

## **Report of the Data Revolution Taskforce**

This report describes the Libraries' intention to build a research data management (RDM) program of services to support faculty, staff and students across disciplines, and to proactively contribute to campus-wide collaborative efforts to advance research data management and open science initiatives at the University of Arkansas and the broader academic community. For this, we need to develop and support data services that build upon researchers' needs and facilitate innovation in teaching, research and preservation.

### **Research Data Management Planning**

Someone planning a research project will make decisions about data resources and potential products throughout the project life cycle. An RDM plan will describe data that will be acquired or produced during the research, how that data will be analyzed, managed, described, and stored, the standards that will be used, and how it will be handled and protected during and after the completion of the project. These planning and tracking processes ensure that the data needs of the researchers are met, as well as eventually making the data findable, accessible, interoperable and reusable.

While the committee recognizes that our primary charge is to recommend policies, standards, and procedures for RDM, we felt that a data literacy program on campus will enhance overall expertise in finding, using, managing, and citing research data. The library is the natural home of instruction in and support for data literacy; therefore, our recommendations for action items go beyond RDM practices to include foundations for a successful data literacy program.

Key stakeholders in these efforts include the University Libraries, the Office of Research and Innovation (ORI), Information Technology Services (UITs), the Graduate School and the Honors College.

### **Survey of RDM services offered by other institutions and at the University of Arkansas**

The committee:

- Surveyed services offered by similar national institutions and identified major services which are centered in their libraries or in collaboration with their research offices or IT departments.
- Consulted several previous studies/survey results and reports done by our library personnel
- Gathered information on the RDM services currently offered by UITs, the ORI, or the Arkansas High Performance Computing Center (AHPCC).
- Decided against surveying campus faculty to identify unmet needs, feeling it more productive to work with the data literacy competencies that have already been identified and to see how these are met on our campus and by whom, and to identify gaps in services. (Appendix 1).

### **The Findings**

Most data literacy competencies identified in Appendix 1, except various levels of data analyses or processing and data visualization, are being taught in specific departments and UITs but are not covered systematically across campus (see Appendix 2).

### **Areas for Significant Library Involvement – Leadership (see Appendix 1 for description of the areas)**

Introduction to research data management life cycles across disciplines

Discovery and acquisition of datasets  
Data management and organization  
Data conversion and Interoperability (consultation or referral)  
Data analysis and visualization (consultation or referral)  
Metadata  
Data Preservation and Curation, depending on how curation is defined  
Ethics, including citation of data

A corollary to supporting efforts to make research data accessible and reusable is for library personnel to be actively involved in research data analytics -- scholarly metrics, research productivity and impact, altmetrics, benchmarking at the university and department levels, showcasing research (ORCIDs, Researcher IDs, databases, etc.).

Library leadership in RDM will require an evolution of the fundamental roles of librarians and the ability to provide a new kind of service on demand and will involve specific kinds of training.

### **Guiding Principles relevant to the data management strategy**

*Building a collaborative and innovative campus:* Complete and accurate research data management and data preservation support collaboration and innovation in the cross-disciplinary research on campus and elsewhere.

*Enhancing our research and discovery mission:* Full and accurate data management, preservation and sharing will enhance the shorter- and longer-term value and application of research and discovery. Research Data management will satisfy research funder requirements, regulatory compliance and the demand for greater openness, transparency and accountability.

*Promoting Innovation in teaching and learning:* Integration of data literacy into instruction will enrich student knowledge of the research process, including ethics and integrity of re-usable data.

*Strengthening graduate education:* Graduate students, given a solid understanding and training in the fundamentals of RDM, would benefit in their own research, help to support their faculty and when appropriate pass on this expertise and training to undergraduate students they supervise. With this knowledge our graduates will be well placed to be successful.

*Supporting the land grant mission:* Supporting the conservation and reusability of our research data is a direct and indirect asset to other researchers in the state, the region and the world.

### **Roadmap for Implementation**

Short Term (2 months)

- (1) Create a simple and informative landing web page for all things data on campus.

Identify elements to be included on the landing page.

Survey and review the material already created (LibGuide, etc.) for consistency and alignment with the landing page.

Identify applicable campus webpages and policies to be included.

Medium Term (3-5 months)

- (2) Identify librarian and staff competencies needed for the success of the services.
- (3) Develop training programs and/or Identify and facilitate training opportunities (.e.g. webinars, seminars, workshops, online or in-person courses, conferences) to develop basic competencies.

Long Term (6-12 months)

- (4) Promote data services webpage and services on campus through headline news, social media, liaison librarians, etc.
- (5) Identify training needs for data services training for faculty and students by appropriate means (questionnaires, forums, surveys, meetings with key personnel, etc.).
- (6) Plan, promote and implement basic data literacy training in collaboration with key stakeholders on campus to provide faculty, graduate and undergraduate students workshops, webinars and tutorials, etc.

Longer Term (12-18 months)

- (7) Review accomplishments and/or Identify quantitative assessment strategies.

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