

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

**Presented at the
710th Regular Meeting of the Faculty Senate
November 3, 2011**

COMMITTEE MEMBERSHIP

**Marilyn Billings, University Libraries
Arthur Kinney, English and Renaissance Center, Chair
Kevin C. Klement, Philosophy
Jennifer Normanly, Biochemistry and Molecular Biology
Brian Ogilvie, History
Daphne Patai, Languages, Literatures and Cultures
Jay Schafer, Director, University Libraries
Bruce Wilcox, Director, University Press**

AD HOC COMMITTEE ON THE
IMPACT AND IMPLICATIONS OF DIGITAL SCHOLARSHIP

SECOND REPORT

September 22, 2011

The Final Report of the Ad Hoc Committee on the Impact and Implications of Digital Scholarship (Sen. Doc. No. 09-058) presented at the 687th Regular Meeting of the Faculty Senate on September 17, 2009, determined that there are two topics worthy of further investigation. These are:

1. Investigating how new technologies and new productivity venues of scholarship, which include peer review in the evaluation process, are included in the departmental examination of tenure and promotion decisions. Are such decisions taking into account new forms of scholarship that have emerged in the digital world, and are they being rewarded appropriately?
2. Investigating whether UMass Amherst should be following the precedent set by Harvard, MIT, and the University of Kansas requiring that all faculty members deposit their scholarly research papers in an online university repository (in addition to sending them to scholarly journals) in an effort to expand access to the institution's scholarship.

This report addresses both of these topics.

Topic 1. Investigating how new technologies and new productivity venues of scholarship, which include peer review in the evaluation process, are included in the departmental examination of tenure and promotion decisions. Are such decisions taking into account new forms of scholarship that have emerged in the digital world, and are they being rewarded appropriately?

Background

In the 2010 Mellon Foundation funded report, *Assessing the Future Landscape of Scholarly Communication: an Exploration of Faculty Values and Needs in Seven Disciplines*, the authors state:

Our work has confirmed the important impact of each discipline's nature, culture, and traditions on many scholarly communication habits in research universities; the peer reviewed journal article is the primary mode of scholarly dissemination in the sciences and the quantitative social sciences, while the more interpretive, historical, and qualitative disciplines rely heavily on the university press monograph with a varying mix of journal articles, critical editions, and other publications. These traditions, which rely heavily on various forms of peer review, may override the perceived "opportunities" afforded by new technologies, including those falling into the Web 2.0 category.

The report is based on the responses of 160 interviewees across 45, mostly elite, research institutions in seven selected academic fields: archaeology, astrophysics, biology, economics, history, music, and political science. The authors concentrated on assessing scholars' attitudes and needs as both producers and users of research results.

The Executive Summary provides this synopsis of the findings of the report:

In sum, our research suggests that enthusiasm for the development and adoption of technology should not be conflated with the hard reality of tenure and promotion requirements (including the needs and goals of final archival publication) in highly competitive and complex professional environments. Experiments in new genres of scholarship and dissemination are occurring in every field, but they are taking place within the context of relatively conservative value and reward systems that have the practice of peer review at their core. Perhaps, as a consequence, we found that young scholars can be particularly conservative in their research dissemination behavior, and that established scholars can afford to be the most innovative with regard to dissemination practices. We cannot suggest that our interviewees had singular or unanimous opinions about what, or even if, change was needed in the current scholarly communication system of their

respective disciplines, but we identified five key topics, addressed in detail in the case studies themselves, which require real attention:

- (1) The development of more nuanced tenure and promotion practices that do not rely exclusively on the imprimatur of the publication or easily gamed citation metrics,
- (2) A reexamination of the locus, mechanisms, timing, and meaning of peer review,
- (3) Competitive high quality and affordable journals and monograph publishing platforms (with strong editorial boards, peer review, and sustainable business models),
- (4) New models of publication that can accommodate arguments of varied length, rich media, and embedded links to data; plus institutional assistance to manage permissions of copyrighted material, and
- (5) Support for managing and preserving new research methods and products including components of natural language processing, visualization, complex distributed databases, and GIS, among many others.

Although robust infrastructures are needed locally and beyond, the sheer diversity of scholars' needs across the disciplines and the rapid evolution of the technologies themselves means that one-size-fits-all solutions will almost always fall short. As faculty continue to innovate and pursue new avenues in their research, both the technical and human infrastructure will have to evolve with the ever-shifting needs of scholars. This infrastructure will, by necessity, be built within the context of disciplinary conventions, reward systems, and the practice of peer review, all of which undergird the growth and evolution of superlative academic endeavors.

The 2011 report of the Association of American University Presses, *Sustaining Scholarly Publishing: New Business Models for University Presses*, notes "the world of scholarly communication in 2011 looks very different than it did a generation ago."

The technological and cultural shifts of the last decade – the transformation from a print-based system of content scarcity and centralization to a digital, decentralized system of content abundance, easy access to expertise, attention as the coin of the realm, handheld connections, and distraction as a big business – challenge not just publishers' business models, but may even threaten many of the intellectual characteristics most valued by the scholarly enterprise itself: concentration, analysis, and deep expertise.

Among the report's recommendations are:

- Active, structured, open sharing of lessons learned by participants in existing digital publishing projects should be an ongoing process.
- Existing partnerships between presses, libraries, and other scholarly enterprises are vital models for collaboration to learn from and build upon.
- The support of foundations, libraries, and university administrations in providing funds to work toward the digital future has been, and will remain, crucial.
- Open access is a principle to be embraced if publishing costs can be supported by the larger scholarly enterprise. University presses, and nonprofit publishers generally, should become fully engaged in these discussions.
- Proposals and plans for new business models should explicitly address the potential impact of the new model on other parts of the press's programs, as well as explicitly address the requirements, both operational and financial, for making the transition to a new model.

UMass Amherst Environment

To determine current practice concerning the evaluation of digital scholarship in departmental tenure and promotion decisions at UMass Amherst, the Ad Hoc Committee surveyed the Chairs of all academic departments.

The survey consisted of three questions:

- 1) How does your Department's personnel committee treat digital research and digital publication?
- 2) Does your School/College have a standard practice regarding digital research and digital publication?
- 3) Please provide additional comments you believe to be helpful to the work of our task force.

In defining "digital research" we are including a wide range of activities such as digital mapping, data mining, and the use of geographic information systems to create projects and products that do not translate into the traditional model of

print/electronic peer reviewed journal papers. Digital scholarship, including digital research and digital publishing, suggests that there will be new kinds of “publications” – not just e-journals and open access journals. These might include web pages, social media, and other e-publications with new editorial and technical approaches.

We received eighteen responses from six Schools/Colleges. These responses are summarized below.

Summary of Survey Responses

1) How does your Department’s personnel committee treat digital research and digital publication?

Many departments responded that this has not been an issue for them, but the evaluation of any research or publication is based on peer review in “high quality” sources.

- We have not considered digital research and digital publications in faculty evaluations. This issue has not come up yet but I am certain it will in the future and is something we as a faculty should begin to address.
- The main issue for us as a department is to consider peer reviewed publications as a main evaluation criterion in promotion/tenure, AFR evaluations. We have not examined where or how digital scholarship fits into the traditional evaluation of faculty scholarship (along with competitive grant applications [with NIH and NSF as the main sources of major research funding]).

Some departments indicated that print publications are still the “gold standard” in their discipline. Others have begun addressing the issue of “digital research and publication:”

- In the Department of Mathematics and Statistics, the primary form of digital scholarship we have encountered in personnel decisions is the posting of research results on international preprint servers, such as arXiv. Given the long times to publication in some of the most prestigious journals, such preprints are sometimes cited in publications before they themselves appear in print and can be very influential. While we note the posting of such preprints as an indication of research productivity, our assessment of them would be based on outside letters in which the letter writers refer to the preprints and assess their significance. We consider it, but don’t have a real way of factoring it in. Publications are still key.
- Some forms of electronic publishing mirror traditional academic venues in their operation. For example, many e-journals operate based on the same principles of rigorous peer review as traditional journals. The reputation of e-journals has evolved over the past 20 years to the point that some of the most prestigious journals in certain fields are published only or primarily in electronic form. One example is the Journal of Artificial Intelligence Research, which started to publish in 1993 and has become one of the most highly regarded journals in that field. Obviously, in such cases, the very fact that a journal is published exclusively in electronic form should not be considered as a negative aspect. The fact that a traditional venue abandons paper publication in itself should not be considered as an indication of poor quality. In this regard, publications in rigorously peer-reviewed e-journals and conference proceedings should be evaluated in the same way as traditional paper publications.

Established evaluation standards do not yet exist for other forms of electronic publishing. The range of new contributions that may come before promotion and tenure committees include software tools, dataset archives, web sites, or moderated discussions. All of these are valuable academic activities—and are in fact either mandated or encouraged by funding agencies such as NSF and NIH. However, in each case, it must be determined whether the activity is best characterized as research, service, education, or a combination of these areas. Moreover, personnel committees need to consider ways in which the impact of the work can be evaluated. Acceptable ways of rigorous peer review have not been formalized, but there are some emerging evaluative tools. For example, some suggest that the number of links pointing to scholarly work, particularly from respected entities, could be considered a form of citation.

Because electronic publications are increasingly prevalent and could have high impact on dissemination of academic knowledge, personnel decisions must consider this work and how to evaluate it. We recommend that faculty members report these activities and, when the significance and impact of the activity is not apparent, they should provide some context and explain the significance of the work and its impact on research or education. We also recommend that personnel committees be mindful of these emerging new forms of electronic dissemination and consider appropriate ways to evaluate them.

2) Does your School/College have a standard practice regarding digital research and digital publication?

The overwhelming response to this question was “not to my knowledge” or “no.”

3) Please provide additional comments you believe to be helpful to the work of our task force.

The primary theme in response to this question dealt with the quality of the “publication outlet.”

- The key issue is not the form of publication, but it is the quality of the publication outlet.
- Forget about this and focus on quality and impact.
- Basically, we view digital scholarship in much the same way that we assess print scholarship. Specifically, we consider a range of issues that include:
 - How selective is the publication?
 - Is it peer reviewed and refereed?
 - What is the circulation?
 - What is the publication frequency?
 - Is the publication associated with an academic institution?

Topic 2. Investigating whether UMass Amherst should be following the precedent set by Harvard, MIT, the University of Kansas and others that requires that all faculty members deposit their scholarly research papers in an online university repository (in addition to sending them to scholarly journals) in an effort to expand access to the institution’s scholarship.

Background

The University Libraries has been engaging the campus community in scholarly communication issues for many years. The University Libraries hosted several early colloquia and later partnered with other areas (Center for Teaching, Graduate School, Office of Research) when it was recognized that this is a campus-wide endeavor. Colloquiums in this series have included:

- October 2001: *Scholarly Publishing: Constructing a Brave New World* with Jean-Claude Guedon, Professor at the Université de Montréal, David E. Shulenburg, Provost of the University of Kansas (later the first Vice President for Academic Affairs for the Association of Public and Land-Grant Universities), and Heather Joseph, President of *BioOne* (now Executive Director of the Scholarly Publishing and Academic Resources Coalition - SPARC).
- October 2004: *Freedom of Speech and Speech for Free: University Libraries, University Presses and the Law*, with Peter J. Givler, Executive Director of the Association of American University Presses.
- March 2005: *In the Public Interest: Expanding Access to Scholarly Research* with John Willinsky, Public Knowledge Project, and Jane Griffith, National Institutes of Health.
- September 2005: *University E-Repositories: Solutions for the Scholarly Community* with Ann Wolpert, Director of Libraries, Massachusetts Institute of Technology, and Nancy Fried Foster, Lead Anthropologist, University of Rochester.
- April 2006: *Research & Scholarship in the Digital Age: An Exploration* with Christopher Greer, Program Director, National Science Foundation Office of Cyberinfrastructure (now Director of NSF's national Coordination Office for Networking and Information Technology Research and Development).
- March 2007: *Showcasing Research & Teaching in the 21st Century: A Digital Approach* with David Shulenburg, Vice President for Academic Affairs, NASULGC/APLU.
- March 2008: *Engaging the Web for Scholarship, Pedagogy, and Publication* with Siva Vaidhyanathan (author of *The Googlization of Everything*), University of Virginia.
- October 2009: *The University's Role in the Dissemination of Research & Scholarship: A Call to Action* with Stuart Shieber, James O. Welch, Jr. and Virginia B. Welch Professor of Computer Science and Director,

Office for Scholarly Communication, Harvard University and Ann Wolpert, Director of Libraries, Massachusetts Institute of Technology.

- October 2010: *How Can a Textbook Be Free?* with Stephen Carson, MIT OpenCourseWare, Eric Frank, President of Flat World Knowledge, and Michael Boezi, editorial director of Flat World Knowledge.

In 2006, the Faculty Senate Research Library Council recommended and the Faculty Senate endorsed (Sen. Doc. No. 06-038) the investigation of implementing an Institutional Repository for UMass Amherst. This led to the creation of **ScholarWorks@UMassAmherst**, which was launched in 2007.

In 2007, the Faculty Senate endorsed (Sen. Doc. No. 07-035) the recommendations of the Research Library Council and encouraged faculty, librarians, staff, and administrators to be supportive of new and innovative models of scholarly communication and utilize these options whenever possible.

In 2009, the Faculty Senate held a Committee of the Whole discussion on “The Impact and Implications of Digital Scholarship” moderated by Arthur Kinney, Chair of the Research Library Council with Jay Schafer, the Director of Libraries, Bruce Wilcox, the Director of the University Press, Marilyn Billings, the head of ScholarWorks, and Stuart Shulman, from Political Science, participating.

Also in 2009, the Faculty Senate created an *Ad Hoc Committee on the Impact and Implications of Digital Scholarship* (Sen. Doc. No. 09-010) to study the implications of digital production and dissemination of scholarship from the viewpoints of faculty, researchers, librarians, publishers, and booksellers to determine the impact of that process on scholarly publication and distribution and its various consequences for library needs and facilities, faculty personnel actions, effects on academic societies, copyright protection and the ownership of intellectual property, and other related topics. This *Ad Hoc Committee* concluded that the rapid rise of digitization has, and will continue to have, fundamental and far-reaching consequences. The initial report outlines some of the most visible and important ones (Sen. Doc. No. 09-058). The *Ad Hoc Committee on the Impact and Implications of Digital Scholarship* was asked to continue tracking the effects of digitization on various parts of the campus. This report is an outcome of that request.

Recent Developments

Since the 2007 Faculty Senate recommendation that “encouraged faculty, librarians, staff, and administrators to be supportive of new and innovative models of scholarly communication and utilize these options whenever possible,” there has been significant movement in the academic and research communities toward open access publishing and data management.

- The National Institutes of Health Public Access Mandate was signed into law in late 2007. This law requires all NIH funded researchers to submit or have submitted for them an electronic copy of their final peer-reviewed manuscript to Pub Med Central. The manuscript will be made publicly available no later than 12 months after the official date of publication if the publisher requires an embargo period. Pub Med Central is a digital repository maintained by the National Library of Medicine.
- Beginning January 18, 2011, proposals submitted to National Science Foundation (NSF) must include a supplementary document of no more than two pages labeled “Data Management Plan.” This supplementary document should describe how the proposal will conform to NSF policy on the public dissemination and sharing of research results.
- In June 2011, the National Endowment for the Humanities (NEH) announced that the Digital Humanities Implementation Grants program requires that every applicant include both a sustainability plan and a data management plan. This aligns NEH data management requirements with those of NSF.
- In August 2011, the Coalition of Open Access Policy Institutions was established. This is a new, and growing, alliance of more than 20 colleges and universities that have faculty open access policies on scholarly research.

Recommendations of the Ad Hoc Committee on the Impact and Implications of Digital Scholarship:

Topic 1. Investigating how new technologies and new productivity venues of scholarship, which include peer review in the evaluation process, are included in the departmental examination of tenure and promotion decisions. Are such decisions taking into account new forms of scholarship that have emerged in the digital world, and are they being rewarded appropriately?

From the results of the survey conducted by the Ad Hoc Committee, it is clear that peer review is an essential component to the evaluation of any faculty scholarly communication – whether a traditional print publication or one in the “digital realm.” It is also evident that many departments are still very much print-based when discussing evaluation of research and publication.

The Ad Hoc Committee recommends that Deans of the Schools/Colleges initiate a School/College-wide discussion that asks Department Chairs and Departmental Promotion and Tenure Committees to begin addressing the impact digital scholarship may have on the local promotion and tenure process.

Topic 2. Investigating whether UMass Amherst should be following the precedent set by Harvard, MIT, the University of Kansas and others that requires that all faculty members deposit their scholarly research papers in an online university repository (in addition to sending them to scholarly journals) in an effort to expand access to the institution’s scholarship.

The mandates for open access and data management plans from federal agencies (NIH, NSF, and NEH) underscore the fact that open access policies are becoming more central to the academic environment. The Ad Hoc Committee recommends that the University Libraries and the Faculty Senate Research Library Council work with the Provost, the Vice Chancellor for Research and Engagement, and the Deans of the Schools/Colleges to investigate and recommend if it is appropriate for the UMass Amherst Faculty Senate to adopt an Open Access Policy using the model of the Coalition of Open Access Policy Institutions.

Cited Sources:

Harley, Diane, Acord, Sophia Krzys, Earl-Novell, Sarah, Lawrence, Shannon, & King, C. Judson. (2010). *Assessing the Future Landscape of Scholarly Communication: An Exploration of Faculty Values and Needs in Seven Disciplines*. UC Berkeley: Center for Studies in Higher Education. Retrieved from: http://escholarship.org/uc/cshe_fsc

Withey, Lynne, Cohn, Steve, Faran, Ellen, Jensen, Michael, Kiely, Garrett, Underwood, Will, Wilcox, Bruce. (2011). *Sustaining Scholarly Publishing: New Business Models for University Presses*. New York: The Association of American University Presses. Retrieved from: http://aaupnet.org/resources/reports/business_models/aaupbusinessmodels2011.pdf

MOVED: 12-12 That the Faculty Senate endorse the recommendations of the Second Report of the Ad Hoc Committee on the Impact and Implications of Digital Scholarship, as presented in Sen. Doc. No. 12-009.