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Upskilling Academic Librarians for Data Management Services

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Abstract:

Over the last two years, in an effort to increase expertise and support for data management services, the University of Kentucky Libraries (UKL) has endeavoured to upskill library faculty and staff on research data management skills and best practices. This began with the formation of a special task-force charged with developing a workshop in the spring of 2015 for academic librarians with liaison responsibilities. This workshop focused on the research data life cycle and included presentations from nine speakers from campus who provide various types of data management support. The success of this workshop led to the creation of the Research Data & Scholarly Communications (RDSC) Committee in the fall of 2016. The RDSC is charged with continuing to develop training opportunities for library faculty and staff and the university community, as well as with developing a plan for distributed, yet cohesive data management services at the UKL – a task that has been a challenge given the lack of a dedicated data librarian. In regard to the first charge, which is directly related to upskilling for RDM services, the RDSC developed a spring, 2017 series of nine workshops for library faculty and staff and members of the University of Kentucky's School of Information Science (SIS). Planning for 2017/18 workshops and training events is currently underway. The response from the original workshop and the subsequent series of nine workshops has been overwhelmingly positive, and assessment results show that workshop participants feel more confident in their knowledge of research data management.

Keywords: research data management, scholarly communications, RDM, DMP, upskilling, training

Upskilling Academic Librarians for Data Management Services

That research data services should be provided by academic libraries is now commonly accepted. Research is more collaborative, computational, and data intensive than it has ever been, and federal requirements such as the National Science Foundation Data Management Plan (DMP) mandate of January, 2011 require a DMP with every NSF grant proposal (Tenopir, Birch, & Allard, 2012). This increase in data-driven research and new expectations for data management planning are forcing researchers to become more active in the data management planning process than they have had to be in the past, which has resulted in higher demand for data management support on the university campus. Academic libraries are increasingly rising to the challenge, but the process has not been without difficulties. Every university research community is unique, so there is no one size fits all solution, and

even among universities that are of similar size with similar research demographics, the technical and human infrastructure needed to support the research data management (RDM) needs of researchers varies widely. Similarly, every academic library is uniquely organized with differing levels of data management expertise in-house. This has resulted in service capacities that can differ greatly from institution to institution. In an effort to develop RDM service capacity, libraries are increasingly writing emerging technology and data management skills into new position descriptions, but many librarians are still employed and will be employed for some time to come who obtained their library degrees before these skills were included in the typical library school curriculum (Maatta, 2013). This lack of training and expertise is undoubtedly to blame for the dread with which many librarians look upon the data management-related expectations that are increasingly being added to their traditional responsibilities. Lastly, libraries are not (and should not be) the only unit on campus to offer research data management services, but comprehensive, campus-wide RDM services require an unprecedented degree of collaboration among service units on campus that is often difficult to realize. When taken together, these challenges and others can seem overwhelming for libraries that are trying to establish RDM services. The University of Kentucky Libraries (UKL) is no exception.

Like many libraries, the UKL does not have a dedicated data librarian on staff, e.g. research data librarian, data coordinator, or data curation specialist. It does, however, have a number of librarians who have RDM-related skills and responsibilities. In 2015/16, in an effort to increase the RDM proficiency of subject librarians across disciplines throughout the library system, UKL administration formed a special task force comprised of these skilled individuals and charged it to develop an RDM workshop. The goal of this workshop was not to make participants experts overnight, but to begin the process of upskilling librarians who have had little or no training in RDM in the hope that over time, with additional training, they will feel more confident in their knowledge of RDM and more willing to participate in RDM-related services. The workshop was ultimately comprised of three half days and one full day of instruction and hands-on activities. Fourteen of the seventeen librarians who were invited to participate in this workshop completed the training.

The stated objectives of the workshop were 1) describe the research data lifecycle and the importance of RDM best practices, 2) develop expertise with the research data lifecycle through hands-on activities, and 3) demonstrate RDM best practices through the development of a DMP for a research case study using DMPTool – an online DMP resource that provides detailed guidance and links to general and institutional data management resources. The first day of the workshop included a workshop overview, an introduction to the research data lifecycle, and creation of personal DMPTool accounts; the second day covered data formats, naming conventions, and data description; the third day focused on data storage, backup, and security; and the fourth day included a discussion about data sharing, preservation, and archiving. Nine speakers from the University of Kentucky campus community were invited to present during the workshop. The guest speakers included the Associate Director of the Proposal Development Office who talked about how RDM plays into that unit's work, the University's Chief Information Security Officer who spoke about security-related issues attendant with managing research data, a Professor of Chemical & Materials Engineering and Interim Director of High Performance Computing who talked about his personal experience with the RDM-related issues on campus from the perspective of both researcher and service provider, and a research staff member from Biosystems & Agricultural Engineering who has

worked with the UKL staff to develop an automated metadata management system for his department's research data. The end-of-workshop assessment revealed that the guest speakers were a crowd favourite.

For the hands-on activity component of the workshop, participants were placed in interdisciplinary teams. At the end of each presentation, the teams were instructed to work on a collaborative DMP using the NSF generic template in DMPTool. Each day, they worked on those aspects of the DMP that were covered in that day's presentation. The case study used for the activity was an adapted version of "Combining Data from 10 Years of Research for Retrospective Studies on the Effects of Exercise and Diet on the Risk of Diabetes" from the New England Collaborative Data Management Curriculum (NECDMC). Unfortunately, while participants did work on their DMP each day, the workshop did not allow as much time for the hands-on activity as originally intended. This is the one aspect of the workshop that needs the most work.

The success of this workshop led to the formation in 2016 of the Research Data & Scholarly Communication (RDSC) Committee. The charge of this committee is to provide guidance and support to the University of Kentucky Libraries and campus community regarding the management and use of research data and scholarly communications. The 2016/17 goals of the RDSC include 1) plan and implement a campus-wide environmental scan on RDM and SC practices and needs to help inform future directions; 2) develop a preliminary plan to roll out a distributed, yet cohesive, RDM and SC service model for the UKL; 3) provide instructional and professional development opportunities for UKL personnel and the campus community; and 4) maintain the Research Data Management @ UK LibGuide. Progress on the goal to provide additional training to library faculty and staff is outlined below.

The RDSC understood from the start that a single workshop would not be sufficient to bring UKL librarians up to speed on all things RDM and SC, but the committee did not want to keep repeating the same workshop. Instead, the committee planned a series of nine 1.5 hour workshops for the spring, 2017 semester. These include 1) Data management basics and best practices; 2) Data management and metadata; 3) Introduction to GIS; 4) Finding, organizing, and creating spatial data; 5) Introduction to web mapping; 6) Preservation of research data; 7) Introduction to GEPHI; 8) Open data and data discovery; and 9) Introduction to Tableau. Instructors for these workshops included all members of the RDSC committee, the UKL digital mapping specialist, campus IT (Tableau), and a Gatton College of Business and Economics PhD student (GEPHI). Due to complaints about limited admittance to the first workshop, this workshop series was opened to the entire library system, as well as to students and faculty in the School of Information Science (SIS) in the College of Communication and Information at the University of Kentucky. The latter were included as a soft roll-out of RDM and SC workshops to the campus at large, as well as to build relationships between members of the UKL and SIS program. All participants were invited to attend the workshops in person or to attend remotely using Zoom video conferencing software. Attendance has ranged from 10-20 with a few SIS faculty and students participating in each workshop remotely. Feedback from the original workshop and the current series of workshops has been overwhelmingly positive, and workshop assessments indicate that participants feel that the workshops are increasing their comfort and proficiency with RDM and SC-related topics. The RDSC is currently working on plans for RDM/SC training for the 2017/18.

Efforts to develop RDM services at the University of Kentucky are ongoing and much remains uncertain, but one thing is clear – training librarians and staff on research data management and scholarly communications will continue to be central to the UKL’s mission to provide RDM services to the University of Kentucky research community. Comprehensive RDM services cannot rest on the shoulders of one or two people alone. They require the active and willing participation of the entire library community. It is our belief that the familiarity and expertise necessary to garner this internal support will come with continual training and professional development opportunities.

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