Libraries

1. Libraries of the twentieth century have been characterized as the "heart of the campus." How will they be characterized in the twenty-first century?

Clifford Lynch, Executive Director, Coalition for Networked Information (CNI): This characterization actually goes back a lot farther than the twentieth century. I suspect that in the twenty-first century, their role as stewards of campus information will, if anything, increase. They will become a more active participant in the academic enterprise.

Patricia Battin, Consultant: In an article in *Educom Review* in 1984, I wrote that the appropriate metaphor for the library is the "DNA of the academic institution." As the genetic code, the character and quality of the information resources will determine the character and quality of the institution. I believe that to be true for the twenty-first century.

Richard E. Lucier, Interim Associate Vice Provost for Academic Initiatives, University Librarian and Executive Director, California Digital Library, and Systemwide Planning for Libraries and Scholarly Information, Office of the President, University of California: The character of academic research libraries in the twenty-first century is dependent on many forces that are at work, including the changing nature of higher education and scholarship, the information marketplace, and technology. That said, librarians do have the opportunity to influence this process, but it will take strong and sustained leadership. I would like to see us aim for developing the library in a way that it will be seen as the "heart of scholarly communication."

Carol A. Mandel, Dean of Libraries, New York University: The "heart" will continue to be a good metaphor for the campus library, a metaphor that takes on additional layers of meaning as the library pumps scholarly information—the "lifeblood" of study and research—through the campus network. The library will continue to be important as a repository of older physical information and as a place for intellectual pursuits, even as it expands its added role as the source of electronic scholarly resources.

Deanna B. Marcum, President, Council on Library and Information Resources: The library building now at the center of the campus will remain there—but as a re-purposed cultural and learning center where all members of the campus community come together. Many library services will be available from the desktop and will not necessitate a visit to the physical library space. Books and journals may be maintained in low-cost repositories, and the library space can be adapted for students and faculty engaged in research and learning.

Duane Webster, Executive Director, Association of Research Libraries: Research libraries of the future may well be characterized as the symphonic orchestra of the university: a creative enterprise weaving together traditional and contemporary sounds (collections) to deliver a technologically sophisticated performance of an ever-changing melody (of services). An orchestra (research library) is different in size from a string quartet (college library), yet both perform successfully only if well staffed, finely practiced, creatively led, and strategically targeted at the interests and preferences of differentiated audiences.

2. How important is collaboration between the library and other information providers on campus?

Lynch: This collaboration is critical, but it is a part of a much broader collaboration that also encompasses faculty, information technologists, instructional technologists, and others.

Battin: Collaboration between the library and other information providers on campus is not only important—it will be essential to survival in the digital age.

Lucier: Collaboration between librarians and other information providers on campus is, without doubt, critical. It does concern me that it seems necessary to ask this question. We must move beyond this and aggressively focus our (all information providers) attention on substantive collaboration with faculty if we hope to embed ourselves in scholarship, teaching and learning, and research.

Mandel: Questions 2 and 3 are so intertwined that I will answer them together. Please see my answer under Question 3.

Marcum: Collaboration among information providers is critically important. Provosts have grown tired of competing arguments from the information agencies on campus. Technology facilitates collaboration; university administrators will demand it. Librarians and information technology specialists who envision the transformation of the university to take advantage of technology have already embraced collaboration.

Webster: Successful collaboration is critical. Yet the academic library is already one of the most aggressively collaborative units on campus: OCLC was begun as a cooperative cataloging service in Ohio; libraries were early supporters of the Internet; and libraries pioneered interinstitutional arrangements such as interlibrary loan, document delivery, and collective licensing agreements. Likewise, the existing link between research libraries and academic departments and university administrators will only grow stronger as emerging technologies facilitate intracampus collaboration.

3. What role do you envision that technology will play in the provision of library services to students and faculty in the future?

Lynch: More and more library services will be technology-enabled. Technology will shape and extend these services. But it's important to note that the fundamental nature of library functions will remain largely constant; in most cases, technology will shape tactics and extend reach rather than fundamentally redefine roles.

Battin: Technology will continue to define (and redefine) the shape of the traditional library functions of creation, storage, dissemination, use, and preservation of knowledge that underlie the scholarly process.

Lucier: Technology will play an increasing role and will replace people in the delivery of many of today's basic services. I view this as very positive because it frees up those same people to involve themselves with students and faculty as partners in scholarship and teaching. Librarians have the opportunity to reinvent themselves and grow professionally if they are willing to hand over some of their work to technology and focus on new activities. This represents an enormous personal and institutional challenge.

Mandel: Technology will not have a separate "role" but will increasingly be woven into the fabric of every library service. Library services will be joined to technology to achieve their mission just as ink bonds to paper to deliver the printed word. In an environment where content, medium, and application merge, collaboration is the essential model of operation. The library's most active ongoing collaborations will be with academic information technology organizations and with teaching faculty, focusing on direct support of teaching and research. Other partnerships will be aimed toward the development of particular new programs, e.g., partnerships with the university press to achieve new models of electronic publishing or with the bookstore to develop electronic reserves, and will form and re-form as new possibilities emerge.

Marcum: Technology allows library services to be available to students and faculty whenever and wherever they need such services. Technology makes possible round-the-clock library services without increasing investment in human resources. In addition, research materials increasingly exist only in digital form. Such resources are available only with the application of technology.

Webster: Libraries, like students, are one of society's earliest adopters of technological innovations. In the future, libraries will work with technology to do one of the things they do best: select and organize content. Thus they will address the widespread concern about the difficulty of finding and evaluating information on the Web. Libraries will continue to exploit the inevitable technological innovation to improve productivity, control costs, enrich services, and deliver the high-quality content that is demanded.

4. What is the biggest challenge facing libraries in the future?

Lynch: This is hard to answer because there are so many: understanding the economics and intellectual property; establishing the right vision and implementing it; incorporating radical changes in technology and culture.

Battin: Technology enables the individual student/scholar to customize information requirements. The biggest challenge for academic libraries will be to adapt their organizational structures and professional talents to create user-centered information resources to respond to a wide spectrum of demands.

Lucier: There are so many huge challenges facing libraries and librarians that I find it difficult to isolate one. That said, I think it is extremely important to focus resources and energy on working with scholars in developing alternative forms of scholarly communication. This is a long-term effort that demands thoughtful, sustained, and creative activity but one that is essential to sustaining scholarship and the creation of new knowledge in a democratic society.

Mandel: Ensuring continued access to electronic resources is our greatest challenge, which we face on two fronts. First,

short-term licensing of electronic information (the only means of acquiring most of what is currently available) does not enable control of future access to these resources. Second, rapid cycles of technological obsolescence defy traditional preservation strategies. Today's paradigms do not work in these situations. Preserving future use of digital information awaits conceptual breakthroughs in the next century.

Marcum: Leadership is the biggest challenge facing libraries in the future. Integrating massive print collections and electronic resources, facilitating the deep and wide collaborations required with other information agencies on campus, and streamlining operations to achieve cost efficiencies are essential tasks of information managers. Leaders must be able to imagine the kinds of library services that are needed by faculty and students.

Webster: Creating library.org is the challenge of the next millennium. Libraries of the future must serve a set of constituents and expectations different from those of the twentieth century. Library.org is a characterization of this new library, one that delivers traditional values in our rapidly changing world: open access to carefully selected and relevant collections; availability of a robust and dynamic information commons; responsive, technologically advanced services ensuring timely engagement and satisfying a wide variety of information needs.

5. Is the Web a library, and if not, will it ever become one?

Lynch: The Web is not a library. It is popular to characterize the Web as the world's digital library, but I believe that this is not only disingenuous but counterproductive and misleading. Certainly, the Web offers a wealth of raw materials that may be appropriate for library collections. It is a user interface to many library collections and a way of reaching library services. But it is not a library—it is not managed.

Battin: The Web today is a global information commons of great power for disseminating all kinds of information. For it to be useful for the higher education community, the technological power of the Web must be managed by some form of organized collaborative management to establish and maintain access conventions, shared funding, validation and authenticity certification, and preservation/archiving responsibilities.

Lucier: I see the Web as a tool, one of many tools, that gives us the means to build a global library, to the extent that we are able to summon the political will and resources to do so. But I do not see the Web, in its current form, as a library.

Mandel: A library is defined by three fundamental functions: (1) selection to create a "collection"; (2) organization to enable access; and (3) preservation for ongoing use. Although technologies may evolve to add the second function to the Web, the first and third functions are antithetical to the very nature of today's Web. The Web's successor will become more "library-like," and libraries will continue to become more "Web-like," but each will retain some essential differences from the other.

Marcum: The Web is most definitely not a library now, and it probably never will be. But the Web provides a wonderful mechanism for collaboration between and among scholars and librarians who want to create "libraries" of high-quality resources on a particular topic for scholarship and teaching. Another great concern about Web resources is that they are ephemeral. Libraries select and preserve information resources for generations to come. The longevity of Web-based resources is calculated in days!

Webster: The Web is not a library and will likely never become one simply because every library worth its salt is built on the basis of selectivity and is organized around a set of intellectual principles. The research library collection is a composite of curatorial decisions made over decades, sometimes centuries, combined with evolving practices of systematically organizing and accessing these resources. The Web is more accurately conceived as an extraordinary delivery service allowing desktop access to library.org.