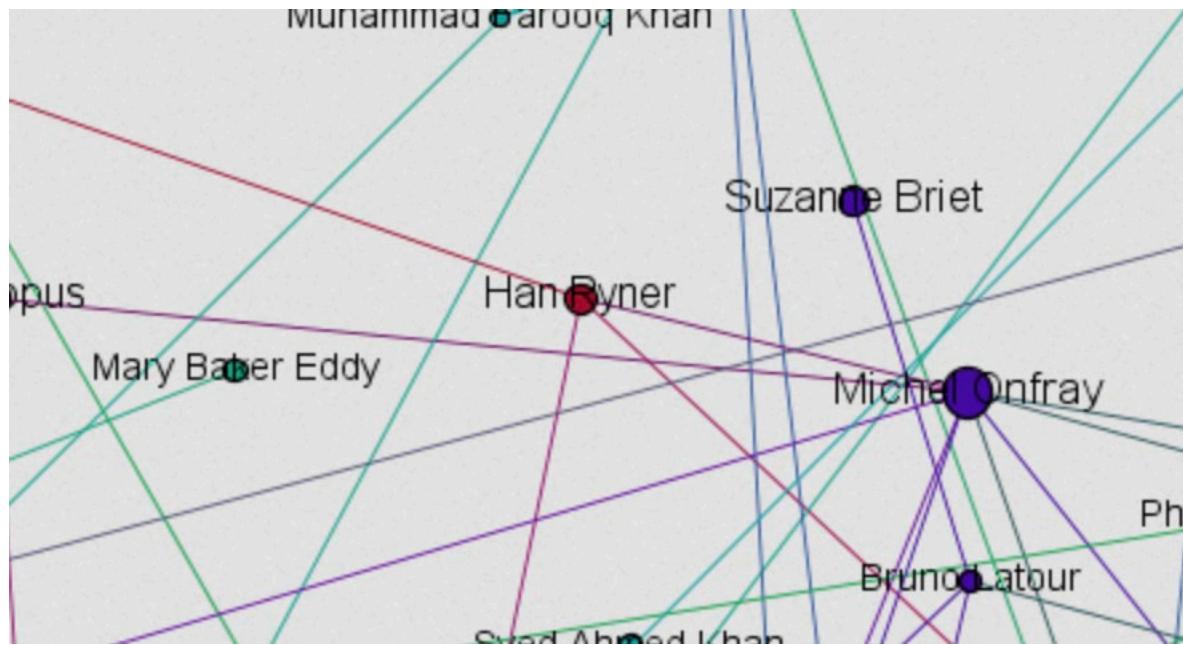
D. Degree



D

Image: [Tapiocozzo](#) (CC 4.0 BY-SA)





Jupyter Notebooks

**Jay Brodeur,
Associate Director of
Digital Scholarship
Infrastructure & Services
brodeujj@mcmaster.ca**



Using Jupyter Notebooks to support learning



1. Breaking down barriers to synchronous instruction with programmatic approaches:
 - Standardized and streamlined setup.
 - Open and extensible technology.
 - Embedded background information, examples, and explanation.
2. Introducing young scholars to emerging best practices
 - **Sharing, Reuse, Reproducibility:** Jupyter Notebooks as open, sharable, reusable products.
 - **Research Transparency:** Integrating elements of a research paper (context, methodology, results) with the underlying analysis and data.

Learn more in Barba, Barker, et al. 2019. “Teaching and Learning with Jupyter”. Available at: <https://jupyter4edu.github.io/jupyter-edu-book/>

Podcasting

**Veronica Litt,
Digital Scholarship
Coordinator
littvs@mcmaster.ca**



Podcasting: A Trio of Options

Sample Class: Undergraduate Social Work Course

Podcast Directive: Students pair up and have a conversation about anti-oppressive social work practices

Learning Outcomes

- Hone collaboration skills
- Cultivate students' scholarly voice
- Select episodes can act as a resource for future iterations of the class

Podcasting: A Trio of Options

Sample Class: Graduate English Course

Podcast Directive: Students script and record an episode that contrasts a canonical interpretation of a novel with their interpretation (can be done in pairs or solo)

Learning Outcomes

- Practice communicating literary analysis to a public audience
- Can work adjacently to an annotated bibliography in training students to conduct secondary source research in a fresh way

Podcasting: A Trio of Options

Sample Class: Continuing Education Course on Data Analytics

Podcast Directive: Students interview a person in the field about their career path

Learning Outcomes

- Networking opportunity
- Hones communication skills
- Select episodes can act as a resource for future iterations of the class

DMP Assistant makes best practices visible.

*Case Study: Graduate
Research Methods*

**Danica Evering,
Research Data
Management Specialist**
everingd@mcmaster.ca





Goal Learning Outcomes:

- **Organize thesis research** with a tool students will use in their career.
- Learn to **practice care** in research by beginning with the end in mind.
- Understand **open research** and the value of datasets.

DMP Assistant – Course Integration Components

Early Semester:

- **Presentation:** Intro to Research Data Management
 - *Provides understanding of open research, the value of data, and overview of best practices for storage, security, sharing, and more.*
- **Demo:** DMP Assistant, DMP Examples Database, Course DMP Rubric
 - *Introduce students to tool and share examples of DMPs in your field.*
- **Assignment:** First Draft of Data Management Plan
 - *Complete a DMP for your thesis research using DMP Assistant, looking at other DMP examples for guidance.*

Section 1: Types of data produced

Types of data, samples, physical collections, software, curriculum materials, and other materials to be produced in the course of the project

Performance Criteria	Complete/detailed	Performance Level			Directores w/this req.
		Addressed issue, but incomplete	Did not address		
Directorate- or division-specific General assessment criteria	1.1 Describes what types of data will be captured, created, or collected	<p>Clearly defines data type(s). E.g. text, spreadsheets, images, 3D models, software, audio files, video files, reports, surveys, patient records, samples, final or intermediate numerical results from theoretical calculations, etc. Also defines data as: observational, experimental, simulation, model output or assimilation</p> <p>"This project will produce: observational data in binary format, which is then converted by proprietary instrumentation software into ASCII text; Matlab mat-files for working data during the analysis phase; CSV and/or HDF5 files for data sharing and preservation."</p>	<p>Some details about data types are included, but DMP is missing details or wouldn't be well understood by someone outside of the project</p> <p>"We will collect zooplankton data from net tows. We will also collect elemental ratio data from preserved samples."</p>	No information about data types is included; fails to adequately describe data types.	All
	1.2 Describes how data will be collected, captured, or created (whether new observations, results from models, reuse of other data, etc.)	<p>Clearly defines how data will be collected, captured or created, including methods, instruments, software, or infrastructure where relevant.</p> <p>"Ride data will be collected via the smartphone apps, including both user entered information, such as observed road conditions or photos, as well as information captured automatically by the phone itself, such as GPS location."</p>	<p>Missing some details regarding how some of the data will be produced, makes assumptions about reviewer knowledge of methods or practices.</p> <p>"Data will be captured by sensors in the field"</p>	Does not include information regarding how the data will be collected, captured or created.	GEO AGS, GEO EAR SGP, MPS AST
					GEO EAR SGP, GEO AGS

Data Management Plans As a Research Tool (DART) – Course DMP Rubric

<https://osf.io/jj7dm>

Data Collection

What types of data will you collect, create, acquire and/or record?

We will be collecting surveys which will then be exported into tabular format.

We will also be conducting both semi-structured interviews and focus groups that will produce both digital audio and text (transcriptions) based data.

What file formats will your data be collected in? Will these formats allow for data re-use, sharing and long-term access to the data?

Our file formats will exist both in non-proprietary and proprietary formats. The non- proprietary formats will ensure that these data are able to be used by anyone wishing to do so once they are deposited and made openly available.

Surveys will exist in .csv (non-proprietary), MS Excel, & SPSS (both proprietary) formats. For more information regarding SPSS see: [SPSS Wikipedia](https://en.wikipedia.org/wiki/SPSS) <https://en.wikipedia.org/wiki/SPSS>

Interviews & focus groups data will exist in .mp3 (non-proprietary), MS Word & NVivo (both proprietary) formats. For more information regarding NVivo see: [NVivo Wikipedia](https://en.wikipedia.org/wiki/NVivo) <https://en.wikipedia.org/wiki/NVivo>

Any survey data deposited for sharing and long-term access will be in .csv format so that anyone can use them without requiring proprietary software.

The final de-identified versions of the interviews and focus groups transcripts will be exported into a basic non-proprietary text format for deposit, long-term preservation and access.

DMP Example: Mixed Methods

<https://alliancecan.ca/en/services/research-data-management/learning-and-training/training-resources>

Potential Reading Assignments:

- Cynthia Hudson-Vitale and Heather Moulaison-Sandy, "Data Management Plans: A Review," DESIDOC Journal of Library and Information Technology 39, no. 6 (December 18, 2019): 322–28, <https://doi.org/10.14429/djlit.39.6.15086>.
- "DataWorks! Data Management Plan (DMP) Challenge Evaluation Rubric," Federation of American Societies for Experimental Biology (FASEB), 2023, <https://www.faseb.org/getmedia/cb681545-2ed5-4970-b167-e1b47b1f225e/Rubric-for-DataWorks-DMP-Challenge-12-14-21.pdf>
- Maria Praetzellis, "DMP Competition Winners: DMPs so good they go to 11," Qualitative Data Repository, DMP Tool, Princeton Research Data Service, May 19, 2021, <https://blog.dmpTool.org/2021/05/19/dmp-competition-winners-dmps-so-good-they-go-to-11/>



Data Management Plan: Testing DMP Assistant

[Project Details](#)[Contributors](#)[Plan overview](#)[Write Plan](#)[Research Outputs](#)[Share](#)[Request feedback](#)[Download](#)

Set plan visibility

Public or organizational visibility is intended for finished plans. You must answer at least 0% of the questions to enable these options. Note: test plans are set to private visibility by default.

- Private: visible to me, specified collaborators and administrators at my organization
- Organization: anyone at my organization can view
- Public: anyone can view or download from the Public DMPs page

Manage collaborators

Invite specific people to read, edit, or administer your plan. Invitees will receive an email notification that they have access to this plan.

Email address	Permissions	
everingd@mcmaster.ca	Owner	

Invite collaborators

* Email

* Permissions

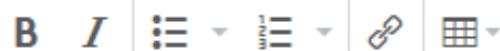
- Co-owner
- Editor
- Read only

Submit

Mid-Semester:

- **Review: Data Management Plan Exchange**
 - *Add the course instructor and an assigned colleague as collaborators in DMP Assistant.*

Describe the type(s) of data that you will collect, including all survey, interview and/or focus group data. If there are any additional types of data that will be collected or generated describe these as well.



We will be collecting data in the form of two surveys in Canadian **institutions** with a Dataverse instance, and administrators of their institution's instance. Once data is deidentified, it will be exported into tabular format. Surveys will contain quantitative and qualitative data.

Quantitative data analysis may be conducted in RStudio, SPSS, or Excel. Qualitative data analysis will be conducted in Taguette, Datasette, Voyant, or NVivo. Both processes will generate scripting and code that may be deposited alongside the de-identified data. Additionally, our survey questions themselves may be shared as part of our dataset for

Depending on class time, a portion of the class could be discussing these revisions – common themes, updating on best practices, and discussing next steps for revising.

Guidance

Comments (1)

Add comments to share with collaborators

- **Review:** Data Management Plan Exchange
 - *Using the “Comments” section in DMP Assistant, DMP Exemplars, and the Course DMP Rubric, students and course instructors add constructive revisions.*

Format

pdf

Download settings

Optional Plan Components

- project details coversheet
- question text and section headings
- unanswered questions
- research outputs

PDF formatting

Font

Face

Arial, Helvetica, Sans-Serif

Download Plan

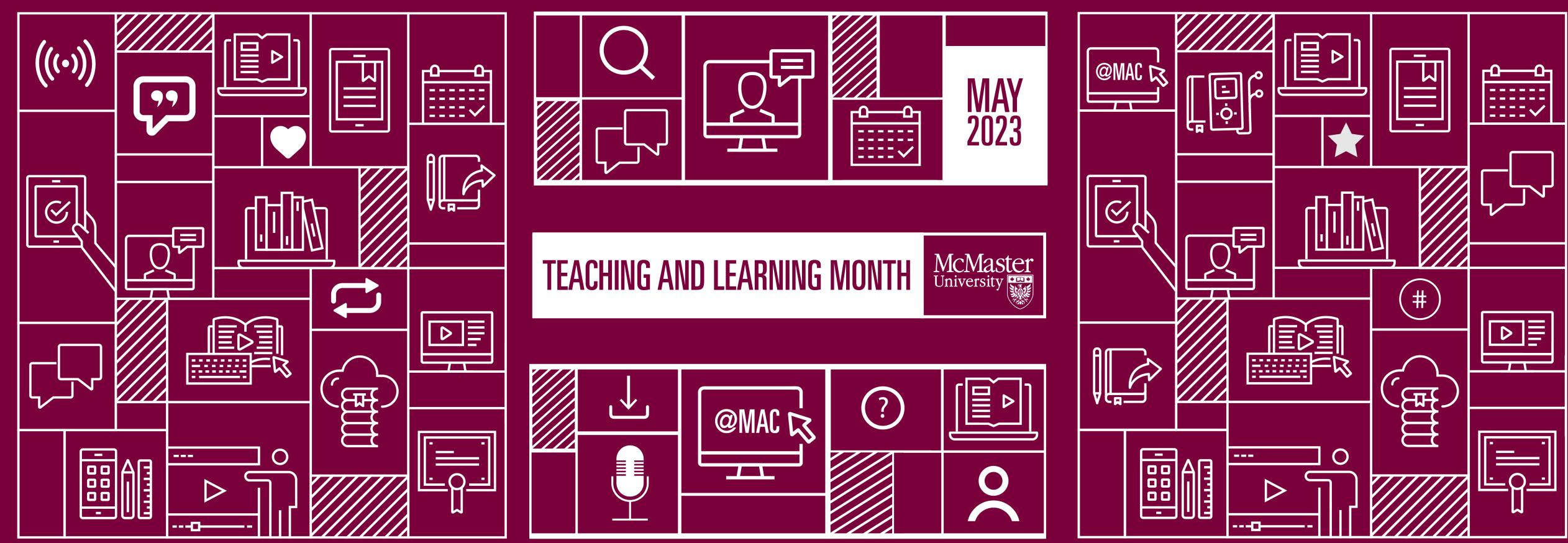
Late Semester:

- **Assignment:** Final Draft of Data Management Plan
 - *Integrate feedback from colleague and instructor; update DMP considering the changes to your research proposal. Download and submit.*

Other potential Methods-related tie-ins:

- **Indigenous Data Sovereignty**
 - *Ownership, Control, Access, Possession (OCAP) course from the First Nations Information Governance Centre (FNIGC) or module on Indigenous research and data sovereignty.*
- **Research Ethics**
 - *Data Management Plan can accompany drafting an ethics application.*
- **Information Security for Research**
 - *Data Governance is often a component of learning about how to secure and safely store your research.*
- **Open Research, Open Access, and Open Data**
 - *DMPs can accompany a larger conversation about open research.*

Q&A



TEACHING AND LEARNING MONTH



MAY
2023

May is **Teaching and Learning Month** at McMaster! Visit the MacPherson Institute website at mi.mcmaster.ca/teaching-and-learning-month/ to learn more!

Session topics include teaching tools and platforms, virtual resources, accessibility, generative artificial intelligence, developing engaging course content, applying universal design principles, experiential learning and more.

Stay in Touch

The Sherman Centre can visit your classroom, host discussions, provide resources, and generally collaborate on instructional sessions. If you'd like to learn more or discuss a potential collaboration, contact us at scds@mcmaster.ca.