

Supporting Data Use in Undergraduate Student Research:

From Teaching Basic Data Literacy to Incorporating
Data Documentation into Empirical Research Projects



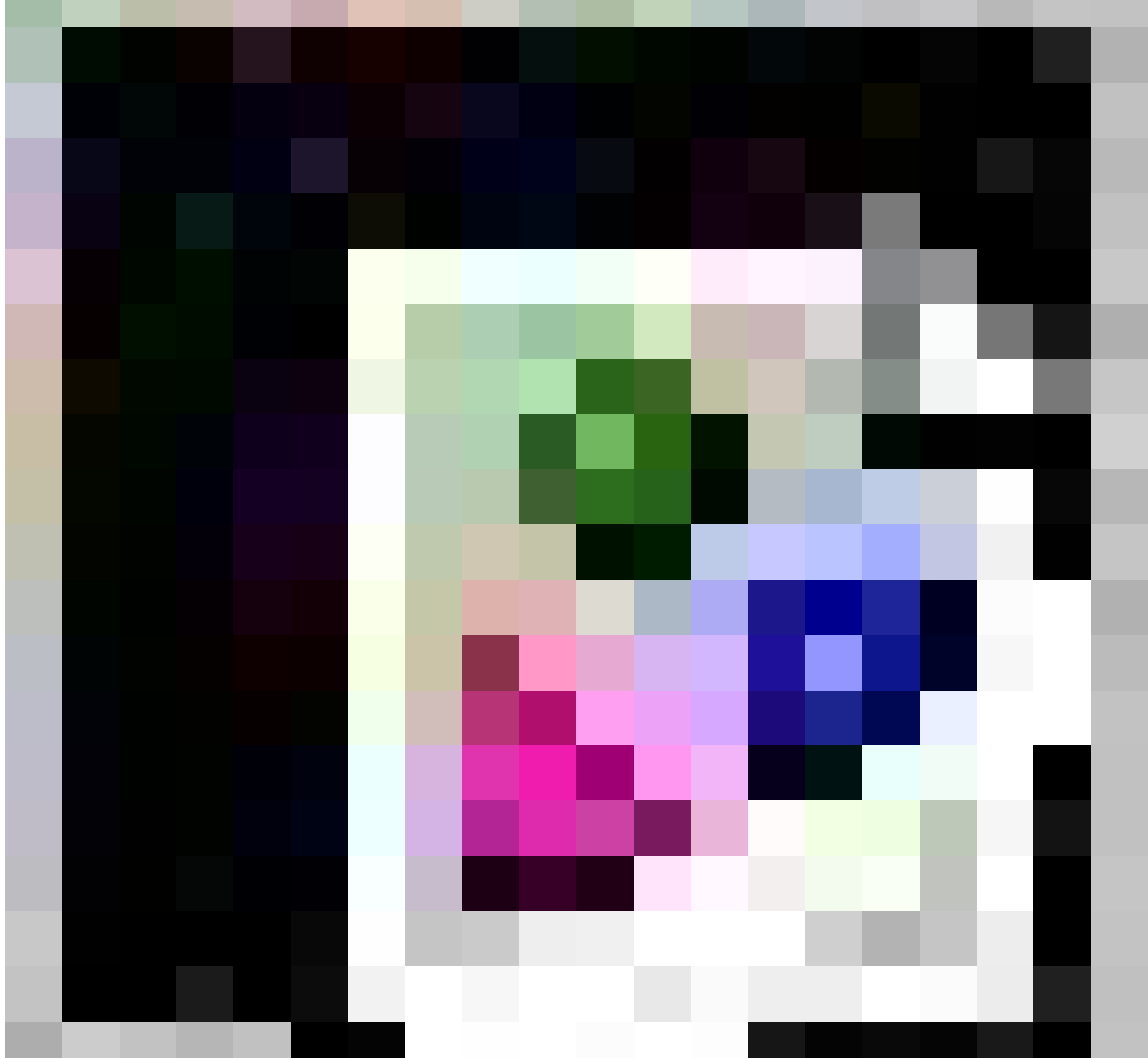
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Data Explosion

- Data explosion:
Increase of data use
in undergraduate research.
- Across all disciplines
and subject areas



Data Research at Mac

- About Mac: highly selective liberal arts college w/ 2000 students
- No one librarian wears 'data hat'
- From 'Q courses' to Data Science minor
 - Across disciplines new emphasis on data
- Data support: from finding to data management
 - Ambitious students
- Traditional support
 - Course-integrated, consultations



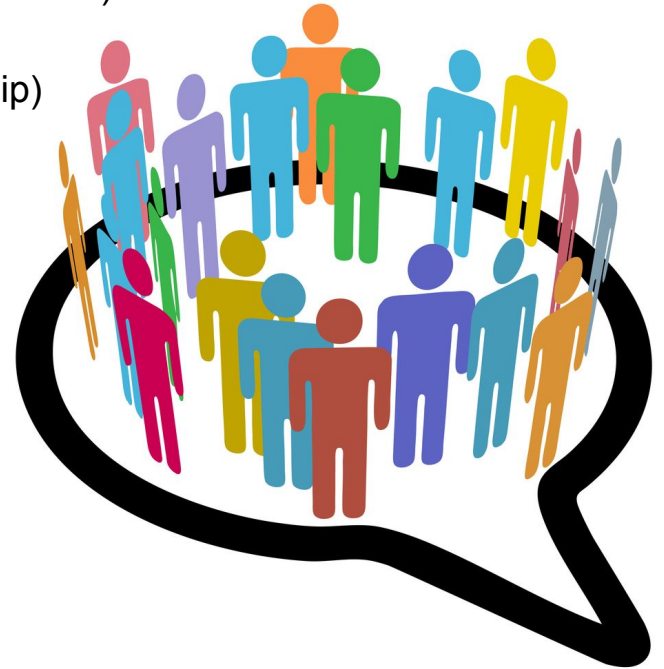
Influences

- Internal demands:

- Increasing data integration into the curriculum (Hughes Grant)
- Increasing faculty research needs
(grant requirements, more awareness, digital scholarship)

- Staff development - learning more

- conferences/ webinars/ workshops
- Curricular projects: e.g. [NECDMC](#)
- [Project TIER](#)



What we are doing to meet on-campus data needs

Finding a Place for Data to Live on Campus

Digital Commons,
our institutional repository

Connecting with Grants Office

Providing faculty support for
data mgmt planning

Data-focused Instruction Sessions

Course-integrated sessions,
workshops, consultations

Data Modules

Online data best-practices
resource

We'll be focusing on these support efforts
in this presentation.

A background image showing two young women, one Black and one Asian, looking at a laptop screen. The woman on the left is wearing a red top, and the woman on the right is wearing a grey top. They appear to be in a classroom or office setting, engaged in a collaborative activity.

Supporting Data In Undergraduate Research:

Instruction & Consultations

Instruction sessions

Going beyond just finding data.

- Data-focused course integrated instruction
- Honors student sessions
- Summer science workshops

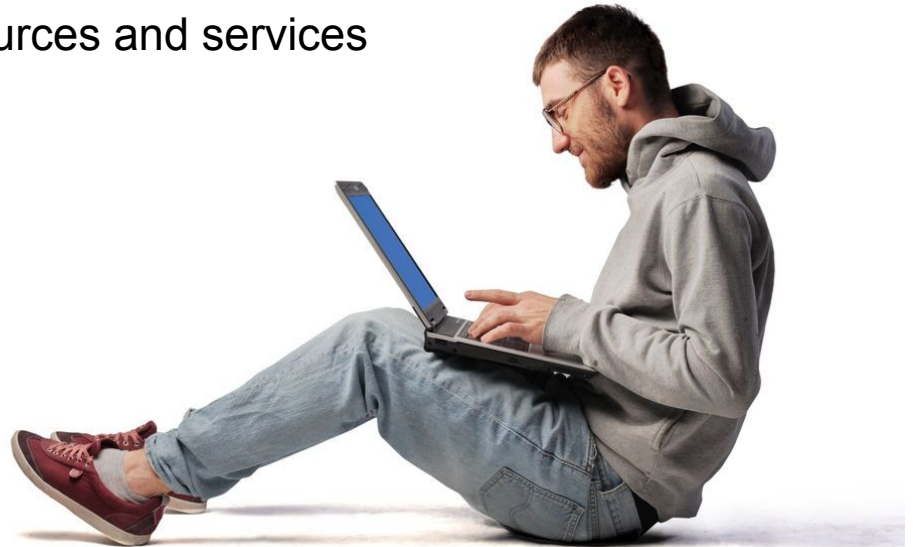
Data consultations

Identifying needs, finding data, proper citation,
data management best practices

Supporting Data In Undergraduate Research:

Creating Online Modules

- Library & ITS Committee
- Interactive and flexible
- Expanding beyond Social Sciences
- 'Macalesterize': Connect to our resources and services
- Identify topics to cover:
 - Module #1: Data Management Overview
 - Module #2: Finding & Collecting
 - Module #3: Sharing & Using
 - Module #4: Intellectual Property & Ethics
 - Module #5: Protecting & Storing
 - Module #6: Metadata
 - Module #7: Organizing
 - Module #8: Preserving & Archiving



Learning Objectives

Examples:

- “Students will cite sources of data and document processes of collecting data in order to communicate the origins of their data.”
- “Students will identify, locate, or create data appropriate to the question being addressed.”
- “Students will articulate the importance of preserving original data in order to recreate the study.”

Choosing A Platform

- Looked at variety of products
- Chose Google Slides



The modules in action:

Introduction to Statistical Modeling

Students were asked to go through our 'Finding Data' module and then complete a Google doc-based exercise answering questions about where they might find the needed data for their specific research project.

A librarian then gave feedback on their responses via the Google doc as well as suggesting possible other data sources they may want to check out.



The Move to LibGuides

- Rethinking our Platform
- Why LibGuides?
 - Staff access / edit
 - Ability to share content between modules
 - It's platform students and faculty are familiar
- Process of creation
- How's it going?
- Take a look at the modules

Future Plans: "Data Modules 2.0"

- Develop discipline-specific scenarios
- Add a glossary
- Create additional exercises for faculty



More Future Plans

- Course integration in the Fall
- Data Modules Assessment Plan
 - Survey students for usefulness of modules
 - Assess final projects for data practices using rubric



You can find our data modules at

<http://libguides.macalester.edu/data1>

if you'd like to follow the progress of our work.

Sources we mentioned in our presentation:



< <http://www.ProjectTier.org/> >

The TIER Protocol (Teaching Integrity in Empirical Research) provides guidance to students conducting quantitative research to help ensure that their work is transparent and reproducible.

New England Collaborative Data Management Curriculum (NECDMC)

< <http://library.umassmed.edu/necdmc/index> >

An instructional tool for teaching data management best practices to undergraduates, graduate students, and researchers in the health sciences, sciences, and engineering disciplines.

Thanks for attending
our session!

QUESTIONS?

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