

**FINAL REPORT**  
**OF THE**  
**AD HOC COMMITTEE ON THE**  
**IMPACT AND IMPLICATIONS OF DIGITAL SCHOLARSHIP**

**Adopted unanimously by the Rules Committee,  
acting on behalf of the Faculty Senate,  
May 26, 2009**

**Presented at the  
687<sup>th</sup> Regular Meeting of the Faculty Senate  
September 17, 2009**

**COMMITTEE MEMBERSHIP**

**Marilyn Billings, W.E.B. Du Bois Library**  
**John Brigham, Political Science**  
**Arthur Kinney, English and Renaissance Center, Chair**  
**Kevin C. Klement, Philosophy**  
**Brian Ogilvie, History**  
**Daphne Patai, Languages, Literatures, and Cultures**  
**Jay Schafer, Director of Libraries**  
**Stuart Shulman, Political Science**  
**Lynnette Leidy Sievert, Anthropology**  
**Bruce Wilcox, Director, University Press**  
**Shlomo Zilberstein, Computer Science**

**FINAL REPORT  
AD HOC COMMITTEE ON THE  
IMPACT AND IMPLICATIONS OF DIGITAL SCHOLARSHIP  
MAY 5, 2009**

The Faculty Senate first tackled the issues of the production and dissemination of digital scholarship in a Special Report of the Research Library Council to the Faculty Senate on May 10, 2007, in Senate Document No. 07-035. "Access to scholarly literature is vital to all members of the academic community," that report read. "Scholars and their professional societies and associations share a common interest in the broadest possible dissemination of peer-reviewed contributions. Unfortunately, the business practices of some commercial publishers of journals are contrary to these interests and threaten to limit the promise of increased success that digital technologies inherently provide. Development of library collections is more and more constrained by the rising costs of journals and databases."

Since that time, digitization has resulted in new programs, new policies, new procedures, and new equipment so that, Jennifer Howard recently wrote in the *Chronicle of Higher Education*, "'recently changing' is the term most often used these days to describe the landscape of scholarly communication. Scholars [and teachers] have to clear new and higher hurdles as they bump up against copyright and fair-use issues, open access mandates, and a baffling array of publication and dissemination models. [For instance] how much of his own published work can a scholar post on a personal Web site without raising the publisher's ire? How much of someone else's work can he use in his course pack without trampling on fair use and risking a fine or legal action? How does a researcher upload her work to her institution's repository, and are there consequences if she opts out? Those are just some of the questions that professors. . . find themselves tripping over."

And as these problems grow more frequent and more acute, various responses have developed.

(1) MIT's professors voted unanimously to adopt a policy stating that all faculty members will deposit their scholarly research papers in a free, online university repository (in addition to sending them to scholarly journals) in an effort to expand access to the university's scholarship (<http://dspace.mit.edu/>). The policy is modeled on one adopted last year by Harvard University's Faculty of Arts and Sciences. At MIT, as at Harvard, professors can opt out of the policy if, for instance, the journal that accepts their work does not allow for re-publication of articles. YouTube.com has initiated open access to key courses in more than 100 schools and colleges, including the University of California Berkeley.

(2) The University of Michigan Press has reported that it will shift most of its scholarly publishing from being primarily a traditional print operation to one that is primarily digital.

(3) Baker & Taylor has announced a worldwide partnership with Ebrary to develop new digital content products and services as well as to integrate tens of thousands of e-books and other titles that Ebrary has aggregated for more than 330 leading publishers, following a move by Google to put online all the books at five major repositories: Bodleian Library of the University of Oxford and the Harvard, Michigan, and Stanford Universities, and the New York Public Library.

(4) At the Conference of Historical Journals at the American Historical Association's annual meeting in January 2009, Professor Bonnie Wheeler, editor of the journal *Arthuriana*, said journals are caught between the changing habits of readers, who increasingly just want individual pieces of content, not aggregates published by journals. A journal started today, however, is likely to be online-only and open access. And more and more readers now discover bits and pieces of any journal's content—an article here, a book review there—through

electronic databases and aggregations like JStor, Project Muse, and EbscoNet. Other journal editors are concerned with material previously or simultaneously released on public and private websites.

(5) Colgate University Library has moved all books offsite, filling the renovated library building instead with computers to call up the books digitally if available or order books to be shipped to the library for use.

(6) Scholarly societies whose income stream is largely dependent on printed journals and other publications will need to reassess this as a means of sustainability.

On our own campus, digitization affects libraries, research practices, scholarly publication and, in time, personnel decisions.

### Libraries

What does digital scholarship mean to the Library? The information landscape of early 21<sup>st</sup> century higher education is characterized by ubiquitous digitized, indexed, online access to content. Researchers and students often begin and end their quest for information online. Results of research can be and increasingly are published without traditional publishers or conventional formats. What are the critical functions of a research library in this changing landscape? How should we be rethinking the research library in a dynamic, swiftly changing landscape dominated by digital technology?

As users become more digitally focused, the demand for electronic formats increases. In meeting this demand, libraries are spending more of the acquisitions budget on electronic resources. Sixty-two percent of our acquisitions budget at UMass Amherst Libraries is spent on electronic resources—less is spent on print resources. Sixteen percent of our budget is spent on monographs and fifteen percent on print journals. While the preference for electronic resources is clearly higher in the science, technology, medical and social science disciplines, humanists are quickly becoming familiar with this format for journal publications and digitized historical manuscripts and will soon have extensive monographic collections available digitally through the Google Library Project. Multimedia formats are becoming more requested for curriculum use which also increases pressure on the print budget.

Traditional models of staffing are being challenged by technology and budgets. In-person reference desk statistics are falling, but the need for work with students and faculty, especially in the area of information literacy, is not. Reduced budgets for staffing will require prioritization of services provided by libraries. Skills required to collect, organize, deliver and preserve digital information are very different from those associated with print collections. Long-term employees may be challenged by the transition from print to digital, and we must maintain dual workflows because of continued, although declining, acquisitions of print and the maintenance of large, legacy print collections.

Space in library facilities that has historically been used to house large print and microform collections is now being re-imagined as the demand for these materials decreases and the demand for new collaborative service and student areas increases. If space is to be used differently, less-used parts of the print and microfilm collections will have to be housed elsewhere. In deciding whether to move collections to remote storage, the need for space must be balanced against the value to advanced researchers in some disciplines of easy access to print and microfilm materials.

## Digital Dissemination

The issue of economic sustainability has been the driving force behind the movement to find new models for disseminating research and scholarship. The old system is in crisis as a direct result of the predatory pricing policies of commercial journal publishers over the past 30 years. Over time, academic libraries became hard-pressed to maintain subscriptions to increasingly expensive journals, particularly in science, technology, and medicine. Sustainability was challenged. Hence there has been a call for change. So the question is how to create a cost-effective system that maximizes access to new research while still covering the expenses associated with the publication, dissemination, and archiving of that research.

Institutional repositories and open access journals represent one promising approach and the recent actions by the faculties at Harvard and MIT to put all current research openly online are important steps in that direction. Open access has numerous advantages. It will help make faculty research more quickly available to a broader population of scholars worldwide. It will increase rates of citation. And it will open new possibilities for collaborative research and teaching.

## Sustainability

But knowledge is expensive to produce. In addition to the author's own work, it requires many other contributions of expertise. If we are to create a new system that is sustainable, we have to find ways to pay for those contributions. They include the selection, peer review, and editorial development of high-quality scholarly work; the intensive and often hidden labor that goes into its presentation in an appropriate format; and all the processes involved in making it available to readers and reviewers through various channels. These activities require the work of trained professional staff and a significant investment in whatever medium is selected for delivery—whether it is web-based, ink-on-paper, or both. For a typical scholarly monograph, the upfront costs are \$20,000 or more. In the old system, these publication costs were borne primarily by the libraries and individuals who purchased books or subscribed to journals. In an open access system, we will need to find new ways to cover those expenses.

University presses and academic libraries are actively exploring new models—both economic and technological—but we are still in the laboratory stage of experimentation and development. One interesting model can be found at the National Academies Press, which provides at its website free page-by-page access to all of its books, while simultaneously offering PDF downloads and print-on-demand hard copies for sale. Since researchers seldom want to read a book cover-to-cover on screen, the University of Massachusetts Press, like other presses, generates a sufficient revenue stream through the sale of printed books. Printed copies are also used for various other purposes, such as academic exhibits and review copy distribution.

Google, which has already digitized over 7 million books through the Google Library Program, is clearly going to be an important player. Among academic librarians there is considerable ambivalence about Google—and specifically about the prospect of the creation of a universal library that is controlled by a large corporation. Monopolies tend to charge monopoly prices, and librarians worry that Google will ultimately devise a pricing structure that favors profitability over access. The collaboration between the Internet Archive and the Boston Library Consortium (of which UMass Amherst is a member) provides another model: one in which the database will be open. Commercial digital libraries are a third kind of purveyor of online monographs; the UMass Amherst Libraries recently subscribed to *Ebrary*, a digital library, due to demand by instructors of online courses who want their off-campus students to have access to digital monographs.

Authors' Rights

Digital publication and new publication technologies generally make it imperative that faculty members and other authors (e.g., graduate students) in the university community become informed about issues regarding their rights as authors, including how these rights are created and possibly reassigned, modified, and separated, shared or lost. Many faculty members assume incorrectly that they retain rights to re-use or re-designate the purpose of their works when they sign an agreement with a publisher. When an author first creates a work, he/she owns a copyright to it, including the right to distribute, modify, publish, reformat, publically perform and display it and/or create derivative works based upon it. Unless assigned away, under U.S. law these rights are retained by the author or his/her designees until the death of that author plus 70 years.

Many faculty members assume incorrectly that these rights are either retained in full or given away in full when the work is taken over by a publisher and that they are held by the nominal copyright owner. However, the extent to which these rights are retained or given away—or, as in the case of NIH-supported research, must be made public—varies widely. Organizations such as the Scholarly Publication and Academic Resources Coalition (SPARC) and the Creative Commons non-profit corporation have created alternatives to exclusive publishing agreements so that authors may retain their rights to distribute their own works more openly. On campus, *ScholarWorks* is a digital repository, a mechanism whereby faculty authors who wish to distribute their scholarly works in an open access platform may do so. With current technologies, fewer and fewer works can ever be considered "out of print," and hence publishers may be less likely to concede re-use to authors.

Personnel Actions

There are now emergent questions growing out of the arrival of these new technologies and new productive venues of scholarship for which the peer review evaluation process would be a useful extension. That is to say, although these works have not traditionally fallen within what we think of as university scholarship, some of them are done at such a high-level quality and convey such sophisticated and significant information that they are in fact scholarly objects for which peer review would make sense.

At present, the burden is on the scholar to explain to the promotion and tenure committee why these scholarly artifacts count as service, research or as some hybrid of service and research. This will not affect all disciplines in the same way, although there is a convergence around experimentation with new ways of conveying scholarship, such as new software tools, data set archives, websites and databases. For example, the Dartmouth Dante Project or the Dataverse, which is a place for storing replication datasets, is the kind of scholarly contribution for which personnel committees and departments and disciplines will need to make formalized judgments about how to assess their value and contribution as scholarly artifacts. We know that when people post datasets on the web as part of their publishing, it attracts a lot of attention. Studies have shown that articles are more likely to be cited when the data is available. We should be looking at new ways of calling attention to new kinds of research as significant. The old metrics simply do not suffice. We should find ways to extend peer review to scholarly objects that have not previously been deemed worthy of such reviews and reward them appropriately.

Part of what comprises the universe of digital scholarship is reputation-based systems that are embedded in software. This software is not running the way a Google algorithm runs but includes algorithms similar to the ones that make Google or Web 2.0 platforms possible. They allow for rating, ranking, reviewing, posting, and the reposting of links. Other kinds of open peer review are happening with entities such as *arXiv.org*. Originally, the repository was at Los Alamos. Now it is at Cornell. It started as a physics repository where physics faculty and researchers could put their papers. It was openly accessible to anyone to review. Now it

includes chemistry and biology and some other disciplines as well. It is a subject access repository. Those materials, after they have gone through this open-review process, actually end up in traditional print journals to get that final imprimatur of the traditional print venue.

ScholarWorks, the University's digital repository, has peer review software behind it. Several journals are up and running, sponsored usually by one of our faculty members. Others are graduate student journals. It uses the same high-quality editorial and peer review functionality that can be found in the best journals. ScholarWorks makes conference proceedings openly available during the conference using the same peer-review functionality that is used for the open access journals. For example, many of the presentations and proceedings from the YouTube conference recently hosted at UMass Amherst are already available via ScholarWorks.

### **Conclusion**

The rapid rise of digitization has, and will continue to have, fundamental and far-reaching consequences. This initial report outlines some of the most visible and important ones. The Task Force appointed by the Rules Committee of the Faculty Senate prepared this statement as requested by the Faculty Senate's Research Library Council. The Council will continue to track the effects of digitization on various parts of the campus.

**MOVED:** That the Faculty Senate receive the Final Report of the Ad Hoc Committee on the Impact and  
**71-09** Implications of Digital Scholarship, as presented in Sen. Doc. No. 09-058, and thank the  
Committee for its excellent work.