Purdue University

Purdue e-Pubs

Charleston Library Conference

The Time Has Come… To Talk About Why Research Data Management Isn't Easy

Carol Tenopir
University of Tennessee, Knoxville, ctenopir@utk.edu

Jordan Kaufman
University of Tennessee, Knoxville, jkaufma9@utk.edu

Robert J. Sandusky
The University of Illinois at Chicago, sandusky@uic.edu

Danielle Pollock
Simmons University, danielle.pollock@simmons.edu

The Time Has Come . . . to Talk About Why Research Data Management Isn't Easy

Carol Tenopir, University of Tennessee, Knoxville, ctenopir@utk.edu

Jordan Kaufman, University of Tennessee, Knoxville, jkaufman@utk.edu

Robert J. Sandusky, University of Illinois at Chicago, sandusky@uic.edu

Danielle Pollock, Simmons University, danielle.pollock@simmons.edu

Abstract

For the last decade academic libraries have talked with each other and with potential partners about their roles in helping to manage research data and their plans to expand or initiate research data services (RDS). Libraries have the capacity to provide these services, but the range and maturity of research data services from libraries varies considerably. In summer 2019, our team surveyed a sample of academic libraries of all sizes that are members of the Association of College and Research Libraries (ACRL) to find out about their current RDS and plans for the future. This study is a follow-up to surveys of this same group in 2012 and 2015. Our findings include the types of RDS currently being offered in academic libraries, the barriers that hinder RDS implementation, and staff capacity for creating RDS.

Introduction

In 2012, the Association of College and Research Libraries identified data curation as an important trend and issue affecting academic libraries (ACRL Research Planning and Review Committee). In order to further examine this topic, a team at the University of Tennessee Center for Communication and Information Studies surveyed ACRL library members in the United States and Canada to assess research data services currently being offered and plans for the future. They found that only a small number of libraries were offering these services, but with more planning to offer RDS within the next two years (Tenopir, Birch, & Allard, 2012).

To assess the changes of research data services in academic libraries over the past decade, ALA-Choice, in collaboration with the University of Tennessee and members of the DataONE Usability and Assessment Working Group, replicated the original 2012 study. The purpose of the 2019 study was to see if libraries had increased the number and types of RDS offered, what types of services are more or less common, what type of training opportunities are in place for library staff, and what plans look like for future RDS in academic libraries.

The results presented here are a summary of "Research Data Services in Academic Libraries: Where Are We Today?", a white paper published by Choice and available at http://www.choice360.org/librarianship/whitepaper.

Methodology

The survey questions were modeled after the 2012 study, with a few modifications. The survey was hosted through QuestionPro at the University of Tennessee, and invitations were sent by Choice to library directors or senior administrators, who were asked to respond on behalf of their library. The survey was anonymous; however, respondents were asked to provide contact information if they agreed to a follow-up interview. The survey opened July 23, 2019 and closed on September 13, 2019. The survey was sent to a total population of 3,168 libraries and garnered 186 viable responses for a 5.9% response rate. Respondents were allowed to skip any question and leave the survey at any time. Due to this, the number of responses for each question varies. The unit of analysis is the library. Of the 186 respondents, 27 agreed to a follow-up interview.

Results

The first three questions helped us gauge the context and demographics of the institutions of the responding libraries. We asked: How many FTE (full-time equivalent) students are enrolled in your academic

institution? How many tenure-track and tenured faculty are employed at your academic institution? Which Carnegie Classification does your institution fall under? When comparing characteristics of the responding institutions with the full population, we found we had an overrepresentation of doctoral institutions compared to the population. It is probable that libraries with high research activity were more likely to respond to the survey.

We asked respondents about a series of services to see if they currently offered the service, planned to in the next couple of years, or had no plans to do so. In total, there were 14 questions about types of services, and each question could be categorized into two types of services: informational/consultative and technical/hands-on. We found that research/doctoral institutions offer the most services.

Table 1. Frequencies and percentages of survey participants by type of institution compared to the population.

Carnegie Classification	Survey Respondents	2018 Carnegie Classification
Doctoral universities (R1, R2, R3 combined)	60 (32.2%)	418 (14.1%)
Master's college and university	54 (29%)	685 (23%)
Baccalaureate college	29 (15.6%)	837 (28.1%)
Associate's college	38 (20.4%)	1,000 (33.6%)
Other	5 (2.7%)	34 (1.1%)
Total	186 (100%)	2,974 (100%)

1,350 institutions identified as Special Focus in the 2018 Carnegie Classification list were not included in the survey because ACRL did not include these institutions in their list. Tribal colleges are listed as "other" in the Carnegie list.

Table 2. Number of tenure-track and tenured faculty employed at the academic institution of responding libraries.

	Frequency	Percent
Under 100	74	41.1%
100–499	76	42.2%
500 and Above	30	16.7%
Total	180	100%

Table 3. Number of FTE (full-time equivalent) students enrolled in the academic institution of responding libraries.

	Frequency	Percent
Up to 1,999	57	30.6%
2,000–4,999	54	29.0%
5,000–9,999	36	19.4%
10,000–24,999	25	13.4%
25,000 or more	14	7.5%
Total	186	100%

Table 4. Informational/consultative services offered, plan to be offered, or not offered.

	Offering	Plan to Offer	Not Offering
Providing reference support	43%	20%	37%
Creating Web guides	33%	28%	40%
Discussing RDS	23%	30%	48%
Consulting on data management	21%	20%	59%
Consulting on data and metadata standards	21%	21%	59%
Training co-workers	20%	29%	52%
Involved in data policy development or strategic planning	19%	29%	52%
Outreach and collaboration	19%	21%	63%

Table 5. Technical/hands-on services offered, plan to be offered, or not offered.

	Offering	Plan to Offer	Not Offering
Providing technical support	26%	22%	52%
Directly participating	23%	19%	57%
Preparing data	17%	23%	61%
Identifying data	16%	31%	53%
Creating metadata	14%	24%	63%
Deaccessioning/deselection of data	7%	14%	80%

As we saw from the 2012 study, many academic libraries had plans to offer RDS within the next two years. If these plans had been put into action, libraries would be offering more research data services now than they did almost a decade ago. We found that this was not the case. Providing reference support was the only service that did not fall from 2012 (44% currently offering and planned to be offered) to 2019 (43% currently offering). From our open-ended questions and interviews we discovered that academic libraries and librarians face barriers that prevent them from implementing RDS at their institution.

One of the opened-ended questions respondents were asked was: What have been the challenges to providing research data services? Several barriers were mentioned, including lack of funding, infrastructure/technology, faculty awareness/interest, and institutional support. However, the number one barrier across all types of institutions was lack of adequate numbers of trained staff members.

During interviews we followed up with questions about the types of barriers that prevent RDS at institutions. We saw the same issues from the open-ended questions carry over into the interviews. Some quotes:

- "We recently conducted a faculty survey (Spring 2019) on research data services. There is a great need on campus, but most faculty did not consider the library as a resource for these services."

- ". . . but probably the more substantial barrier has been people who are in decision-making positions who think that because we are primarily a teaching institution that it's not a priority."

- "I would say staffing is probably going to be the biggest barrier."

To further examine ways in which libraries can begin to overcome these barriers, we asked a series of questions about how academic libraries are building capacity in research data services. Of the libraries currently involved in RDS, we found that primary leadership responsibilities for plans and programs were divided into four groups: individual (37%), committee/group (24%), library department (4%), and a combination of all three (30%).

We also asked library directors and deans how they developed staff capacity. Of those responding

libraries who were able to "check all that apply," 47% indicated that they reassigned existing staff, 27% hired staff specifically into positions to support RDS, 19% indicated they were planning to hire, and 16% said they were planning to reassign existing staff.

We also asked respondents if their library provided opportunities for staff to develop skills related to RDS, and 42% responded "yes." Respondents indicated that they supported staff to attend conferences or workshops (31%), to take courses about research data management (20%), provided in-house workshops and presentations (15%), and collaborated with other academic programs (7%). Previous studies by Tenopir and colleagues have shown that library directors believe they are providing more funding and opportunities for RDM and training than do their librarians (2014).

Conclusions

While it appears that research data services have not increased dramatically over the last seven years, the 2019 survey revealed that more academic libraries are offering a range of services and that RDS awareness has increased throughout the library community. Overall, many academic libraries are still not offering an abundance of RDS. Of the responding libraries, 44% say they are not involved in RDS. The results of this most recent North American survey are consistent with recent studies in other regions (Cox et al., 2014, 2017, 2019; Tenopir et al., 2017).

Informational services are offered more than technical/hands-on services, and not surprisingly, doctoral institutions offer the most RDS. The most popular type of information service being offered is reference support followed by creating Web guides; of the libraries that said they currently offered technical/hand-on services, 55% began offering them in the last three years. This does not mean that academic libraries need to offer every type of service to be active participants in RDS. By understanding users' needs, all types of academic libraries can tailor RDS that are valuable to their institutions. While academic libraries are trying to find ways to begin offering or increase RDS, we found that the same barriers that prevented RDS in 2012 still affect libraries today.

The number one challenge to providing RDS across all types of institutions was staffing. For doctoral/research institutions, libraries are looking for ways to hire a dedicated data librarian, while libraries at smaller institutions are struggling to offer RDS

due to overworked staff and lack of data expertise. Other issues that are affecting RDS include funding, infrastructure, faculty interest, and institutional support. Although academic librarians are facing these barriers, with many feeling institutionally unsupported in their efforts to increase RDS, they still feel hopeful about the future. Many respondents expressed future goals and plans such as finding ways to "distribute the work across multiple librarians and develop written policies" and acknowledging that RDS "is where the library can make itself feel valued again."

Understanding the barriers that prevent RDS can help academic libraries reassess their RDS goals and specifically find ways to help improve and increase staff training and knowledge. Most academic libraries assert that they are underresourced, making efforts to expand the services to include RDS feel like a burden. More academic libraries have a single individual who is responsible for RDS, although 30% of respondents said that responsibility for RDS plans

and programs rested with some combination of individual, group, or committee, and/or department unit. It's also worth noting that research/doctoral institutions are more likely than all other types of institutions to have a dedicated data librarian. This contrasts with the 2012 survey, which showed no difference by institution type. About 40% of libraries said they provided opportunities for staff to develop skills related to RDS, but many librarians are expected to maintain currency in a wide range of skills, so adding new responsibilities can hinder service expansion.

Although we expected research data services would increase over the ensuing years, it is clear that there are still many challenges that prevent RDS from becoming a necessary and standard component of library services. Many librarians believe that a range of RDS are important for academic libraries to offer their faculty and students; beginning new services just may take more time and effort than first thought.

References

ACRL Research Planning and Review Committee. (2012). 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*(6), 311–320. https://doi.org/10.5860/crln.73.6.8773

Cox, A., Kennan, M., Lyon, L., & Pinfield, S. (2017). Developments in research data management in academic libraries: Towards an understanding of research data service maturity. *Journal of the Association for Information Science and Technology, 68*(9), 2182–2200.

Cox, A., Kennan, M., Lyon, L., Pinfield, S., & Sbaffi, L. (2019). Maturing research data services and the transformation of academic libraries. *Journal of Documentation, 75*(6), 1432–1462.

Cox, A., & Pinfield, S. (2014). Research data management and libraries: Current activities and future priorities. *Journal of Librarianship and Information Science, 46*(4), 299–31.

Tenopir, C., Birch B., & Allard, S. (2012). Academic libraries and research data services: Current practices and plans for the future. *Association of College & Research Libraries*. Retrieved from http://www.ala.org/acrl/sites /ala.org.acrl/files/content/publications/whitepapers/Tenopir_Birch_Allard.pdf

Tenopir, C., Sandusky, R., Allard, S., & Birch, B. (2014). Research data management services in academic research libraries and perceptions of librarians. *Library and Information Science Research, 36*(2), 84–90. https://doi.org/10.1016/j.lisr.2013.11.003

Tenopir, C., Talja, S., Horstmann, W., Late, E., Huges, D., & Pollock, D. (2017). Research data services in european academic research libraries. *Liber Quarterly: The Journal of European Research Libraries, 27*(1), 23–44.