Research Data Services in Academic Libraries: Overview and Case Studies from Two Universities

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STEM Interest Group Webinar
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MiALA
Michigan Academic Library Association

Presenters

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Outline

- Introduction - data & research data management
- Joanna
  - Creating Research Data Support
  - Tips for starting data discussions at your library
- Elaine
  - Data Management Plan Service
  - Institutional Data Repository: Deep Blue Data
- Suggested resources
- Q & A

What are data?

What is research data management (RDM)?

Data are...

recorded factual materials commonly accepted in the scientific community as necessary to document and support research findings.

- National Institutes of Health

Anything you perform analysis on.

- *Data Management for Researchers* by Kristin Briney

A **few** types of data

- research notes or lab notebooks
- survey responses
- software and code
- measurements from lab equipment
- images (photographs, films, etc.)
- video or audio recordings
- physical samples

Data can be physical as well as digital!

Research data management (RDM) is...

the compilation of small practices that make your data easier to find, easier to understand, less likely to be lost, and more likely to be usable during a project or ten years later.

RDM includes:

- Writing a data management plan
- Documenting your data
- Creating metadata about your data
- Organizing your data
- Improving analysis procedures
- Securing sensitive data properly
- Having adequate storage and backups
- Taking care of your data after a project
- Sharing data effectively
- Finding data for reuse in a new project

Why did RDM evolve?

- **Global recession in late 2000s**: budget cuts at federal funders → only fund projects that would make the best use of $
- **Omnipresence of digital data**: research on a massive scale, much easier to share data
- **Fragility of digital data**
- **Reproducibility crisis**
- High profile cases of **data fabrication or sloppy data management**

Why are academic libraries offering RDM services?

- Increasing questions about **locating datasets**
- Help patrons **meet requirements** from funding agencies
- Libraries = **excellent at preservation and sharing**
- Librarians can tap into their **university-wide network**

Starting from Scratch:
Creating Research Data Support at Oakland University

Joanna Thielen

Creating Research Data Support

- Select a name for this new area
- Overarching goal: assist patrons in organizing, storing and sharing their research data more effectively
  - Cover all disciplines
  - Free for whole OU community
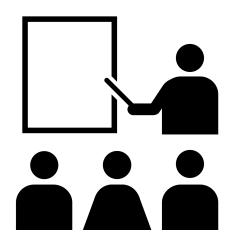- Volunteer group of colleagues → serve in advisory capacity

Research Data Support Goals

(for past two years)

- Capacity building
- Targeted outreach

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Workshop series on data topics

- 14 workshops over 2 academic yrs
- Open to all librarians and staff
- Goals
  - Myself: create knowledge bank of workshop materials
  - Colleagues:
    - Increase comfort and knowledge about data and RDM
    - Refer data-related requests to Joanna

Capacity building

Slide 1

Data Documentation & Organization

December 9, 2016
Joanna Thielen

Research Data Management series

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Slide 4

A major challenge of research is being able to **locate, understand and use** your research data *at a later date*.
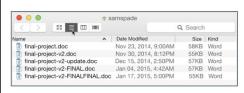
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Slide 7
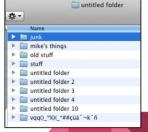
Poor data organization can have severe consequences

A 2013 article in *Frontiers in Human Neuroscience* was retracted because "the authors discovered that a **systematic human error in coding the name of the files** had been made…. This error has ultimately modified the final results of the paper, which are therefore not correct."

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Slide 11

Creating documentation

- Types of documentation
  - Research notes
  - Lab notebooks
  - Codebooks
  - ReadMe.txt files
  - Software code

- Tools for documentation
  - Word processing software (EverNote, Google Docs, Word, OneNote, etc.)
  - Paper notebooks
  - Text editor (Notepad, Sublime, etc.)

Child Care & Early Education
RESEARCH CONNECTIONS

ICPSR 4098

National Household Education Survey, 2003

Part 1: Codebook for Parent and Family Involvement in Education Survey Data

United States Department of Education National Center for Education Statistics

DADEDUC is a measure of the educational attainment of the child's residential father or male guardian. This measure is derived from DADGRADE (PV7) and DADDIPL (PV8).

The values for DADEDUC are:

1 = Less than high school diploma
2 = High school graduate or equivalent
3= Vocational/technical education after high school or some college
4= College graduate
5= Graduate or professional school
-1= No father for the subject child in the household

DADEMPLD indicates the employment status of the child's residential father or male guardian. This measure is derived from DADWORK (PV9), DADLEAVE (PV10), DADHOURS (PV11), DADLOOK (PV13), DADAGN (PV14a), DADEMPL (PV14b), DADREL (PV14c), and DADANSAD (PV14d).

The values for DADEMPLD are:

1 = Working 35 hours or more per week
2 = Working less than 35 hours per week
3 = Looking for work
4 = Not in the labor force
-1 = No father for the subject child in the household

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Do your digital files look like this?

File naming convention for Journal Articles

Author_YYYY_JournalName_Topic.pdf

1st author last name → Author
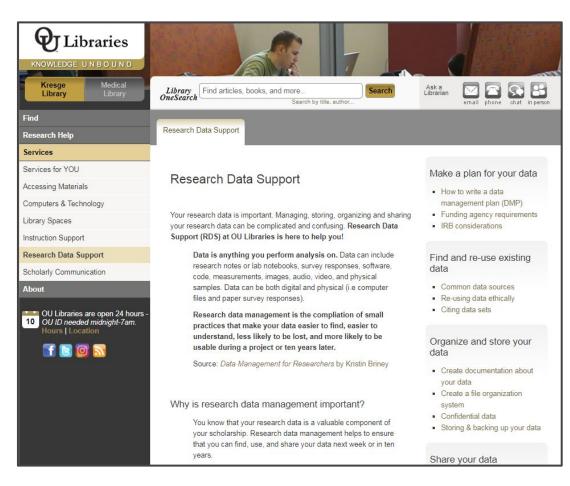
Abbreviated → JournalName

Abbreviated → Topic

Tips for creating a FNC

- **Choose 4-7 elements**
  - Examples: date (YYYYMMDD), creator, location, project name
- **Avoid spaces -** Some software doesn't recognize file names with spaces
- **Avoid special characters -** Such as ~ ! @ # $ % ^ & * ( ) { } [

Implementing RDM practices can seem arduous, time-consuming, a bottomless pit of busy work…

BUT

For every **one minute spent** on implementing RDM practices, you could **save ten minutes** of headache later

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General RDM web pages - bit.ly/OU-RDS

- Discipline agnostic
- Covers:
  - Data mgmt plans
  - Finding existing data
  - Organizing & storing data
  - Sharing data

Capacity building

Spreading the word about Research Data Support

- Created flyer
  - Recruit colleagues to distribute
  - Always carry paper copies
- Started w/ my depts
  - Target new faculty
  - Word of mouth
- New area of outreach: student summer research internships

Targeted outreach

So… how do I start with data at my library?

- Start a data discussion group with colleagues
  - Learn about data topics together
  - Start with basics → How do I cite a dataset?, How to choose a chart type?
- Put your ear to the ground
  - What are the data opportunities on campus?
  - What data requests has your library received?
- Learn about your univ's data-related policies
  - Copyright & Intellectual Property
  - Data retention
  - Data ownership

Tips

Data Services from the University of Michigan:
DMP Review Service & Deep Blue Data

Elaine Meyer
Engineering Librarian

MLibrary Research Data Services

Data Management Planning: helping plan for managing, sharing and curating data and develop Data Management Plans (DMPs) that meet funder requirements.

Discovery & Access: assisting in discovering, accessing, and acquiring different types of research materials, including data.

Data Organization & Management: helping researchers to understand, develop and apply strategies for organizing and managing their data.

Metadata & Documentation: locating standards for documentation that capture the details of generating, processing and analyzing data so it can be discovered, understood and reused.

Data Sharing & Publication: helping disseminate research data for discovery, access and reuse in ways that enable researchers to receive credit for their work.

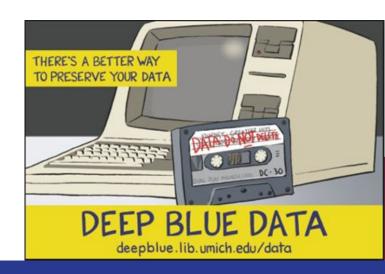**Preservation:** taking action to sustain the accessibility and scholarly value of data over time.

Data Visualization: a rich and diverse set of practices, methodologies and tools from hand drawn charts to interactive web maps to immersive 3-D environments.

DMP Review Service Goal

To support the development of strong, effective data management plans (DMPs) by CoE and CECS researchers.

THERE'S A BETTER WAY TO PRESERVE YOUR DATA

DATA Do NOT DELETE

DC-30

DEEP BLUE DATA

deepblue.lib.umich.edu/data

Examples of funding agencies that require a DMP

U-M DMP Review Service: Website & email

MLibrary DMP Review Service website for University of Michigan faculty:

https://www.lib.umich.edu/research-data-services/dmp-review-service-coe

To submit a DMP for review, email:
enginDMPhelp@umich.edu

Submitting your DMP to the Review Service

Submission should include:

- A short description of the project or the method
- The agency and directorate and/or division
- The official title, proposal approval form (PAF) #, and sponsor deadline of the grant

Who will review the DMP?

- A librarian and IT staff will review your DMP.

Submitting your DMP to the Review Service

How will the review be conducted?

- **Google Drive:** When a DMP is received, the document is uploaded into Google Drive and shared with the specific people reviewing the DMP, as well as whomever submits the DMP
- **Comment feature:** The Google Docs "suggestion" feature will be used to leave comments in the Google Doc that the researcher can either accept or reject. (The reviewers will not directly edit the document)
- **Turnaround time:** The service is guaranteeing a 10-business day turnaround time for a first review.
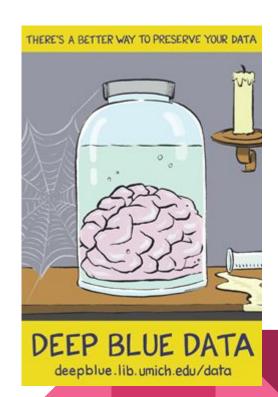
Promoting CECS DMP Review Service

- **CECS faculty meeting**: Introduced DMP Review Service and shared the DMP review website
- **Email CECS faculty list**: For the faculty not at the meeting, they can still get information
- **Ask faculty** if they are submitting any grant applications and would like their DMP to be reviewed.

Research Data Services: Data Sharing & Publication

Deep Blue Data

What is Deep Blue Data?

- Expansion of Deep Blue (U-M's Institutional Repository), which primarily stores digital documents

- Deep Blue Data accepts:
  - Data from all disciplines
  - Data in any format. Open, nonproprietary and widely used formats are preferable
  - Data in all sizes that are technically possible

THERE'S A BETTER WAY TO PRESERVE YOUR DATA

DEEP BLUE DATA
deepblue.lib.umich.edu/data

Deep Blue Data Features and Benefits

Features
- Provides a means for you to publish your research data
- Ensures that your data are preserved for future use
- Enables your data to be cited by assigning a Digital Object Identifier (DOI)

Benefits
- Comply with requirements from funding agencies and publishers
- Gain visibility and promote your scholarship by sharing your data

Deep Blue Data Features and Benefits

https://deepblue.lib.umich.edu/data

Deep Blue Data outreach: Engineering Lab day

Outreach to CECS faculty and students so they know:

- that Deep Blue Data exists
- that they have an Engineering Librarian

Deep Blue Data outreach: The cake!

Deep Blue Data outreach: Laptop stickers

Outreach to CECS faculty and students:

- Stuffed the CECS mailboxes
- Passed out stickers/postcards at many events
- Put stickers on my own laptop

Deep Blue Data outreach: Chocolates

The chocolates were so well received that they are all gone!

- Faculty mailboxes
- Passed them out at events

Resources for Learning More about RDM

- Other libraries' LibGuides/websites
  - Cornell
  - New York University
  - Duke
  - University of Minnesota data mgmt workshop materials
  - University of Wisconsin Data Services video series
- Blogs:
  - Data Ab Initio
  - Databrarians
- Coursera: Research Data Management and Sharing (starts April 23!)
- Twitter: #datalibrarian, #dataliteracy, #datalibs

Resources

Books

- Data Management for Researchers by Kristin Briney
- The Data Book by Meredith Zozus

Conferences

- Research Data Access and Preservation (RDAP) Summit
  - 2018 Summit on Twitter: #rdap18
- Data Librarian Symposiums
  - Univ. of Mass. & New England Area
  - Midwest
  - Southeast

Resources

Looking for more resources? Check out:

Barbrow, S., Brush, D., & Goldman, J. (2017). Research data management and services: Resources for novice data librarians. *College & Research Libraries News, 78*(5), 274. Doi: https://doi.org/10.5860/crln.78.5.274

Resources

Questions?

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