

Digital Library Advisory Committee Report

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EXECUTIVE SUMMARY

The UC Berkeley Digital Library should consist of scholarly materials, selected and organized to support the research, teaching, and service missions of the Berkeley campus. Creating such a Digital Library will require building a permanent collection of digital material; providing access to digital materials that are not part of the permanent collection; and providing network-based user services.

The Library's primary goals must be to 1) select the highest quality materials for the Library's permanent collection, 2) secure perpetual access rights to these materials, and 3) take responsibility for preserving their content. Other important goals for the Library are to:

- develop an access system that promotes user self-sufficiency; brings users and librarians together over the Internet; and captures user feedback for system improvement;
- take an active role in developing the Digital Library culture on campus;
- investigate new roles in support of scholarly communication;
- create policies and procedures in response to issues of intellectual property, copyright and fair use, and
- continue the Library's program of applied research projects to solve local problems and contribute to national efforts to make the Digital Library a reality.

These goals arose from the Committee's articulation of programmatic categories in which Berkeley could work to develop its Digital Library: Contents and Collections; UC Berkeley Library's Leadership Roles; Preservation and Archiving; Digital Library Access Systems; Scholarly Communication; Intellectual Property; and Culture, Teaching and Training. "Infrastructure," an eighth category, was deemed outside the purview of this Committee.

Over the next few years, the Library will be pressed to make choices among many compelling Digital Library projects that fall within the programmatic categories listed above. Therefore, the Committee has developed criteria to describe the respective benefits and costs of a given project, which in turn will help the Library to establish priorities among the many projects. The criteria are Scope, Feasibility, Impact, Urgency, Strategic Path, Size/Cost, Funding Source, Relationship/Leverage and User Groups Served.

This report does not include a separate section on the relationship between the UC Berkeley Library and the California Digital Library. This topic arose in almost every area of the Committee's deliberations and it seemed most appropriate to include these discussions in the relevant sections of this report. The Committee fully endorses the concept that Berkeley should be a proactive leader within the California Digital Library, its collaborative library, and urges both organizations to further develop the co-library model.

INTRODUCTION AND CHARGE

The Digital Library Advisory Committee was formed by University Librarian Gerald Lowell in March 1999. The Committee was charged to:

- *Identify the goals* a Digital Library should aspire to in serving the UC Berkeley community.
- *Develop a framework* of programmatic categories that will help the Library to meet those goals.
- *Create criteria* to set priorities among Digital Library initiatives as they arise.

The Committee met for fourteen weeks. Inherent in all discussions was a recognition that UC Berkeley is a research university. Therefore, Digital Library projects and programs that aid in the discovery of new knowledge should have the highest priority.

The Committee surveyed the relevant literature/web sites; explored digital projects at other institutions; and examined a wide variety of digital initiatives on this campus that hold promise for the Digital Library. Richard Lucier, University Librarian for the California Digital Library, met with the group to share his perspectives on the role of the CDL vis-a-vis the Library. The Committee also met with Alice Agogino, newly appointed Faculty Assistant on Educational Development and Technology, to discuss the relationship between the Library and the proposed new Center for Teaching, Learning and Technology.

In order to fulfill its charge, the Committee needed to make a number of planning decisions. First, it was decided that a three-to-five year planning horizon would be a realistic time frame for its discussions. Second, the Committee decided that rather than trying to solve specific Digital Library problems, it would recommend goals and criteria to guide the Library when selecting among the many projects it could address. Third, the Committee recognized that a robust hardware, software, network, and technical support infrastructure are essential to the success of a Digital Library. However, Committee members were not selected for their technical expertise, and chose to defer infrastructure issues to others in the Library, IST and the CDL. Finally, the Committee decided that “library automation” also lies outside the scope of this report, although the Committee recognizes the importance of these services. Since both digital library and library automation projects often draw on the same personnel, the Library must develop a process that prioritizes and balances these projects.

DEFINING THE DIGITAL LIBRARY

The UC Berkeley Digital Library should consist of scholarly materials, selected and organized to support the research, teaching, and service missions of the Berkeley campus. It will include a permanent collection of digital materials (i.e., Berkeley has permanent access rights) and will provide access to selected materials that are not part of the permanent collection. In addition to digital collections, The UC Berkeley Digital Library will provide a set of network-based services to enable successful discovery and use of scholarly materials.

DIGITAL LIBRARY GOALS

The Library's primary goals must be to 1) select the highest quality materials for the Library's permanent collection; 2) secure perpetual access rights to these materials, and 3) take responsibility for preserving their contents. Other important goals for the Library are to:

- develop an access system that promotes user self-sufficiency; brings users and librarians together over the Internet; and captures user feedback for system improvement;
- take an active role in developing the Digital Library culture on campus;
- investigate new roles in support of scholarly communication;
- create policies and procedures in response to issues of intellectual property, copyright and fair use, and
- continue the Library's program of applied research projects that solve local problems and contribute to national efforts to make the Digital Library a reality.

CONTENT AND COLLECTIONS

For the purpose of discussions on content, the Committee assumed that 1) metadata, including periodical indexes, were more appropriately considered a part of the access system rather than the collection, 2) the Digital Library would include traditional kinds of content, such as text, images, audio, video, and datasets, and 3) the Digital Library must also include newly developed knowledge that has no direct parallel in either existing library systems or the traditional print world.

COLLECTION PRINCIPLES

Selection

Library selectors are expected to be well-versed in all formats of materials relevant to their areas in order to select the most pertinent and cost-effective formats. Considerations central to making effective collection decisions include 1) weighing the relevance of the material to research programs and curricula, 2) matching the longevity of the medium to the utility of the information, and 3) enhancing accessibility via remote access, simultaneous use of materials, hyper-linking to related materials, online searching and browsing, etc. Cost is always a factor, and the Library should perform cost-benefit analyses associated with various formats, including operational and infrastructure costs. It is also desirable that the Library be able to evaluate the usefulness of digital materials once purchased. As part of the contract process the Library should request that vendors provide meaningful use statistics as defined by emerging national standards.

Ownership vs. Licensing

The UC Berkeley Library has a responsibility to ensure that scholarly materials are available to future generations of scholars and students. Licensing digital materials for a limited period does not add these materials to the permanent collection, as the Library may not be willing or able to re-license these materials on a recurring basis. Instead, whenever possible, the Library should negotiate for perpetual access rights to digital materials.

The concept of "perpetual access rights" is core to the Library's current and archival responsibilities, and needs to be more fully understood. At a minimum, perpetual access arrangements must safeguard against poor performance by a publisher's access systems, business

failures and/or mergers by the original publishers. In fact, in some cases restrictions on permanent access or archiving may be a sufficient reason *not* to acquire a resource. The Committee recommends that the Library work, on campus and with CDL, to clarify both what is technically required in order for the campus to have “perpetual access” and how this might be ensured through legal contract.

Substituting Digital for Print

Three criteria should be considered before substituting digital media for print: 1) the selector must decide if the digital content is an adequate replacement for the print; 2) the Library has accepted the responsibility to preserve the digital version, and 3) users should have reasonable access to the digital material.

Content Genres

The digital collection must include established genres of library materials, such as text (books, serials, dissertations/theses), numeric databases (statistical/scientific), and special collections (images, audio, video, manuscript). In addition, the Digital Library should provide access to new forms of scholarly communication – such as pre-print servers, specialized web sites, museum artifacts, and other kinds of databases – as they emerge.

The Committee believes that other materials that could be included, such as courseware and faculty lectures, are peripheral to the core functions and goals of the Digital Library as defined in this report. Instead, the Committee believes that dealing with such materials should be an important role for an educational technology organization on campus.

Sources of Content

The digital world has broadened the world of “publishers.” Whereas the Library primarily used to work with commercial vendors, society publishers, and exchange programs, it now must look to a wide range of sources to provide the materials needed by the UC community. These include materials:

Purchased by UC Berkeley: Again, ownership of digital content is strongly preferred, over temporarily licensed access.

Freely available / Open-access materials on the web: The Digital Library should point to such materials when they support campus research and teaching, and have been assessed to be of high academic quality and utility. The Library should try to ensure that this material is adequately archived.

Digitized by the Library: The Library has a responsibility to digitize and make available its unique content (e.g., special collections, archives) and should attempt to do so within the overall priorities for collections and services. Material that is not unique to the Berkeley collection may also be digitized if so doing serves the goals and meets the criteria of this report.

Published on campus: This includes Berkeley-hosted electronic journals, faculty papers and databases, etc.

Consortially produced or acquired: Consortial publication can reduce the cost and effort of providing digital materials to the community. For example, JSTOR (a non-profit organization begun at the Andrew W. Mellon Foundation) provides digitized serial backsets that

are available to all participants, and SCAN (a joint project of the University of California Press and the UC Berkeley Library) is investigating new models to reduce the cost of scholarly publishing, including the creation of new serial titles. Consortially acquired materials can be free, or not, but once again ownership is preferable to temporary licensing.

Provided through pay-per-use agreements with providers: Pay-per-use access might be paid for by the Library or by the individual user. In either case, the Digital Library should provide access to digital material on a pay-per-use arrangement, as determined by library selectors, when the material is: unique and only available in this manner (e.g., some video products); of interest to a very small number of users on the campus, not warranting payment of a full subscription to the material; needed only a few times a year (e.g., pre-scheduled classroom showing of a film); or, exists as part of a body of work that is not otherwise of particular interest.

THE CDL ROLE IN ARRANGING ACCESS TO CONTENT

To date, the CDL has concentrated much of its acquisition efforts in establishing contracts with commercial vendors and scholarly associations, and by supporting selected consortial agreements. The Committee recognizes that UC Berkeley Library has immediately benefited from these CDL-negotiated and co-funded contracts. Berkeley is receiving digital content and access at lower prices, or more content at equal prices, than it could secure on its own. In the long term, the Committee hopes that the CDL will coordinate and support campus efforts in identifying and making available digital material from all the sources of content, as listed in the previous section.

In order to reap full benefits from the UC Berkeley's co-library partnership with CDL, Berkeley should continue to co-invest dollars towards centrally negotiated license/purchase agreements, where there is appropriate cost or service benefit to the Berkeley campus. Before any Library/vendor negotiations are started, the Library should check with the CDL to see if negotiation is planned with that vendor. If that CDL negotiation is timely, the Library should not pursue an individual negotiation. The Committee recognizes that the concept of "timely" is difficult to define – it depends on the urgency of demand from campus users; the expected cost and service benefit of a CDL negotiation to Berkeley and to the entire UC system; and the negotiation schedule.

In exchange, the Library has responsibilities in the co-library partnership. Library staff should fully participate on committees, working groups, and other activities sponsored by the CDL. By such participation, the Library can help influence the directions and priorities set for centrally held resources. The Library should also look favorably on proposals from the CDL to hire Berkeley staff on an ad hoc basis when specific expertise is needed.

UC BERKELEY LIBRARY'S LEADERSHIP ROLE

The Digital Library holds great promise for furthering research and improving teaching. The UC Berkeley Library has undertaken many applied research projects to further the creation of and access to digital information. One example is the development of the Encoded Archival Description, which provides a standard method of encoding special collection finding aids. Another is the Library's lead role in the Making of America II project, whose work has formed the basis of CDL's digitization and metadata standards.

The Committee agreed that the UC Berkeley Library has a responsibility to continue such applied research projects and suggests that the Library apply the following guidelines with regards to digital library research:

- *Balance national and local interests.* Select projects that both solve a local problem and also contribute to the development of digital technology and/or applications benefiting the library community at large.
- *Coordinate with the CDL.* Applied research projects that address important issues faced by the libraries in UC system are of special interest. These also provide opportunities to collaborate with the CDL. The CDL representative to the Committee welcomed this type of campus initiative and suggested that the CDL could provide a framework through which Berkeley could collaborate on projects that have UC-wide applicability.
- *Attempt to find external funding sources.* If an external source of funding cannot be found, local funding should be considered for applied research projects that solve an important immediate problem or provide a high priority service.
- *Do not duplicate efforts* already underway either at the CDL or at other institutions.

Finally, the Committee believes that the Library needs to do a better job of integrating applied research projects into the Library's day-to-day activities. It is important to explain to staff and faculty what projects are being pursued and why. In addition, the Library should be more aggressive in forming partnerships with Berkeley faculty who work in areas of interest to the Library.

DIGITAL PRESERVATION AND ARCHIVING

Because the Library is building collections for the future as well as for today's scholars, the Library must archive digital material intended to become part of the permanent collection. The Library should consider also the importance of proactively making arrangements to archive those free / open access materials on the web which support campus research and teaching, and have been assessed to be of high academic quality and utility.

In the fast-changing environment of digital materials, it may not be possible for the Library to know how a digital item will be preserved at the time it is purchased. However, the Library must take responsibility for developing the best means to migrate, archive, and preserve the material before the material requires it.

The Library must work to ensure that digital materials are at no more risk of degradation or information loss than the print collection. This may include strategies such as keeping a single print copy within the UC system as a backup for digital access to this material. The Library should take a UC-wide and national leadership role in developing archiving standards and systems for digital materials, as it has in developing archiving standards for print materials. As a first step, the Library should devise a method to measure the risk attributable to print and digital materials, with the goal of closing the gap between the two.

In cases where the Library enters into projects or partnership, it may delegate its digital archiving responsibility, but only if the partner organization (e.g., CDL or a similar organization;

reliable publisher) agrees to 1) standards that are at least as rigorous as those the Library applies to itself, and 2) mechanisms for monitoring and verifying that material is processed accordingly.

A digital archive must ensure that its contents are tamper-proof, i.e., protected against malicious or inadvertent deletion or changes of authorship, facts, statements, etc. It is important that, at any time, it be possible to authenticate each item in the archive as being the one originally deposited. The UC Berkeley Library should investigate, test and put into place security measures which use open standards and which do not damage the quality of the digital content they are intended to protect.

Finally, maintaining the digital archive should be at least as cost-efficient as maintaining the print collection.

DIGITAL LIBRARY ACCESS SYSTEMS

The Committee defined Digital Library access systems as “anything which gets digital content to the user or the user to the content.” The UC Berkeley Library and the CDL have a shared responsibility for creating an effective Digital Library access system. On campus, the Library is responsible for integrating access to a wide variety of Digital Library resources and services, including resources and local services outside the CDL. Therefore, some of Berkeley’s access-systems development will be local, while other segments will be coordinated or performed by the CDL. When contemplating new areas of Digital Library access system development, Berkeley should first determine if this work could be done best via systemwide cooperation.

In an environment of shared and/or collaborative Digital Library development, the issue of identity or ownership of various access components is complex. It is as yet unclear how these access components will be presented to Digital Library users: should the screen’s graphics primarily identify them as “Berkeley”, “CDL,” or some marriage of the two? This is an issue with both practical and political ramifications and should be discussed further within the campus community and with the CDL.

Because people will be working from remote locations and at all hours, the goals for a Digital Library access system were defined as user self-sufficiency, just-in-time mediation, and feedback from users.

Features of self-sufficient systems include web-based user interfaces that are consistent with emerging web standards; the organization of digital content in an intellectually coherent manner; discovery systems (metadata and search engines) that effectively guide users to the most appropriate materials; and the provision of online interactive tutorial aids.

Just-in-time mediation means providing users access to a reference librarian at the “appropriate time” – when the user is not finding what is needed or does not know how to start a research project. Types of just-in-time mediation include lists of contact phone numbers, email help lines, telephone help lines, and video-conferencing.

Listening to users is critical in designing access systems, and feedback mechanisms should be built into the process. This includes asking for comments and suggestions, the use of focus groups, and the capture of management statistics to help uncover patterns of use.

DISCOVERY SERVICES

The Library should take responsibility for the organization of content in the digital environment, just as it has done for print. There must be discovery services that allow users to efficiently identify the most appropriate content, as directly as possible.

The current and mid-term future Digital Library environment is made up of many different web sites that provide access to digital content (e.g., local and union catalogs, publisher-provided web sites, and other scholarly web sites). The Library must create a discovery/user interface environment that knits all these resources together in an intellectually coherent fashion. This is only possible if the correct level and depth of metadata is created for each resource, or if sophisticated natural-language search engines become available.

In addition, the interface must allow the user to move easily through this environment. Inherent in providing access to many different web sites is finding new ways to allow users to navigate during a session. For example, there needs to be an easy way for a user to “mark” a point to return to, or create a trail to backtrack through his or her search logic.

DELIVERY SERVICES

Digital materials must be delivered via the network in a manner that matches the existing technology to the user’s needs. For example, delivering an entire digitized book over a slow telephone line is inappropriate. Large or highly structured content needs to be delivered in segments, e.g., first the table of contents, then selected portions of the book. The Library should work with IST and CDL to adopt standards for software and/or hardware that allow the most universal access possible.

The CDL and the Library should have minimum performance requirements (e.g. response time, “up” time) that apply to both UC and vendors’ delivery systems.

USER INTERFACE(S)

The Committee is proud of UC Berkeley’s innovative work but does not believe that current interfaces are becoming easier to use. In place of the ancestral, single place for cataloged books (the card file), UC Berkeley’s library web site now offers five pathways to find materials held in the collection (Gladis via telnet, Pathfinder I and II, Melvyl via telnet, and CDL.).

Constant refinement is the norm, even at the best web sites. Given a three- to five-year outlook, the Digital Library interface should be made available via the most popular web browsers. The Library needs to develop basic, advanced, and professional interfaces appropriate to users’ levels of interest and web browser capabilities. In particular, the Library should seek advice from users on what they view as a *standard, simple, default user interface* that will enable the most casual users to be relatively successful with little training. Finally, the Library should consider providing users the option to create an individualized user interface, which would be available from any location via a web browser.

VALUE-ADDED END-USER SERVICES

Value-added end-user services include electronic reference, electronic reserves, online tutorials, and the provision of software applications that help users access and manipulate digital information in the collection. The Library should pursue those services that relate directly to local needs, e.g., providing access to special collections held at Berkeley. When developing a new service locally, the Library should consider 1) the most cost-effective mechanisms for implementing the service (e.g., off-the-shelf vs. locally developed software), and 2) how it might eventually be scaled up for broader use within the UC system. Berkeley looks to the CDL to provide a framework within which the campuses can collaborate on services that have UC-wide applicability. Examples include developing online tutorials for systemwide resources, and coordinating systemwide 24-hour, remote, staffed reference.

SCHOLARLY COMMUNICATION

UC and the CDL have given strong support to finding new roles for the University and, by implication the Library, in scholarly communication. The scholarly communications arena seems particularly complicated by the question of “who does what?” Clearly the CDL and the UC Berkeley Library should coordinate rather than duplicate efforts.

The Library seems to be a natural locus for services that support faculty publishing. However, it does not seem to be the most natural locus for services that support classroom teaching technologies – such services seem more in the purview of the proposed Center for Teaching, Learning and Technology.

Contributions the Library might make in new patterns of scholarly communication are suggested by the Library’s characteristics: it is stable, centrally located, and a focus for academic activities; it has a track record for developing processes to manage scholarly materials; it is skilled in bibliographic control and access; it already has structures in place to help notify patrons of the existence and features of scholarly materials (i.e. publicity and awareness services); and it has always had an archiving function. The Committee suggests the Library should consider the following as possible new roles.

- Support faculty, departments, and ORU’s in their electronic publishing efforts, perhaps on a recharge basis. The Library should develop a program that both assists faculty efforts at electronic publication and fits within the existing mission of the Library. Any new library service must scale to the number of faculty and students that use the service. Therefore, projects that result in “infrastructure” that assists large numbers of users are particularly appealing. Examples might include providing pre-print server support under faculty management and/or providing a single place to look for faculty research (e.g., “bio-bibs,” a list of works in progress, the content of and/or links to faculty working papers.)
- Move towards archiving and making available all scholarly materials produced on campus (not just those available through commercial sources.) This might include locally edited journals and databases.
- Aggressively seek out already vetted low-cost/free journals and offer to archive their materials – to preserve the ongoing availability of this material that might otherwise be abandoned. (Not necessarily all such journals would receive the Library’s support; the same selection and filtering processes currently used would apply here as well.)

- Archive or otherwise ensure the continuous availability of research-level works produced by individuals and/or organizations outside of UC. Again, the Library's selection and filtering processes would be used to identify the appropriate materials.

As the Library selects among new roles, it should look for opportunities that both enhance campus scholarship and also have broader international applicability and impact. The Committee noted that new services falling outside the traditional library roles should only be undertaken with the support of the Academic Senate and the Administration, and with supplemental funding.

INTELLECTUAL PROPERTY

The creation of digital content is accelerating and the Library needs to establish a framework and policy for handling intellectual property issues, such as copyright. The Committee felt the Library has not had the opportunity or ability to explore these issues. In particular, the Library 1) needs to work with the CDL and national groups to understand digital-library-related intellectual property issues, attempt to influence public policy, and ensure that local policies are up to date; 2) develop intellectual property policies and procedures that minimize the risk of liability and take full advantage of the fair-use of copyrighted materials; and 3) take appropriate action to protect UC Berkeley Library's own intellectual property.

The Committee agreed that the campus needs a center to advise faculty and students on intellectual property issues. However, it felt that it is not the role of the Library to provide this service center, because intellectual property issues are campus-wide. The Committee endorses the recommendations issued by the University-wide Task Force on Copyright (September 1998.)

CULTURE, TEACHING, AND TRAINING

Librarians have a responsibility to partner with their constituents in new ways: to develop digital content, to improve scholarly communication, and to promote digital information literacy.

The Library should not assume that the benefits of a Digital Library are clear to the academic community. In fact, librarians should take the lead in working with faculty so that both faculty and librarians better understand how Digital Library content and services can be integrated into faculty work.

The Committee suggests that as a new role, the Library should form teams with campus technological experts and individual faculty to develop new scholarly digital content. The Library might look towards the University of Virginia, the University of Washington, Cornell University, and the University of Arizona for fruitful paths to consider. The Committee suggests that the Library provide seed money for a few demonstration projects involving partnerships between library staff and faculty. The Library might also explore whether there is faculty interest in library-run but campus-funded summer programs regarding digital applications for research and instruction.

The Library has a primary role to teach users how to locate and evaluate information. It has a growing responsibility to teach electronic literacy. It is, however, not the job of the library to teach technological literacy skills. When developing such programs, the Committee recommends that

web-based tutorials be used to promote user self-sufficiency. In developing such tutorials, Berkeley librarians should choose projects that are not already under development at other UC campuses, and design tutorials in such a way that they are applicable across UC. The Committee suggests that coordinating development of web-based tutorials is an appropriate CDL function.

Currently the Library has staff who are experts in digital information. The Library must find ways to support and reward staff initiative in this arena. The Library should also fund development opportunities to deepen and broaden the Library's digital competencies.

CRITERIA FOR PRIORITIZING DIGITAL LIBRARY PROJECTS

At any given time, the Library will be faced with more Digital Library projects than it can address. The following criteria will help the Library understand the benefits and costs of a given project. The Committee suggests that each project be characterized using the following "criteria questions," and that the resulting profile be used to determine where the project lies on the Library's priority list.

Scope: Does the project reflect current campus academic strengths and evolving trends? Does the project fall within the Library's traditional areas of service? If not, does the project move the Library in directions in which it should be moving? If the project is outside the Library's normal scope, has the Academic Senate Library Committee been consulted?

Feasibility: Is funding available? Does the technology exist to support the project? Do Library staff have the needed expertise to complete the project, and are they available for assignment?

Impact: How desirable is the project? Does it affect a large number of campus faculty and students? Is there an immediate benefit from this project? Will the benefit be long lasting? Will this save faculty and students' time and enhance their productivity?

Urgency: Is there an external mandate/deadline that must be met?

Strategic Path: Is this project a step toward enabling a strategic service or technology, as identified by long-term library planning (i.e., would this project help lay a foundation necessary for future desired development?)

Size and Cost: What does the project cost and what does it save? How long will how many resources be tied up (to the exclusion of other projects.)

Funding Source: Does the project draw on steady-state resources? If so, what existing function or service could the Library stop doing in order to fund this project? Is there an opportunity for outside funding? If so, how much of a "match" of Library resources would be required?

Relationship/Leverage: Would this project deepen a relationship that the Library would like to further develop with a donor, a funding agency, a faculty member, the CDL or other consortium? Would entering into partnership on this project allow the Library to proceed in areas where it could

not support development on its own? Is somebody else already working in this area? If so, how would this project extend an ongoing project without duplicating efforts?

User Groups Served: Does the project directly support the needs of the campus faculty, students, and staff, by 1) building collections, 2) improving infrastructure, or 3) providing other value-added services? Does the project support other communities (e.g., research libraries, State of California users, national users, international users) without placing an unreasonable demand on library resources that would jeopardize the ability to serve the campus?

APPENDIX – SELECTED BIBLIOGRAPHY

The following articles and web sites are referred to in the report or were used as background reading by the Committee. It is by no means a comprehensive list of readings.

RELATED DIGITAL LIBRARY PROJECTS AT OTHER UNIVERSITIES:

University of Virginia Libraries: Electronic Centers: <http://www.lib.virginia.edu/ecenters.html>

University of Washington Digital Library: <http://content.lib.washington.edu/diginit/>

UWired: http://www.washington.edu/uwired/about_site/

Cornell University—Cornell Institute for Digital Collections:
<http://CIDC.library.cornell.edu/Info/about.html>

University of Arizona Southwest Electronic Text Center: <http://www.library.arizona.edu/swetc/>

University of Michigan Digital Library Production Service: <http://www.umdl.umich.edu/>

CALIFORNIA DIGITAL LIBRARY:

Starr, Susan, “*Building the Collections of the California Digital Library*” *ISTL*, Winter, 1998.
<http://www.library.ucsb.edu/istl/98-winter/article2.html>

“*The California Digital Library*”, John Ober, *D-Lib Magazine*, March 1999, vol. 5, no. 3,
<http://www.dlib.org/dlib/march99/03ober.html>

SELECTED ARTICLES:

Bailey, Charles W. Jr. “*Scholarly Electronic Publishing Bibliography*.” Houston, University of Houston Libraries, 1996-99. <http://info.lib.uh.edu/sepb/sepb.html>

Ginsparg, P., “*Winners and Losers in the Global Research Village*”,
<http://xxx.lanl.gov/blurb/pg96unesco.html>

Kirby, Rob, “*A Scenario for Publishing Mathematics in the Future*”, *ISTL*: Fall, 1998:
<http://www.library.ucsb.edu/istl/98-fall/article2.html>

Note: For the field of mathematics, much of what was written at the time is now in place, but the Committee includes this article as a model for what can be done for other disciplines, such as the NIH proposal in biomedicine listed below.

Smith, Abby, “*Why Digitize?*” Washington, D.C.: Council on Library and Information Resources, February 1999. (see also <http://www.clir.org>).

SCHOLARLY COMMUNICATIONS PROJECTS:

New Horizons in Scholarly Communication (a publication of the Librarians Association of the University of California): <http://libweb.ucsc.edu/scomm/>

JSTOR Project: <http://www.jstor.org/>

SCAN Project (University of California Press): <http://www.ucpress.edu/scan/>

Scholarly Publishing & Academic Resources Coalition (SPARC): <http://www.arl.org/sparc/>

E-BIOMED: A Proposal for Electronic Publications in the Biomedical Sciences:
<http://www.nih.gov/welcome/director/ebiomed/ebi.htm>

Digital Projects of the UC Berkeley Library, Summary, June 1999
<http://sunsite.berkeley.edu/R+D/ucblibrary.html>

Encoded Archival Description
<http://lcweb.loc.gov/ead/>

The Making of America II: <http://sunsite.berkeley.edu/MOA2/>

UC Copyright Task Force Report:

<http://www.ucop.edu/acadinit/copyright/reports.html>

Summary available at: <http://www.ucop.edu/acadinit/copyright/reports/reviewcontext.html>

TWO CONFERENCES OF NOTE:

“*Alternative Models of Scholarly Publishing in Higher Education*”, Nov. 6, 1998:
<http://www.lib.berkeley.edu/LAUC/Conference>

“*New Challenges for Scholarly Communication in the Digital Era*”, Mar. 26-28, 1999:
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