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

INSTITUTE *of* **Museum** and **Library** SERVICES
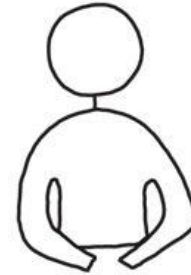
D|I|L data information literacy
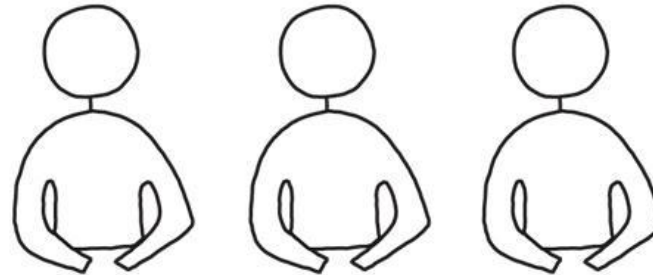
Project Structure

Data Librarian
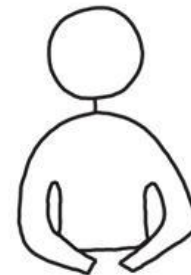
Subject Librarian or Information Literacy Librarian

Research Faculty
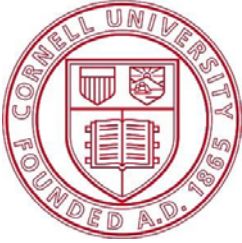
Graduate Students

Post-doc; Research assistant

DIIL
data information literacy

Five Case Studies

Cornell	Minnesota	Oregon	Purdue #1	Purdue #2
Natural Resources	Civil Engineering	Ecology	Electrical & Computer Engineering	Agricultural & Biological Engineering
Longitudinal data of fisheries and water quality	Real-time sensor data on bridge structures	Climate change and plant growth data	Software code in community service projects	Simulation data of hydrological processes

Project Phases

Literature Review

Interviews
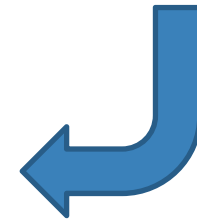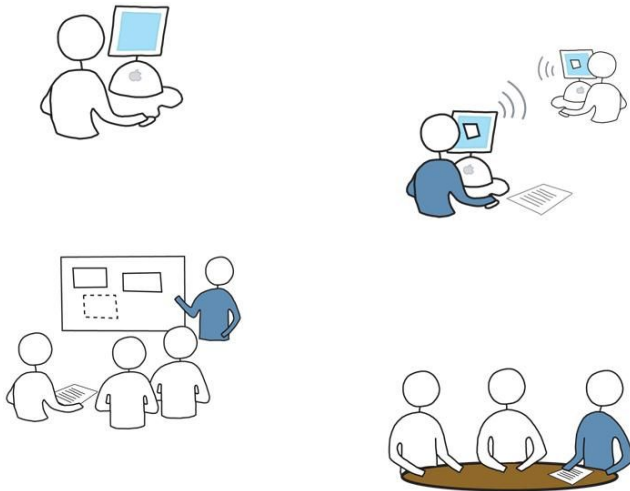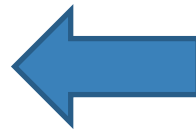
Develop Educational Programs

Implement Programs

Literature Review

Understanding Disciplinary…

o Concepts of Data and
Data Management Issues

o Terminology

o Best Practices / Standards

o Educational Approaches

Interviews

Understanding Local:

o Data / Research

o Lab Practices

o Priorities

o Faculty (n = 8),
o Grad Students (n = 15),
o Research Assistants (n = 2)

Competencies of DIL

Processing and Analysis	Curation and Re-Use
Management and Organization	Conversion and Interoperability
Preservation	Visualization and Representation
Databases and Formats	Discovery and Acquisition
Ethics and Attribution	Metadata and Description
Quality and Documentation	Cultures of Practice

Carlson, J., Fosmire, M., Miller, C., & Nelson, M. S. (2011). Determining data information literacy needs: A study of students and research faculty. *portal: Libraries and the Academy*, *11*, 629-657. doi:10.1353/pla.2011.0022

Interview Methodology

Interview Worksheet

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

I don't know or NA

Interviewer's Manual

DIL data information literacy

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

Cultures of Practice

Preservation

Discovery and Acquisition

5.0
4.0
3.0
2.0
1.0
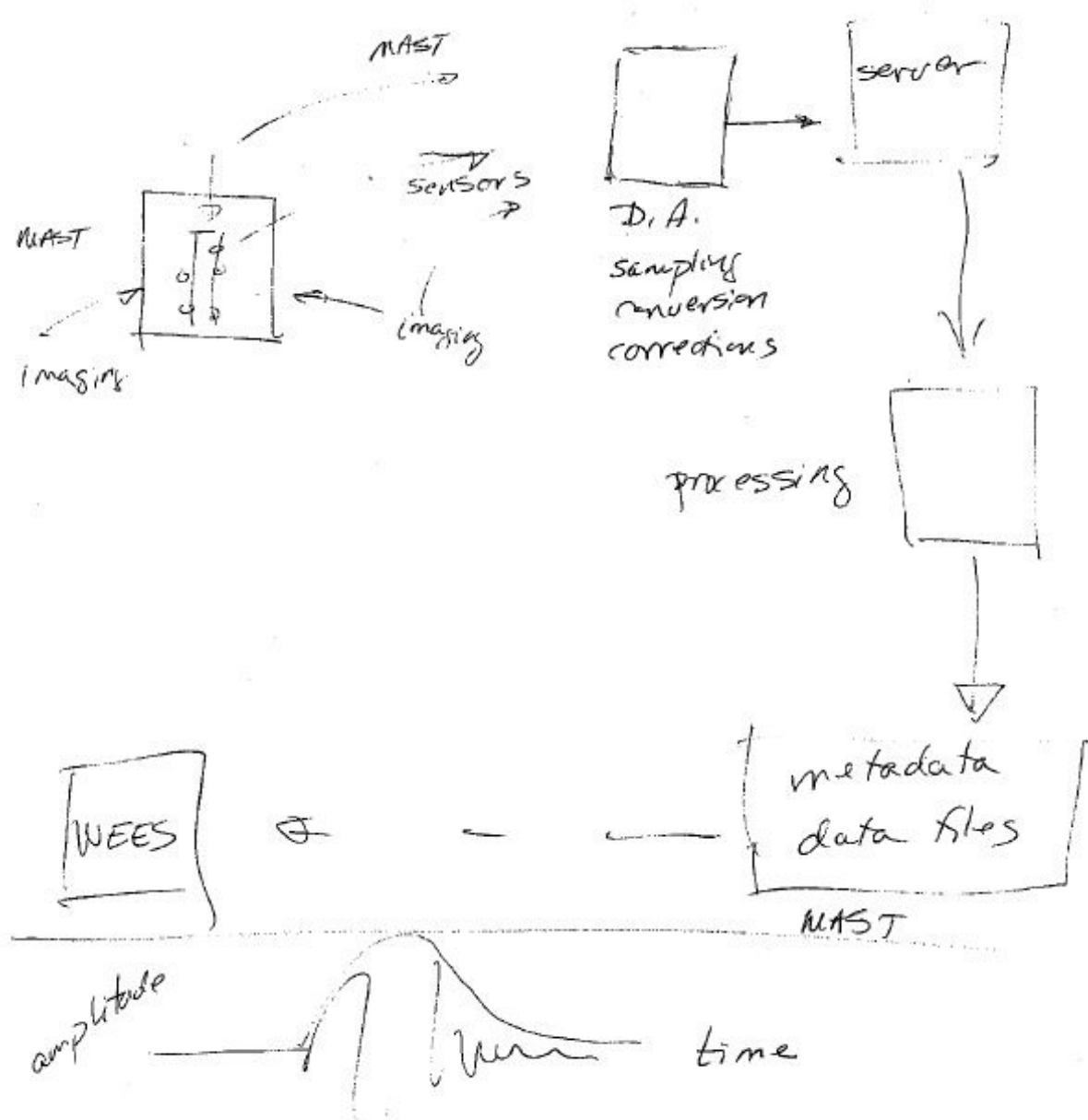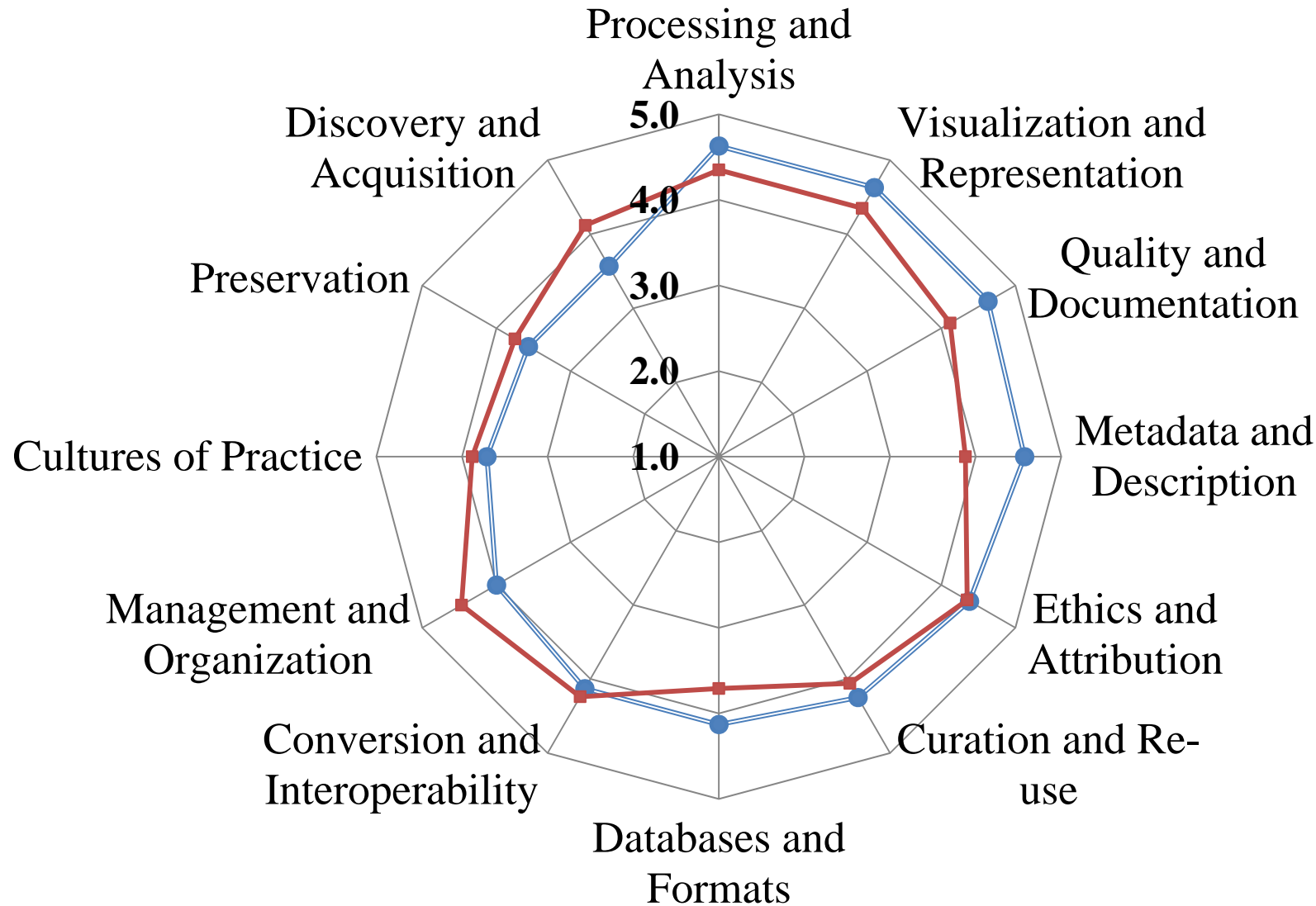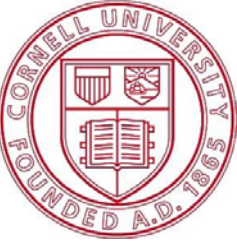
Average Ranking of Faculty (n=8)   Average Ranking of Students (n=17)

Synthesis (Commonalities)
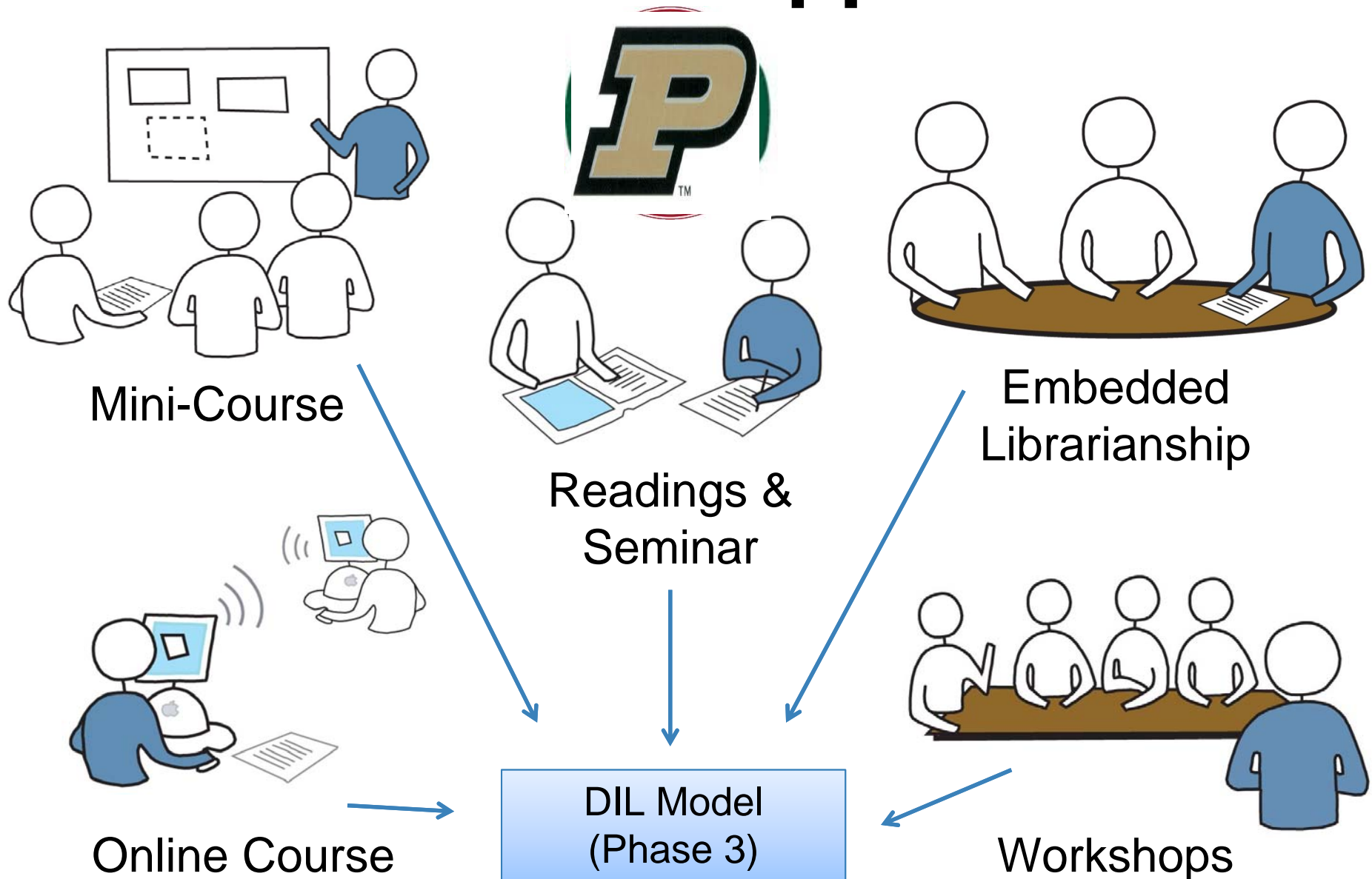
o Lack of formal training in data management

o Lack of formal policies in the research team

o Self-directed learning through trial and error

o Focus on data mechanics over deeper concepts

Local Themes

Cornell	Minnesota	Oregon	Purdue #1	Purdue #2
Natural Resources	Civil Engineering	Ecology	Electrical & Computer Engineering	Agricultural & Biological Engineering
Data sharing Databases Stewardship	Data ownership Long-term access	Cultures of practice Metadata Closing out a grant	Documenta-tion & organization Transfer of responsibilty	Standard operating procedures Metadata

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

DIL data information literacy

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!

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