Frameworks for a Data Management Curriculum for Science, Health Sciences, and Engineering Students

Donna Kafel  
*University of Massachusetts Medical School*

Mary E. Piorun  
*University of Massachusetts Medical School*

Siamak Najafi  
*Worcester Polytechnic Institute*

*See next page for additional authors*

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Presenter Information
Donna Kafel, Mary E. Piorun, Siamak Najafi, Tracey Leger-Hornby, and Elaine Russo Martin

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DOES RESEARCH DATA MANAGEMENT INSTRUCTION NEED TO BE DISCIPLINE SPECIFIC?

Research Cases
Illustrate data management concepts in these real life research scenarios:
- Outcomes from Orthopedic Implant Surgery
- Regeneration of Functional Heart Tissue
- Improving End-of-Life Care for African Americans
- Characterizing a Component of a Rocket Engine used to Connect Satellites in Orbit

For each case, a summary of teaching points that relate to specific modules is included, and simplified data management plan provides a template for student activity in Module.

Assessment
By using case studies instruction can be customized for students in homogenous groups. An estimated 20% of RDM teaching can be tailored to emphasize a select few RDM issues for an audience from a specific discipline. The other 80% is generic, constituting good RDM practice that is applicable to all disciplines.1

Footnote 1: Creamer, A. 2013. Crossing That Bridge We Have Come to: Teaching Students How to Manage Qualitative Data. A Conversation with Professor Julie McLeod and Susan Childs about DATUM for Health and DATUM: Research Data Management at Northumbria University.

Footnote 2: Does Research Data Management Instruction Need to Be Discipline Specific? This project is made possible by a grant from the U.S. Institute of Museum and Library Services.

Introduction
This seven module curriculum is designed to be a teaching tool for faculty and librarians to use when teaching data management to undergraduate and graduate students who are studying science, health sciences, or engineering.

Each module addresses components of the National Science Foundation Data Management Plan including:
- Types of data
- Standards to be used for data and metadata format and content
- Physical and/or cyber resources used to store data
- Policies for access and sharing
- Policies for re-use, re-distribution, and production of derivatives
- Plans for archiving and preserving data

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