
WORKING PAPER SERIES

**OPEN ACCESS AND SUNY:
HOW NEW FORMS OF PUBLICATION
ARE TRANSFORMING SCHOLARLY COMMUNICATION**

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OPEN ACCESS AND SUNY:

HOW NEW FORMS OF PUBLICATION ARE TRANSFORMING SCHOLARLY COMMUNICATION

Scholarly communication is changing (University of California Office of Scholarly Communications; Modern Language Association). After remaining relatively stable for centuries, the process in which research findings are shared and published is changing rapidly. One of the more dramatic responses to this change is the trend towards “open access” to the peer reviewed scholarly literature.

“By ‘open access’ to this literature, we mean its free availability on the public internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. The only constraint on reproduction and distribution, and the only role for copyright in this domain, should be to give authors control over the integrity of their work and the right to be properly acknowledged and cited.” (Budapest Open Access Initiative <http://www.soros.org/openaccess/read.shtml> signed by over 300 organizations and nearly 4,000 individuals). It should be emphasized that this open access movement is focused on the literature that is submitted to publishers with no expectation of direct compensation.

This paper introduces the concept of open access. Some of the background and historical context for the concept are discussed. Descriptions of the main routes to providing open access are provided. Advantages related to open access as they pertain to the scholar and to the reader are described. Issues related to providing open access are analyzed. The paper also discusses some of the efforts that are under way around the State University of New York (SUNY) to offer open access choices for scholars.

Clearly, fundamental changes to the manner in which research findings are shared, published and disseminated have a wide ranging impact on those who create and use those findings as well as on the university as a whole. These changes will affect academic disciplines to varying degrees and at different rates. It is hoped, however, that this paper will provide a beginning for discussions of such fundamental changes.

Background

A growing number of scholars, librarians, funding agencies, technologists and university administrators are advocating for opening up access to scholarly literature. Each group tends to focus on different aspects or emphasizes a certain aspect of the trend. But, they are all asking related questions:

A growing number of scholars, librarians, funding agencies, technologists and university administrators are advocating for opening up access to scholarly literature.

- In an age of ubiquitous inter-networking, of rapidly expanding computer power and dramatically declining costs for computer storage, shouldn't the method in which scholarly works are created, shared and utilized be altered to make best use of these developments?
 - Is the current model the best way to assure access to a growing amount of scholarly work and to an ever-increasing number of journals?
 - With research funded by taxpayers should access to those findings be controlled by tolls established by commercial interests?
- Can the new computing and networking tools result in a greater impact for any particular scholar's work?
- How will change affect the work that publishers and scholars do?
- Can open access journals and "self-archiving" of scholarly work provide a useful supplement to the current model of scholarly publishing?

Significant technological change and advances have combined with a continuing increase in both the amount and cost of scholarly publications to raise these and other questions. Other trends such as open

source software and international standards for searching distributed archives have also influenced the growth of new models such as open access. Open source software packages such as Dspace (www.dspace.org) and EPrints (www.eprints.org) are designed to store, manage and maintain a variety of digital objects and are some of the most widely used means for creating repositories of those assets. Both Dspace and EPrints are compliant with the Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH; see www.openarchives.org). This standard allows someone to search for materials stored in digital repositories around the world without having to go to or be aware of those individual repositories. One example of such a search service that provides for research discovery across distributed repositories is Oaister (<http://oaister.umdl.umich.edu/o/oaister>) which in September 2005 indexed nearly six million documents.

Open access to the scholarly literature can be achieved via

- open access journals (electronic journals utilizing new business models that allow for the free access to articles by anyone on the open internet);
- self-archiving (posting a version of the article in an Internet-based archive compliant with the OAI-PMH; this could be a discipline-specific system such as the physics-oriented database, ArXiv or an "institutional repository" hosted by the researcher's institution).

Different academic disciplines have different cultures that result in varying methods for sharing research results. Changes related to the open access movement are most dramatic in the science, technology and medical areas, but all disciplines are seeing the results of these trends.

In physics, for instance, there is a well-established tradition of sharing research results even prior to formal publication. The www.arXiv.org repository now includes hundreds of thousands of pre-prints and post-prints from the fields of physics,

mathematics, computer science and others. All of the documents are freely available. Similar databases are available for economics (www.repec.org) and the cognitive sciences (www.cogprints.org).

In the humanities, the focus is much more on the monograph than on the journal article. Here the trends towards posting work on the Internet and open access are not as strong. Yet people from all fields are involved in the open access movement. For instance, the Directory of Open Access Journals includes dozens of titles from the social sciences and the humanities (www.doaj.org).

A diverse array of researchers, librarians and administrators have been joined by research funding agencies in calling for open access to the scholarly literature. The National Institutes of Health have established a policy recommending that authors post their articles to the PubMed Central database (a freely available, web-based archive of published biomedical literature) as soon after publication as possible and within twelve months. ("Policy on Enhancing Public Access to Archived Publications Resulting from NIH-Funded Research" <http://grants.nih.gov/grants/guide/notice-files/NOT-OD-05-022.html>) NIH estimates "that the results of NIH-supported research were described in 60,000 – 65,000 published papers in 2003. We believe that widespread access to and sharing of peer-reviewed research publications generated with NIH support will advance science and improve communication of peer-reviewed, health-related information to scientists, health care providers, and the public".

In the United Kingdom, more stringent requirements are being debated. The proposal by the Research Councils United Kingdom mandates that recipients of these national research funds post their articles to their institution's repository. It also provides researchers with financial incentives to promote the publication of their work in an open access journal ("RCUK Announces Proposed Position on Access to Research Outputs" [\[Other nationwide efforts include a program to post Australian theses and dissertations online. "The aim of the Australian Digital Theses program is to establish a distributed database of digital versions of theses produced by the postgraduate research students at Australian universities. The theses will be available worldwide via the web. The ideal behind the program is to provide access to, and promote Australian research to the international community" \\(<http://adt-beta.library.unsw.edu.au/about/aimsoverview>\\).\]\(http://www.rcuk.ac.uk/press/20050628openac-cess.asp\).</p></div><div data-bbox=\)](http://www.rcuk.ac.uk/press/20050628openac-</p></div><div data-bbox=)

One of the most compelling arguments for open access relates to the research results that are derived from taxpayer monies. Thirty of the most developed countries have signed the "Declaration on Access to Research Data from Public Funding" passed by the Organisation for Economic Co-operation and Development in 2004.

The declaration reads in part:

"Recognising that an optimum international exchange of data, information and knowledge contributes decisively to the advancement of scientific research and innovation;

"Recognising that open access to, and unrestricted use of, data promotes scientific progress and facilitates the training of researchers;

"Recognising that open access will maximize the value derived from public investments in data collection efforts...

"[the signatories] Declare their commitment to:

"Work towards the establishment of access regimes for digital research data from public funding in accordance with the following objectives and principles:

"Openness: balancing the interests of open access to data to increase the quality and efficiency of research and innovation with the need for restriction of access in some instances to protect social, scientific and economic interests." (http://www.oecd.org/document/15/0,2340,en_2649_34487_25998799_1_1_1_1,00.html).

The private UK-based research funding agency, Wellcome Trust has mandated that its authors post their articles on Internet archives that are compliant with the new searching standards. The policy also provides grantees support in their use of new open access publishing models. (“Wellcome Trust position statement in support of open and unrestricted access to published research” http://www.wellcome.ac.uk/doc_WTD002766.html).

Numerous universities around the world have passed university and/or faculty resolutions that urge or mandate a move towards open access to the scholarly literature. These include many prominent universities in the U.S. with even stronger statements/mandates coming from institutions in Europe. Among the US institutions are Cornell, Stanford, University of California, Harvard, University of North Carolina, University of Kansas, Columbia and Case Western Reserve University. Here’s an excerpt from the resolution passed by the Cornell Faculty Senate:

The Senate strongly urges tenured faculty to cease supporting publishers who engage in exorbitant pricing, by not submitting papers to, or refereeing for, the journals sold by those publishers, and by resigning from their editorial boards if more reasonable pricing policies are not forthcoming....The Senate strongly encourages all faculty, and especially tenured faculty, to consider publishing in open access, rather than restricted access, journals or in reasonably priced journals that make their contents openly accessible shortly after publication. The Senate strongly urges all faculty to negotiate with the journals in which they publish either to retain copyright rights and transfer only the right of first print and electronic publication, or to retain at a minimum the right of postprint

archiving. The Senate strongly urges all faculty to deposit preprint or postprint copies of articles in an open access repository such as the Cornell University Dspace Repository or discipline-specific repositories such as arXiv.org.

(“Cornell Faculty Senate Resolution on Scholarly Publishing” <http://www.library.cornell.edu/scholarlycomm/resolution.html>)

The most recent international conference focusing specifically on the open access initiative was held in the UK in March 2005. The meeting’s final recommendations indicated “in order to implement the Berlin Declaration [2003], institutions should:

1. implement a policy to require their researchers to deposit a copy of all their published articles in an open access repository and
2. encourage their researchers to publish their research articles in open access journals where a suitable journal exists and provide the support to enable that to happen”

(“Berlin 3 Open Access Conference Recommendations” <http://www.zim.mpg.de/openaccess-berlin/recommendation.html>).

Signatories to this declaration and other related efforts (<http://www.soros.org/openaccess/initiatives.shtml>) include national-level research organizations, public and private research funding agencies, major universities, professional associations, publishers, and thousands of scientists, researchers and professors (<http://www.soros.org/openaccess/view.cfm>). The wide range of organizations and individuals supporting these efforts indicate the diverse, widespread support for the open access movement.

For example, in 2000, 30,000 scientists from 180 countries signed an open letter calling on science publishers to make their journal contents freely available on the web (Swan).

Benefits of Open Access

What advantages does a researcher gain as a result of opening up access to their work? What advantages generally can be seen deriving from the open access movement?

A growing body of research indicates that articles available on the open Internet are accessed and downloaded more often than those available via toll access. For example see “The effect of open access and downloads (‘hits’) on citation impact: a bibliography of studies” (<http://opcit.eprints.org/oacitation-biblio.html>). One example from the field of computer science indicates that “restricting our analysis to the top 20 publication venues by average citation rate gives an increase of 286% (median 284%) in the citation rate for [freely available] online articles”(Lawrence). It is this potential loss of one’s research impact (via a toll-access publication) that is oftentimes seen as the compelling reason for making the publication available via an open access method.

Other practical advantages are associated with posting one’s articles on an institutional repository. These systems create unique identifiers for a work that is a stable, unchanging web address for that article or other electronic publication. Use of an IR allows for the management, security, backup and ongoing preservation of the electronic publication. Oftentimes these systems are managed by library and information technology staffs alleviating the faculty from these sometimes neglected tasks.

Institutional repositories are defined as “digital collections capturing and preserving the intellectual output of a single or multi-university community” (Crow). By including scholarly materials from their wide array of academic departments, higher education institutions can showcase their faculty and their work via an IR. Listings of open access repositories compliant with the OAI-PMH standard can be found at <http://www.earlham.edu/~peters/fos/lists.htm#archives>.

Researchers are, of course, consumers of schol-

arly materials as well as producers. Even the wealthiest higher education institutions cannot afford all of the scholarly journals published today. This gap between what is available versus what is affordable increases in the context of less well-endowed institutions, private citizens and residents of other countries. New models for electronic publication and new tools utilizing expanding computer capabilities offer to increase this level of access.

Issues

Isn’t the posting of a published article a violation of copyright? It depends. But, in most cases, it is not a violation of copyright. Generally, in agreement for publication, a researcher/author signs over copyright to the publisher. Authors need to be aware that they can still retain limited rights in this circumstance. The right to post the article to a web site or to their institution’s repository is one example. A sample addendum to publisher’s copyright agreement statements for retaining these rights can be found at <http://www.arl.org/sparc/author/addendum.html>

Moreover, most publishers surveyed (90+%) indicate that their policies allow some form of self-archiving. This could be the pre-print or the post-review edited copy. Most publishers request that you point to their web site for the copy of the article as published in the journal (that is, the publisher’s “pdf” file cannot, in most cases, be posted to the repository). A consortium of British universities has created a resource that provides publisher’s policies regarding author self-archiving. The resource can be found at <http://www.sherpa.ac.uk/romeo.php>

Authors of articles published in open access journals generally retain their copyright. Open access publishers oftentimes make use of a Creative Commons license (<http://creativecommons.org/license>) to allow for the use of the work. One common form for a Creative Commons license provides a right for the use of the article or work with a requirement that the author receives attribution.

Trends toward open access have implications for the established means of providing promotion and tenure to faculty.

What are some of the business models publishers are considering in the wake of the open access movement? At the risk of over-simplification these can be characterized as a switch from a reader pays to an author or institution pays model. That is, replacing the subscription model where access is paid for after publication with a model that pays the publisher for peer review and editing management

services prior to publication. These fees could be paid via grant monies or via memberships paid by the author's institution (see the description of BioMed Central below). "Authors feel that any publication fees required should come from research grants first and foremost and, failing that, from their institution or its library. In practice, this seems to be largely what is happening, with growing numbers of insti-

tutions proving amenable to taking out 'membership' of open access publishing companies like BioMed Central and growing numbers of grant-awarding bodies declaring that they will support publication fees" (Swan). Other publishers are looking to subsidize their journals with other activities and services, with monies from foundations and various hybrid approaches. A growing number of foundations and other funding agencies indicate that their grants can be used to pay for article processing charges. A partial list can be found at <http://www.biomedcentral.com/info/about/apc-faq#grants>

Trends towards open access have implications for the established means of providing promotion and tenure to faculty. The Institute for Scientific Information has begun providing impact factors for open access journals. Some of these are quite impres-

sive. (See, for example, http://www.plos.org/news/announce_pbioif.html#note) Yet the process of publishing in the most prestigious print journals as a way to increase one's standing vis-à-vis promotion and tenure is well established. Higher education institutions have begun to place more emphasis on open access publishing within this context. But such changes take time. Efforts to take into account new trends in electronic publishing in the context of tenure and promotion need to go on equally with efforts to promote open access. "Bloomington Faculty Council calls on all faculty, staff, students, and university administrators of Indiana University Bloomington to work toward a more open publishing system by increasing their support of existing refereed journals and publishers whose practices are consistent with open access to scholarly communication and to support those who make such choices when considering tenure and promotion". ("Resolution on Journals, Databases, and Threats to Scholarly Publication" <http://www.indiana.edu/~bfc/docs/AY04/circulars/B39-2004.htm>). The Modern Language Association recommends that "departments, in formulating their guidelines for tenure and promotion, should bear in mind the dramatic changes that have occurred in scholarly publishing practices and alter their expectations with regard to all levels of scholarly publishing" (Modern Language Association).

Impact factors are an imperfect measure when relating the influence of a single article with the prestige of the journal it's published in (Garfield). New capabilities will more easily allow measures of a specific article's impact (access, use, and citation) separate from what journal published it. As these capabilities are improved, a researcher's impact can be examined more directly and not inferred from the journals used for publication.

The process of self-archiving provides another approach for this issue. Namely, submit the article to that prestigious journal, retain postprint archiving rights and then include the article in your institutional repository.

Open Access and SUNY

What options are available to SUNY researchers in regards to open access? Among the growing number of options are:

- a SUNY-wide membership to BioMed Central;
- a SUNY-wide repository

BioMed Central is a biomedical journal publisher with over 100 titles. Their journals are open access. Institution-wide membership fees cover the publisher's costs. New York State/United University Professions Joint Labor Management Committee grant monies were used to pay this fee through March 2007. Any SUNY researcher can submit an article to this publisher. Any resulting publication is open access, toll-access free. See <http://www.biomedcentral.com/home> for more information.

The SUNY Office of Library and Information Services has created an institutional repository using the Dspace software. (<http://dspace.sunyconnect.suny.edu>) While not all the materials in the database are openly accessible, open access is the presumption. That is, unless there is a good reason to restrict access (SUNY-only access to SUNY Press monographs or, copyright issues related to

accessing visual resources, for instance) the materials in the SUNY-wide repository are open and free to anyone. The system is set up to manage, maintain, secure, disseminate and preserve the intellectual output from SUNY and is compliant with OAI-PMH. Some SUNY institutions have created their own repositories. Researchers without access to a campus-based repository are urged to submit their work to the SUNY-wide repository. Those with access to a campus-based repository might consider posting their work there and with the SUNY-wide repository. SUNY's Dspace includes electronic journals, journal articles, SUNY Press monographs, graduate theses, and a visual resources file.

Conclusion

The trend towards open access to scholarly literature is relatively new. Researchers are seeing increased impact from their work as a result of this trend. Scholarly publication is in the process of significant change. New capabilities and standards allow for new methods of scholarly communication. The results of all these changes are not yet fully known. Their significance for the academy and for individuals within those institutions cannot be underestimated.

NOTES

Crow, Raym. "The Case for Institutional Repositories: A SPARC Position Paper". The Scholarly Publishing & Academic Resources Coalition, 2002. <http://www.arl.org/sparc/IR/ir.html> (accessed September 15, 2005).

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University of California Office of Scholarly Communications. "Regain Control of Scholarly Communication". University of California, 2005. http://osc.universityofcalifornia.edu/home/regain_control.html (accessed September 15, 2005)

ADDITIONAL RESOURCES

Open Access Overview: <http://www.earlham.edu/~peters/fos/overview.htm>

SPARC (Scholarly Publishing and Academic Resources Coalition) Open Access Newsletter:
<http://www.arl.org/sparc/soa/index.html>

Open Access Bibliography: <http://www.escholarlypub.com/oab/oab.htm>

Budapest Open Access Initiative: <http://www.soros.org/openaccess/>

Open Archives Initiative: <http://www.openarchives.org>

Open Access Resources (SPARC): <http://www.arl.org/sparc/oa/index.html>

Creative Commons: <http://www.creativecommons.org>

Directory of Open Access Journals: <http://www.doaj.org>

BioMed Central: <http://www.biomedcentral.com/home>

Public Library of Science: <http://www.plos.org/>

Digital Repository Resources (SPARC): <http://www.arl.org/sparc/repos/index.html>

Publisher Policies Regarding Self-archiving: <http://www.sherpa.ac.uk/romeo.php>

Dspace: <http://www.dspace.org>

SUNY Digital Repository: <http://dspace.sunyconnect.suny.edu/>

Search Tools:

<http://oaister.umdl.umich.edu/o/oaister/>

<http://scholar.google.com/>