Expanding Librarians' roles in the research life cycle

Danuta A. Nitecki
Libraries, Drexel University, Philadelphia, U.S.A.
dan44@drexel.edu

Mary Ellen Davis
Association of College and Research Libraries, Chicago, U.S.A.
mdavis@ala.org

Abstract:

Academic and research librarians have expanded their traditional service roles of facilitating discovery and delivery of authoritative information to embrace innovative partnerships with researchers to organize and disseminate scholarship along with its underlying evidence. As the information services landscape shifts from a focus on managing and accessing bibliographic resources, to stewarding and disseminating research data and publication output, there is no clear framework to help understand this transition which eventually will seem commonplace as the information age evolves more fully to the data age. This presentation highlights an important shift for librarians from servant/client relationships to more entrepreneurial roles and partnerships focused on designing and stewarding scholarship and research data as an important institutional asset. It will review the collective efforts of librarians to prepare to explore, adapt, and implement emerging digital scholarship services through the lens of the Association of College & Research Libraries (ACRL) and then offer a case study of how librarians at one U.S. mid-sized research university are reshaping their role to participate throughout the research life cycle.

Keywords: research life cycle, academic libraries, information entrepreneur, ACRL, Drexel University

1. Extending a view of research

Librarians often equate research with processes requiring information literacy – defining a topic, gathering background information, locating and evaluating information resources, and citing sources utilized in reporting research results. This publication-based view of research is expanding to embrace emerging interactive open science,

> *… the practice of science in such a way that others can collaborate and contribute, where research data, lab notes and other research process are freely available, under terms that enable reuse, redistribution and reproduction of the research and its underlying data and methods*. (Foster)

Librarians are beginning to embrace this change by assuming new roles to address its technological and cultural challenges. This requires new attitudes and skills to become "intellectual entrepreneurs" that enable science to evolve in these new directions.

1.1 The Librarians' Transition from Service to Entrepreneurial Roles

Most academic librarians are comfortable with service roles, assisting people accessing information, and teaching students how to use and create resources ethically. However, some librarians have less experience engaging with researchers beyond assisting with student assignments and literature reviews. Research data management (RDM) provides opportunities for more academic librarians to embrace new roles and become "information entrepreneurs." As Abosede and Onakoya (2013) cite Cherwitz and Hartelius (2007), this involves:

> *creating synergistic relationships among academic disciplines and between intellectuals on and off campus in order to sew seamless connections among disciplines and between the academy and the public and private sectors. Intellectual entrepreneurship is about harnessing, integrating and productively utilizing intellectual energy and talent wherever it is located in order to promote academic, cultural, political, social and economic change. Intellectual entrepreneurship takes advantage of the knowledge assets contained within walls of the university and empower faculty and students to become change agents both internally and externally.*

RDM challenges academic librarians to become self-motivated, research-grounded, intellectual entrepreneurs, and specifically to:

- become **proactive designers of services** that enable productive knowledge workers;
- **partner in knowledge-generating activities** bringing understanding of the information and data landscape and its tools for discovery and utilization;
- **share project management roles** to increase research team productivity; and
- be **change agents** that build evidence to monitor efficiencies and gauge impact.

Successful librarians will strengthen or develop their present roles in the following ways:

- **Assessment**: by expanding from identifying customer needs to understanding researchers' work
- **Education**: by shifting from skills training to advocacy and raising awareness of changing requirements and workflows for RDM
- **Curation**: by going beyond cataloging and preserving artifacts to designing infrastructures and implementation for digital preservation with secure storage, data records identifiers, and migration of records to new technical formats
- **Environment designer**: by changing from renovating places that house materials and study spaces, to creating environments for becoming lifelong learners and citizen scientists.

1.2 Developing skills to assume entrepreneurial leadership roles

Librarians in North America address these new roles together as well as through explorations at their own campuses. Through discussions with expert ACRL members and examining the literature, we propose new abilities librarians need to shift from servicing researchers to partnering with them to better advance knowledge in the data age. Key areas for development include abilities to:

- deeply understand the research lifecycle;
- develop protocols and infrastructures for the description discovery, retrieval, and citation of research data;
- simplify compliance regulations and articulate the rationale for sharing raw data and publications to advance e-science;
- adapt archival practices for data "at rest" including metadata creation, organization, and preservation;
- assess and identify trustworthy repositories managed by associations or government agencies;
- review and propose institutional policies to clarify intellectual property rights, compliance and regulations regarding research data; and
- apply data mining and analytics to demonstrate evidence of faculty productivity, research impact, trends and rankings.

2. ACRL initiatives

Our presentation highlights ways a national organization prepares librarians for change:

- Recognizing the growing importance of assessment in libraries a Task Force developed proficiencies for assessment librarians that which offers skills important to apply to understanding RDM.
- Members organized several Communities of Practice within ACRL to share information and learn from each other. The new Data Curation Interest Group (DCIG) quickly grew to more than 1,000 members and populated a discussion list to seek advice on common challenges. The leaders of these groups were connected to many other technical groups considering data management issues, and realized that ACRL could uniquely help by identifying what librarians new to RDM need to understand about data management, why and how they should be involved in the research lifecycle, and how they could position themselves as credible with faculty researchers. The DCIG developed webinars and a toolkit of resources about data management issues, while new interest groups formed with focus on numeric and geospatial data services, and digital humanities.
- ACRL developed a stand-alone "road show" that is available for licensing. The licensed workshop includes two presenters and a curriculum delivered at a location of the licensee's choosing so that institutions can take advantage of affordable learning opportunities delivered locally.
- In 2016 the ACRL's Board of Directors responded to member interest in adapting to new roles, and added to its strategic plan, a fourth goal, "New Roles and Changing Landscapes" that helps the library workforce navigate change in higher education.

3. Drexel University Library gathers insights

This case study offers insights from multiple perspectives and methodologies by which one university library explores new librarian roles.

- Through a partnership with ACRL, we utilized an innovated community engagement approach to identify how researchers conduct their work and assess support that the library could offer to improve their productivity.
- Interviews and observation of research teams developing competitive institutes of applied research have helped librarians understand common challenges across disciplines.
- Focus group interviews of librarians engaged with research teams enable them and managers to design active responsive services.
- A campus faculty survey identifies the range of awareness about research management, the volume of existing data held in labs or deposited in repositories, and projections of future demand for storage space and other support.
- Convening a self-governance forum of campus leaders responsible to protect research output as an institutional asset has uncovered challenges to change attitudes, build collaborative partnerships, and develop shared technological knowledge.

4. Conclusion

Universities are increasingly expected to demonstrate accountability for investments in higher education, to preserve the mission of scholarship for social good, and to enable citizens to develop their intellect for improving life around them. Academic librarians are positioned to be critical players in addressing these demands, modeling the impact of increasing entrepreneurial leadership in higher education. Librarians will be integral to the academy to leverage its knowledge assets and empower its community to become effective change agents. The results will create not only relationships across the academy, but with public and private sectors of society to harness intellectual energy and talent in order to promote cultural and economic change.

An important first step is to learn how to work together in new ways and build collaborative governance. Doing so, librarians, researchers, faculty, students, and administrators for research, IT, and compliance, will strengthen the university's research infrastructure.

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