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Research data management and services

Resources for novice data librarians

Research in many academic fields today generates large amounts of data. These data not only must be processed and analyzed by the researchers, but also managed throughout the data life cycle. Recently, some academic libraries have begun to offer research data management (RDM) services to their communities. Often, this service starts with helping faculty write data management plans, now required by many federal granting agencies. Libraries with more developed services may work with researchers as they decide how to archive and share data once the grant work is complete.

As RDM services become more common, academic librarians are often asked by their library administrators to start offering these services locally. Most librarians have no experience in managing research data at any point in the research life cycle. They need ways to educate themselves on the job through targeted professional development programs and self-directed training. The purpose of this article is to point librarians to a variety of Internet resources, including training materials, courses, and social and online communities, to get up to speed on RDM.

Online communities

- **DataCure Discussion List.** DataCure is a Google group of librarians and

information professionals whose members have significant roles or responsibilities in providing services in managing or curating research data. DataCure exists to provide a safe space for data professionals to talk frankly about their ideas, projects, successes, and struggles with their work. *Access:* <http://bit.ly/22sx7M8>.

- **DataLibs Listserv.** The DataLibs Listserv is a way for the National Network of Libraries of Medicine New England Region e-Science Program to disseminate and communicate data science events (meetings, webinars, and workshops), job opportunities in e-science/data science, e-Science Community Blog postings, and new articles and issues in the *Journal of eScience Librarianship*. DataLibs also serves as a forum for the discussion between e-science and data librarians about research data management and related topics. *Access:* <http://esciencelibrary.umassmed.edu/connect-with-others>.

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- **DataQ.** The DataQ Project is a collaborative platform for academic librarians to ask questions related to research data support in academic libraries. Questions can be submitted anonymously or through an account on the site and center around research data and librarianship. A team of named expert editors or project volunteers tag questions for easier topical browsing and draft responses in a fairly rapid time frame. *Access:* <http://researchdataq.org>.

- **e-Science Portal for Librarians.** The e-Science Portal for Librarians allows one to learn about and discuss library roles in data science, fundamentals of domain sciences, and emerging trends in supporting networked scientific research. It is intended for those interested in how academic researchers, partnerships, collaborations, and organizations generate, share, store, and use data for scientific research, with an emphasis on research in the health, biological, and physical sciences.¹ The portal aggregates links to external websites, videos, PDFs, articles, etc. An entire section of the portal points readers to guides, tools, and documents about RDM that are relevant for the sciences and other disciplinary fields. Subsections include links to resources about data management planning, the research data life cycle, data curation, data sharing, data repositories, metadata, etc. *Access:* <http://esciencelibrary.umassmed.edu>.²

- **Medical Library Association Data Special Interest Group (MLADSIG).** The MLADSIG exists to provide a space for sharing ideas, brainstorming new programs, and developing collaborations across medical libraries. Join the community, connect with colleagues, and contribute your expertise and perspective. You must be an MLA member to join. *Access:* <http://www.mlanet.org/p/cm/ld/fid=213>.

Materials from annual symposia

- **Midwest Data Librarian Symposium (MDLS).** The MDLS is an annual two-day un-conference hosted in the Midwest, but open to all. Slides and other resources from the 2016 symposium cover topics such as integrating

data literacy into curricula, developing data personas, and cleaning messy data. A Twitter and Storify archive of the event are also included. To track or attend future symposiums, visit <https://mwdatalibrariansymposium.wordpress.com>. *Access:* <http://hdl.handle.net/2027.42/134687>.

- **NER e-Science Symposium.** The University of Massachusetts and New England Area Librarian e-Science Symposium encourages libraries to collaborate and support e-science initiatives at their institutions. Featuring presentations by nationally recognized leaders in data science, the symposium is an educational opportunity for librarians to learn about data resources and current initiatives. The collection provides videos, slides, and posters from past symposia. The 2016 Symposium's theme was Library Research Data Services: Putting Ideas into Action, a helpful starting point for novice data services librarians. *Access:* http://escholarship.umassmed.edu/escience_symposium.

- **Research Data Access and Preservation (RDAP) Summit.** At the annual RDAP Summit, librarians, scientists, educators, and others discuss and learn about topics in research data access and preservation. Themes covered in past summits range from linked data and metadata, to data use and reuse, to data infrastructure. SlideShare slides used in workshops and presentations from past summits are available. *Access:* <https://www.asis.org/rdap/past-events>.

Online training materials

- **DataONE Modules.** These modules provide CC0-licensed slides, handouts, and sample activity assignments for use in class instruction or workshop sessions. A snapshot of the numerous and varied topics covered include general data management, data planning, data protection, metadata, and legal and policy issues. *Access:* <https://www.dataone.org/education-modules>.



• **Digital Humanities Data Curation Guide (DHDC).** RDM is not just for the sciences. Librarians supporting the humanities may wish to explore the DHDC's guide. The guide includes a glossary and FAQ section, as well as topical articles relevant to the humanities with links to additional trusted resources. *Access:* <http://guide.dhcurator.org/about/>.

• **Johns Hopkins University (JHU) Data Management Services Trainings.** The JHU Data Management Services team has developed handouts on fairly specific topics, such as de-identifying human subject data, as well as on broader issues in RDM such as data organization best practices. Several handouts require having a Box account (<https://www.box.com/>). Online courses offered via Blackboard are in development; access credentials are provided. Currently one course is available: Preparing Your Data Management Plan. *Access:* <http://dms.data.jhu.edu/training/>.

• **MIT Libraries Research Data Management Workshop Slides.** The MIT Libraries' RDM workshop slides offer concrete strategies, tools, and directions for research data management topics. Topics include a detailed data management overview, data management planning, file organization, data sharing and storage options, and version control. While the audience for these slides is the faculty, students, and staff working with data, librarians new to the field will find them clear and comprehensive to learn from or build on locally. *Access:* <http://libraries.mit.edu/data-management/services/workshops>.



• **New England Collaborative Data Management Curriculum (NECDMC).** The NECDMC is an instructional tool for teaching data management best practices to undergraduates, graduate students, and researchers in the health sciences, sciences,

and engineering disciplines. Each of the curriculum's seven online instructional modules aligns with the NSF's data management plan recommendations and addresses universal data management challenges. Included in the curriculum are lesson plans, presentation slides, activities, and research case studies. Instructors are welcome to customize the content to meet the learning needs of their students and the policies and resources at their institutions. *Access:* <http://library.umassmed.edu/necdmc>.

• **University of Minnesota Libraries Workshop Resources.** The University of Minnesota Libraries data management workshops range from several session courses to one-shot trainings. Most trainings involve a mix of materials including videos, slides, checklists, and templates. Resources range from a full data management course offered in 2015 covering the essentials, to specific topics for individual workshops, such as creating a data management plan and how to share data. *Access:* <https://www.lib.umn.edu/datamanagement/workshops>.



• **University of Wisconsin Data Services Video Series.** The University of Wisconsin Data Services department's YouTube channel offers a series of short videos in which data librarians explain the nuts and bolts of data services for researchers. The series begins with "Why Data Management?"—five reasons you should manage your data. Other videos cover key topics like version control, naming conventions, passwords, data citation, and data management plans. The information is very practical and explained clearly. *Access:* <https://www.youtube.com/channel/UC9MT-uDcJjgSXQWC9JvlfeQ>.

Social media

• **Data Ab Initio Blog.** This blog about managing research data is written by PhD chemist and information professional Kristin

Briney. Content over the past four years includes many posts about data conferences and webinars, book reviews, information about her own book on research data management, and lots of practical tips on dealing with research data. *Access:* <http://dataabinitio.com>.

- **Databrarians Blog.** This blog for “aspiring data librarians” is managed by social sciences data librarian Celia Emmelhainz, with a team of nine regularly contributing coauthors. Content includes interviews, sample dialogues with students about data, and in-depth advice on managing data, with an emphasis on qualitative data in the social sciences. There is a related “databrarians” Facebook group with 150 members. *Access:* <http://databrarians.org>.

- **DataLibs.** Follow #datalibs on Twitter to see what librarians are talking about, and for new resources and trends related to data science. *Access:* <https://twitter.com/hashtag/datalibs>.

- **e-Science Community Blog.** The e-Science Community Blog is intended to serve as both a bulletin board for news, upcoming events, and continuing education/job opportunities as well as a forum that librarians can use to post questions or to initiate and engage in discussions. All librarians interested in the emerging area of data science librarianship, including those supporting RDM services, are welcome to participate. *Access:* <http://esciencecommunity.umassmed.edu>.

- **Love Your Data Week.** Engage with the annual, facilitated Love Your Data Week conversations to learn about themed research data management resources, tools, and practices. *Access:* <https://loveyourdata.wordpress.com> and <https://osf.io/r8tht/>.

Specific tools

- **Data Management Planning Tool (DMPTool).** The DMPTool, developed by the University of California Curation Center,



Build your Data Management Plan

allows librarians and researchers to develop data management plans through templates based on particular funder requirements. *Access:* <https://dmptool.org>.

- **e-Science Thesaurus.** The e-Science Thesaurus, developed to introduce librarians to terminology and concepts in eScience,³ points to relevant literature and resources on data and digital research topics and provides links to interviews with librarians and experts working in eScience-related roles. This thesaurus provides a comprehensive list of more than 50 different terminologies and concepts, with links to seminal and relevant literature, resources, grants, and interviews on a variety of eScience-related topics, including RDM. *Access:* <http://esciencelibrary.umassmed.edu/professional-educ/escience-thesaurus>.

- **Purdue Data Curation Online Toolkit.** This toolkit helps one develop a Data Curation Profile, which describes the lifecycle and history of a dataset. A researcher interview guide and profile template are provided. Developing a profile provides a platform for discussing data with researchers, educates researchers about data management, and offers insight into data services needs on campus. *Access:* <http://datacurationprofiles.org>.

Data Curation Profiles Toolkit

Online courses

- **Coursera: Research Data Management and Sharing.** Helen Tibbo of the University of North Carolina School of Information and Library Science and Sarah Jones of the United Kingdom’s Digital Curation Centre teach this Coursera course. According to the instructors: “After completing this course, learners will be better equipped to manage data throughout the entire research data lifecycle, from project planning to the end of the project when data ideally are shared and made available within a trustworthy repository.” *Access:* <https://www.coursera.org/learn/data-management>.

• **Library Juice Academy: Research Data Management.** Library Juice Academy is a company that provides online professional development for librarians. The Research Data Management course (\$250) is a six-week asynchronous course offered a few times a year. The description from the instructor states: “The purpose of this course is to explore the processes of data production and data management, and the role of LIS professionals and institutions in supporting data producers.” *Access:* <http://libraryjuiceacademy.com>.

• **University of North Texas (UNT): Digital Curation and Data Management.** Post-master’s library and information science professionals may be admitted to UNT’s Department of Information Science to earn a Graduate Academic Certificate in Digital Curation and Data Management. The certificate consists of four three-credit online courses (at UNT’s graduate course tuition rate), which prepare students for the “emerging digital curation and data management workforce.” *Access:* <http://lis.unt.edu/digital-curation-and-data-management>.

Notes


1. Donna Kafel, Myrna Morales, Robert Vander Hart, Sally Gore, Andrew Creamer, Javier Crespo, and Elaine Martin, “Building an E-Science Portal for Librarians: A Model of Collaboration,” *Journal of eScience Librarianship* 1, no. 1 (2012). <https://doi.org/10.7191/jeslib.2012.1005>.

2. The e-Science Portal will be migrating to a new home and website in the coming months. Once the new site launches, the link provided here will both display archived content and point directly to the new Portal. Because the resources aggregated on this site are applicable for librarians supporting all disciplines (not just science librarians), the new Portal will be even more inclusive with respect to resources and ways to connect.

3. Kevin Read, Andrew Creamer, Donna Kafel, Robert Vander Hart, and Elaine Martin, “Building an eScience Thesaurus for Librarians: A Collaboration Between the National Network of Libraries of Medicine, New England Region and an Associate Fellow at the National Library of Medicine,” *Journal of eScience Librarianship* 2, no. 2 (2013), <https://doi.org/10.7191/jeslib.2013.1049>. *zz*

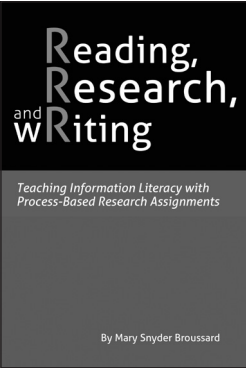
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