Developing an Understanding of Data Management Education: A Report from the Data Information Literacy Project

Jake Carlson, Lisa Johnston, Brian Westra, Mason Nichols

http://www.datainfolit.org
Project Structure

Data Librarian

Subject Librarian or Information Literacy Librarian

Research Faculty

Graduate Students

Post-doc; Research assistant
# Five Case Studies

<table>
<thead>
<tr>
<th>Cornell</th>
<th>Minnesota</th>
<th>Oregon</th>
<th>Purdue #1</th>
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<td><strong>Natural Resources</strong></td>
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<td>Longitudinal data of fisheries and water quality</td>
<td>Real-time sensor data on bridge structures</td>
<td>Climate change and plant growth data</td>
<td>Software code in community service projects</td>
<td>Simulation data of hydrological processes</td>
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Project Phases

- Literature Review
- Interviews
- Develop Educational Programs
- Implement Programs
Literature Review

Understanding Disciplinary...

- Concepts of Data and Data Management Issues
- Terminology
- Best Practices / Standards
- Educational Approaches
Interviews

Understanding Local:

- Data / Research
- Lab Practices
- Priorities

- Faculty (n = 8),
- Grad Students (n = 15),
- Research Assistants (n = 2)
# Competencies of DIL

<table>
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<tr>
<th>Processing and Analysis</th>
<th>Curation and Re-Use</th>
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<td>Management and Organization</td>
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<td>Preservation</td>
<td>Visualization and Representation</td>
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<td>Discovery and Acquisition</td>
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<td>Metadata and Description</td>
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<td>Quality and Documentation</td>
<td>Cultures of Practice</td>
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Module 7 – Organization and Description of Data

Please indicate how important you believe it is for your students to be knowledgeable in each of the competencies listed below by the time they graduate by circling a response below:

Data Management and Organization
Skills may include:
Understands the lifecycle of data, develops data management plans, and keeps track of the relation of subsets or processed data to the original data sets. Creates standard operating procedures for data management and documentation.

1 Not Important
2 Somewhat Important
3 Important
4 Very Important
5 Essential

I don’t know or NA
Interview Results
Rankings of Importance

- Processing and Analysis
- Visualization and Representation
- Quality and Documentation
- Metadata and Description
- Ethics and Attribution
- Curation and Re-use
- Databases and Formats
- Conversion and Interoperability
- Management and Organization
- Preservation
- Discovery and Acquisition
- Cultures of Practice
- Average Ranking of Faculty (n=8)
- Average Ranking of Students (n=17)
Synthesis (Commonalities)

- Lack of formal training in data management
- Lack of formal policies in the research team
- Self-directed learning through trial and error
- Focus on data mechanics over deeper concepts
### Local Themes

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<td>Data sharing</td>
<td>Data ownership</td>
<td>Cultures of practice</td>
<td>Documentation &amp; organization</td>
<td>Standard operating procedures</td>
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<td>Databases</td>
<td>Long-term access</td>
<td>Metadata</td>
<td>Transfer of responsibility</td>
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<td>Stewardship</td>
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<td>Closing out a grant</td>
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Instructional Approaches

Mini-Course

Readings & Seminar

Embedded Librarianship

Online Course

DIL Model (Phase 3)

Workshops
Next Steps

Teach
- Complete Instruction

Assess
- Student Work
- Faculty Satisfaction

Model
- Common Experiences
- Symposium

Publish
- Materials
- Toolkit
Credits

Principal Investigator:
• Jake Carlson - Purdue University

Co-Principal Investigators:
• Camille Andrews – Cornell University
• Marianne Stowell Bracke – Purdue University
• Michael Fosmire – Purdue University
• Jon Jeffryes – University of Minnesota
• Lisa Johnston – University of Minnesota
• Megan Sapp Nelson – Purdue University
• Dean Walton – University of Oregon
• Brian Westra – University of Oregon
• Sarah Wright – Cornell University

Grad Asst: Mason Nichols – Purdue University
Thanks and Stay Tuned!

Jake Carlson - jrcarlso@purdue.edu
Lisa Johnston - ljohnsto@umn.edu
Brian Westra - bwestra@uoregon.edu
Mason Nichols - masonnichols@purdue.edu

datainfolit.org
@datainfolit
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