Training the next generation | the essential role of academic libraries in educating graduate students in research data management

Why Data Management Education?

Evolving needs | The ability to quickly and easily collect large, nuanced datasets is outpacing researchers' abilities to effectively manage them.

Preservation & access | Poorly managed data are at the greatest risk of being placed into 'dark storage' or completely lost. 78% of researchers either don't use a metadata standard, or use one that they made up.[1] How effectively can these datasets be shared and reused?

Mandates | Investigators are under increasing pressure from funding agencies to compose data management plans and share data; they need the skills to meet these requirements.

Will the data in her laboratory notebook be preserved & accessible over time?

Why the Library?

Innovation | As data-driven science becomes the norm, academic libraries face the challenge of redefining our roles in information services and management.[2-4] Data management is one area where we can have a strong impact on our stakeholders.

Our skills | Progression from information literacy to data literacy is a natural step. Librarians have skills and knowledge in areas that directly translate to data management and curation.[5]

Our mission | We strive to cultivate superior scholarship, empower discovery, and preserve and disseminate knowledge. Effective data management enhances all of these aspects of our mission.

Strategy | Library-based courses that reach across disciplines establish a high level of engagement with a population that is increasingly inclined to "ask Google."

Why Graduate Students?

They need it | They aren't getting data management training anywhere else[6], but they badly need it as a part of their professional development.

They'll use it | A large majority will be handling data as a part of their thesis or dissertation research, and many will use these skills for the rest of their careers.
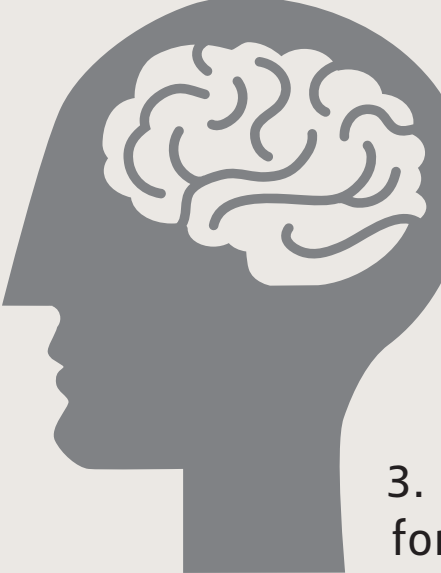
Receptive audience | Students are more likely to integrate new habits and skills into their workflow than older, more well-established researchers.

Timing | Data loss occurs when students finish their program and leave, but this could be reduced if they had better training up front.

Graduate-level instruction in data management is fundamental for future researchers in many disciplines.

Our Strategies

Workshops | We currently offer graduate students two 60-minute workshops in research data management every quarter. While these workshops are well-received, their level of benefit to the students is severely limited by the short time period of the instruction. The most common feedback we receive is, "I wish we had spent more time or gone into greater detail on XYZ... "

Coursework | We are currently working on developing a credit-bearing course in research data management for graduate students. The initial offering will be a 2 credit, transdisciplinary course. In the future, we plan to offer discipline-specific discussion sections in parallel with the course, as well as hybrid and Extended Campus versions. We are working closely with the OSU Center for Teaching & Learning to develop pedagogy, learning outcomes, activities and exercises that are both specific and conducive to the data management curriculum.

Cohort study | In collaboration with the OSU Graduate School and Research Office, we are offering the course in a pilot mode prior to launching the credit-bearing version. Participating students (N=20) will receive a 0.1 FTE stipend to participate in the course. Instead of us grading them, they will grade the course, providing critical feedback about how it can be improved. We will remain engaged with the students on a quarterly basis until they graduate in order to assess the impact of the course on their data management practices, and how well prepared they were to deposit their thesis or dissertation dataset(s) into our digital repository.

Goals | Provide students with critical skills; improve research processes, resulting in better preservation and sharing of data; emphasize the essential role of library faculty in supporting the research processes of the next generation of investigators.

Credit-bearing coursework in research data managment is rare, but high-quality resources for curriculum development and course content are available. See references[8-12] for a short list.

References

1. Tenopir, Carol, Suzie Allard, Kimberly Douglass, Arsev Umur Aydinoglu, Lei Wu, Eleanor Read, Maribeth Manoff, and Mike Frame. "Data Sharing by Scientists: Practices and Perceptions." PLoS ONE 6, no. 6 (June 29, 2011): e21101. doi:10.1371/journal.pone.0021101.

2. ACRL Research Planning and Review Committee. "2012 Top Ten Trends in Academic Libraries A Review of the Trends and Issues Affecting Academic Libraries in Higher Education." College & Research Libraries News 73, no. 6 (June 1, 2012): 311–320.

3. Marchionini, Gary. Research Data Stewardship at UNC: Recommendations for Scholarly Practice and Leadership. Chapel Hill: University of North Carolina, February 15, 2012.

4. Tenopir, Carol, Ben Birch, and Suzie Allard. Academic Libraries and Research Data Services: Current Practices and Plans for the Future. White Paper. Association of College and Research Libraries, June 2012.

5. Cox, Andrew, Eddy Verbaan, and Barbara Sen. "Upskilling Liaison Librarians for Research Data Management." Ariadne no. 70 (November 2012).

6. Jahnke, Lori, Andrew Asher, and Spencer D. C. Keralis. The Problem of Data. Reports. Council on Library and Information Resources: Digital Library Federation, August 2012. ISBN 978-1-932326-42-0. http://www.clir.org/pubs/reports/pub154.

7. Adamick, Jessica, Rebecca Reznik-Zellen, and Matt Sheridan. "Data Management Training for Graduate Students at a Large Research University." Journal of eScience Librarianship 1, no. 3 (March 13, 2013). doi:10.7191/jeslib.2012.1022.

8. Piorun, Mary, Donna Kafel, Tracey Leger-Hornby, Siamak Najafi, Elaine Martin, Paul Colombo, and Nancy LaPelle. "Teaching Research Data Management: An Undergraduate/Graduate Curriculum." Journal of eScience Librarianship 1, no. 1 (February 14, 2012): 46–50. doi:10.7191/jeslib.2012.1003.

9. Creamer, Andrew and Lamar Soutter Library, University of Massachusetts Medical School. Scientific Research Data Management [course materials]. Retrieved March 28, 2013. From https://sites.google.com/a/vt.edu/scientific-research-data-management-simmons/.

10. DataONE. DataONE Education Modules. Retrieved March 28, 2013. From http://www.dataone.org/education-modules.

11. EDINA and Data Library, University of Edinburgh. Research Data MANTRA [online course]. Retrieved March 28, 2013. From http://datalib.edina.ac.uk/mantra.

12. Jisc and the Digital Curation Center. Research data management training materials (RDMTrain); discipline-specific RDM training modules. Retrieved March 28, 2013. From http://www.dcc.ac.uk/training/train-trainer/disciplinary-rdm-training/disciplinary-rdm-training.

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