The Library as an Active Collaborator in Meta-Science, Open Science, and Data Science

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Introduction

Academic libraries are well positioned to be active collaborators in meta-science, open science, and data science-related projects and initiatives. Due to their established relationships with researchers, research support units, university leadership, scholarly publishers, and other research stakeholders, libraries play a key role in coordinating, communicating, and evaluating research-related practices, policies, and incentives. Building on their expertise in organizing, synthesizing, and making information available, many libraries now offer a high level of support related to the use, curation, and preservation of research objects such as data and code.

Current and Future Activities

Meta-Science

- **Literature Review Service** – Lane liaisons assist researchers by conducting systematic searches of the scholarly literature and recommending related tools and reporting standards.
- **Data Survey** – Lane recently gathered information about the data-related practices of researchers at Stanford Medicine (see figure 2). Survey will be revised and re-run at regular intervals.

Open Science

- **Open Access** – Lane encourages authors to make their scholarship freely and immediately available.
- **FAIR Data** – Recent class offerings, including a 90 minute introduction to research data management, emphasize the importance of ensuring that data that is made available is also (re-)usable.
- **Larger Efforts** - Lane is increasingly active in campus-wide initiatives related to providing public access to research data, the use of persistent identifiers (e.g. ORCHID, RRID), and open science tools (e.g. Protocols.io).

Data Science

- **Office Hours** – Lane is currently developing data science office hours as a mechanism for researchers to receive basic help in Python and R.
- **Classes** – Currently developing classes on data science topics (e.g. version control with Git) as well as an introduction to the data science resources available to Stanford Medicine researchers.

Lane Medical Library

Lane Medical Library is the library for the Stanford University School of Medicine as well as the library of record for both Stanford Health Care (SHC) and Lucile Packard Children’s Hospital (LPCH). The library has active liaison and instruction programs that foster education, outreach, and research support efforts. Through the recruitment of new staff members, the library’s Research and Instruction (R&I) team and have begun to develop new services related to open science, data science, and scholarly communications.

Figure 1.
Adapted from Lane Library’s “Introduction to Research Data Management” workshop, this figure illustrates the relationship between activities related to data management, open science, and research integrity/reproducibility.

Figure 2.
Lane Library also conducts its own research. These results were derived from a survey of the data needs of the Stanford Medicine Community. As part of this survey, participants were asked to rate their expertise on a variety of data-related activities. (n = 349).

Challenges and Opportunities

As the library expands its services and expertise related to data and scholarly communications, we have the opportunity to support and actively collaborate with researchers on a variety of projects. A significant challenge is engaging research communities who may not necessarily perceive of the library as a resource or active research collaborator.