In recent years, academic librarians have seen many changes in the area of scholarly publishing. While access to the Internet has been invaluable in the communication of ideas and the dissemination of scholarship, technology has also forced us to re-evaluate our options. The serials crisis and the advent of electronic journals continue to raise questions with regard to the ownership of scholarly activity. This has given rise to a number of initiatives, all aimed at changing the course of scholarly communication. Although originating in North America, these initiatives have had a global impact. This article discusses some emerging trends and their impact on Canadian libraries.

The rise of consortia

For many years, academic libraries faced with escalating costs for serials in the areas of science, technology and medicine were forced to cancel journal subscriptions. Successive rounds of cancellations decimated science collections, particularly in smaller institutions. In Canada, the declining value of the dollar against its American counterpart made the situation even worse. The diversion of funds toward serials purchases affected monograph collections.

Free or subsidized document delivery was seen as an alternative to fill gaps in journal collections. Many libraries signed agreements with CISTI (the Canada Institute for Scientific and Technical Information) and commercial document suppliers to provide access to journals that had been cancelled. It is only with the new millennium and the rise of consortia licensing of electronic journals that science libraries have been able to regain lost ground. These agreements have been a boon to smaller academic institutions, giving them access to a large pool of resources that was previously unaffordable. A few examples will illustrate the multilevel nature of these consortia.

Government-funded initiatives such as the Canadian Foundation for Innovation have made possible the Canadian National Site Licensing Project, in which 64 Canadian universities participate. The project gives Canadian academic researchers access to scholarly journals and databases to make them globally more competitive. The initial 3 year licenses were renegotiated in 2003.

Similar agreements are in place at the provincial level. For example, the Ontario Information Infrastructure promises to provide a common gateway to digital resources for the province’s academic institutions. The scholar’s portal, as it is called, will provide access to electronic resources negotiated by the Ontario Council of University Libraries, with the University of Toronto as service provider. A departure from the broader institutional categories that have so far been the norm is a recent Ontario-based licensing agreement directed at the province’s health-care providers. As part of this agreement, colleges and universities running nursing programs in Ontario have access to a practice-based collection of nursing journals, databases and reference books in electronic format.

SPARC

While consortia provide an equitable distribution of resources to their member institutions, they do not address systemic ills in the scholarly publishing system. An Association of Research Libraries initiative called SPARC (Scholarly Publishing and Academic Resources Coalition) promises to do just that. Through its alternative journals program, SPARC has endorsed low-priced alternatives to commercial journals. One such offering, Organic Letters, was started by the American Chemical Society in 1998. The journal has already surpassed its high-priced competitor, Tetrahedron Letters, in impact factor, a widely accepted rating system for journals used by the Institute of Scientific Information. SPARC also has a Leading Edge Program designed to
support new models in electronic publishing, where charges are borne by authors or their institutions. SPARC encourages librarians to play an advocacy role in creating change. Librarians can encourage faculty to publish in not-for-profit journals and persuade their peers to revoke the “publish or perish” mentality so prevalent in tenure and promotion decisions. SPARC has now become somewhat of a global phenomenon with the creation of the International Scholarly Communication Alliance. The Alliance is supported by eight research library associations, including the Canadian Association of Research Libraries. Its mandate is to establish equitable access to scholarly and research publications.

Free online scholarship

SPARC’s objectives are laudable, but there are some who feel that asking faculty to change established behaviour will be a long uphill path. Instead, advocates for self-archiving, such as Stevan Harnad, want scholars to deposit their article preprints and refereed postprints in university-installed e-print archives that conform to standards created by the Open Archives Initiative. These can be searched and freely accessed wherever they are located, as e-print archives are interoperable with one another.1 A discussion list run by Peter Suber of Earlham College which served as a forum for free online scholarship has now become the SPARC Open Access Forum. The open access movement is already poised to create new ripples in academia.

Recently SPARC has become active in promoting institutional repositories offering open access to scholarly content such as working papers of authors, preprints, theses and other forms of intellectual product. The Canadian Association of Research Libraries (CARL) has made a commitment to support this initiative among its member institutions. It has already embarked on a pilot project with an emphasis on Canadian content. Its aim is to increase the profile of Canadian institutions and widen the audience for Canadian research while offering a cost-effective alternative to the traditional publishing model.2 Last year CARL held a conference attended by librarians, faculty and publishers where different models of open access were discussed. The variety of disciplines covered at this conference was truly impressive. Among others, representatives from ArXiv, the physics e-print archive; Berkeley Electronic Press; MIT D-Space; BioMed Central; Bioline International; and the Electronic Society for Social Scientists (ESSS) spoke about how these projects are affecting the scholarly publishing process by freeing up the research literature.3

The open access scholarship movement gained momentum with the arrival of BioMed Central. This site offers open access to over a hundred biomedical journals. One of its offerings, Journal of Biology, promises to be an open access alternative to prestigious journals such as Nature and Science. More recently, a movement called the Budapest Open Access Initiative (BOAI) pledged “to remove access barriers to the literature, thus uniting humanity in a common intellectual conversation.” The BOAI initiative has received a shot in the arm with a $3 million donation from George Soros of the Open Society Institute. BOAI has a twofold strategy – to promote self-archiving of refereed journal articles by scholars and to support the launching of open access alternative journals in all disciplines. BOAI has been endorsed by both the Association of Research Libraries (ARL) and CARL.

The Public Library of Science (PloS), a grassroots movement started by scientists, has obtained 30,000 signatures from scientists who have agreed to publish only in journals that offer open access six months after publication. While the impact of this movement is still to be seen, a number of journals have already

---

**Important Open Access URLs**

- ArXiv E-print Archive ~ arxiv.org
- Bioline International ~ www.bioline.org.br/
- BioMed Central ~ www.biomedcentral.com
- BOAI ~ www.soros.org/openaccess/index.shtml
- SPARC Open Access Forum ~ www.arl.org/sparc/soa/
- HighWire Press ~ highwire.stanford.edu
- HINARI ~ www.healthinternetwork.org
- OAI ~ www.openarchives.org/index.html
- PLOS ~ www.publiclibraryofscience.org/
- PubMed Central ~ www.pubmedcentral.nih.gov
- SPARC ~ www.arl.org/sparc
elected to make their archives available freely at PubMed Central, which acts as an online repository for open access journals. More recently, PLoS announced that a $9 million grant from the Gordon and Betty Moore Foundation will allow the launch of two new journals. Called PLoS Biology and PLoS Medicine, the two journals will offer rigorous peer review and high editorial standards. Use of a new business model, in which the costs of these services are recovered by modest fees on each published paper, will allow PLoS to make all published works immediately available online, with no charges for access or restrictions on subsequent redistribution or use. The first issue of PLoS Biology was published in October this year accompanied by much media coverage.

Another example of the trend is Stanford University’s HighWire Press, which labels itself as the largest online archive of free life sciences articles in the world. To date, HighWire hosts 346 journals. Other publishers have since made forays into the area of free online access. In addition, granting agencies in Europe and elsewhere are beginning to endorse the principles of open access. Recently the Association of College and Research Libraries (ACRL) issued a statement called Principles and Strategies for the Reform of Scholarly Communication. These developments have been reported in the SPARC Open Access Forum.

One of the most interesting developments is the journals to developing countries program, which provides free or discounted access to biomedical journals from participating publishers such as Blackwell, Elsevier Science, the Harcourt Worldwide STM Group, Wolters Kluwer International Health & Science, Springer Verlag, and John Wiley. Access to the Health InterNetwork Access to Research Initiative (HINARI), created to bridge disparities in health information, is based on the World Bank’s definition of low-income countries. However, such initiatives face their share of problems. Internet access is not readily available in many areas, for example, and the effects on local publishing need to be considered. Leslie Chan of the University of Toronto has been in the forefront in this area with the launching of Bioline International, which helps established journals in developing countries move to the electronic medium. The Indian Academy of Sciences recently decided to offer free online access to its journals. All this will help developing countries to participate in the global flow of knowledge and bridge the north-south digital divide.

Changing role for librarians

It is truly remarkable how much progress has been made in the electronic delivery of scholarly information. The fact that more library users want remote access to library resources is driving the need to subscribe to electronic journals. Faced with both the electronic and print versions of journals, librarians are hard-pressed to decide which is the definitive version or the copy of record. Moreover, decisions to cancel print are possible only after archival considerations are met. In addition, there is a lack of flexibility with these packages. As more libraries have access to a core set of journals through consortia licensing, there is less need to request document delivery of the more recent journal articles. Remote access also results in less in-library use of journals, which has repercussions on other library services.

As the electronic library evolves, librarians find themselves taking on more responsibilities for liaison and instruction. This should provide ample opportunity for librarians to act as advocates for moving toward a more progressive system of scholarly communication. The impetus for change can come only through effective faculty-librarian partnerships. Most important, new alliances need to be fostered in a climate of mutual trust if the tripartite relationship between faculty, publishers and librarians is to be sustained.

Leila Fernandez is a Science Librarian at York University in Toronto.

Notes