

Associate Dean for Research: Libraries commitment to Interdisciplinary/Collaborative Sponsored Research in the Libraries and throughout the University.

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Associate Dean for Research: The Libraries Commitment to Interdisciplinary/Collaborative Sponsored Research in the Libraries and throughout the University

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Abstract

The research role of university librarians is changing. The advent of massive datasets by academic researchers has created the need for collaboration between the researchers and librarians. The National Science Foundation (USA) has recognized the need for management of massive datasets. In response, Purdue University Libraries has created a program and specific positions to help address this need.

Keywords: Interdisciplinary Research; Massive Data Sets; Purdue University.

The research role of university librarians is changing. Along with the advent of the need to manage massive digital datasets by academic researchers has come the need for organizing and accessing these massive datasets. Also accompanying this need are opportunities for new collaborations between librarians and the disciplinary researchers in science, engineering and technology, as well as a greater appreciation for, and awareness of, the professional knowledge and training that librarians' hold. This leads to new and enhanced means for libraries and librarians to participate in sponsored/funded research.

The report from the US National Science Board (NSB), *Long-Lived Digital Data Collections Enabling Research and Education in the 21st Century*, September 2005, confirms the crisis in data management and calls for the creation of new research positions (pp. 27) that closely replicate the professional knowledge of librarians, quoted from the report below:

DATA SCIENTISTS

The interests of data scientists – the information and computer scientists, database and software engineers and programmers, disciplinary experts, curators and expert annotators, librarians, archivists, and others, who are crucial to the successful management of a digital data collection – lie in having their creativity and intellectual contributions fully recognized. In pursuing these interests, they have the responsibility to:

- *conduct creative inquiry and analysis;*

- *enhance through consultation, collaboration, and coordination the ability of others to conduct research and education using digital data collections;*
- *be at the forefront in developing innovative concepts in database technology and information sciences, including methods for data visualization and information discovery, and applying these in the fields of science and education relevant to the collection;*
- *implement best practices and technology;*
- *serve as a mentor to beginning or transitioning investigators, students and others interested in pursuing data science;*
- *and design and implement education and outreach programs that make the benefits of data collections and digital information science available to the broadest possible range of researchers, educators, students, and the general public.*

Almost all long-lived digital data collections contain data that are materially different: text, electro-optical images, x-ray images, spatial coordinates, topographical maps, acoustic returns, and hyper-spectral images. In some cases, it has been the data scientist who has determined how to register one category of representation against another and how to cross-check and combine the metadata to ensure accurate feature registration. Likewise, there have been cases of data scientists developing a model that permits representation of behavior at very different levels to be integrated. Research insights can arise from the deep understanding of the data scientist of the fundamental nature of the representation. Such insights complement the insights of the domain expert.

As a result, data scientists sometimes are primary contributors to research progress. Their contribution should be documented and recognized. One means for recognition is through publication, i.e., refereed papers in which they are among the leading authors.[1]

Case Study: At the Purdue University Libraries, along with the reorganization of the Libraries administrative structure, the position of Associate Dean for Research (ADR) was

created. It was determined to be critical that the Libraries' administrative positions reflect the goals of the University – learning, discovery, and engagement – rather than assume a more traditional administrative structure. Hence, the decision was made to restructure positions, for example, creating the Associate Dean for Learning, replacing the previous Director for Public Services. New positions were created, such as the Associate Dean for Research. Three additional positions comprise the Libraries administration: Associate Dean for Planning and Administration; Associate Dean for Collections and Information Resources; and Associate Dean for Information Technology.

The Associate Dean for Research position quickly evolved from the Interdisciplinary Research Librarian initially designed to relate and identify more closely with interdisciplinary, collaborative sponsored research endeavors. The Dean of Libraries and the Interdisciplinary Research Librarian met with virtually every department and center on campus in an effort to understand the research agenda within each department /center; through this effort it was possible to see potential connections between departmental research needs and library/librarian partnerships.

Purdue University has a council that represents university-wide research interests. The Dean of Libraries sits on the council; at the first meeting, however, it was noted that other council members were Associate Deans. This led to the decision that the relevant person to represent the Libraries was an individual associated with research. The logical individual was the Interdisciplinary Research Librarian, but council participation was restricted to dean level positions. The Interdisciplinary Research Librarian became the first Associate Dean for Research, more effectively reflecting the significance of this position within the university, and also making the individual in that position eligible to sit on, and contribute to, the council. It has been greatly beneficial to have the ADR serving on the University Research Council for it has provided access to discussions occurring at the highest levels within the research area of the university, and has enabled the message about the librarians; abilities, willingness, and desire to collaborate on sponsored research to expand.

While serving on the council was important, the strongest need for the ADR was the Libraries' new role in exploring collaboration on sponsored research projects with academic departments in the sciences, engineering and technology. The new ADR position, in part, replicates the structure and responsibilities within these academic departments. The Dean of Libraries met with Deans and Department Heads of the related departments, to propose and demonstrate this new working relationship and link between the departments and the libraries. Without exception, the concept was well received by the Deans and Department Heads. The ADR then set meetings with faculty and researchers. The responses have been successful in fact the new challenge is addressing the number of requests that are being received to create collaborative research proposals with librarians as a

joint principal investigator. To date, joint proposals have been submitted by departments in Biology, Chemical Engineering, and Electrical/Computer Engineering.

In the spring of 2005 no members of the Purdue Libraries faculty were involved in collaborative, interdisciplinary research projects. One year later, in the spring of 2006, eleven Purdue Libraries faculty were involved in interdisciplinary research projects. The image and relevance of librarians has been enhanced and their reputation is growing among faculty colleagues, particularly in the sciences, engineering, and technology. The Associate Dean for Research in is a key individual in this new and dynamic environment.

To enable the ADR to respond quickly to the expectations placed upon the Libraries to support the challenge of massive data sets, in early 2006 the Libraries began the search for two Data Research Scientists. The description for these positions is closely modelled on the Data Scientist described above. These positions will be funded up-front for three years by the Libraries, with the assumption that by the end of the three years both positions will be completely funded through external grants. The first Data Research Scientist is expected to be in place in the summer of 2006. The primary role of the Data Research Scientist will be to collaborate with faculty colleagues on sponsored research projects as well as furthering the Purdue Libraries' research agenda in the areas of taxonomy, ontology, and metadata as they relate to the management of massive data sets.

Conclusion:

In less than two years the challenge of managing massive data sets at Purdue University has moved from the purview only of computer scientists and technologists, to being highly visible in the arena of librarians. It portends a great future for the field of librarianship - while the 20th century may be recognized as the golden age of libraries, the 21st may be remembered as the golden age of librarians!

References

- [1] National Science Board, "Long-Lived Digital Data Collections Enabling Research and Education in the 21st Century", pp.27, (2005).