Teaching Research Data Management: An Undergraduate/Graduate Curriculum

Paul Colombo  
pdc@edutel.com

Mary E. Piorun  
University of Massachusetts Medical School, mary.piorun@umassmed.edu

Donna Kafel  
University of Massachusetts Medical School, Donna.Kafel@umassmed.edu

See next page for additional authors

Follow this and additional works at: http://escholarship.umassmed.edu/escience_symposium

Part of the Library and Information Science Commons

http://escholarship.umassmed.edu/escience_symposium/2011/posters/7

This material is brought to you by eScholarship@UMMS. It has been accepted for inclusion in University of Massachusetts and New England Area Librarian e-Science Symposium by an authorized administrator of eScholarship@UMMS. For more information, please contact Lisa.Palmer@umassmed.edu.
Presenter Information
Paul Colombo, Mary E. Piorun, Donna Kafel, Tracey Leger-Hornby, Siamak Najafi, and Elaine Martin

Keywords
Data Management, Curriculum, Learning Objectives

Comments
Presented also at the Medical Library Association Annual Meeting, May 17, 2011, Minneapolis, MN.

Creative Commons License
This work is licensed under a Creative Commons Attribution-Noncommercial-Share Alike 3.0 License.
Learning Objectives

- Identify the types of data
- Identify the various ownership levels of research data
- Describe the typical data life cycle
- Categorize data storage requirements in terms of size/amounts
- Evaluate and appraise data publishing and storage options
- Indicate the various descriptors of raw data
- Record project identifiers for specific research data
- Define various naming conventions
- Recognize data format importance for long-term access needs
- List and select various ways to assure the security of their data
- Recognize data privacy requirements
- Identify data sharing and reporting requirements

Introduction

The data management module focuses on various forms of data and the plan of the researcher to collect, store, retrieve and disseminate their data to collaborators according to policies and standards.

Life Cycle

Appropriate life cycles of specific research data are discussed in this module, along with the different time-dependent values of data and its management in different phases of its life cycle.

Security

This module employs various measures to establish adequate data integrity and protection. Including: keeping data safe from corruption and insuring that access to it is suitably controlled.

Naming Conventions

This module covers the importance of rules which when applied to data, could result in a set of data elements which are described in a standardized and logical fashion.

Sharing

Gaining timely access to data for scholarly research from any computer using a simple, universal set of protocols and formats — while respecting policies of funding agencies, institutions and publication venues.

Storage

Coding of words, descriptions, figures, still or moving images, and sounds into digital format and onto an array of repositories that can be accessed by authorized users with standard search protocols.

Mix and Match Modules to Meet Researcher Needs

Undergrad Working on First Research Project

New Graduate Student in a Lab

Librarian Leads Workshop For New Faculty

Medical Student Collects Personal Data

Project Overview

With funding from the Institute of Museum and Library Services, the University of Massachusetts Medical School Library and Worcester Polytechnic Institute Library collaborated on a plan to expand the scope of science library practices and promote, among medical and graduate and undergraduate science students, the preservation of scientific data in relevant repositories and archives. This poster outlines curriculum frameworks and learning needs for research data management instruction that can be delivered through a variety of methods. Individual modules are based on faculty and student interviews, as well as a comprehensive literature review.

LEARNING MODULES

Project Sponsors

This project is made possible by a gift from the U.S. Institute of Museum and Library Services and with funds from the National Library of Medicine under Contract No. N01-LM-6-3508.

Steering Committee

UMMS: Elaine Martin, D.A.; Mary Piorun and Donna Kufel (Project Manager) WPI: Tracy Leget-Homby and Siamak Najafi

Education Committee

UMMS: Lisa Palmer, Myrna Morales, David Lapointe and Patricia Franklin; WPI: Christine Drew, Laura Hanlan, Glenn Gaudette, John Sullivan and Erica Stults

External Consultants


Privacy & Restrictions

Information privacy and the relationship between the collection and dissemination of personally identifiable data are covered in this module.