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Data Curation Education in Research Centers Poster

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Data Curation Education in Research Centers (DCERC)

Christopher Eaker, Erica Johns, & Kayla Siddell (University of Tennessee)

Abstract

The volume of scientific data is growing exponentially across all scientific disciplines. Competent information professionals are needed to sort, catalog, store, and retrieve this data for future research and education requirements. In response to this need, the goal of the Data Curation Education in Research Centers (DCERC) project is to develop curriculum to educate information science students in the critical field of scientific data curation. Three masters degree students at University of Tennessee (UT) and three doctoral students at the University of Illinois, Urbana-Champaign are completing year one of the program.

DCERC Scholars

Christopher Eaker has an engineering background, in which he dealt with data on a daily basis. Engineering is a highly applied science, so his skills in putting data to work and making decisions on the fly will be a strong asset to the field of data curation.

Erica Johns has a horticulture background and has worked with scientific data from the ground up. She has proposed hypotheses that require experimentation and data accumulation. She has collected data, analyzed data, and input data into a system that categorized the information for users and researchers to derive conclusions and suggest further scientific trials.

Kayla Siddell has a background in Psychology. She has various research experience including the development and implementation of research design and protocol, literature search and review, and data collection and analysis. She hopes to help to lobby for the field and bridge gaps between scientists and information professionals.

References:

[1] Graduate School of Library and Information Science. Data Curation Education Program. In GSLIS - Center for Informatics Research in Science and Scholarship - Collections & Curation. Retrieved January 30, 2012, from http://ciriss.lis.illinois.edu/CollMeta/dcep.html.

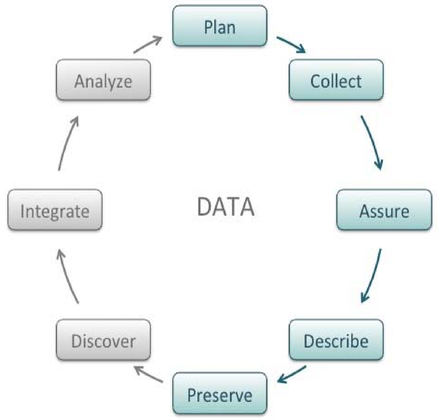
[2] Michener, William K., Suzie Allard, Amber Budden, Robert Cook, Kimberly Douglass, Mike Frame, Steve Kelling, Rebecca Koskela, Carol Tenopir, and David A. Vieglais. 2011. "Participatory Design of DataONE - Enabling Cyberinfrastructure for the Biological and Environmental Sciences." *Ecological Informatics.* Accepted, in press, available online 3 September 2011. Accessed 5 September 2011. doi:10.1016/j.ecoinf.2011.08.007

[3] Palmer, C., Allard, S., & Marlino, M. (2010). Data Curation Education in Research Centers. Poster proposal.

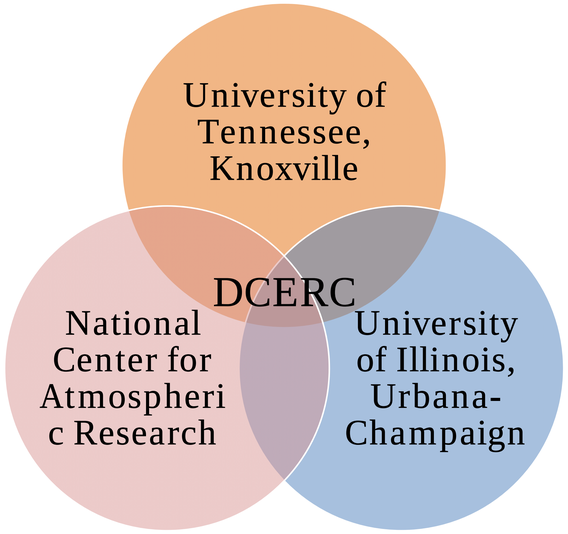
[4] *The Economist*, February 25, 2010.

What is Data Curation?

The active and on-going management of research data through its life cycle of interest and usefulness to scholarship, science, and education.[1]



Data Life Cycle[2]



[4]

Objectives

This grant addresses the scale and complexity of data essential for contemporary scientific investigation which is growing exponentially across all scientific disciplines. The "data deluge" is now a fundamental characteristic of e-science and "big science," especially in such disciplines such as particle physics, astronomy, and atmospheric science. Moreover, scientists, their employers, and their funders recognize the value in sharing data assets and in curation of data for re-use over the long term.[3]

There is a need for information professionals who can help scientists manage the challenges of data driven science. This program educates the information professional who can meet these challenges.[3]

Field Experience

National Center for Atmospheric Research (NCAR)
Boulder, Colorado

The DCERC Scholars will travel to Boulder, CO, during the summers of 2012 and 2013 for onsite field experiences at the National Center for Atmospheric Research where they will work alongside scientists and researchers to experience the demands of data curation at the source of data creation.

Coursework

Foundations of Data Curation lays the foundation for the concepts and terminology of the data curation field. Topics include:

- the data life cycle
- data sharing
- institutional repositories
- digital humanities
- data appraisal and selection
- data curation policies
- data management plans
- cyberinfrastructure.

Environmental Informatics includes case studies, class projects, and guest lectures and allows the students to experience the challenges facing researchers, land managers, decision makers, information professionals, and policy makers in the area of biological data acquisition, management, and delivery. The emphases of the class are:

- information life cycle
- metadata management
- data and information standards
- geospatial technologies
- web technologies
- project management.

Science, Technology, Engineering and Medical Communication & Information explores the role of communication and information in each of the STEM domains for facilitating discovery of ideas, collaborating between STEM researchers, and disseminating findings to those within the fields as well as the public.

Educational Workshops

CurateGear workshop focused on digital curation and digital preservation. The speakers displayed and discussed their strategies and exhibited and demonstrated digital curation and preservation. The attendees discussed issues related to the digital curation environment. They asked for leadership in decision making, a one-stop destination that discusses all of the preservation tools, discussed the importance of being able to evaluate data, and how one must proceed accordingly to preserve appropriately.

Repositories in Science & Technology showcased successful data repositories around the world. The workshop opened with a history of repositories, their purpose, and some thoughts on their future. Then presenters talked about how individual repositories work and the types of data they accept. Finally, the discussion centered around how to develop consistent standards among repositories.

Introduction to TEI (Text Encoding Initiative) was a two-day hands-on workshop which taught participants how to work with TEI to develop digital representations of humanities texts for research and preservation.

Project Partners

THE UNIVERSITY of TENNESSEE KNOXVILLE

ILLINOIS UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

NCAR NATIONAL CENTER FOR ATMOSPHERIC RESEARCH

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