



# **Environmental Scan 2007**

**by the ACRL Research Committee  
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## Executive Summary

### Introduction

Academic librarianship is a profession in transition as the scope and pace of change in both the information environment and the higher education environment continue to increase. Over the past decade, the Association of College and Research Libraries (ACRL) has undertaken an ongoing environmental scan to identify the trends that will define the future of academic librarianship, to support research aimed at improving the practice of librarianship in academic and research environments, and to develop resources and programming that support the continuing professional education needs of its membership.

The ACRL Environmental Scan 2007 builds on the foundation provided by earlier reports of the association, including the 2002 report on the “Top Issues Facing Academic Libraries” and the 2003 Environmental Scan. The current environmental scan should also be considered within the context of related statements of specific research agendas, including the “Research Agenda for Library Instruction and Information Literacy” (2003) and the “Scholarly Communications Research Agenda” (2004).

The Environmental Scan 2007 was prepared by the ACRL Research Committee (James L. Mullins, chair, 2005-07; Scott Walter, chair, 2007-09). The complete membership of the Research Committee can be found in Appendix A.

### Methodology

The purpose of the environmental scan was to identify the major assumptions shaping the practice of academic librarianship, as well as to identify emergent issues of concern to the profession. The committee met these goals through a mixed-method research design that included survey research, literature review, and member checking (i.e., verifying the work in progress with stakeholders through a panel session, publication, and survey).

The major assumptions shaping the practice of academic librarianship were identified through a survey of ACRL member leadership in spring 2006. Respondents were asked to react to an initial list of assumptions included as part of the ACRL Strategic Plan, and items were ranked (or added to the list) based on survey responses.

This list of major assumptions became the focus for a comprehensive review of the published literature designed both to explore the state of research and practice related to these issues, as well as to identify any emergent issues beginning to find their way into the literature of the field.

Finally, committee members prepared a draft report on the “Top Ten Assumptions” that formed the basis for a panel discussion at the ACRL National Conference held in Baltimore in spring 2007. This draft also formed the basis for an article published in the April 2007 issue of *College & Research Libraries News*. Following the panel session and publication, committee members received comments from the association membership at large through an online survey that asked for feedback on the “Top Ten Assumptions.” The panel session, publication, and survey facilitated a process of member checking that supported final revisions to the report. Comments received by committee members in face-to-face meetings and through the online survey shaped the final draft and selected comments may be found throughout this report.

## Findings of the Committee

The Research Committee identified the following as the “Top Ten Assumptions for the Future of Academic Libraries and Librarians” (in ranked order):

1. There will be an increased emphasis on digitizing collections, preserving digital archives, and improving methods of data storage, retrieval, curation, and service.
2. The skill set for librarians will continue to evolve in response to the changing needs and expectations of the populations they serve, and the professional background of library staff will become increasingly diverse in support of expanded service programs and administrative needs.
3. Students and faculty will continue to demand increasing access to library resources and services, and to expect to find a rich digital library presence both in enterprise academic systems and as a feature of social computing.
4. Debates about intellectual property will become increasingly common in higher education, and resources and educational programming related to intellectual property management will become an important part of library service to the academic community.
5. The evolution of information technology will shape both the practice of scholarly inquiry and the daily routine of students and faculty, and demands for technology-related services and technology-rich user environments will continue to grow and will require additional funding.
6. Higher education will be increasingly viewed as a business, and calls for accountability and for quantitative measures of library contributions to the research, teaching, and service missions of the institution will shape library assessment programs and approaches to the allocation of institutional resources.
7. As part of the “business of higher education,” students will increasingly view themselves as “customers” of the academic library and will demand high-quality facilities, resources, and services attuned to their needs and concerns.
8. Online learning will continue to expand as an option for students and faculty – both on campus and off – and libraries will gear resources and services for delivery to a distributed academic community.
9. Demands for free, public access to data collected, and research completed, as part of publicly funded research programs will continue to grow.
10. The protection of privacy and support for intellectual freedom will continue to be defining issues for academic libraries and librarians.

The Research Committee also identified a number of emergent issues of concern to the profession. While some of these issues were not yet fully established in the literature of the field at the time of review, all are represented both in that literature and in informal channels for scholarly and professional discussion (e.g., Weblogs) and will be of increasing importance in coming years. This list is selective and unranked. A complete list of the emergent issues can be found in the report. A selection follows:

- There will be broader collaboration between academic, public, special, and school librarians on topics of common concern, e.g., public engagement and media literacy.
- Library facilities and services will become increasingly integrated with research, teaching, and learning programs across campus, including those housed in information technology programs and student services programs.
- The ability to meet the needs of e-science and e-scholarship in the social sciences and the humanities will increase and require new approaches to the design and delivery of core library services.
- Collaboration between academic libraries and university publication programs will increase as their roles become increasingly complementary.
- The focus for academic libraries will shift from the creation and management of large, on-site library collections to the design and delivery of library services.
- The tools and techniques of social computing will provide new opportunities for the design and delivery of library resources and services, but will also make increasing demands on library staff and systems.

### Conclusion

Much has changed in the academic library environment since the publication of the last ACRL Environmental Scan in 2003, but many issues identified in the earlier scan remain relevant to practice, e.g., the increasing role for librarians in educational programs, formal and informal; the impact of digitization programs (as defined most recently by the mass digitization programs sponsored by Google and the Open Content Alliance); changes in the publishing industry and the broader environment for scholarly communication; new approaches to research, teaching, and learning on campus; and the call for accountability in higher education. There is no doubt that these issues will continue to be significant to academic library research and practice in the coming years, or that some of the emergent issues identified in this report will become part of the new “assumptions” about the work of academic libraries and librarians.

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## **ACRL Environmental Scan 2007**

The ACRL Research Committee prepared the Environmental Scan 2007 based on a mixed-method research process that included online surveys, a review of the literature, and a process of member checking (facilitated both by face-to-face meetings and additional online surveying). The purpose of the environmental scan was to identify the major assumptions shaping the practice of academic librarianship, as well as to identify emergent issues of concern to the profession. The report begins with a listing of emergent issues and then identifies a list of the “Top Ten Assumptions for the Future of Academic Libraries and Librarians.” The report concludes with a selective listing of the resources consulted.

### **Emergent Issues**

During the research process leading to the preparation of this report, it became clear that there were many issues that, while not yet fully established in the scholarly literature of the field, were regularly represented both in the professional literature and in informal channels for scholarly and professional discussion (e.g., Weblogs). Many of these “emergent issues” are already of considerable local significance in our libraries and will be of increasing importance in years to come. Below are several statements representing emergent issues. No attempt has been made to rank these issues.

- There will be broader collaboration between academic, public, special, and school librarians on topics of common concern, e.g., public engagement, media literacy.
- Pressure to make library facilities environmentally friendly will increase. Developments in this area will likely take place as part of broader institutional efforts.
- Library facilities and services will become increasingly integrated with research, teaching, and learning programs across campus, including those housed in information technology programs and student services program.
- The library’s print materials will be moved from prime library space and relocated to off-site locations; space currently housing collections will be repurposed to support collaborative learning, new modes of research support, and interactive learning areas.
- Tensions will grow each year as decisions are made that determine what portion of the budget will be used to purchase standardized digital collections as opposed to what amount will be used to preserve and provide access to unique collections held by the library.
- Library patrons will use semantic Web search techniques to locate information resources.
- The need to meet the needs of e-science and e-scholarship in the social sciences and the humanities will increase and require new approaches to the design and delivery of core library services.
- Collaboration between academic libraries and university publication programs will increase as their roles become increasingly complementary.
- The focus for academic libraries will shift from the creation and management of large, on-site library collections to the design and delivery of library services.

- Regional and professional accrediting bodies will require greater accountability using valid assessment techniques.
- A crisis will occur in Library and Information Science (LIS) education as schools prepare students to assume new roles in academic libraries and as contributors to campus programs.
- Interdisciplinary studies, new models of undergraduate and graduate education, and newly developed areas of inquiry will stretch library resources and service models.
- The tools and techniques of social computing will provide new opportunities for the design and delivery of library resources and services, but will also make increasing demands on library staff and systems.

Each of these issues is worthy of further research. In fact, articles on many of these issues are already appearing in the professional literature and in other professional communication networks, and several are already represented in the scholarly literature of the field. It is likely that research into each of these areas will be regularly reported in the coming years.

## **Top Ten Assumptions for the Future of Academic Libraries and Librarians**

### **1. There will be an increased emphasis on digitizing collections, preserving digital archives, and improving methods of data storage, retrieval, curation, and service.**

Public awareness of the issues surrounding large-scale digitization projects has grown as an increasing number of libraries have signed on as partners in projects, such as the Open Content Alliance, the Google Book Search Library Project and Microsoft Live Book Search. Publishers continue to develop extensive digital collections, moving beyond electronic versions of existing collections into the creation (and marketing) of digital collections they have created themselves. For libraries developing their own digital collections (as opposed to those simply licensing access to content created by others), the establishment of institutional repository programs, advances in search technology, creation of tools allowing scholarly use of digital content, and broader changes in the scholarly communication environment are all notable aspects of this assumption.

### Repositories

Institutional repositories provide access to one of the most dynamic venues for digital content creation, curation, and service. The literature on repositories is broad, and touches upon (among other things): auditing trusted repositories and metadata; creative approaches to developing institutional repository services; managing new data types; and discussions on future institutional repository development paths. Seamus Ross and Andrew McHugh (2006) examine the topic of trust and auditing repositories, and discuss the role that evidence plays in verifying whether trusted repositories exhibit certain desired characteristics. Joanna Kaczmarek, Patricia Hswe, and Janet Eke (2006) examine the application of the RLG/NARA audit checklist to repositories, such as the University of Illinois ECHO Repository. Other studies report creative approaches to building repository services, including embedding repositories in existing academic and business sites (Walters, 2006) and developing marketing and communications plans (Gierveld, 2006). In complementary studies, Tyler Walters reviewed the impact of institutional repositories on internal

library functions (“Reinventing the Library,” 2007), and the future of repositories and the various categories of content they will manage (“The New Academic Library,” 2007). The critical topic of metadata standards for repository content was also covered in the literature, with one study arguing that “metadata is the cornerstone of the infrastructure required for exchange and use of information” (Goldsmith and Knutson, 2006).

### Changes in scholarly communication, copyright, and e-books

While much of the writing on scholarly communication focuses on repositories, other studies report changes to the way materials are published (e.g., e-books), and on new efforts to address and educate scholars about author rights and copyright management. One study outlines developments in eBook technologies (Whalley, 2006), while another reports the results of a survey done by academic librarians who studied library users’ awareness and use of e-books (Levine-Clark, 2006). An exemplary study by Crews and Van Westrienen (2007) addresses developments in copyright affecting publishers and higher education through a report of the activities of the Zwolle Group.

Both institutional repository projects and issues related to copyright management were among the topics recognized as a common feature of “scholarly communication education” programs in a survey released by the Association of Research Libraries (ARL) as the final draft of this report was being prepared (Newman, Blečić, and Armstrong, 2007).

## **2. The skill set for librarians will continue to evolve in response to the changing needs and expectations of the populations they serve, and the professional background of library staff will become increasingly diverse in support of expanded service programs and administrative needs.**

Changes in society are reflected in changes on our campuses and in our libraries. The Baby Boomer generation of workers can see retirement in the not so distant future. Our student populations are more representative of the broader population’s ethnic make-up. Added to these demographic trends are technological developments that have changed both what is possible and what is expected.

The convergence of demographic changes, technological advances, and broader social trends compels librarians to accelerate their acquisition of new skills and knowledge. In particular, they must understand and embrace the application of new technologies to instructional programs, as well as to other service programs. To build a staff with these skills, libraries are faced with a choice of recruiting new people who possess these skills or providing developmental opportunities for existing staff. Developing new skills is not new to librarians, but as one librarian responding to the publication of the Top Ten Assumptions states, librarians need to “not only evolve, they need to take a major leap forward to maintain relevancy.” In 2002, Carol Ebbinghouse asked her readers, “Would You Hire You?” and suggested that maintaining current technology skills was key to the answer. More recently, Steven J. Bell and John D. Shank (2007) articulated a vision of a “blended librarian,” i.e., a library professional whose skill set includes traditional professional competencies along with increasingly significant skills related to teaching and to the application of technology to library service. Perhaps Jenny McCarthy best captures the issue and its background in her article, “Planning a Future Workforce: An Australian Perspective” (2005). As she writes: “libraries throughout the world are facing the dual challenge of an aging workforce and a workplace which is requiring significant reassessment of the skills base of its staff as a result of the impact of technology on the delivery of information services. The implications for libraries in responding to this environment are significant.”

The demographic trends affecting academic librarians include the aging of the librarian population, new generations of users with different expectations, and an increasing diversity in the ethnic, racial, and socioeconomic background of our students, faculty, and community user groups. The aging of the current population of librarians is well documented. Not as clearly understood is how increases in minority populations in the United States will affect higher education and library services.

Scott Jaschik (2006) points out the discrepancy between increases in minority populations and their enrollments in higher education and suggests that enrollments of minorities are low possibly because of “lingering problems in the college pipeline.” Keith Lance (2005) argues that the issue has more to do with economic factors that limit minorities from pursuing master’s degrees. Maggie Ferrell (2005) states that continuing low enrollments among Hispanics mean that colleges and universities need to do a better job of recruitment. She concludes that “we can confidently predict that Hispanics will comprise a greater proportion of our population and they will be seeking career advancement through colleges and universities . . . [and that, therefore,] we should consider Spanish language services, collections, and recruitment of Hispanic librarians.”

### Skills and competencies academic libraries are seeking in employees

Job advertisements serve as a good indicator of the qualifications libraries expect their new employees to have. In 2001, Beverly Lynch and Kimberley Robles Smith published the results of a content analysis they had conducted of 220 job advertisements that appeared in *College & Research Libraries News* between 1973 and 1998. They found that knowledge of computer technology had become a routine requirement, that instruction had become a standard responsibility for an academic library’s public services, and that interpersonal, written, and oral communication skills were critical for all librarian positions. A more recent study done in Australia (Kennan, Cole, and Willard, 2006) analyzed job advertisements published in 1974, 1984, 1994, and 2004, and found that librarians were expected to have a broader range of skills than in the past. Specifically, they noted a marked increase in the need for skills in Web design and the use of electronic resources, as well as for good interpersonal and behavioral skills. Both of the above studies found a continuing demand for traditional skills as well as for new sets of skills. While many studies have articulated the changing nature of professional skill requirements in areas such as reference librarianship, cataloging, and instruction librarianship, James Neal (2006) introduced a new dimension to the discussion in his identification of the increasing need to incorporate individuals with professional backgrounds outside of librarianship into the academic library.

### Standard librarian skills and core competencies

The American Library Association’s (ALA) draft “Statement of Core Competencies” is available at <[www.ala.org/ala/accreditation/prp/DraftCoreCompetencie.pdf](http://www.ala.org/ala/accreditation/prp/DraftCoreCompetencie.pdf)>. This 2005 statement is directed at LIS educators preparing students for the library profession. The competencies are broad by design so that they may remain relevant over time.

The statement had several categories, including Professional Ethics, Resource Building, Knowledge Organization, Technological Knowledge, Knowledge Dissemination: Service, Knowledge Accumulation: Education and Lifelong Learning, Knowledge Inquiry: Research, and Institutional Management. Each category has items listed under it. For example, Technological Knowledge has four items:

- demonstrates a comprehension of current information and communication technologies,

and other related technologies, as they affect the resources and uses of libraries and other types of information-providing entities;

- has basic knowledge of the concepts and processes related to the assessment and evaluation of the specifications, economic impact, and efficacy of technology-based products and services;
- understands and can apply the principles of techniques used to continuously track and analyze emerging technologies to recognize relevant innovations; and
- demonstrates proficiency in the use of standard information and communication technology and tools consistent with prevailing service norms and professional applications.

ACRL recognizes that the core skills cited in the statement revolve not around the technologies themselves but around the skills needed to assess student needs, keep track of new technologies, and adapt those that are found relevant to the library's mission.

What are the current needs of students? Which technologies dictate librarian skills? What expectations are the current populations of students and faculty bringing to the academic library? What are the emerging technologies and innovations that will impact library services? Veronica Reyes (2006) notes that for today's undergraduates, "the boundaries between work, play, and study are blurred. Connectivity has fundamentally changed the way people work, think, and interact with others. Computers are not viewed as a new technology but rather an integral part of daily life along with cars and phones." In this environment, librarians must be ready to provide access to the library's collections and services anytime and anywhere. Jerry Campbell (2006) called for academic libraries to make fundamental changes in order to remain relevant and vital to its patrons. This must be done by recrafting services, he argued, including collection development, reference, and instruction, and by reinventing the library as a place. The changes brought about by the Internet and the demand to provide services anytime, anywhere have made transformation an imperative.

In addition, librarians must assess the impact of Web 2.0 on library services and the ways in which our users view the library. Tim O'Reilly (2005) discusses a number of characteristics that distinguish Web 2.0 from previous ways of disseminating information. One of these, he notes, is support for the transition from a publishing paradigm to a participation paradigm. This transition affects libraries and librarians in three ways. First, librarians will be expected to "harness [the new] collective intelligence." Examples of collective intelligence include encyclopedias such as Wikipedia, social networking services such as MySpace and FaceBook, social tagging "folksonomies" such as del.icio.us and Flickr, recommendation systems such as those offered by Amazon and e-Bay, and the shared wisdom of blogs. Second, libraries will find that users subscribing to the participation paradigm will want to support the digitization of unique library collections and efforts to make them available to the public at no cost. Third, the new "participation paradigm" will promote the advent of Web-based open source software and the Internet as a platform for applications. Open source software supports anything from Open Access (OA) journals to RSS feeds, and the Internet as a platform supports information sharing opportunities, such as podcasting and the greater dissemination of locally developed databases. It goes without saying that librarians must be able to use these new technologies.

While Web 2.0 technologies may make new approaches to library service possible, we are routinely reminded that traditional services will remain with us, as well. Jakob Nielsen (2007) lamented that companies were neglecting basic design principles in their haste to implement

Web 2.0 services. Librarians must avoid making the same mistake by being cognizant that they will need to continue providing those traditional services that are still in demand. Campbell (2006), even though he is calling for a complete transformation, acknowledges that libraries will need to provide at least a decade of “legacy operations.”

Finally, librarians need to develop skills to assess the needs of library users. Gillian Hallam and Helen Partridge (2006) argue for the inclusion of Evidence Based Practice (EBP) in the curriculum of LIS programs. They maintain that “library and information professionals need to be willing to develop the skills and knowledge essential for EBP and to be motivated to use these within the context of their day-to-day work.” A comment from a librarian on a survey distributed by the Research Committee addresses this issue: “LibQUAL data indicates that [users’] expectations are changing faster than our capacity to meet their changing needs and expectations. We need more research into our users’ environment to know how best to direct our efforts to respond to these changes.” OCLC’s 2006 report (“College Students’ Perceptions of Libraries and Information Resources: A Report of the OCLC Membership”) was an important attempt by librarians to determine the information-seeking habits and preferences of the college student populations their libraries serve. In the coming years, we expect the example set by the University of Rochester to guide new efforts to assess the quality of library services to students, faculty, and other campus constituencies.

### Continuing education opportunities

The opportunities that have existed in the past for formal education through degree programs and classes, as well as professional development offered by national and regional organizations and a librarian’s own institution, have multiplied due to improvements in online learning technologies. Carol Ebbinghouse (2002) addresses these new learning technologies by way of questions she asks individual librarians about their continuing education. Organizations and professions now provide online continuing education. ACRL has begun to supplement conferences and events with e-learning opportunities <[www.ala.org/ala/acrl/acrlproftools/elearning.htm](http://www.ala.org/ala/acrl/acrlproftools/elearning.htm)>. Some libraries are also now providing online continuing education, but others are lagging behind. Paula Warnken (2004) discusses how libraries can manage change. She points out that “in our libraries, technological advances have been occurring at unprecedented rates without commensurate organizational changes.” Her article provides advice on how libraries can manage the change and the development of new skills for its staff.

### Observations from the Research Committee’s Survey

The consensus of the survey participants responding to this assumption was that librarians must develop new skills. In order to remain relevant, they must assess student and faculty needs and keep track of new technologies. Below are some of the participants’ comments.

- “In current and future hires we will be looking for more instruction/info lit skills, ability to interact effectively with faculty, administrators, as well as students, and computer skills.”
- “We must be guides, facilitators, and collaborators in an environment that never stops changing.”
- “Librarians should have been in the past, and need to be in the future, viewed as scholars in an academic environment; colleagues rather than servants.”

- “Traditional (Baby Boomer) librarians are often resistant to the changes, and there are difficulties with newer and traditional librarians working together.”
- “True, but you seem to assume that veteran librarians haven’t or can’t evolve their skill sets when many clearly have time and time again. I know of a director who has started to speak of “legacy librarians” -- an extremely unfortunate way of thinking. One I would not want to see ALA encourage.”
- “We are all electronic resources librarians now.”

### **3. Students and faculty will continue to demand increasing access to library resources and services, and to expect to find a rich digital library presence both in enterprise academic systems and as a feature of social computing.**

Student expectations for faster and greater access to services are documented in Neil Howe and William Straus’ “Millennials Go to College: Strategies for a New Generation on Campus” (2003). This study reports that the college students of today, children of the Baby Boomer generation, have much higher expectations for college services. Another report titled “Parent and Teen Internet Use” (MacGill, 2007) reports that Internet use has been continuously increasing and that different age groups use the Internet differently. The report also reveals that Internet use seems to vary depending on how a user connects to the Internet. For example, high speed access, offered by many college and university campuses, creates more demanding users. Stephen Abram and Judy Luther (2004) describe how the members of the Millennial generation differ from Baby Boomers, and identify nine Millennial generation behavioral traits and their effect on library services. According to Abram and Luther, Millennials do not differentiate information on the basis of format or media type, expect information and entertainment to be available to them whenever they need it and wherever they are, multitask and expect all information appliances to support multitasking, and see content and technology as inseparable. Jill Taylor-Roe (2006) noted that “the success of e-journals means that many users now expect 24/7 access to a much wider range of library resources.”

David Lewis of Indiana University/Purdue University at Indianapolis recently presented a model for the future of academic libraries (2007). The model includes a complete migration from print to electronic collections; retirement of legacy print collections; redevelopment of library space; repositioning library and information tools, resources, and expertise; and a change in the focus of collections from purchasing materials to “curating” content. This model goes a long way towards addressing student expectations for faster and greater access to services.

The demand for faster and more comprehensive access to library services and resources is not limited to online services and resources. Faculty and students also appreciate effective on-site, in-person assistance. Many librarians have responded to this demand by taking research and technology assistance across campus to places like the student center (Walter, 2005; Kuchi, 2004), department offices (Wagner, 2004; Lee, 2004), and other campus locations.

### **4. Debates about intellectual property will become increasingly common in higher education, and resources and educational programming related to intellectual property management will become an important part of library service to the academic community.**

Issues relating to intellectual property have been of great interest to libraries and institutions of higher education for a long time, and advances in technology have made this topic increasingly

important over the last decade. Photocopying machines, which made it easy for users to reproduce printed materials, were the first of a long line of technologies that have made the contents of copyrighted materials readily available to many people. The growth of the Internet with the increasing importance of digital materials, the growth of distance education, the growing importance of open source software, the emergence of file sharing on peer-to-peer networks, the 1998 Digital Millennium Copyright Act, and Google's plan to digitize the holdings of its library partners are forcing librarians and educators to reconsider the meaning of intellectual property and how to determine ownership. The OA movement and Web 2.0 applications such as Wikis promote information sharing, while at the same time information is becoming a valuable commercial commodity. Scholarly communication is being reshaped by advances in technology and by the growing realization on campuses that the high cost that libraries must pay for journals is to a significant extent the result of faculty members giving up intellectual property rights to their research.

### Indicators of the importance of intellectual property and copyright issues today

- Library associations are becoming increasingly aware of the importance of intellectual property issues for academic libraries, as demonstrated by the attention these issues draw in the ACRL's 2006 legislative agenda <[www.ala.org/ala/acrl/acrlissues/washingtonwatch/legagenda.htm#108](http://www.ala.org/ala/acrl/acrlissues/washingtonwatch/legagenda.htm#108)>.
- ARL has recently initiated a new effort to develop resources to educate faculty and others in U.S. institutions of higher education about intellectual property and copyright <[www.knowyourcopyrights.org/](http://www.knowyourcopyrights.org/)>.
- Efforts such as the Creative Commons <[creativecommons.org/](http://creativecommons.org/)>, MIT Open Courseware <[ocw.mit.edu/index.html](http://ocw.mit.edu/index.html)>, SPARC <[www.arl.org/sparc/](http://www.arl.org/sparc/)>, and various OA publishing initiatives that facilitate the sharing of intellectual content and permit scholars to retain certain rights to intellectual property are becoming more popular.
- An increasing number of libraries and universities have copyright, scholarly communication, intellectual property, and technology transfer offices.
- There is an increasing emphasis on educating faculty, students, and librarians on copyright issues. Most universities have tutorials of some type. Some leaders in the library profession are calling for librarians of the future to be better educated on copyright issues, and some LIS programs offer courses on the subject.

### Implications

- Librarians need to partner with faculty and other offices on campus to educate individuals of all types about copyright and intellectual property issues.
- Librarians must give high priority to ensuring that provisions in legislation such as the Technology, Education, and Copyright Harmonization (TEACH) Act, which sets forth conditions under which government bodies and accredited nonprofit educational institutions can use copyrighted works in distance education courses conducted over the Internet, are not eroded.
- Librarians realize that balancing the needs and rights of creators, publishers, and users is often difficult in the digital environment. Nonetheless, legislation such as the Digital

Millennium Copyright Act (DMCA) has a significant impact on the ability of libraries and educational institutions to provide the fair use of digital materials. Librarians must stand up for the rights of users to fair use of digital materials.

- Ways must be found to implement intellectual property management in a more comprehensive and sophisticated manner than presently provided by Digital Rights Management (DRM) systems.
- Librarians must continue to work with faculty and professional organizations to persuade them to use OA to scholarly works. Efforts such as the Creative Commons, SPARC, institutional repositories, and other OA publishing initiatives that facilitate free access to scholarly material should be supported.
- OA to federally funded research must remain a priority for the library community.

**5. The evolution of information technology will shape both the practice of scholarly inquiry and the daily routine of students and faculty, and demands for technology-related services and technology-rich user environments will continue to grow and will require additional funding.**

As noted above, students and faculty will continue to demand that the campus and the library provide the level of technology that they find on retail and social networking sites. Keeping up with this demand will be an ongoing expense.

### Cyberinfrastructure

Cyberinfrastructure includes the technology, policies, and people who support scholars and researchers participating in communities that advance knowledge and learning. The nation's cyberinfrastructure will experience important developments in the future. Three important reports on cyberinfrastructure were published between September 2006 and March 2007. The first, "To Stand the Test of Time: Long-term Stewardship of Digital Data Sets in Science and Engineering" (ARL, 2006), focuses on the need for new partnerships and collaboration among domain scientists, librarians, and data scientists to better manage digital data collections. This joint report of ARL and the National Science Foundation calls for librarians not only to be at the table but to lead efforts to curate digital research data. The second report, "Our Cultural Commonwealth: The Final Report of the American Council of Learned Societies Commission on Cyberinfrastructure for the Humanities and Social Sciences" (American Council of Learned Societies, 2006), calls for a coordinated effort to build a Humanities and Social Sciences cyberinfrastructure alongside the Sciences and Engineering cyberinfrastructure. The third report, the National Science Foundation's update to the Atkins report of 2003, is "Cyberinfrastructure Vision for 21st Century Discovery" (National Science Foundation, 2007). This report explores the nature of the diverse teams of professionals required to develop, deploy, and transform scientific and engineering research and learning.

### Resource Discovery and Access

Much is now being written about resource discovery and access. Bradley (2006) reviews and analyzes new Google services and ponders whether the technology giant has "bright competitors nipping at its heels." Baksik (2006) provides a thorough overview of the Google Books project and notes that Google and scanned versions of books are here to stay, despite all the intellectual property entanglements. Several recently published articles challenge the traditional role of the

online public access catalog (OPAC). The author of one of these articles asserts that OPACs have lost the battle for user attention to Web search engines. While some authors discuss how OPAC may be brought back, other authors doubt that it will make a comeback. Some of them claim that librarians have waited too long to respond to search engines (Markey, 2007). Others warn against the incremental steps approach that some librarians espouse in discussions on how to improve catalogs and cataloging (Coyle and Hillman, 2007). Dempsey (2006) suggests that library resource discovery will live hand-in-hand with Web resource discovery, with the former being constantly reshaped by the latter. Authors of some recently published articles are also reporting that new library systems depart completely from the traditional paradigm of the earlier systems (Murray, 2006) and are beginning to alter the library service model.

### Social Software and “Library 2.0”

The professional literature has covered Library 2.0 extensively. Generally, Library 2.0 advocates claim that libraries are undergoing significant change. The change includes, among other things, infrastructure, content, and services. Much of the literature that addresses the effect on libraries of such new Web 2.0 developments as social software is still trying to define Web 2.0 and what it means for libraries. Michael E. Casey and Laura C. Savastinuk (2006) point out that the meaning and significance of Web 2.0 differ from library to library. They conclude that each library must interpret its meaning and significance and apply the interpretations accordingly. Jack Mannes (2006) attempts to define “Library 2.0” and to explain what its impact will be on libraries and librarians. Elaine Peterson (2006) comments on social tagging Web content and suggests that it has its own philosophical underpinnings. She discusses tagging versus structured cataloging and how the two might coexist. Librarians are experimenting in increasing numbers with the ways in which social tagging and other Web 2.0 tools and concepts might work in a library environment (Farkas, 2007; Stephens, 2006), and there is no doubt that there will be increasing attention in the literature to innovative projects in academic libraries, such as the University of Pennsylvania’s PennTags <[tags.library.upenn.edu/](http://tags.library.upenn.edu/)> and Stanford University’s Delicious IC <<https://www.stanford.edu/group/ic/cgi-bin/drupal/delicious>>.

### **6. Higher education will be increasingly viewed as a business, and calls for accountability and for quantitative measures of library contributions to the research, teaching, and service missions of the institution will shape library assessment programs and approaches to the allocation of institutional resources.**

Many colleges and universities are now facing serious financial challenges caused by a variety of economic and demographic factors. These include widespread tuition discounting, changes in state and federal support, a lack of sufficient endowment, and shrinking enrollment. However, the conventional approaches to dealing with these issues are no longer effective. As a result, American institutions of higher education are now turning to the same sound financial management principles used by corporate America. The University of Phoenix and other for-profit educational institutions are being recognized by some as models for academe in the 21st century (Berg, 2005). Most universities have undertaken profit-seeking ventures for quite a while, and the importance of these ventures to the university has increased over time. They include high-profile athletic teams, patent licensing, and technology transfer. For some, online learning is the latest episode in a long history of entrepreneurial ventures.

In the past, universities did not evaluate academic programs in terms of costs versus benefits. They focused on the “core values” of the institution. Now the belief that higher education must begin to produce tangible evidence that it is committed to improving student learning and achievement has become very important and widespread among universities (Rhoades and

Slaughter, 1997). Schools (and libraries) will have to demonstrate in a more quantitative way that they have had a positive impact on student graduation rates, retention, and transfers. Margaret Spellings, U.S. Secretary of Education, formed the Commission on the Future of Higher Education in late 2005 to engage the public in a national dialogue on higher education. Specifically, the commission was charged with developing a strategy for higher education to meet the needs of America's diverse population and address the economic and workforce needs of the future. Its final report, "A Test of Leadership: Charting the Future of U.S. Higher Education" (2006), made several recommendations for reform grouped into five broad categories. "Transparency and Accountability" was one of these categories. The commission noted in summarizing the recommendations of this category that "improved accountability is vital to ensuring the success of all the other reforms we propose. Colleges and universities must become more transparent about cost, price, and student success outcomes, and must willingly share this information with students and families."

### Observations from the ACRL Research Committee's Survey

While comments on the completed survey forms varied in terms of endorsement of a business model for higher education, most agreed that many libraries have already started using a business model in their own restructuring efforts. One respondent noted that corporate America has generally downsized and outsourced its special libraries and that academic libraries should take note. In a similar light, several respondents suggested that academic libraries need to make better use of "performance indicators" and perhaps even return on investment (ROI) measures. Using ROI data to make decisions may be unrealistic for an academic library, but the point of these comments is not so much to specify which tool to use, but rather to highlight the fact that academic libraries need to think strategically about how to stay relevant and how to add value to the parent enterprise. One concern raised by some of the respondents was that use of a business model might threaten academic freedom and other values. Others argued that an accountability model does not in any way infringe upon academic freedom and the library profession's core values. These core values and accountability are not mutually exclusive. They can in fact support each other.

### **7. As part of the "business of higher education," students will increasingly view themselves as "customers" of the academic library and will demand high-quality facilities, resources, and services attuned to their needs and concerns.**

In 1997, Arthur Levine, then president of Columbia University's Teachers College, reported on a five-year national study of undergraduate attitudes about higher education (Levine, 1997). The study's findings were shocking. College, he wrote, "is not as central to the lives of many of today's undergraduates as it was to previous generations. It is becoming just one of many activities in which they engage every day." Students prefer relationships with schools similar to those "they already enjoyed with their bank," Levine continued, "their gas company, their supermarket." They "want their colleges nearby and open during the hours most useful to them, preferably, around the clock. They want easy, accessible parking, no lines, and a polite, helpful, and efficient staff. For the most part, they are willing to comparison shop, placing a premium on time and money. They do not want to pay for activities and programs they do not use or can get elsewhere."

Levine demonstrated that "rising consumer expectations" and "rising student expectations" rank among the most significant change drivers in higher education, and that faculty and academic administrators (and librarians) must prepare for "growing expectations for services and service quality, fueled in part by the high cost of education." "Students are clients," he

concludes, and institutions of higher education must consider investments in classrooms, residence halls, recreational facilities, and libraries as part of the package that supports a student's decision to enroll (and remain) at a given institution in a higher education environment characterized by competition and choice. In the June 9, 2006, issue of the *The Chronicle of Higher Education*, Audrey Williams June reported on a survey that sought to determine the role of higher education facilities in student enrollment choices. The choice: "facilities related to the student's major" was selected more often than the other choices (73.6 percent of respondents) as extremely or very important in choosing a college. Next in importance came the library with 53.6 percent of the respondents selecting the library as extremely or very important in choosing a college. The original report of the survey, sponsored by the Association of Higher Education Facilities Officers, can be found at <[www.appa.org/files/FMArticles/fm030406\\_f7\\_impact.pdf](http://www.appa.org/files/FMArticles/fm030406_f7_impact.pdf)>.

### Observations from the ACRL Research Committee's Survey

Most respondents agreed with this assumption, although some objected to using the term *customer* to identify a student. Some argued that we must not let the students' immediate desires interfere with the library's responsibility to meet long-term goals such as, in the words of a respondent, "helping integrate them into the world of scholarship." Closely related to this wants-versus-needs debate is the concern that higher education, libraries included, need to do a better job promoting the value of understanding the world of scholarship to the student. One respondent stated that "if we are going to be successful in taking the high road, so to speak, and not just dispensing enough for them to write a paper or pass a final, but actually enlightening them to the importance of information fluency, we need to sell this effectively." Another explained that "we want those outside the library profession to understand and appreciate libraries in order for libraries to secure proper funding. Librarians need to promote the library's value-added services and resources to both students and decision makers. This concept of doing a better job of marketing should be discussed in much more depth and at higher levels within academic librarianship because it may be a key to the continued financial well being of the profession."

### **8. Online learning will continue to expand as an option for students and faculty – both on campus and off – and libraries will gear resources and services for delivery to a distributed academic community.**

A transformation is occurring in how universities conduct its educational programs. New technology; changes in the makeup of student bodies, with adults, minorities, women, and foreign students participating in ever increasing numbers; and online learning are major components in this transformation, according to recent volumes of the University Continuing Education Association's annual reports titled "Lifelong Learning Trends: A Profile of Continuing Education." One of these reports describes several of the trends bringing about this transformation. One trend is the great potential of the adult population in the United States for participation in online learning. According to the report, online learning has become an appealing alternative for working adults with career and family responsibilities who want to enhance their education. Other trends include the fast and consistent growth of jobs in occupations requiring more education, and the increased number of American households that have access to technology-based instruction.

Congress reauthorized portions of the Higher Education Act (HEA) in 2006 (Carnevale, 2006). Included in the reauthorization was the elimination of what was known as the "Fifty Percent Rule." The change reverses an earlier requirement that in order for postsecondary educational institutions to be eligible for federal student-aid programs, they must provide at least 50 percent

of instruction in a classroom setting, and no more than 50 percent of students may be enrolled in correspondence courses. This new ruling will most likely make online education even more attractive to universities than it had been before 2006.

### Observations from the ACRL Research Committee's Survey

An earlier draft of this report focused this discussion on "distance learning," but several respondents argued that terms such as *online learning* or *distributed learning* were more appropriate. The online learner is just as likely to live across the street from the main campus as to live a thousand miles away. Another respondent argued that online learning and face-to-face learning are not mutually exclusive, i.e., online learning is frequently integrated into the classroom curriculum to create hybrid courses that are somewhere between Web-based courses and traditional courses. Most agreed that the predictions of doom and gloom for traditional campuses have passed and that there is a well-established basis for both types of learning and course delivery in higher education for the foreseeable future.

### **9. Demands for free, public access to data collected, and research completed, as part of publicly-funded research programs will continue to grow.**

Recent literature on Open Access reflects the extensive growth of this relatively new movement to make publicly funded scientific research freely available to the public. High profile OA initiatives like Highwire Press, Public Library of Science (PLoS), BioMedCentral, and others have attracted the attention of scholars interested in supporting improved publishing models (Walters, 2007; Park and Qin, 2007). In the past few years the promotion of OA has expanded beyond libraries and has gained the support of many governments, the United States and the European Union in particular, the scientific community, publishers, funding agencies, and the general public (Albert, 2006). The National Institutes of Health have supported legislation requiring that the results of government-funded research be made freely available to the public online (Engelward and Roberts, 2007). As this report goes to press, the U. S. Congress continues to debate this issue. Similar legislation was also proposed in the European Union (EU), but ultimately lost support due to pressure from the publishing industry (Ensreink, 2007). Funding agencies, such as the Howard Hughes Medical Institute (HHMI), have implemented or are considering policies that encourage those scientists they fund to self-archive in open repositories or to publish in OA journals ("Funding Agencies Toughen Stance on Open Access," 2007).

A battle between OA proponents and the publishing industry is escalating. The Association of American Publishers recently hired a public relations consultant, who is famous for using "media messaging" to shape the climate change debate, to assist it in shaping the debate on OA (Giles, 2007). On the other hand, many publishers are supporting OA in one form or another and are experimenting with a variety of business models to respond proactively. Some publishers have hybrid programs that give authors the option of paying to make their articles freely accessible. Others are altering subscription models to give free access to older journal content (Suber, 2007). This multifaceted and contentious issue will likely continue to get coverage in the professional literature over the next several years (Albert, 2006).

### **10. The protection of privacy and support for intellectual freedom will continue to be defining issues for academic libraries and librarians.**

In the 1960s, the Supreme Court ruled in support of legislation that assured the right of Americans to their privacy. Librarians have always recognized the importance of protecting the privacy of library users' personal records and have informed their communities about the

importance of this issue. Most recently, the library profession has opposed relatively recent government laws such as the USA PATRIOT Act that threaten the right to privacy. Some librarians have gone so far as to refuse to comply with Federal Bureau of Investigation (FBI) requests for library patron records (*American Libraries*, 2006). Becky Albitz (2005) describes the climate of suspicion and mistrust the USA PATRIOT Act has created. In a recent document issued by the U.S. Department of Justice's Office of the Inspector General, the authors noted that, "according to FBI data, the FBI issued approximately 8,500 National Security Letters (NSLs) in the calendar year 2000, the year prior to the passage of the Patriot Act. . . . The number of NSL requests increased to approximately 39,000 in 2003, approximately 56,000 in 2004, and approximately 47,000 in 2005." The Office of the Inspector General later stated that these numbers are underreported for various reasons. ALA has publicly criticized the Department of Justice for its use of these letters in libraries. The USA PATRIOT Act was reauthorized in 2006.

Academic freedom holds a time-honored place in academe. Some are concerned that the absence of privacy will erode academic freedom. Libraries serve as repositories of knowledge. Faculty and students have access to this knowledge and are encouraged to use it. But fear of censure, due to lack of privacy, may discourage this use. John Shuler (2004) defines privacy and describes the tradition of mutually assured anonymity in academic libraries. He suggests that electronic resources are eroding both privacy and anonymity and argues that academic libraries have a new role to play in protecting privacy. He maintains that libraries must let its users know what information is collected, stored, and shared; what determines privacy arrangements with vendors and users; and what determines the expectations of privacy. In her article "Walking a Tightrope," Karen Coombs (2004) describes the tension between the goals of protecting user privacy and fulfilling institutional missions and goals. Coombs emphasizes the importance of privacy in libraries but notes that only 14 percent of all libraries have a privacy policy.

Other authors note the need to balance privacy with the emerging need to personalize the libraries' services. The authors Robert McDonald and Chuck Thomas (2006) point out that the "dogmatic library protection of privacy inhibits library support for file-sharing, work-sharing, and online trust-based transactions that are increasingly common in online environments, thus limiting seamless integration of Web-based services." It is true that some may dismiss the importance of privacy in this new age of online access. Users of social networking sites, such as Facebook and Myspace, may feel no discomfort in sharing their private information. Other users of these sites may not know that private information about them could become public information. Indeed, the public at large may well have less regard for keeping library use records confidential.

## Appendix A: ACRL Research Committee Roster 2007-2008

Scott Walter, Chair 2007-2009  
Associate University Librarian for Services  
University of Illinois

James L. Mullins, Chair 2005-2007  
Dean of Libraries  
Purdue University

Steven M. Adams, Member  
Biological and Life Sciences Librarian  
Princeton University

Frank R. Allen, Member  
Associate Director  
University of Central Florida

Eric L. Frierson, Member  
Education and Political Science Librarian  
University of Texas Arlington

Jon R. Hufford, Member  
Associate Librarian  
Texas Tech University

Rebecca Jackson, Member  
Head, Social Sciences and Humanities  
Department  
Iowa State University

Blake Landor, Member  
Classics/Religion/Philosophy Bibliographer  
University of Florida Libraries

Regina C. McBride, Member  
Associate Dean  
Southern Illinois University

Ashley Pillow, Member  
Outreach Librarian  
Loyola University New Orleans

Ruth A. Vondracek, Member  
Head, Research Consulting & Innovative  
Services  
Oregon State University

Tyler Walters, Member  
Associate Director for Technology &  
Resource Services  
Georgia Tech Library

Kathy A. Parsons, Ex-Officio Member  
Head, Stacks & Service Desks  
Iowa State University Library

Kara J. Malenfant, Staff Liaison  
Scholarly Communications & Government  
Relations Specialist  
Association of College & University  
Libraries

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