Developing a Data Management Curriculum for Graduate Students in the Natural Resources

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Developing a data management curriculum for graduate students in the natural resources

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Objective
What skills do graduate students need to be successful in managing, working with and curating their research data? This poster reports on work at Albert R. Mann Library to address these needs in collaboration with faculty in the Department of Natural Resources.

Natural Resources/Long-term Studies

Context
- Long-term studies tracking longitudinal changes in fish species occurrence, population abundance, growth, and diet
- Data types
  - Spreadsheets (MS Excel),
  - Relational databases (MS Access),
  - Scripted analyses in R (open source statistical software)

Educational Priorities
- Acquiring the data management and organization skills necessary to work with databases and data formats, document data, and handle accurate data entry is described as essential, otherwise, “it’s as if the data set doesn’t exist.”
- Data management
- Data organization
- Data quality and documentation
- Data analysis and visualization
- Metadata

Response
NTRES 6940 Special Topics Course: Managing data to facilitate your research
Six session mini-course:
- Intro to Data Management
- Data Organization
- Data Analysis & Visualization
- Data Sharing
- Data Quality & Documentation
- Wrap-up

Assessment Methods
- In-class active and collaborative learning
- Post class one-minute reflections
- Final survey

How would you rate your knowledge/skills/ability in the following areas?

- Creating a data management plan
- Documenting your data
- *Evaluating data repositories
- Visualizing data and creating graphs
- Following best practices in structuring relational databases
- Recognizing necessary components of a data management...
- Describing your research and data collection process
- Describing the importance of data management

Evaluating Dataset Documentation
(http://1.usa.gov/W8hS7G)

“Learning about relational databases was very useful. Efficient organization of spreadsheets was also helpful. I would like to learn more about how to organize metadata, but I think this is an upcoming class discussion. Also, I am still lacking clear reasons why Access is preferable to Excel. What does Access offer that Excel does not? What are the features that make Access particularly useful?”

Evaluation Dataset Documentation
Multi-file terrestrial ecology data set:
NASA readme file:
ftp://dis1.gsfc.nasa.gov/data/toms/README.TOMS2
(http://1.usa.gov/W8hS7G)

0 = No Competence
100 = Very Competent

The Data Information Literacy project is supported in part by a grant from the Institute of Museum and Library Services (IMLS). Any views, findings, conclusions or recommendations expressed here do not necessarily represent those of the IMLS.