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Weaving Scholarly Communication and Information Literacy

[Strategies for Incorporating Both Threads in Academic Library Outreach]

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Introduction

In this chapter, we examine the alignments and disconnects between information literacy and scholarly communication. Our goal is to identify a common theoretical framework that academic librarians can use to design and provide outreach and education activities incorporating both themes for students and faculty. In looking at ways to weave scholarly communication and information literacy into academic library outreach, it is useful to review how each of these programmatic areas emerged as responses by academic libraries to trends and issues in the larger arena of higher education. Both information literacy and scholarly communication offer a conceptual framework in which to think about the scholarly materials provided by academic libraries to foster the creation of new knowledge. Both emerged as topics of universal professional concern in response to transformations in postsecondary education, information production, technology, and publishing. Both emphasize subject strengths, interdisciplinary links, evaluation of content, and incorporation of technology, and both attempt to respond to new information formats and information needs. Professional conversations about each area have matured and evolved over time, and yet, until very recently, the two conversations have taken place in separate and seemingly disconnected venues. We argue that, by using the American Library Association (ALA 2004) *Core Values of Librari-*

anship as a framework, librarians can bring the conversations about information literacy and scholarly communication together to enhance and strengthen their respective impacts by providing a common loom on which to weave a rich, enlightening, and valuable tapestry.

This chapter will first attempt debunk the myth the academic library focuses on either collection building to support scholarly communication *or* user-centered instruction to fulfill information literacy missions. We will discuss the background and identify current issues within both realms—information literacy and scholarly communication—including values, goals, and objectives that they hold in common. We will then examine the history and present state of both areas within academic libraries in the United States, identifying key documents and milestones. Finally, we will review and analyze current conversations taking place in the literature and in our professional organizations in order to gain perspective and provide guidance on how librarians can build stronger alliances between information literacy and scholarly communication. The alignments, parallels, and relationships suggest more common elements than the differences that may have defined earlier library organizations. We conclude with an interpretation of how information literacy and scholarly communication can be effectively connected using the *Core Values*.

Collection Development and Management: Background and Current Issues

Several years after Anthony Cummings's (1992) seminal work, *University Libraries and Scholarly Communication*, defined scholarly communication, the advent of mainstream electronic publishing transformed library collection development practices. During the late 1990s, collection development librarians moved beyond selecting and deselecting or withdrawal of materials and into the realm of actively managing collections.

Today, librarians have adopted the ACRL's (2003) definition of scholarly communication as:

> the system through which research and other scholarly writings are created, evaluated for quality, disseminated to the scholarly community, and preserved for future use. The system includes both formal means of communication, such as publication in peer-reviewed journals, and information channels, such as electronic listservs. (para. 1)

The original focus of scholarly communication centered on the unsustainable economic practice of "buying back"—through library journal subscriptions—scholarly content from commercial publishers and scholarly or professional societies that were publishing faculty research output. The now-famous graph (Figure 1.1) indicating sharp price increases over time illustrates the negative impact on libraries' budgets as they attempted to cover the escalating costs of library and institutional subscriptions. This does not take into account adding new resources that are always on the horizon but instead emphasizes a steady state.

Figure 1.1

Monograph and Serial Expenditures in ARL Libraries, 1986–2004 (includes electronic resources from 1999–2000 onward) (Used with permission.)
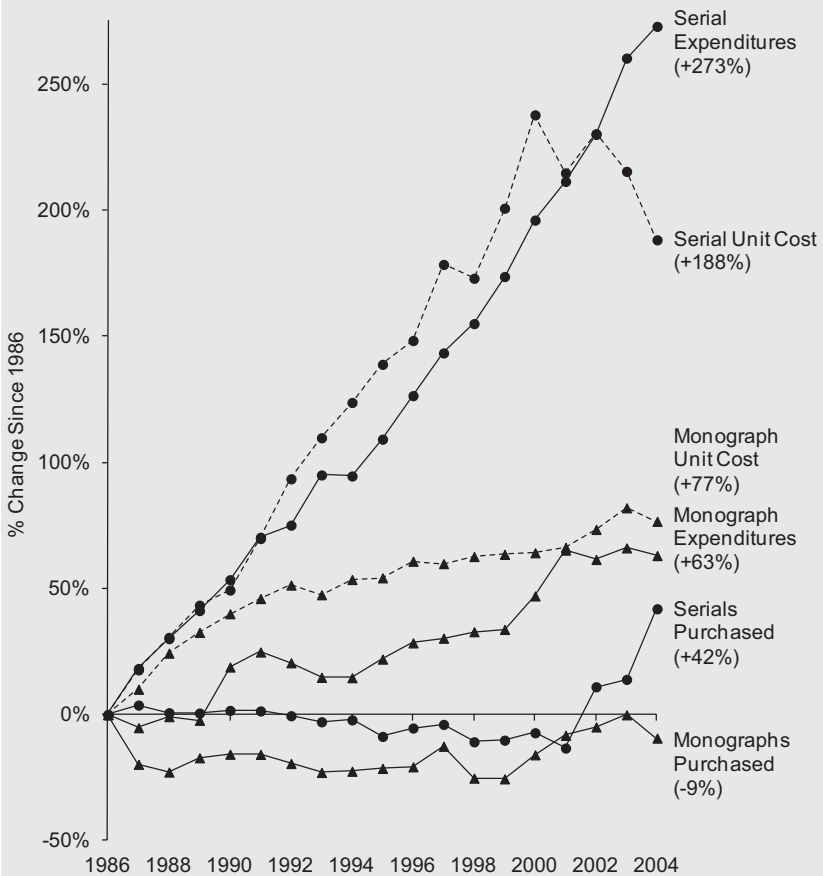
Source: *ARL Statistics 2003-04,* Association of Research Libraries, Washington, D.C.
*Includes electronic resources from 1999-2000 onward.

While sustainability issues related to journals were clearly the focus of scholarly communication initiatives, the scholarly monograph also faced its own set of challenges. Publishers and book vendors in the mid-1990s began to experience a decline in sales of scholarly monographs to libraries as changing methods of scholarship altered the ways that libraries acquired books. The traditional acquisition model of purchasing individual book titles began to compete with alternative options, including annual subscription models and the purchase of subject packages assembled by publishers and aggregators. Licensing and format access restrictions have challenged libraries' ability to share e-content through traditional services such as resource sharing or interlibrary loan. Due to flattening materials budgets and the assumption of ever-higher costs of materials, more availability of content, and the increasing tendency toward research specialization, libraries have departed from their traditional collection development policy of acquiring materials "just in case" and began to develop alternative "just in time" practices, such as patron- or demand-driven acquisitions. University presses are increasingly concerned about their sales figures and profit margins and are more selective in accepting manuscripts, making it harder for scholars to publish and forcing them to look to commercial and trade publishers.

Opinion pieces, editorials, and letters to university administrators and publishers have been plentiful, sharing different viewpoints on the perceived crisis in scholarly publishing and the untenable nature of the current scholarly journal subscription and monograph pricing model (see Owens 2012). As a response to this growing concern, the conversation of scholarly communication has evolved to include a call for sustainable pricing and alternatives to the traditional publishing models of scholarly and commercial publishers. The current conversation also encourages the awareness of the cycle of creation, transformation, dissemination, and preservation of knowledge related to teaching, research, and scholarly endeavors. It argues for new roles for libraries, so that they become not just repositories and buyers' clubs, but active participants in the endeavor of making information available and supporting the generation of new efforts to educate, develop, and advocate for best practices in scholarly communication.

As one of these best practices, most academic research libraries have created ways to inform faculty and students about best practices associated with the core content areas of scholarly communication.

Authors' Rights and Intellectual Property

The legal right of authors, composers, translators, illustrators, editors, and all contributors to the scholarly product to retain or confirm

the right to distribute one's work broadly is at the core of scholarly communication. Even if the work has been published, oftentimes an addendum can be secured so that the work can be deposited within a disciplinary or institutional repository, capitalizing on the potential to reach a greater readership as well as to ensure perpetual access, regardless of where the content was originally published.

Copyright and Fair Use

According to the US Copyright Office (2012), this form of intellectual property law "protects original works of authorship including literary, dramatic, musical, and artistic works, such as poetry, novels, movies, songs, computer software, and architecture. Copyright does not protect facts, ideas, systems, or methods of operation, although it may protect the way these things are expressed." Copyright and fair use have enormous consequences in teaching and research because of the limits and rights bestowed on copying, distribution, and access. The Copyright Law of the United States (17 U.S.C.; see US Copyright Office 2011) governs the making of reproductions of copyrighted material and makes users liable for any infringement. Most institutions of higher education adhere to this statute, relying on educational exemptions provided to libraries and the fair use provisions of the copyright law and obtaining the permission of the copyright holder when required. The Copyright Act of 1976 (17 U.S.C §107) contains a fair use doctrine, known as the "Four Factors Test," to evaluate and determine if something falls under an allowed fair use.

Dan Lee, Director of the Office of Copyright Management and Scholarly Communication at the University of Arizona, summarizes the approach that many libraries have adopted:

> The primary issue is to promote access to the scholarly literature, and that is done on various levels… On the copyright side, it's making sure we don't overstep our bounds, but in making sure we don't broadly define those bounds or have tight controls… The access we want would allow the scholars on campus to have the publications reach the communities they want to reach. (Everett-Haynes 2008)

The advent of digitization, which provides a means both to produce and to distribute content and can be used to convert analog content to digital, necessitates new understanding of these limits and rights. As distance education becomes more common and widely available, both faculty and students need to be educated on their legal rights and responsibilities related to the distribution, access, and use

of e-content. For example, alternatives to traditional copyright such as Creative Commons licensing[1] allow creators to communicate which rights they retain and which rights they waive for the benefit of readers, researchers, or other creators.

Open Access (OA)

Open access (OA) is defined as a mode of publication or distribution of research results that limits or removes payments, fees, licensing, or other barriers to readers' access to research reports, journal articles, conference proceedings, books, or any other type of scholarly literature or research product. Although many of the best-known discussions of OA focus on scientific, medical, and technology research, open access publishing occurs in all subject areas. OA publishing requires nontraditional business models to pay the costs of publishing because the usual modes of payment, such as subscriptions, are eliminated or minimized. Some publications offset costs by requiring the authors to pay publication charges after the manuscript has been peer-reviewed and accepted for publication; others use a membership model (e.g., BioMed Central, PeerJ). There are different "flavors" of OA that define ways that it can be achieved while still reducing or eliminating costs associated with accessing the publication. For example, publishers sometimes build endowments or ask for financial support from the communities that most benefit from their work. Universities, research centers, and libraries have occasionally subsidize researchers to enable them to participate in open access opportunities. Many traditional publishers are joining the effort to make OA a choice with some of their journals. There are a number of social and political initiatives that promote OA, such as the Alliance for Taxpayer Access, Students for Free Culture, the Right to Research Coalition, and the Scholarly Publishing and Academic Resources Coalition (SPARC) developed by the Association of Research Libraries (ARL).[2]

Management of Research Data

Libraries have been instrumental in helping scientists and scholars honor the recent mandates from federal funding agencies that require research data to have a management plan so that it can be found, curated, shared, potentially reused, and archived. New toolkits and resources have become available to support e-science and other disciplines, making a broader statement of support for e-research. Again, libraries and librarians are centrally positioned in these efforts. Examples of this emphasis are seen in the recent rollout and adoption of the Data Management Plan Tool issued by the California Digital Library

to provide instructions and guidance about articulating a data management plan and the Purdue Data Curation Profiles Toolkit launched by Purdue University to create communities of scholars, librarians, and archivists who are exploring ways to manage research data.[3]

New Publishing Opportunities and Options

Scholarly output has experienced many changes in recent years. Technology drove many of these changes; however, new product lines and experiences by readers, students, and scholars point to different expectations that have transformed creative output. The journal has experienced fundamental changes, but the scholarly monograph has been challenged as well. Electronic books, or e-books, are becoming part of the mainstream and present many choices in the publishing process. Print versus online is one choice, but compatibility with different distribution channels, migrating technologies and devices, and shifts in readership trends create an ever-changing landscape. The availability of online publishing and digital services has pushed libraries to take on new roles previously assumed only by publishers. In this new environment, more libraries are exploring and engaged in publishing services and finding opportunities to provide greater discoverability to and curatorial support for unique content in their own collections. University archives and special collections units have been instrumental in actively digitizing collections and creating finding aids to increase access to users both locally and globally. Libraries have also provided the momentum in establishing institutional repositories in which members of the academic community can place their scholarly output and intellectual property so it can be more widely shared and discovered by search engines such as Google. Educating the academic community about these issues has been enlightening for faculty and librarians, and growing awareness of scholarly communication issues has influenced the services and collection management practices in libraries.

Reporting a series of interviews in the article "Whither Science Publishing?" science journalist Bob Grant (2012) concludes:

> To keep up with the blistering pace of scientific and technological advances, publishers are getting creative. In recent years, new concepts such as post-publication peer review, all scientist editorial teams, lifetime publishing privilege fees, and funder-supported open access have entered the publishing consciousness. (para. 3)

The publishers, researchers, and information scientists who participated in these interviews concur that the current publishing system is broken and badly in need of repair, that peer review is imperfect and

needs to remedy its cumbersome processes and time-consuming delays, that open access is the wave of the future but still in need of refinement, and that hybrid publishing that merges subscription models with open access may be a good alternative. These new directions are already having an impact on the practices of researchers, librarians, and readers and will continue to do so in the future.

Let us turn our attention from this brief overview of the background and current issues in scholarly communication to those in information literacy.

Information Literacy: Background and Current Issues

Like scholarly communication, information literacy emerged in response to developments in the academic and information environment as a way for librarians to focus their individual and institutional instructional efforts and establish legitimacy in the curriculum of higher education beyond the library. Just as the increase in available materials caused collection librarians and bibliographers to change collection management practices, it also drove the need for information literacy and instruction librarians to teach students how to find, use, and evaluate those materials. As higher education became more accessible, students entered the academy with more diverse educational backgrounds and with varying levels of skills and familiarity with the methods of scholarly research. And finally, as the curriculum expanded to meet different needs, instruction methods shifted from lecture to inquiry-based instruction with increased emphasis on the pursuit of individual research interests. The debates around the purpose, outcome, and placement of library instruction—whether is it most effective as a separate course or as an integrated component of a subject or discipline—began early and continue to the present (Salony 1995).

The modern library instruction movement emerged in the 1960s in response to research that documented the tendency of students then, as now, to be uncritical in their use of information (Grassian and Kaplowitz 2009). Even before the advent of electronic publishing, information in print formats was increasing exponentially during this decade. Research interests of faculty became more specialized, which resulted in an increasing number of specialized publications written for smaller and more focused communities of scholars. The curriculum of higher education diversified and expanded to include both specialized researchers and more focused, pragmatic programs intended to teach vocational skills. As more information became available, students needed guidance in learning the skills necessary to locate, evaluate, and use it.

The professional literature of information literacy reveals that the debates around the placement, methods, goals, and objectives of li-

brary instruction in academic libraries continued and intensified in the thirty-year period from 1960 to 1989 (Grassian and Kaplowitz 2009, 14). In 1989, the chair of the ALA Presidential Committee on Information Literacy, Patricia Breivik, reconceptualized the intended outcome of library instruction as "information literacy," and the committee developed the core definition we use today: "To be information literate, a person must be able to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information" (ALA 1989, para. 3).

It is also evident from the literature that the range of activities in information literacy instruction is very broad. Articles and conference presentations that focus on providing information literacy instruction to discrete sets of students in specific disciplines and in defined educational contexts are numerous and common. Much of the information literacy literature is directed toward the librarian practitioner and offers useful solutions to common instructional challenges. Most librarians familiar with information literacy will agree that the literature reflects both a broad range of institutional environments and a wide variety of programs designed to teach students information literacy skills and concepts. They would probably also agree, upon reflection, that the ACRL (2000) *Information Literacy Competency Standards for Higher Education*, while imperfect, provide a common set of learning outcome expectations that span different environments and provide some commonality regardless of the educational context.

Recently, inspired and informed by the literature of teaching and learning, many professionals have started to build a more solid theoretical foundation of praxis that moves beyond the *Information Literacy Competency Standards* (Accardi, Drabinsky, & Kumbier 2010; Elmborg 2006; Simmons 2005; Jacobs and Berg 2011; Townsend, Brunetti, and Hofer 2011). Examining and applying learning principles espoused in critical literacy, threshold concepts, appreciative inquiry, and problem-posing education will allow academic librarians to use a common core set of values, identified in the *Core Values of Librarianship*, to design outreach programs that will reach both students (the traditional audience for information literacy instruction) and faculty (the traditional audience for scholarly communication).

Another feature of the professional conversation around information literacy is the way in which it addresses scholarly communication, either explicitly or implicitly. Part of the debate about the placement of information literacy attempts to answer the question of whether it is a defined subject content area of its own or whether it is most effectively addressed as an understanding of the research methods of a discipline (Badke 2008). Regardless of where it is placed in the curriculum, we suggest that information-literate members of the academy should un-

derstand how knowledge is created, evaluated, shared, and preserved within a discipline. If we define scholarly communication as the ways in which subject knowledge is created (research methodology), evaluated (peer review), shared (through scholarly journal articles, monographs, conference proceedings, and research reports), and preserved (repositories writ large), then it is clear that an information-literate individual is one who understands both the issues *and* processes of scholarly communication.

While giving a high-level summary of the content and focus of the information literacy literature, it is worthwhile to consider the differences that we observed between the professional literature of information literacy and that of scholarly communication. These differences serve to illustrate the ways in which professional conversations about each area have taken place in separate and seemingly disconnected venues.

Scholarly Communication: Audience and Changing Realities

Scholarly communication, as central as it is to the mission of most academic libraries, is sometimes perceived as distant from the daily processes and procedures that members of the library staff engage in with typical users. Instead, it often appears to be centralized as a relatively new rollout of practices and services directed by library leaders and management teams that have close relationships with campus leadership, such as the provost, academic deans, directors of the university press (if there is one), university counsel, deans or vice chancellors of research, faculty who serve as editors of prestigious journals, and the like. Special programming has increasingly widened to include presentations to broader audiences that now typically attract more graduate students, who are considered an important target as they are the next generation of scholars and are currently engaged in research and creative enterprises and being exposed to current best practices while working under advisors and mentors. As bibliographers and subject liaison librarians strive to develop closer relationships with faculty and students, it is clear that librarians need to be increasingly comfortable with and well-versed in the options in each of the topical areas of scholarly communication.

As thematic emphases in scholarly communication mature, one now sees entire books dedicated to open access, copyright issues in libraries, institutional repositories, and data management plans. In addition to books exploring these topics, rich conference papers and proceedings provide insight through the use of case studies and local approaches that can be revised and replicated. Most academic libraries today devote portions of their websites to sharing information on how

they promote and manage scholarly communication. In addition, there are many specialized scholarly communication workshops, webinars, seminars, and conferences held by nearly every local and national professional library association that offer professional development opportunities. Scholars and students are increasingly relying upon blogs, Twitter feeds, and preprint servers to capture scholarly conversations and commentary. This application of social media, often called "altmetrics," uses methods of crowdsourcing peer review to determine impact, learn about new applications, and solicit and use feedback and assessment on the scholarly information provided. The next generation of bibliographic management software, such as Mendeley and Zotero, described as reference managers, are free and Web-based and help users manage not just what they write, but what they read, discover, and retrieve from information seeking and conducting literature reviews.

Scholarship, learning, and publishing trends all have an international, if not global, reach. It follows that the scholarly communication and open access movement is not limited to a North American audience. The international history now extends over a decade, with the Budapest Open Access Initiative arising from an Open Society Institute meeting in 2001 that envisioned accelerating progress by making scholarship freely available on the Internet (BOAI 2012a). Today over 635 organizations are signatories, and nearly six thousand individuals have shown their support (BOAI 2012b). The Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities was signed in 2003 and today has more than 300 institutional signatories (Max Planck Society 2012). Each year since 2003, the Berlin Conference convenes to discuss and strategize around issues of open access and publishing.

Open Access Week, during the month of October, is an opportunity for the academic and research community to learn about the potential benefits of open access and to inspire wider participation in helping to make open access a new norm in scholarship and research. Another public advocacy group is the Right to Research Coalition, which encourages students, scholars, professionals and librarians to promote open access as a method to democratize and share research.[4]

Indeed, publishing today is a worldwide enterprise with publishers and agents seeking and competing for the best manuscripts and submissions. Responding to the increasing need to develop consistency across the global publishing industry, the National Institute of Standards Organization (NISO) issues standards that inform the publishing industry and increasingly influence the work of libraries. According to its mission statement, "NISO fosters the development and maintenance of standards that facilitate the creation, persistent management, and effective interchange of information so that it can be trusted for use in

research and learning" (NISO 2012). NISO's work explicitly addresses scholarly communication themes; examples of these contributions include the issuing of SERU: Shared Electronic Resource Understanding, which codifies best practices for the sale of e-resources without licenses;[5] the standardization of the digital object identifier (DOI) standard, which has been extended more recently to data by the DataCite community; and the more current engagement with the Open Archives Initiative in the ResourceSync Project to synchronize Web-scale data repositories allowing replication of content and metadata between repositories in close to real time.[6] These examples of the NISO standards offer parallel structure to the *ACRL Information Literacy Competency Standards* and suggest that the publishing industry and librarians share concerns regarding technical issues and infrastructure in the realm of scholarly publishing. Finally, the works of Jingfeng Xia (2008) and Bruce and Katina Strauch (2002) are representative of the many lucid examples in the literature for how academic library communities around the globe have responded to scholarly communication.

Professional Resources and Programming (Toolkits, Standards, or Something Else?)

The American Library Association (ALA), the Association of Research Libraries (ARL), the Association of Academic and Research Libraries (ACRL)and other specialized librarian groups and professional societies have formed committees that are dedicated to educating members about scholarly communication. Rather than developing unique scholarly communication standards that parallel the *Information Literacy Competency Standards*, the ACRL (2009), the ARL (2010), and SPARC (2012) have each produced resources in the form of toolkits that assist the library community in promoting an understanding of scholarly communication principles. There have also been successful ACRL roadshows and regional meetings of academic librarians, publishers, and vendors that have addressed different aspects of the toolkits. Programming that resonates with users builds confidence in best practices and ensures that they are exposed to legitimate options subscribed to by their peers in a specific discipline. The best-practices approach suggests what lessons have been learned and points to new directions that are likely to evolve. Trends of publishing on the Web, self-publishing, new forms of grey literature, and more multiformat and multimedia integration complement the already diverse range of scholarly publishing. These new products will continue to use peer review and allow for the role of citation metrics, impact factors, and other measures to define value.

For those working in information literacy, ACRL supports programs in the areas of professional development, assessment, and instructional development. Spearheading many of these programs is the ACRL Institute for Information Literacy (IIL). IIL is charged with preparing librarians to become effective teachers in information literacy programs; supporting librarians, other educators, and administrators in taking leadership roles in the development of information literacy programs; and forging new partnerships within the educational community to work towards information literacy curriculum development (ACRL 2012, para. 20–23). In addition to the IIL, conferences such as LOEX in the United States, WILU in Canada, and LILAC in the United Kingdom focus on practical topics of interest to teaching librarians and provide opportunities to create information literacy communities of practice. With the emphasis on teaching the ability to evaluate information, some aspects of scholarly communication, such as those related to establishing authority, are addressed in these arenas, but scholarly communication rarely emerges as a stand-alone topic.

Although scholarly communication toolkits emphasize practicality in outreach and demonstrate an understanding of the need to reach diverse audiences with a clear educational message, we found it interesting and revealing that we could not find any explicit reference to information literacy in discussions of scholarly communication. The differences in the audiences, purposes, intent, and content found between the literatures of information literacy and scholarly communication are illustrative of the administrative and professional disconnects between these two fundamental areas of academic librarianship. Where can we find common ground between the two?

Information Literacy: Understanding the Context of the Standards

Although the ACRL *Information Literacy Competency Standards for Higher Education,* which followed the 1989 final report of the ALA Presidential Committee on Information Literacy, focus almost exclusively on describing the skills, knowledge, and abilities of an information-literate individual, it is useful to point out that the committee's final report presents the need for information literacy in a much larger context. An understanding of information literacy is introduced as follows:

> How our country deals with the realities of the Information Age will have enormous impact on our democratic way of life and on our nation's ability to compete internationally. Within America's information society, there also exists the potential of addressing many long-

> standing social and economic inequities. To reap such
> benefits, people—as individuals and as a nation—must
> be information literate. (ALA 1989, para.3)

The report also states:

> Information is expanding at an unprecedented rate, and
> enormously rapid strides are being made in the tech-
> nology for storing, organizing, and accessing the ever
> growing tidal wave of information. The combined effect
> of these factors is an increasingly fragmented informa-
> tion base—large components of which are only avail-
> able to people with money and/or acceptable institu-
> tional affiliations. (ALA 1989, para. 1)

By expanding our focus beyond the definition of information
literacy to the broader, more inclusive context of the whole report, the
document begins to offer a foundation for outreach efforts by academ-
ic librarians that includes and implicitly connects both information
literacy and scholarly communication.

Other, more recent documents build upon the idea of access to in-
formation as a foundation of a democratic society, a key tenet of both
information literacy and scholarly communication. In his proclama-
tion which designated October 2009 as National Information Literacy
Awareness Month, President Barack Obama declared:

> An informed and educated citizenry is essential to the
> functioning of our modern democratic society, and I
> encourage educational and community institutions
> across the country to help Americans find and evaluate
> the information they seek, in all its forms. (Obama 2009,
> para. 4)

The Alexandria Proclamation on Information Literacy and
Lifelong Learning jointly adopted by representatives from UNESCO,
IFLA, and the National Forum on Information Literacy states:

> Information Literacy lies at the core of lifelong learning.
> It empowers people in all walks of life to seek, evaluate,
> use and create information effectively to achieve their
> personal, social, occupational and educational goals. It
> is a basic human right in a digital world and promotes
> social inclusion of all nations. (NFIL 2005, para. 2)

These and other statements provide a vision that can inspire and
inform our efforts to eliminate the disconnect and strengthen the align-
ment between scholarly communication and information literacy.

Broadening the Information Literacy Focus beyond Undergraduate Education

Another feature of the professional conversations about information literacy is its focus on the undergraduate as the target population for instruction. There is some mention of information literacy needs of professional populations (engineering, business, and medicine are common examples), but for the most part, the programs and practices described are directed toward undergraduates. This is not surprising in view of the placement of information literacy within the library organizational structure and its integration into the curriculum of the academy. It stands in contrast to the corpus of scholarly communication literature, which focuses on the information needs of faculty and graduate students.

However, there is evidence that undergraduates are not the only students who can benefit from a better understanding of information literacy, an understanding that incorporates core scholarly communication concepts. *Researchers of Tomorrow* is the United Kingdom's largest study to date on the research behavior of Generation Y doctoral students (born between 1982 and 1994). The study, commissioned in 2009 by the Joint Information Systems Committee (JISC) and the British Library, involved 17,000 doctoral students from 70 universities over three years (Education for Change 2012, 5). The research findings revealed:

- Doctoral students are increasingly reliant on secondary research resources (e.g. journal articles, books), moving away from primary materials (e.g. primary archival material and large datasets).
- Access to relevant resources is a major constraint for doctoral students' progress. Authentication access and license limitations to subscription-based resources, such as e-journals, are particularly problematic.
- Open access and copyright appear to be a source of confusion for Generation Y doctoral students, rather than encouraging innovation and collaborative research.
- This generation of doctoral students operates in an environment where their research behavior does not use the full potential of innovative technology.
- Doctoral students are insufficiently trained or informed to be able to fully embrace the latest opportunities in the digital information environment. (JISC 2012a)

Although the students surveyed for the report were affiliated with British institutions, it is likely that the results of a survey of American graduate students would parallel the findings of the British survey in many important aspects. It is particularly revealing to note that the students surveyed demonstrate:

> a continuing lack of understanding about the nature of open access. Generation Y students felt that putting their own work out openly will bring them no positive benefits, and may even have a negative impact. Equally, doctoral students' understanding of the intellectual property and copyright environment appears to be a source of confusion, rather than an enabler of innovation. (JISC 2012b, para. 7)

Open access and intellectual property rights are key to addressing many of today's scholarly communication challenges, yet graduate students, the researchers and faculty of tomorrow, don't understand how these issues affect them. This lack of understanding, while distressing in the short term, presents a golden opportunity to expand the focus of information literacy from its traditional undergraduate audience to align more closely with scholarly communication efforts to educate graduate students on how to protect their own intellectual work at the same time as they make it available to others in order to facilitate innovation and the advancement of research.

Using the Core Values to Connect Information Literacy and Scholarly Communication

The comprehensive nature of the current *ACRL Information Literacy Competency Standards (IL Standards)* is laudable, and after twelve years of using them in the library classroom, we can learn from our experience in future revisions and new efforts. The experience of using scholarly communication toolkits has proven that they are a viable method to implement training and influence librarian, publisher, and faculty behavior. The literature on content standard development offers guidance on how to develop standards and toolkits that will help us focus on the big ideas and core concepts of information literacy and scholarly communication (Townsend, Brunetti, and Hofer 2011). The fact that librarians have embraced, used, applied, assessed, and critiqued the *IL Standards* attests to their practical application. Scholarly communication toolkits serve a purpose similar to the *IL Standards* in that they provide guidelines for action and a core curriculum and suggest important content that needs to be shared and acted upon in order for the

desired outcomes to be achieved. Just as information literacy standards guided the development of content for library instruction programs and scholarly communication toolkits guided the development of resources for collection development and management activities and advocacy efforts, professional resources that incorporate the best practices of both information literacy and scholarly communication are needed to guide the development of education and outreach programs.

The ALA's *Core Values of Librarianship* states:

> The foundation of modern librarianship rests on an essential set of core values that define, inform, and guide our professional practice. These values reflect the history and ongoing development of the profession and have been advanced, expanded, and refined by numerous policy statements of the American Library Association. Among these are:
>
> - Access
> - Confidentiality/Privacy
> - Democracy
> - Diversity
> - Education and Lifelong Learning
> - Intellectual Freedom
> - Preservation
> - The Public Good
> - Professionalism
> - Service
> - Social Responsibility (ALA 2004)

A close examination of the *Core Values of Librarianship* provides a vision that more closely aligns the big ideas and core concepts of information literacy and scholarly communication. In working to support this alignment, we can use the *Core Values* as a foundation and framework to guide the development of robust professional resources that will begin to bridge the disconnect between the scholarly communication toolkits and the *Information Literacy Competency Standards*.

Examining the Standards through the Lens of Core Values

Jacobs and Berg's (2011) article, "Reconnecting Information Literacy Policy with the Core Values of Librarianship," which inspired and informed our thinking on the alignments between information literacy and scholarly communication, provides an excellent critique of the limiting nature of defining information literacy instruction as an activity by which librarians deposit knowledge about the location, evalua-

tion, and use of information into students. Instead, the authors encourage incorporating a problem-posing approach to teaching information literacy. In this model, the librarian actively encourages students to consider and question the social, economic, political, and cultural aspects of information creation, distribution, retention, and ownership as part of the information literacy curriculum. This approach clearly supports the idea that concepts of scholarly communication, such as open access versus paid subscriptions, the role of the library in knowledge creation and dissemination, and issues of copyright and intellectual property are essential components of information literacy (Jacobs and Berg 2011, 390).

We strongly advocate that future revisions of the ACRL *Information Literacy Competency Standards* incorporate a basic understanding of scholarly communication principles and include explicit statements that an information-literate individual understands:

- the basic concepts, issues, and methods of scholarly communication
- the fact that methods of scholarly communication differ between disciplines
- the methods of scholarly communication within his or her field of study or area of expertise

By using the phrase "information-literate individual" instead of "information-literate student," we can also imply that an understanding of these concepts is important to all members of society and broaden the audience for information literacy education beyond undergraduates.

Applying the Core Values

Although it is unrealistic in this chapter to provide a comprehensive analysis of the possible ways that the *Core Values of Librarianship* can be used to align information literacy and scholarly communication, this is a good time to provide examples of how this process might work and some of the challenges librarians might encounter. First, let us look closely at the idea of access as a core value of librarianship and consider how this value is expressed in information literacy and in scholarly communication.

ACRL (2000) Information Literacy Competency Standard Two states, "The information literate student accesses needed information effectively and efficiently." In this case, *access* refers to the method or process of finding the needed information. On the other hand, *access* in scholarly communication typically refers to the availability of information and includes such issues as perpetual access, barriers to access, and open access. The ALA *Core Values* statement on access reads,

"All information resources that are provided directly or indirectly by the library, regardless of technology, format, or methods of delivery, should be readily, equally, and equitably accessible to all library users" (ALA 2004, para. 5). In this instance, it is clear that the *Core Values* statement relates more closely to the scholarly communication concept of access than it does to the information literacy application. Although librarians support the idea that "All information resources … should be readily, equally, and equitably accessible to all library users," some findings suggest that faculty attitudes towards archiving publications, peer review, and open access may not reflect this lofty ideal. As King and Harley (2006) conclude in one study of University of California Berkeley faculty attitudes toward scholarly communication issues, "approaches that try to 'move' faculty and deeply embedded value systems directly toward new forms of archival, 'final' publication are destined largely to failure in the short-term" (2). The King et al. study attempts to more fully explore the academic value system by associating different levels of access within a discipline and holistically within the universe of scholarly publication and communication and finds that the complexity and interconnectedness of peer review, e-publishing, economic and cost issues, open access, electronic communication, data storage, data management needs, and archival specifications contribute to a lack of understanding among faculty and authors of critical decision-making elements in promoting scholarly communication principles more widely. Today, half a decade later, the comfort level among faculty with e-publishing is greater, and the publishing milieu is more mature. The faculty concerns expressed in this study, although still factors, are no longer the barriers they were just a few years ago. Any conversation addressing an alignment between the information literacy implications, understanding, and applications of access and those of scholarly communication will need to acknowledge and address the differing perspectives of several populations, including undergraduates, graduate students, librarians, and faculty.

Next, the broad and overarching value of education and lifelong learning is another example of a natural connection between information literacy and scholarly communication. The *Core Values* state:

> ALA promotes the creation, maintenance, and enhancement of a learning society, encouraging its members to work with educators, government officials, and organizations in coalitions to initiate and support comprehensive efforts to ensure that school, public, academic, and special libraries in every community cooperate to provide lifelong learning services to all. (ALA 2004, para. 9)

Although lifelong learning is not mentioned in the *Information Literacy Competency Standards*, the introduction to the standards proclaims:

> Information literacy forms the basis for lifelong learning. It is common to all disciplines, to all learning environments, and to all levels of education. It enables learners to master content and extend their investigations, become more self-directed, and assume greater control over their own learning. (ACRL 2000, para. 2)

Recent discussions of the ACRL Scholarly Communication Committee explored issues of lifelong learning. Following the discussion of how librarians could "encourage the use of a committee discussion group to draw the connection between the earlier efforts to develop information literacy as a core expertise for librarians with emerging work regarding scholarly communication" (Ogburn 2011, para. 3). At the ACRL Scholarly Communications Discussion Group meeting at ALA Annual 2011, Joyce Ogburn, the past president of ACRL, raised the following questions:

- How can information literacy programs help students learn about the whole cycle of scholarly communication?
- Scholarly communication librarians are frequently teachers; what can they learn from the information literacy experts?
- What lessons can be learned and ideas exchanged by librarians incorporating information literacy and scholarly communication into their work? (Ogburn 2011, para. 5)

Her conclusions led her to coin the phrase "Lifelong learning requires lifelong access." She expands on her ideas by stating, "In other words, creating critical thinkers and expectations of continuous learning requires highly credible resources to be available, easily found and recognized for their quality among the abundance of information propagated so freely on the Web" (Ogburn 2011, para. 7).

In the introduction to *Transforming Research Libraries for the Global Knowledge Society,* Barbara Dewey (2010) argues that librarians need to take a lead role in what she terms "creation literacy," which she defines as "the ability to create and disseminate new knowledge in meaningful ways in our global networked society" (5). She goes on to state that "creation literacy goes beyond information literacy in that it focuses on research output and its impact beyond the process of find appropriate resources and solving problems of a given

project or task" (5). While we might argue with both the terminology (the phrase "creation literacy" might be more likely to bring up the idea of creationism than is intended) and the characterization of information literacy as focused simply on process and "solving problems of a given project or task," the creation and dissemination of new knowledge is a powerful role for libraries, one that academic librarians need to understand in order to undertake the work of achieving this goal.

As these two recent examples illustrate, the role of libraries in fostering a learning society is central to the alignment of information literacy and scholarly communication. This can be used as a guiding principle as the profession develops strategies for information literacy, collection management, and subject liaison librarians to take a larger role in promoting awareness of scholarly communication issues. As we noted earlier, a distributed model will give scholarly communication more traction than depending on a single administrator, copyright officer, or "evangelist" for the cause to spread the scholarly communication message. Extending the focus beyond economic issues to include societal and cultural impacts on scholarship and academic publishing has the potential to create programmatic synergies across library and publishing organizations that are valued by all librarians and stakeholders with investments in research and learning.

Conclusion

Now is an opportune time for academic librarians at all levels to undertake an effort to more closely align scholarly communication and information literacy. As of summer 2012, a formal review of the ACRL *Information Literacy Competency Standards* is underway. The 2011 ACRL Plan for Excellence identifies both student learning and scholarly communication as strategic directions. These efforts will, as we share Joyce Ogburn's confidence, bridge "student learning and the research and scholarly environment" by extending a call "for librarians to transform student learning, pedagogy and instructional practices through creative and innovative collaborations and to accelerate the transition to a more open system of scholarship" (Ogburn 2011, 514). As this speculative and preliminary attempt to use the ALA *Core Values* to take information literacy and scholarly communication out of their silos and weave them more seamlessly into the collective consciousness of academic librarians indicates, the resulting conversations will introduce many issues that both sides care passionately about, and will undoubtedly serve as the foundation for action plans to address the identified disconnect.

Notes

1. For more information, see the Creative Commons website at http://www.creativecommons.org.
2. For more information, see the websites of these organizations: Alliance for Taxpayer Access, http://www.taxpayeraccess.org; Students for Free Culture, http://freeculture.org; Right to Research Coalition, http://www.righttoresearch.org; Scholarly Publishing and Academic Resources Coalition, http://www.arl.org/sparc.
3. For more information, see the websites for these planning tools: Data Management Plan Tool, https://dmp.cdlib.org; Data Curation Profiles Toolkit, http://datacurationprofiles.org.
4. For more information, see the Right to Research Coalition website at http://www.righttoresearch.org.
5. For more information, see NISO's SERU webpage at http://www.niso.org/committees/seru.
6. For more information, see NISO's ResourceSync webpage at http://www.niso.org/workrooms/resourcesync.

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