

University of California, Santa Cruz
University of Central Florida
University of Chicago*
University of Colorado at Boulder*
University of Connecticut
University of Delaware*
University of Denver
University of Florida
University of Georgia
University of Hawaii
University of Houston
University of Idaho
University of Illinois at Chicago*
University of Illinois at Urbana-Champaign*
University of Iowa*
University of Kansas
University of Kentucky*
University of Louisville*
University of Manitoba*
University of Maryland at College Park*
University of Massachusetts Amherst
University of Miami*
University of Michigan*
University of Minnesota*
University of Missouri at Columbia*
University of Missouri-Kansas City
University of Montana Libraries
University of Nebraska at Lincoln*
University of Nevada, Las Vegas
University of New Mexico
University of North Carolina, Chapel Hill
University of North Dakota
University of North Texas
University of Notre Dame*
University of Oklahoma*
University of Oregon*
University of Pennsylvania*
University of Pittsburgh*
University of Richmond
University of Rochester*
University of San Francisco
University of South Carolina*

University of South Florida
University of Southern California*
University of Tennessee*
University of Texas at Arlington
University of Texas at Austin*
University of Texas at San Antonio
University of Toronto
University of Utah
University of Vermont
University of Victoria
University of Virginia
University of Washington*
University of Waterloo
University of Wisconsin at Madison*
University System of Georgia*
Vanderbilt University*
Virginia Commonwealth University
Virginia Polytechnic Institute and State University*
VTLS, Inc.*
Washington University*
Wayne State University
Yale University

* Denotes charter members



Coalition for Networked Information

An Introduction & Program Plan 2009-2010

Mission

The Coalition for Networked Information (CNI) is an organization to promote the transformative promise of networked information technology for the advancement of scholarly communication and the enrichment of intellectual productivity.

ABOUT CNI

Background and Leadership

The Coalition for Networked Information (CNI), a joint initiative of the Association of Research Libraries (ARL) and EDUCAUSE, promotes the use of networked information technology to advance research and education. In establishing the Coalition under the leadership of founding Executive Director Paul Evan Peters, these sponsor organizations recognized the need to broaden the community's thinking beyond issues of network connectivity and bandwidth to encompass digital content and advanced applications to create, share, disseminate, and analyze such content in the service of research and education. Reaping the benefits of the Internet for scholarship, research, and education demanded—and continues to demand—new partnerships, new institutional roles, and new technologies and infrastructure. CNI seeks to advance these collaborations, to explore these new roles, and to catalyze the development and deployment of the necessary technology base.

Since its founding in 1990, CNI has addressed a broad and diverse array of issues related to the development and use of digital information in research and education environments. As the premier organization fostering connections and collaboration between library and information technology communities, we represent the interests of a wide range of member organizations from higher education, publishing, networking and telecommunications, information technology, government agencies, foundations, museums, libraries, and library organizations.

CNI is supported entirely from dues paid by its over 200 member institutions. Membership in the Coalition is open to all organizations—both for-profit and not-for-profit—that share CNI's commitment to furthering the development of digital information in the networked environment. We view our members as partners in advancing the Coalition's mission. Fall and spring membership meetings are CNI's flagship events, bringing together hundreds of representatives for a comprehensive update on critical issues.

CNI's program is guided by a Steering Committee chaired by Richard West of the California State University system. As sponsor organizations, ARL and EDUCAUSE each appoint three representatives to the Steering Committee drawn from their member leadership. Three "at large" representatives on the Steering Committee contribute additional perspectives. The chief executives of ARL, EDUCAUSE, and CNI serve as *ex officio* members of the committee. CNI Executive Director Clifford Lynch has led the organization since 1997. Joan Lippincott, CNI's Associate Executive Director, has served since fall 1990. For more information about the Coalition's history and contributions, visit the CNI Web site at <http://www.cni.org>.

Marquette University
 Massachusetts Institute of Technology*
 Mayo Clinic
 McGill University
 McMaster University
 Metropolitan New York Library Council (METRO)
 Miami University of Ohio*
 Michigan State University*
 Microsoft Corporation
 MINITEX Library Information Network
 Mississippi State University
 NCAR (National Center for Atmospheric Research)
 National Agricultural Library*
 National Archives and Records Administration
 National Institute for Technology and Liberal
 Education (NITLE)
 National Institutes of Health Library
 National Library of Australia
 National Library of Medicine
 New Media Consortium
 New York Public Library - Research Libraries*
 New York State Library*
 New York University
 North Carolina State University
 Northeastern University
 Northwestern University*
 Occidental College
 OCLC, Inc.*
 Ohio State University*
 Ohio University
 Oklahoma State University
 Oregon State University
 Pennsylvania State University*
 Pepperdine University
 Pomona College
 Portland State University
 Princeton University*
 Purdue University
 Queen's University
 Rhodes College
 Rice University*
 Rochester Institute of Technology*
 Rutgers University*
 Simon Fraser University Library
 SirsiDynix Corporation
 Smithsonian Institution*
 Southern Illinois University at Carbondale*
 Southern Methodist University*
 Stanford University*
 State & University Library (Aarhus, Denmark)
 State University of New York at Albany
 State University of New York, System Administration*
 State University System of Florida*
 Stony Brook University
 Sun Microsystems, Inc.
 SURF
 Syracuse University*
 Temple University
 Texas A&M University
 Texas Christian University
 Texas Tech University
 Thomson Scientific
 Tufts University
 United States Department of Education, National
 Library of Education
 United States Government Printing Office
 Universiteit Van Amsterdam
 University at Buffalo, State University of New York*
 University of Alabama
 University of Arizona*
 University of Arkansas
 University of British Columbia
 University of Calgary
 University of California, Berkeley*
 University of California, Davis*
 University of California, Irvine*
 University of California, Los Angeles*
 University of California, Office of the President*
 University of California, Riverside
 University of California, San Diego*
 University of California, San Francisco*
 University of California, Santa Barbara*

MEMBERSHIP LIST

(As of November 2009)

American Library Association	Dartmouth College
American University*	Denmark's Electronic Research Library (DEFF)
Andrew W. Mellon Foundation	Deutsche Forschungsgemeinschaft (DFG)
Arizona State Library, Archives and Public Records	Duke University
Arizona State University*	Eastern Michigan University
ARTstor	Elsevier Science Publishers B. V.*
Association of College and Research Libraries*	Emory University
Auburn University	Ex Libris (USA), Inc.
Australian Partnership for Sustainable Repositories	Florida Atlantic University
Baylor University	Florida State University
Binghamton University, State University of New York	Gale Cengage Learning
Boise State University	George Mason University
Boston College	George Washington University*
Brandeis University	Georgetown University*
Brigham Young University	Georgia Institute of Technology*
British Library	Georgia State University Library
Brown University*	Harvard University*
Bryn Mawr College	IMS Global Learning Consortium
Bucknell University	Indiana University*
California Institute of Technology	Indiana University-Purdue University at Indianapolis
California State University, Office of the Chancellor*	Internet2
Cambridge Information Group (CIG)	Internet Society
Canada Institute for Scientific & Technical Information	Iowa State University*
Carnegie Mellon University*	Ithaka
Case Western Reserve University*	J. Murrey Atkins Library - University of North Carolina at Charlotte
Center for Research Libraries	J. Paul Getty Trust
Centers for Disease Control and Prevention	Johns Hopkins University*
City University of New York	Joint Information Systems Committee
Clemson University	JSTOR
Colby College	Kansas State University
College Center for Library Automation	Kent State University*
Colorado State University*	Las Vegas Clark County Library District
Columbia University*	Libraries, Claremont University Consortium
Connecticut College	Library and Archives Canada*
Copyright Clearance Center	Library and Information Technology Association
Cornell University*	Library of Congress*
Council on Library and Information Resources	Los Alamos National Laboratory Research Library
Countway Library of Medicine	Loyola University Chicago
	Luther College

Program Themes

CNI's work is structured around three central themes that we believe are the essential foundations of the vision of advancing scholarship and intellectual productivity:

• Developing and Managing Networked Information Content

The Coalition has played a central role in ensuring that the network richly engages the needs of scholarship, teaching and learning. We bring together many diverse communities that create and manage a wide array of content, and work with these communities to advance the deployment of digital information resources. CNI also furthers the development of economic, policy, social and legal frameworks to sustain the creation and management of networked information and facilitate its access.

• Transforming Organizations, Professions, and Individuals

The pervasiveness of ubiquitously accessible digital information is transforming institutions, professions, and the practices of learning and scholarship. CNI focuses on the unprecedented need for collaboration among libraries, information technology and instructional technology groups, faculty, museums, archives, university presses, and other units in order to achieve success in this environment. Organizations must understand their constituencies and adapt their services and facilities to current needs; they must develop and share new strategies, policies, and best practices. Professions need to develop new competencies and enter into new dialogues that cross traditional disciplinary boundaries. CNI seeks to facilitate these collaborations and dialogues and to help professions and institutions work together in program strategy formulation.

• Building Technology, Standards, and Infrastructure

The networked information environment relies on the development and deployment of standards and infrastructure components in order to enable the creation, discovery, use, and management of digital information on the Internet. The ability to use collections of resources in a unified, consistent fashion is essential and requires a continuing focus on interoperability of services. At the same time, promising new technologies need to be explored, assessed and tested, and sometimes adapted to the needs of the CNI community. No one institution acting alone can build the needed infrastructure or explore the full range of new technologies as they become available; it requires a coordinated community-wide effort that also reaches out to other communities, such as the world of e-research. CNI seeks to highlight links between technology and policies at all levels, to offer a context for collaborative experiments and test beds, and to serve as a focal point for sharing knowledge about new technologies.

The specific program initiatives that further CNI's themes evolve from year to year. The initiatives and strategies planned for 2009-2010 are described in the *Program Plan* portion of this publication; most build upon and continue efforts already underway. Many of the initiatives seek to make strategic progress relevant to more than one theme.

It is important to recognize that the networked information environment is highly dynamic. CNI is continually adapting its activities in response to new developments and opportunities. Indeed, the Coalition believes agility is essential in the current environment and invites a continuous dialogue with its members on the need for additional program initiatives. Because of this, the 2009-2010

Program Plan should be viewed as a snapshot of our thinking about priorities and opportunities as of late 2009 that will inevitably develop further during the coming year.

Policy and Consultative Activities

CNI acts as an important and respected voice on behalf of our community in a wide range of national and international policy venues. This is accomplished through our participation in the ongoing scholarly dialogue; through collaboration with key funding agencies, such as the National Science Foundation, the Institute of Museum and Library Services, the National Endowment for the Humanities, the Andrew W. Mellon Foundation, and the Joint Information Systems Committee (JISC); through work on advisory groups of organizations such as Ithaka, RLG Programs of OCLC, Portico, and Microsoft Research; through contributions to standards efforts and standards organizations such as the National Information Standards Organization (NISO); and through participation in organizations such as the Internet Society.

Of particular note in this area are our contributions to the Library of Congress's efforts to map out a National Digital Preservation Program, to various studies and programs conducted by the U.S. National Research Council, to the InCommon Futures Planning Task Force, and to the OCLC Review Board on Principles of Shared Data Creation and Stewardship and the OCLC Record Use Policy Council.

As a contributor and participant within a complex ecosystem of organizations that share common interests, CNI works with Internet2 on advanced networking applications and standards; with the Council on Library and Information Resources (CLIR) on scholarly communication, cyberinfrastructure, and preservation issues; with the New Media Consortium on the exploration and use of new media and new technologies in higher education; and with the IMS Global Learning Consortium on interoperability between learning management systems and digital libraries. CNI works with the American Library Association (ALA) on policy and professional development activities. Our contributions extend to the programs of our sponsor organizations, ARL and EDUCAUSE, particularly to the EDUCAUSE Learning Initiative (ELI) and Net@EDU.

In addition to specific initiatives to address CNI's overarching program themes, the Coalition actively conducts an ongoing program of collaboration and advocacy to advance the development of digital information and its role in transforming organizations and scholarly activities. To this end, CNI works with scholarly societies, government agencies, publishers, and others.

On an international level, we collaborate with other organizations concerned with networked information, including the UK Office for Library Networking (UKOLN), the Digital Curation Centre, and the Joint Information Systems Committee (JISC) in the United Kingdom, the German Initiative for Networked Information (DINI), the German Research Foundation (DFG), and the SURF Foundation, the Dutch higher education and research partnership organization for network services and information and communications technology.

CNI works to provide our community with frameworks for understanding key networked information issues so that institutions can develop strategies to address these issues on the local, regional, or national level. We write white papers, reports, and articles, we present talks at conferences, and we make institutional visits that may involve meetings with campus leaders and presentations at public events and seminars.

RECENT PUBLICATIONS BY CNI STAFF

- Lynch, Clifford A. "Special Collections at the Cusp of the Digital Age: A Credo." *Research Library Issues* (forthcoming).
- Lippincott, Joan K. "Mobile Reference: What Are the Questions?" *The Reference Librarian* 51 (2010).
- Lippincott, Joan K. "Information Commons: Meeting Millennials' Needs." *Journal of Library Administration* 50 (2010).
- Lippincott, Joan K. "Coalition for Networked Information." *Encyclopedia of Library and Information Science*, 3rd edition (forthcoming from CRC Press).
- Lynch, Clifford A. "Jim Gray's Fourth Paradigm and the Construction of the Scientific Record," in *The Fourth Paradigm: Data-Intensive Scientific Discovery*, edited by Tony Hey, Stewart Tansley, and Kirstin Tolle. Microsoft Research, 2009.
- Lynch, Clifford A. and Don E. Carleton. "Impact of Digital Scholarship on Research Libraries" (lecture). *Journal of Library Administration* 49, no. 3 (April 2009).
- Lippincott, Joan K. "Learning Spaces: Involving Faculty to Improve Pedagogy." *EDUCAUSE Review* 44, no. 2 (March/April 2009).
- Lippincott, Joan K. "Information Commons: Surveying the Landscape" in *A Field Guide to the Information Commons*, ed. by Charles Forrest and Martin Halbert. Scarecrow Press, 2009.
- Lynch, Clifford A. "The Institutional Challenges of Cyberinfrastructure and E-Research." *EDUCAUSE Review* 46, no. 3 (November/December 2008).
- Lippincott, Joan K. "Mobile Technologies, Mobile Users: Implications for Academic Libraries." *ARL: A Bimonthly Report on Research Library Issues and Actions*, 261 (December 2008).
- Lynch, Clifford A. "A Matter of Mission: Information Technology and the Future of Higher Education." In *The Tower and the Cloud*, edited by Richard Katz. Boulder: EDUCAUSE, 2008.
- Lynch, Clifford A. "Big Data: How Do Your Data Grow?" *Nature* 455, no. 7209 (September 2008).
- Lippincott, Joan K. "Libraries and Net Gen Learners: Current and Future Challenges in the Mobile Society." In *M-Libraries: Libraries on the Move to Provide Virtual Access*, edited by Gill Needham and Mohamed Ally. London: Facet Publishing, 2008.
- Lynch, Clifford A. "Digital Libraries, Learning Communities and Open Education." In *Opening Up Education*, edited by Toru Iiyoshi and M. S. Vijay Kumar. Cambridge, MA: The MIT Press, 2008.
- Goldenberg-Hart, D. "Enhancing Graduate Education: A Fresh Look at Library Engagement," *ARL: A Bimonthly Report on Research Library Issues and Actions* 256 (February 2008).
- Lynch, Clifford A. "Repatriation, Reconstruction and Cultural Diplomacy in the Digital World." *EDUCAUSE Review* 43, no. 1 (January/February 2008).
- Lippincott, Joan K. "Student Content Creators: Convergence of Literacies." *EDUCAUSE Review* 42, no. 6 (November/December 2007).
- Lynch, Clifford A. "The Shape of the Scientific Article in the Developing Cyberinfrastructure." *CTWatch Quarterly* (August 2007).
- Lippincott, Joan K. "Assessing Information Commons." In *Linking the Information Commons to Learning: How to Measure Success*. Vantage Point. Ipswich, MA: Ebsco, 2007. An earlier version of this paper appeared in *Proceedings of the Library Assessment Conference*, September 25-27, 2006, Charlottesville, VA.
- Lippincott, Joan K. "Beyond Coexistence: Finding Synergies between Print Content and Digital Information." *Journal of Library Administration* 46, 2 (2007).

Most publications, as well as selected presentations and interviews, are available online via <http://www.cni.org/publications>.

than on system building. CNI is serving as an advisor to this project and will feature the work of this group at our meetings.

• Authentication, Authorization, and Access Management

CNI takes a broad view of security, integrity, and access management issues as they relate to the management of licensed resources and the stewardship and preservation of digital content. New technological capabilities—peer-to-peer resource sharing and the ability for users to amass and maintain massive personal digital libraries which include large amounts of copyrighted material drawn from licensed databases—continue to raise complex questions with both technological and policy dimensions. CNI believes that we must continue to explore these new behaviors and practices and to reflect this broad view in the focus on systems and network security within the higher education community.

Authentication and authorization are now established as essential infrastructure components for network-based services and have become a particularly critical need as institutions increasingly rely on site license agreements with information providers, implement online and distance education initiatives, and form consortia for resource sharing or educational initiatives. They are an essential underpinning for data sharing and data reuse. The Coalition has been pursuing a program to define technology approaches, standards, best practices, and policy and business issues for such an inter-organizational authentication and authorization infrastructure. Working in partnership with Internet2, EDUCAUSE and InCommon, we continue to seek to advance progress in this area.

• Identity and Research Management Systems

Building on work beginning in the 2007-2008 program year, we will continue exploration of the potential future convergence, or at least linkage, between identities as established by campus-based identity management systems on one hand, and personal names as used in the context of scholarly communication, citation, and bibliographic control and name authority on the other. Historically, these two worlds have been completely separate, but the emergence of sophisticated author rights retention strategies, institutional and disciplinary repositories, advanced bibliometrics and webmetrics, and similar developments, are clearly bringing them into closer alignment. CNI convened a workshop in the spring of 2008 to map some of these developments, and will release a synthesis of a number of aspects of name management in the coming program year. One additional area of exploration emerging from the workshop is the growing use of name, biographical, and prosopographical databases as infrastructure for additional scholarly work and how these relate to developments in name authority and identity. The 2008 CNI workshop also surfaced a great deal of work on various (mostly locally developed) systems to help track and make visible faculty research interests and achievements as manifest in publications, grants, patent awards and similar events; we will be featuring developments in this area in upcoming CNI meetings.

CNI alerts its community to our organizational activities, significant new publications, and important developments in the field via the CNI Web site, the CNI-ANNOUNCE e-mail list, and the CNI news feed. Through the *CNI Conversations* program, we reach out to communities at our member institutions via Web and phone-based program updates and topical discussions.

Meetings

The Coalition's semiannual membership meetings, scheduled for December 14-15, 2009, in Washington, DC, and April 12-13, 2010, in Baltimore, MD, highlight activities related to CNI's program themes, focus attention on significant new thinking and technology developments, and provide opportunities for members to showcase and discuss a wide range of emerging issues and developments in networked information. Some participants have developed knowledge communities within CNI and use the meetings as an opportunity to share ideas on a particular aspect of networked information and incubate new initiatives. Each member organization is invited to send two delegates, typically a senior information technologist and a senior librarian. Meeting participants are introduced to new developments that may reshape institutional plans in a forum that encourages collaborations and dialogues with others who share common interests. CNI has a long history of being the first to offer discussion of major networked information developments, including Mosaic, the National Science Foundation's (NSF) Digital Libraries Program, the Google Books Scanning program, and NSF's DataNet awards.

CNI regularly co-sponsors a conference in partnership with JISC and UKOLN as part of our ongoing collaboration with these programs. The next conference will be held in Edinburgh, Scotland on July 1-2, 2010.

CNI occasionally convenes invitational or public workshops to advance specific elements of its program plan. CNI also acts as a co-sponsor for other meetings relevant to the CNI agenda. This year these events included the 5th International Digital Curation Conference, "Moving to Multi-Scale Science: Managing Complexity and Diversity," on December 2-4, 2009 in London, England. The Digital Curation Centre (UK) sponsored this event, which was also co-sponsored by the UK's National e-Science Centre. ARL and CNI co-sponsored the forum "The Age of Discovery: Distinctive Collections in the Digital Age," on October 15-16, 2009, in Washington, DC.

In addition, CNI co-sponsored the European Conference on Digital Libraries in Corfu, Greece, on September 27-October 2, 2009; will co-sponsor the IS&T Archiving Conference, June 1-4, 2010, in Den Haag, The Netherlands; the Joint Conference on Digital Libraries, scheduled for June 21-25, 2010, in Surfers Paradise, Gold Coast, Australia; the 5th International Conference on Open Access Repositories (OR2010) on July 6-9, 2010 in Madrid, Spain, as well as a meeting of the Confederation of Open Access Repositories (COAR); and the ASIS&T Research Data Access and Preservation Summit in Phoenix, AZ April 9-10, 2010.

PROGRAM PLAN 2009-2010

Developing and Managing Networked Information Content

The Coalition has broad interests across all forms of digital content that can be used to support research and education. We provide a forum for information on leading projects in this arena, including a showcase at the CNI member meetings for innovative faculty projects from our member institutions. In addition, we track developments and promote strategies for the creation of digital collections, digital libraries, and federated services in support of digital content. Further, because digital content cannot be divorced from the processes of teaching, learning, and scholarship that both create and rely upon that content, CNI is deeply involved in issues involving changing practices of scholarship, the restructuring of scholarly publishing and the broader transformation of scholarly communication, and innovation in teaching and learning. Through our membership meetings, specialized conferences and workshops, collaborative initiatives with other organizations, and publications, we provide leadership on digital content policy and scholarly communication.

• Institutional Content Resources and Repositories

A centerpiece of CNI's work on networked information is built around the broad theme of the stewardship of institutional content resources—materials created by members of the institutional community, or that document the work, processes or intellectual and cultural life of an institution. The practice of such stewardship, which includes management, preservation, and access, is a central role for higher education and cultural memory organizations in the digital age. Our work here has two major components. One is to advance and structure the wealth of new digital content. The program includes our continuing efforts to understand and highlight experiments in the creation of new types of scholarly works for the digital medium, such as successors to the scholarly print monograph or the development of electronic theses and dissertations; the disposition of materials collected through lecture capture systems; the implications of mass digitization of materials to support scholarship; and the availability of digital surrogates for existing collections of physical materials. The second major effort focuses on approaches to managing the wealth of new content through the development of strategies such as the deployment of institutional repositories. Here CNI is addressing the full range of issues from policy and strategic planning through system architecture and standards for the management of complex digital objects.

In 2009-2010 we will continue our work to better understand how a variety of institutional units, including university museums, archives, and audio and video production groups, can leverage institutional infrastructure and build collaborations to make their content resources more accessible for scholarship, teaching and learning. We will also explore ways in which institutional strategies and systems need to connect to national and disciplinary-level data management and curation activities (such as those developing through the e-research initiatives described below), and some of the inter-institutional issues that arise from large scale research collaborations and virtual organizations.

A continuing priority for the 2009-2010 program year is a focused re-examination and re-assessment of institutional repository (IR) services. The concept of the IR is more than five years old; CNI was deeply involved in the initial conceptualization of these services and the development of implementation strategies for them. Platform alternatives have multiplied and matured, and understandings about costs, as well as barriers to successful deployment, have become much clearer. Indeed, we

Building Technology, Standards, and Infrastructure

CNI continues to be actively engaged in key areas of standards and infrastructure development. The Coalition is particularly concerned with facilitating the difficult and delicate transition of standards and technologies into operational infrastructure for the research, higher education and library communities. For example, federated identity management is becoming a key facet of infrastructure to support research.

In addition to the specific program initiatives described here, CNI participates in and tracks a wide range of developments in areas as diverse as identifiers, digital books, metadata standards, distributed and federated network services, harvesting technologies, recommender systems and personalization technologies. As we look at an evolving landscape that includes commercial Web search engines, traditional library automation tools such as online catalogs, stand-alone abstracting and indexing databases, systems deployed by scholarly publishers, museums, and other content providers, and learning management systems, the Coalition is concerned with architectural and standards frameworks that can facilitate integration and interoperability. This perspective has motivated much of our work over the last few years on cyberinfrastructure, IRs, the Open Archives Initiative, and learning management systems.

• Institutional Infrastructure to Support Research

There is a renewed focus on campus infrastructure to support research programs. Developments include: policy, technical, and economic influences that are leading to a partial re-centralization of computing functions; radically new high performance network and distributed computing technologies; a rethinking of storage functionality and economics; requirements for long-term data management, curation and preservation; and growing faculty demands for informatics support services. An additional dimension of these needs involves information and technology intensive collaborations among groups at multiple campuses (sometimes characterized as collaboratories or virtual organizations). Complementing the organizationally oriented work on e-research already described, CNI is also concerned with the institutional and cross-institutional development of technical infrastructure, with a particular focus on large-scale storage and data management, and on collaboration tools and environments. Of particular concern is the persistently difficult integration of investment in national level research infrastructure and campus-level investments and approaches; we are participating in an NSF Task Force on Campus Bridging that is examining these issues.

• Open Annotation

A tremendous amount of research has been done in developing systems to allow annotations to be created, shared, and viewed, but, for various reasons, these systems have met with very limited adoption to date, even though the need to work with annotations for the widest possible range of digital objects remains a fundamental need for scholars in all disciplines. The Open Annotation Collaboration (OAC) project, funded by the Andrew W. Mellon Foundation, is focusing on establishing an interoperable annotation environment that would enable researchers using heterogeneous annotation clients to share their annotations, both in a fully public setting and within the boundaries of actual or virtual organizations. The emphasis here is on common data models and interoperability standards (building on existing work by the World Wide Web Consortium) rather

new information technology/library collaborations required by the e-research environment; and the staffing needs of data curation programs. In this endeavor we will work closely with ARL, where an e-science task force has recently mapped out a number of similar questions from a library perspective, and with the EDUCAUSE Net@EDU Campus Cyberinfrastructure Task Force.

• **Impact Measures for Scholarly Communication**

A number of metrics are used routinely to measure the impact of faculty research output; the results are often important aspects of individuals' review for tenure, promotion, and awards. Some researchers, led by Johan Bollen of Indiana University, are investigating the validity of traditional metrics and offering alternative mechanisms, employing visualization of the impact of researchers' publications. This work also seeks to consider the impact and use of both traditional journal literature and new forms of scholarly communication in a holistic way. CNI is closely following this work, which was featured at our spring 2008 meeting, and we will participate in an NSF-funded workshop organized by Bollen in December 2009, immediately following the Fall CNI meeting.

• **Special Collections in the Digital Age**

The recent work of the ARL Special Collections Task Force—in which CNI has participated as a corresponding member—has provided a context and description of emerging trends that will help many institutions innovate in this area. More special collections programs are working to integrate their resources into the curriculum, working closely with faculty and students on digital projects. The ARL-CNI symposium, "An Age of Discovery: Distinctive Collections in the Digital Age" (held October 15-16, 2009, in Washington, DC) showcased many of these developments, and we will return to them in ongoing CNI meetings. Another area in which CNI has maintained an interest is in the institutional response to the acquisition of large, personal digital archives from scholars and researchers. The digital records of organizations are also poorly explored; a particular area of CNI interest is the changing nature of the academic record caused by the deployment of learning management systems, IRs, and other scholarly support systems; this will have lasting policy implications for special collections and institutional archives.

• **Executive Roundtable**

CNI's Executive Roundtable series assembles executive teams (usually the chief librarian and chief information technology officer) from about 10 institutions for a focused two-to-three hour discussion of a specific topic of interest on the morning of the first day of the member meeting. Launched at the Fall 2003 member meeting, the Executive Roundtables build on the theme of collaboration between librarians and information technologists that has been at the foundation of the Coalition. Past topics have included IRs, learning management system strategies, identity management, learning spaces, funding innovation, the university's role in the dissemination of research and scholarship, lecture and performance capture, and infrastructure to support research, which brought together vice presidents or vice provosts of research, in addition to the usual Roundtable organizational representatives from libraries and information technology. The fall 2009 Executive Roundtable will focus on institutional repositories, examining their growth and changes in institutions that have done pioneering work in this area. The spring 2010 Roundtable is expected to focus on institutional strategies for implementing open access mandates.

are seeing significantly different deployment trajectories in different nations. We will work with a newly forming international Confederation of Open Access Repositories (COAR) to help identify significant policy issues and interoperability standards. We are particularly interested in ways in which the impact of IRs might be measured, and their interactions with virtual organizations, faculty movement from one institution to another, and, in particular, with stewardship of scholarly work associated with faculty retirements.

• **Institutional and Disciplinary Implications of E-Research**

The Coalition has long been engaged in efforts to chart, understand and facilitate the transformation of scholarly practice through the use of digital content and advanced information technology as part of its fundamental mission. In the arts and humanities, CNI, in collaboration with partners such as the J. Paul Getty Trust, the American Council of Learned Societies (ACLS), the National Research Council (NRC) and ARL, continues to provide leadership in computing and the humanities and outreach to build collaborations with the museum community. In the sciences and engineering, CNI has recently been heavily involved in helping the higher education and library communities understand and frame emerging issues in cyberinfrastructure and e-science, with a primary focus on data sharing and data curation issues.

In the 2009-2010 program year, CNI will continue to engage e-research developments both in the sciences and the humanities. The US National Science Foundation (NSF) has launched major programs addressing data curation (the DataNet initiative, and also the Community-based Data Interoperability Networks program), and we will be highlighting developments from these programs in our member meetings. Following on the report of the ACLS Commission on Cyberinfrastructure for the Humanities & Social Sciences, CNI is participating in ongoing discussions about how to frame strategies for effective investment in digital humanities; in this area, we have been an active participant in the planning initiative of the Bamboo project, led by the University of California, Berkeley and the University of Chicago, with funding from the Andrew W. Mellon Foundation. We will feature work of projects such as those supported through the National Endowment for the Humanities High Performance Computing Initiative and the new multi-sponsor, international Digging into Data initiative, emphasizing computationally intensive research enabled by a robust infrastructure.

CNI is concerned with questions about availability of data related to scholarly work, and has been engaged in a number of discussions around open access, open science, and open data as they relate to this question, as well as discussions about disciplinary norms for data sharing. We will also continue to explore and document the ways in which data and computationally intensive scholarship are altering the nature of scholarly communication; the issues here include the legal and technical barriers to large-scale text and data mining; appropriate organizational, policy and technical strategies for linking articles and underlying data; and ways to construct scholarly works that are amenable to various combinations of human and machine use.

Connecting our work in e-research directly to our program focus on institutional content resources, CNI will continue to examine institutional policy and planning implications of cyberinfrastructure initiatives in both the sciences and humanities, and consider how these can complement disciplinary-based activities. An emerging and increasingly urgent issue is understanding the relationships between operational storage systems that support e-research workflows, and the repositories that provide longer-term management environments for the inputs and outputs of these e-research activities; this has substantial technical, economic and policy ramifications.

• Digital Preservation

Closely related to the programmatic focus on stewardship of institutional content resources is the Coalition's continuing work on more broadly based preservation of digital content. This is a central issue, not only in the shift to network-based scholarly communication, but also in ensuring the continuity of cultural and scholarly memory in the digital age. It also continues to emerge as a fundamental social and public policy challenge with wide-reaching implications. CNI works closely with ARL, CLIR, the Andrew W. Mellon Foundation, the Library of Congress National Digital Information Infrastructure and Preservation Program (NDIIPP), NSF, Ithaka, the UK Digital Curation Centre (DCC), and RLG Programs at OCLC on the full range of technical, economic, and strategy issues surrounding digital preservation. In 2009-2010 we will participate in the second year of the Blue Ribbon Task Force on Sustainable Digital Preservation and Access. We will co-sponsor and co-chair the DCC's 5th International Digital Curation Conference, which will take place in London on December 2-4, 2009, and co-sponsor the Imaging Science and Technology (IS&T) Archiving meeting, scheduled for June 1-4, 2010 in Den Haag, The Netherlands. Digital preservation progress will continue to receive extensive coverage at CNI member meetings.

The wide-scale adoption of networked information services and shift to digital content raises a set of new questions about risk management and business continuity planning for libraries and higher education institutions. CNI continues to be deeply interested in these risk management issues, and in 2009-2010 we will be exploring so-called "cloud" storage systems and their implications for robust storage and digital preservation; together with CLIR and Johns Hopkins University, we are planning a workshop on storage substrates and resilient, multi-layer storage design for mid-2010.

Transforming Organizations, Professions, and Individuals

The pervasive nature of digital content and networks has led to transformations in the way the research and education community does its work. In this program area, we focus on the impact of digital content on organizations, including the changing nature of teaching and learning, the need for new services and skills in the professions, and the pressure on physical facilities to accommodate changing needs of user communities. CNI has a longstanding commitment to highlighting and advancing organizational initiatives that facilitate collaborations across institutional units and professional cultures, with particular emphasis on collaboration between librarians and information technologists. We have also fostered collaborations with electronic publishers, electronic records managers, archivists, and others. Our work on organizational and institutional issues includes a focus on evaluation and assessment strategies, recognizing the continuing need to understand the effects and contributions of advanced information technology and digital content.

• Today's Learners and Digital Content

A cross-cutting theme informing our work on teaching and learning in recent years has been understanding the increasing population of students who have grown up with computer and information technologies. While these students are often described as very different from older generations in their use of technology, many of the characteristics of their uses of information and technology—such as multi-tasking, active learning, working in groups, and production, not just consumption, of digital resources—have also been incorporated into the lives of most adult professionals. We help institutions understand the need to reconfigure some of their services and

their physical and virtual spaces to reflect the ways in which our students work with technology and information today.

As both students and faculty increasingly produce new digital information, sometimes incorporating parts of others' work and often in complex social software contexts, they have a pressing need to understand a wide range of issues including format standards, metadata, intellectual property, privacy, and preservation. A variety of literacies—information, technology, and visual—are converging as students, faculty, and others produce innovative digital content. The implications of mobile platforms on content and service delivery strategies are another aspect of this challenge that we will highlight through presentations and publications in 2009-2010. We will encourage libraries to develop cohesive strategies as they enter the arena of provision of content and services for mobile devices, and we will highlight campus strategies that incorporate services from a wide variety of institutional units, including libraries.

• Learning Spaces—Environments and Services for Today's Learners

Many educational institutions are offering public service points or facilities where library and information technology staff share responsibilities to serve users; sometimes these facilities incorporate teaching and learning centers that bring together instructional technologists, faculty, information technologists and librarians. Often these service points and centers are developed in conjunction with building renovations, expansions, or new building projects. CNI seeks to share experiences of institutions' projects, to help identify best practices, and to assist institutions in developing programs that enhance the learning and research functions of the physical space.

CNI's work focuses on learning spaces that have a particular connection with information organizations and professionals, such as libraries, learning or information commons, computing centers, multi-media centers and centers for teaching and learning. Such learning spaces may incorporate formal classroom spaces but classrooms are not our primary focus. CNI also highlights learning spaces that have a cross-sector component, such as multi-media studios or information commons administered or staffed jointly by the library and information technology groups.

In 2009-2010 we will continue to feature our work on learning spaces, partnering with other organizations such as the EDUCAUSE Learning Initiative (ELI). We will offer sessions at several national meetings and we will identify and disseminate information about trends and best practices as well as offer workshops on short-term improvements to learning spaces when plans are on hold due to funding limitations. We will work with some institutions as they plan renovations of their learning spaces. Our efforts will continue to explore such topics as linking the services offered in these facilities more closely to the teaching and learning program of the institution. As we continue to conceptualize the landscape of the impact of technology on teaching and learning, we will make presentations and write about this topic, including contributing to an ELI paper on learning environments.

• Organizational Implications of E-Science and Digital Humanities and Social Sciences

As part of our ongoing exploration of the institutional implications of the emergence of e-science and digital scholarship in the humanities and social sciences, we will continue to look at organizational and staffing questions. These issues include: the development of new service models for faculty and graduate students in newly designed spaces; how to appropriately combine and balance centralized and departmental support resources to most effectively support faculty and students;