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Association of Research Libraries
Coalition for Networked Information
National Association of State Universities and Land-Grant Colleges

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The University's Role in the Dissemination of Research and Scholarship—A Call to Action

Association of American Universities

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On August 4, 2008, four leading associations serving research universities, listed above, convened a roundtable discussion engaging provosts, chief research officers, chief information officers, senior faculty, and library and university press directors to identify actions that should be taken to expand the dissemination of the full range of products of the university community's research and scholarship. Informed by that discussion, the four sponsoring organizations jointly prepared a "Call to Action" statement intended to provide guidance to each organization and its members. The statement strongly urges campus leaders to take action in developing new policies and strategies that promote dissemination of the full range of products of the research enterprise. Selections from that document are included here. To view the full Call to Action, please visit http://www.arl.org/disseminating_research_2009.

Introduction

The production of new knowledge through the practices of research and scholarship lies at the heart of the university's mission. Yet without effective and ongoing dissemination of knowledge, the efforts of researchers and scholars are wasted. Dissemination is thus a core responsibility of the university.

Traditionally universities have relied largely on formal publication systems to ensure dissemination in addition to their critical function in vetting new scholarship, but digital technologies have opened the door to an additional and much broader range of dissemination possibilities and have generated entirely new forms of content that must be shared. This shift demands that universities take on a much more active role in ensuring dissemination of the knowledge produced by their institutions—both now and in the future. The shift also

positions universities to play a much more active role in dissemination—particularly of new kinds of content.

Key to fulfilling this dissemination responsibility is for universities to have the ability to make appropriate decisions about access to content and the uses to be made of it. They must acquire and maintain the rights necessary to make scholarly content as usable and broadly accessible as possible. Particularly for content that is not formally published, universities need appropriate limited rights. Research data, video, audio, and multimedia works, new forms of digital works and scholarly resources, are just some of the non-traditional content whose dissemination needs management. In addition, the university's ability to disseminate knowledge will be enhanced if it can regain similar limited rights to disseminate works that pass through the formal publication system....

A Vision Statement for the University's Role in Dissemination

The creation of new knowledge lies at the heart of the research university and results from tremendous investments of resources by universities, federal and

Faculty research and scholarship represent invaluable intellectual capital, but the value of that capital lies in its effective dissemination to present and future audiences.

state governments, industry, foundations, and others. The products of that enterprise are created to benefit society. In the process, those products also advance further research and scholarship, and the

teaching and service missions of the university. Reflecting its investments, the academy has a responsibility to ensure the broadest possible access to the fruits of its work both in the short and long term by publics both local and global.

Faculty research and scholarship represent invaluable intellectual capital, but the value of that capital lies in its effective dissemination to present and future audiences. Dissemination strategies that restrict access are fundamentally at odds with the dissemination imperative inherent in the university mission....

This Is the Moment to Take Action

Decades of investment and development in information technologies and networked information resources have created an unprecedented opportunity for scholars to express, document, organize, and transmit knowledge with extraordinary flexibility, depth, and power; these same developments have

made it possible for this knowledge to be accessible throughout our society and globally at manageable costs. Yet these opportunities are constrained by publishing, tenure, and promotion policies based on historic practices.

Universities and their communities need to capture the full value of the growing investments in research and scholarship by maximizing the dissemination of their products.... Dissemination of research is a key value of the academy. Indeed, academic freedom encompasses the rights of faculty members and researchers to communicate freely and broadly the conclusions of their scholarly endeavors....

Another key value of the academy is preservation of access to research and scholarship over time. We must retain the rights to preserve products of faculty work within the academy, or decisions about what will be saved and who will be able to use it again will reside outside the academy.

To realize the benefits of this changing landscape, promotion and tenure criteria need to continue their evolution beyond their basis in historic practices that often tied faculty rewards exclusively to publication in the traditional journal and monograph vehicles. While the identification of high-quality scholarship is integral to the academy's work, basing rewards on use of the historic, print-based distribution system retards the development of new models and also strengthens the ability of actors outside the academy to control future dissemination of new knowledge.

Reflecting the need to retain the ability to ensure that faculty scholarly and creative work is broadly available, universities, working with their own faculty, should supplement traditional publishing models with more effective models over time. While such models must preserve the critical qualitative components of traditional publishing, they can and should go beyond them by adopting the benefits made possible by the networked environment. Assistance in these tasks should be solicited from scholarly societies and university presses.

In a networked environment one maximizes technology investments by integrating dissemination functions directly into existing university technology environments. A variety of capabilities for disseminating content already exist on campuses, often under the management of libraries or information technology units. With appropriate rights management strategies, these can be effectively harnessed to substantially enhance dissemination of research and scholarship in the present and into the future.

Recommendations to Campus Leaders

Primary Recommendation:

Campuses should initiate discussions involving administration and faculty about modifying current practices and/or its intellectual property policies such that the university retains a set of rights sufficient to ensure that broad dissemination of the research and scholarly work produced by its faculty occurs.

A number of related actions are also provided here. The scope of a university's dissemination responsibility should not be limited to traditional forms of faculty publications. The discussion of dissemination must broaden and take into consideration all of the products of university faculty including data, analyses, new forms of scholarship, working papers, conference proceedings, monographs, journals, and creative works such as performances.

Embracing responsibility for disseminating the new knowledge arising from faculty work requires individual universities to pursue both inter- and intra-institutional and collective strategies. Coordinated action can arise out of formal collaborations, but also from informal synchronization of actions at multiple institutions.

Some specific institutional strategies include:

- Initiate a process to develop an institutional dissemination plan by explicitly evaluating existing dissemination activities, policies relating to promotion and tenure, and policies regarding faculty copyrights. For instance, charge a campus blue ribbon task force to advise the provost on key issues raised by the emergence of new forms of scholarly publishing and the gains that might be had by utilizing more effective ways of sharing the high-quality results of the processes of scholarly and creative endeavor.
- With this foundation, develop priorities for supporting new dissemination strategies that enhance the value of the multifaceted investments in faculty research and scholarship by promoting the broadest possible access to it.
- Engage departments on campus in developing fresh articulations of the criteria that are appropriate for judging the quality of contributions to their discipline, criteria that embrace emerging forms of scholarly work, where those possess the same attributes of quality and contribution to new knowledge, and do not rely solely on traditional publications and historic practices.

- Develop institutional policies that enable the university to disseminate the full range of its community's products now and in the future.
- Where local dissemination infrastructure exists (such as institutional repositories), promote its use and expand its capabilities as required. Where needed, build new infrastructure that supports documentation of the products of faculty work, both for grant management and compliance and for more general purposes.
- Seek opportunities to invest in shared dissemination infrastructure with other institutions—through shared facilities or by contributing funds to the development of dissemination services by another institution.
- Encourage faculty authors to modify contracts with publishers so that their contracts permit immediate open access or delayed public access to peer reviewed work in a manner that does not threaten the viability of the journals or monographs.
- Develop policies or strategies that redirect resources from high-cost/low-value dissemination practices to development of dissemination mechanisms residing inside the academy.
- Where universities support presses, work to realign presses more directly with the university mission. Encourage press investments in dissemination activities that correspond to areas of excellence on campus. Consider revising reporting relationships to encourage collaboration between presses and libraries. Invest in press/library collaborations.

For information on how a research library could use the Call to Action statement locally to stimulate and inform discussions, see the ARL Scholarly Communication Web site on Institutional Policies, <http://www.arl.org/sc/authors/inst-policies/>.

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ARL Statement to Scholarly Publishers on the Global Economic Crisis

Karla Hahn, Director, ARL Office of Scholarly Communication

Current economic conditions are affecting the funding base of even the largest libraries in the US and Canada to a degree that is unprecedented in recent memory. The situation has altered relatively quickly and most institutions had already completed renewals for 2009 serial subscriptions. There has been concern in the library community that many publishers may be operating at some remove from the realities of the situation and the very widespread preparations that libraries are making to reduce expenditures. In light of these circumstances, ARL issued a statement intended to paint a picture for publishers of the budgetary conditions ARL libraries are operating under currently and are preparing to face in 2010. Although the statement conveys unpleasant realities, it is important to make the situation as clear as possible so that publishers can make appropriate decisions and have as much time as possible to consult with the library community.

The ARL statement reflects a belief that many publishers of contemporary scholarship and research will be seeking to remain true to a shared commitment to promote the broad exchange of new scholarship and research; therefore, it suggests some strategies that would be welcomed by the ARL community. A similar statement was released by the International Coalition of Library Consortia (ICOLC) last month. The two statements should reinforce each other's messages and provide publishers with information to help them make their decisions.

The statement, included in full below, was created by the ARL Scholarly Communication Steering Committee and endorsed by the ARL Board.

ARL Statement on the Global Economic Crisis and its Effect on Publishing and Library Subscriptions

Background

The Association of Research Libraries (ARL) is a nonprofit organization of 123 research libraries at comprehensive, research-extensive institutions in the US and Canada that share similar research missions, aspirations, and achievements. ARL member libraries make up a large portion of the academic and research library marketplace. In 2007, ARL members reported a median expenditure of \$9,600,793 for library materials (\$1,219,796,179 in total), a median expenditure for serials of \$6,587, 241 (\$820,955,367 in total), and a median expenditure of \$4,661,123 for electronic resources (\$536,033,744 total).

The International Coalition of Library Consortia (ICOLC) on January 19, 2009 released a public statement on the global economic crisis detailing the situation for library consortia and recommending specific strategies for publishers that do business with consortia. ARL believes it is helpful to reinforce some of that statement's key messages and offer some additional observations and recommendations based on the particular perspectives of its members.

ARL is making this statement in the belief that scholarly publishers are identified by their commitment to promoting the broadest possible exchange of new scholarship and research. Thus large or small, for-profit or not-for-profit, scholarly publishers should benefit from the fullest possible understanding of the situation of the library community as common stakeholders in the process of scholarly publishing. While ARL can only report on the experiences and situation of its membership, it is likely that their concerns reflect those of a larger group of libraries in North America and beyond.

Large libraries are far from exempt from the consequences of the current global economic crisis. Downturns in state support for public institutions along with substantial losses in endowment funds mean that very few ARL member libraries are not facing substantial reductions in both operating and materials budgets. This is not a prediction but an observation of current realities. Many ARL member institutions have already had to return some portion of their budget for the current fiscal year; double-digit budget returns

for the current year are affecting some members now. We have reports from vendors that some libraries did pull back from 2009 subscription renewals late in 2008 by asking that their invoices be returned for review, but as the ICOLC statement notes, these circumstances largely arose after serial renewal decisions for 2009 had been made and funds committed. There is ongoing concern in the library community that relatively strong 2009 renewals, by masking the ultimate consequences of the changing state of library finances from many publishers, could lead to unwarranted complacency.

In addition to cuts already made, there is strong evidence that most ARL member libraries are preparing for further budget reductions in the 2009/2010 fiscal year. In some cases members are planning for 2009/2010 to be a second year of double-digit budget reductions. Institutions receiving flat budgets (with no inflationary increase) will consider themselves unusually fortunate. Budget reductions are a reality even for many of ARL's largest members.

It is the common view among research libraries that they, like many smaller libraries, are facing protracted budget reductions and cannot justify any expectation that cuts being implemented are anything but permanent. Unlike earlier recessions and inflationary cycles, few are in a position to consider budget management strategies aimed at carrying collections budgets over a few lean years. Most institutions that in the past have been able to protect collections expenditures with special monies or compensatory increases in cuts to other portions of their budget have reached a point where this is no longer a responsible strategy. Instead, institutions are planning for permanent reductions in both staff and collections resources.

Most member libraries are preparing cancellations of ongoing commitments for 2010, albeit in advance of knowing the full scale of budget reductions. In the current economic climate lower costs, high returns on investment, and greater flexibility will be highly valued. In addition, as they reduce their collections, many large institutions are now far less able to take the effects of cancellation decisions on consortium partners into account in their decision-making.

Over the last decade research libraries have substantially reduced their subscriptions to print editions of publications where electronic versions are available. The current economic environment will further preference electronic versions over print and most research libraries would welcome the complete discontinuation of print publishing where this offers reduced publishing and

subscription costs if acceptable preservation strategies are in place, such as archiving with third parties.

In addition, there may be greater exposure of research libraries, which historically have built broader and more diverse collections, to some facets of the current economic crisis. ARL members tend to collect “long tail” materials very actively, including many publications produced abroad. These may be particularly vulnerable to drastic fluctuations in currency exchange rates that disproportionately increase their prices. The long tail of research library collecting is also likely to include significant numbers of small publishers and titles with small circulation bases in the best of times. These will certainly experience cancellation spirals that reduce their titles’ cost/benefit profiles and are likely to be more vulnerable to business failure.

Large libraries have also been subject to a novel form of inflation pressure as some publishers have implemented new pricing models, such as tiered pricing, that shift revenue generation to larger institutions that are required to absorb significant price increases to compensate for discounting to other customers. Publishers implementing changes in pricing models that provide discounts to small customers by balancing them with increases to larger customers will be especially likely to force large institutions into cancellation decisions. Indeed, these pricing models are somewhat counterintuitive given that the content published come disproportionately from the faculty in research institutions.

Recommendations to Publishers and Vendors

ARL echoes the ICOLC statement’s advocacy for publishers to adopt flexible approaches to pricing and avoid reducing content or access as libraries seek to renegotiate expenditures. The research library community believes it is important to go further in making recommendations for publishers and vendors that seek to honor their commitment to enhancing scholarly communication in these times of unprecedented challenge. These recommendations are made based on the belief that scholarly publishers committed to enhancing the effectiveness of the scholarly communication system are prepared to act to minimize negative impacts on the system resulting from economic conditions.

- ARL calls on publishers to consider carefully decisions to invest in new products, functionality, and marketing efforts. Any new investments

need to be strategic and market sensitive. Publishers should base investments on market research that demonstrates demand and takes into account the ongoing economic situation.

- Publishers should go further in reducing the need for outright cancellations by undertaking broad efforts to seek new efficiencies that can result in price reductions in the short as well as long term. As libraries scrutinize their own operations, publishers similarly need to critically examine all of their practices and services to identify ways of reducing expenditures and, with them, prices. One obvious opportunity for reducing operating costs to proportionately lower prices is accelerating shifts to electronic-only publication to reduce overhead of print production and handling.
- ARL reiterates the ICOLC call for price stabilization and advocates real price reductions. Models that stabilize or discount prices for all customers, large and small, are most likely to be attractive in the current economic situation and into the future.
- Libraries serving research organizations are increasingly receptive to models that provide open access to content published by their affiliated authors in addition to traditional subscription access to titles. This kind of model can form a bridge from subscription models to models incorporating author-side payments.
- Responsible publishers and vendors should provide real alternatives to multi-year contracts and a range of options for contract terms, as described in the ICOLC statement.
- Acknowledging the singular budget conditions confronting even the largest libraries, publishers must be open to mid-term renegotiations of contracts.
- The research library community is also concerned that the suddenness and depth of the global economic crisis substantially increases risk for the loss of important scholarly content. Scholarly publishers share with libraries a stewardship responsibility and should accelerate their commitments to third party archiving services as potential for business failure increases.
- Inevitably, libraries will be forced to invoke many contract terms in place for providing ongoing access to previously subscribed content after cancellation. ARL calls on publishers to generously and completely

facilitate fulfillment of existing contract terms to provide ongoing access to back issues of cancelled subscriptions and to continue to provide these contract terms.

- Finally, ARL encourages publishers to consult widely with research libraries. Small, not-for-profit publishers are of particular concern, and ARL member libraries welcome conversations regarding new publishing models that can reduce the cost and vulnerability of established publications of high value.

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Reinventing Science Librarianship: Themes from the ARL-CNI Forum

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On October 16–17, 2008, more than 230 science librarians and library directors gathered at the ARL-CNI Fall Forum in Arlington, Virginia, to consider the implications of e-science and e-research for science librarians and the changing nature of their work. The forum, “Reinventing Science Librarianship: Models for the Future,” was orchestrated by the ARL E-Science Working Group and brought together panels of scientists, science librarians, and research library directors to address the needs of scientists working in distributed and collaborative networked environments, the priorities for retraining science librarians, and the importance of new directions in library practices. A comprehensive collection of forum resources is available from the ARL Web site and the author’s blog;¹ this article focuses on three thematic threads woven throughout the various panels and presentations:

1. The Process of Reinventing Science Librarianship
2. Serving Future Generations of Users
3. The Librarian as Middleware

Each of these themes recurred frequently at the forum, and each represents an area of particular relevance for science librarians—and in many cases, for research librarians more generally. For this author, the themes represent the substantive takeaway messages from the forum that should influence libraries’ next steps in responding to the needs of scientific researchers.

The Process of Reinventing Science Librarianship

Several speakers put forth ideas about what the science librarian of the near future may look like in terms of skills, capacities, and institutional positioning. Three points of general consensus emerged: first, because scientific research is itself being transformed, science librarians (and their libraries) need to become more adaptable to changing conditions; second, in order to understand changing conditions and respond to evolving user needs, science librarians need to focus



Listen to Rick Luce on the need for more flexible staffing in science libraries (2:00 MP3)
<http://www.arl.org/bm~doc/luceexcerpt.mp3>

more on strategies for library service assessment, evaluation, and improvement; and finally, the fundamental role of the science librarian needs to expand to incorporate skills related to organizing and manipulating data and data sets.

At the outset of the forum, Richard (Rick) Luce emphasized that, in an era of e-science, research libraries need to become nimbler, allowing for more fluid and dynamic allocation of staff resources. Emerging forms of scientific practice will require different kinds of library support at different times. He envisioned future science libraries that have the capacity to create multi-skilled information-management teams on the fly, embedding librarians within research teams or departments. Science libraries must develop more flexible staffing structures

in order to be more responsive to the needs of this kind of research. This will, in turn, require highly adaptable science librarians, in terms of both skill set and attitude.

Further, as Sayeed Choudhury, Fran Berman, and others suggested, successful adaptability requires a clear sense of direction, and successful direction requires effective application of library service assessment and evaluation procedures. Institutional requirements are diverse, and ever changing. Becky Lyon quipped, "When you've seen one research library, you've seen one research library." In other words, in order to know how best to serve one's own institution, one must understand the particular needs and features of that institution. What works at one research library will not necessarily port directly to another. Still, as Neil Rambo suggested later in the forum, librarians should not let their institutional

differences get in the way of learning from one another's experiences. For example, helpful models may be found in health science and medical library settings. All of these speakers suggested that science librarians must engage in an ongoing process of measurement, assessment, and revision with regard to the services they provide—learning from and building upon the experiences of others where it is reasonable to do so.²



Listen to Liz Lyon on the increasingly data-intensive nature of science librarianship (2:16 MP3)

<http://www.arl.org/bm~doc/lyonexcerpt.mp3>

Finally, as emphasized in particular by Liz Lyon, Catherine Blake, and Carole Palmer, many of the roles that science librarians will be called upon to play focus on *data*, as science becomes more data-driven itself. Science librarians will need to become data consultants, data distributors, data service providers, data analysts, data miners, and data curators. They will be called upon to enforce data quality, aid in data retrieval, construct data applications, and ensure that data collections are properly annotated and preserved. This will require science librarians to

repurpose and expand upon their existing competencies—especially information organization and retrieval—to meet the challenges of managing data in addition to literature and other more traditional research products.

Serving Future Generations of Users

A second recurring theme of the forum was the need to create sustainable models for data preservation and reuse. The explosion in the volume of scientific data entails a need to both determine data selection and preservation procedures and find ways of maintaining access and usability as data management systems change. Furthermore, lurking beneath all of these issues lies another: how to financially sustain complex data systems over long periods of time.

One compelling strategy for developing sustainable data life-cycle solutions was voiced by William Michener early in the conference, and reiterated frequently thereafter: discussing the issue of long-term support for scientific research, Michener asserted the need for “domain-agnostic solutions.” That is, he contended that a single cyberinfrastructure system should be capable of

supporting a range of disciplines, so that each discipline would not need to develop its own system. Such an adaptable system would reduce the cost of both up-front development—which would require less duplication of effort—and ongoing support—since one support structure could serve many fields. Furthermore, a standardized, domain-agnostic solution would help to enhance data interoperability across domains, thus facilitating future collaboration within and across disciplines.

On a more general level, other speakers—particularly Fran Berman and Clifford Lynch—emphasized that preservation is not an end in itself, but is rather a step on the path to future *reuse*. Reuse of data created by others (or even by oneself) can accelerate advancement and discovery—purposes that should resonate with researchers and funders alike. Thus, characterizing data curation in terms of reuse has two advantages: first, it more accurately reflects the ultimate goal of such practices, elevating access and retrieval over static storage; and second, it enhances the appeal of data curation initiatives to those who are asked to contribute data and/or funding in order for those initiatives to succeed.

The Librarian as Middleware

A third theme—the librarian as middleware—was pervasive at the forum. Rick Luce introduced the idea (and the phrase) on the first panel, and subsequent speakers offered a number of variations and elaborations on it as the forum progressed. For the panelists, librarians became “bridges,” “facilitators,” “trusted arbiters,” and “relationship builders,” negotiating not just between people and systems, but also between systems and systems, and between people and people.

Mediating between people and systems is (or should be) a familiar role for librarians. Whether they are helping an elementary-schooler learn to use a call number system, or assisting a chemistry professor in navigating Beilstein CrossFire, librarians serve this “middleware” role every day. One sees a parallel, if more complex, role for science librarians in supporting e-science. Medha Devare emphasized the key role that librarians will play in mediating between e-science systems and their users, helping individuals to effectively utilize the collaborative data sets, online simulations, virtual environments, and other technological and/or networked resources that e-science will create. Further, as noted by Sayeed Choudhury, greater public access will entail a greater need for the mediation librarians can provide. As more scientific data is made freely available through research enterprises like the Human Genome Project or the

Sloan Digital Sky Survey, data will reach larger numbers of users dispersed across non-traditional audiences—undergraduates, K–12 students, and interested members of the public. This expansion in access will create a parallel expansion in users’ need for help with data navigation across a range of library settings.

Somewhat less obvious, perhaps, are the ways that librarians could become middleware agents between systems and systems, and between people and people.

Several presenters, including Catherine Blake, Fran Berman, and William Michener, pointed to the need for mediation between different systems, and indicated that librarians will have an opportunity to play a strong role in this area. In order to do so, however, librarians will need the skills to negotiate between different data systems and between different sorts and compilations of data sets. Some key concerns in this area will be interoperability, migration, and emulation—all points at which humans must take action in order for systems to begin to talk with each other, and to remain interoperable over time.

Arguably the most important role for librarians as middleware in the e-science context, however, is mediation between people and people. As Sayeed Choudhury pointed out, “human interoperability is more difficult than technical interoperability.” It requires trust, common vocabulary, and negotiation of values. And often—though not always—research librarians are uniquely well positioned to negotiate such issues within and beyond their institutions: they can inspire the trust of a variety of actors, thus enabling them to develop a shared vocabulary and value set. In an increasingly interdisciplinary and collaborative research environment, the capacity for expert mediation will become very important. Indeed, some panelists’ stories suggest that it already has: James Mullins recounted a situation at Purdue in which librarians were able to “bridge the gap” between researchers who did not have a “shared vocabulary.” Medha Devare characterized Cornell Library’s successful leadership role in the VIVO project as a consequence of their reputation as “trusted arbiters of information.” Interdisciplinary collaboration among researchers is increasingly important in the virtual communities formed by networked science, but that does not mean that it will be easy. To the extent that science librarians hold positions of trust within their communities, they will be in a unique position to play mediating and facilitating roles within and between those communities.

Conclusion

Closing speaker Clifford Lynch reminded the audience that what began only a few years ago as a more limited discussion of science data curation has

expanded to include the reuse of data, data management skills, cyberinfrastructure planning, interinstitutional collaboration, incorporation of smaller-scale e-science activities, and discussions of values and policies. Rather than imagine that science librarians will have to become experts in each of these areas, however, Lynch contended that many individuals may become proficient at one or two of these newly valuable skills.

The speakers and panelists outlined an array of perspectives and issues that could redefine the roles of science libraries and librarianship, and emphasized the potentially enormous benefits of

librarians becoming more familiar and engaged with the new and evolving practices of scientists and researchers. In the near future, however, librarians' support for e-science will most likely be defined by their "middleware" role. By forming a bridge between and among researchers, systems, and data, librarians have an opportunity to make a significant contribution to advancement in science, e-scholarship, and research in general.



Listen to Clifford Lynch on the expanding roles of science librarians (2:02 MP3)

<http://www.arl.org/bm~doc/lynchexcerpt.mp3>



¹ Forum resources, including speaker biographies, presentation slides and audio of their remarks, are available on the ARL Web site, <http://www.arl.org/resources/pubs/fallforumproceedings/forum08proceedings.shtml>. Detailed notes on the forum's presentations and discussion are available on the author's blog, <http://elisabethjones.wordpress.com/category/escience/>.

² To encourage learning from the experiences of others, 15 libraries contributed 14 posters for display at the forum showcasing their organizations' work in science librarianship. The forum proceedings include a document describing the contributed posters in three categories: Tools, Programs and Services, and Organizational Models, <http://www.arl.org/bm~doc/ff08posters.pdf>.

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ARL Statistics: Redefining Serial Counts and Remaining Relevant in the 21st Century

Martha Kyrillidou, Director, ARL Statistics and Service Quality Programs

The ARL Statistics 2006–2007 marks the 100th anniversary of the annual gathering of data established by James Gerould at the University of Minnesota. A landmark collection of data that has shaped the way research libraries have viewed themselves in the 20th century, the ARL Statistics are still relevant today thanks to the ongoing stewardship of the ARL Statistics and Assessment Committee. Through the work of the committee, the annual data collection was augmented in 1994–95 to include

elements describing services, and in 2003–04 to include expenditures for electronic resources.

Last year, the committee implemented another change that makes the ARL Statistics even more relevant for the 21st century: the definition for counting serials was changed from serial subscriptions to serial titles, emphasizing the scope of the content rather than the multiplicity of formats.¹ The scope of the content available

to library users is a more valuable indicator of a library's relevance to the research, teaching, and learning processes within a research university.

In earlier years, libraries were instructed to report the "total number of subscriptions, not titles, but electronic serials acquired as part of an aggregated package (such as MUSE or Academic's IDEAL) [were] to be counted by title." ARL library directors and other staff expressed concern that the serials count was problematic since many libraries engage in multiple consortial arrangements and the serials count was inflated by duplicate titles held in multiple packages. The

Fast Facts from ARL Statistics 2006–2007

- Half of a research library's materials budget is spent on electronic resources.

- Both interlibrary borrowing and lending are decreasing as access to electronic resources is increasing.

- ARL libraries are adding a growing number of e-books to their collections.

new definition asks that titles be reported as electronic if available in both print and electronic formats, and that titles be reported as purchased if available through both purchased and non-purchased arrangements. Serial titles are more accessible when they are delivered electronically, thus, in the revised definition, the instructions highlight the primacy of the electronic format when eliminating

A Comparison of Serial Titles in 2006–2007 and Serial Subscriptions in 2005–2006

	Titles (2006–2007)	Subscriptions (2005–2006)
Current Serials (median)	51,797 (n=113)	40,607 (n=113)
Purchased (median)	39,113 (n=101)	25,967 (n=90)
Not Purchased (median)	9,861 (n=101)	10,636 (n=90)
Average Unit Cost	\$192 (n=101)	\$241 (n=89)

Source: ARL Statistics 2006–2007 and 2005–2006.

duplication among print and electronic titles. If a title appears in both print and electronic form and a library has acquired it through several different providers, it would be counted as a single, electronic, purchased title.

This change has been successful in that more libraries are able to report data on serial titles (101 libraries) than were able to report data on serial subscriptions (90 libraries), indicating that the new definition is moving us in the direction of gathering data that are both collectable and useful. The accompanying table offers a comparison of the ARL Statistics data collected for serial subscriptions in 2005–06 and serial titles in 2006–07. The median number of serial titles reported (51,797) under the new definition is over 10,000 titles higher than the median number of serial subscriptions reported in 2005–06 (40,607). Most of the increase is in serial titles purchased (median: 39,113). As a result, the unit cost of serials has decreased as the definition shifted from subscriptions to titles. The number of serials not purchased did not change dramatically when the definition changed from subscriptions to titles. One should also note that there is a strong positive correlation between serial subscriptions under the old definition and

serial titles under the new definition. That is, in general, libraries reporting high numbers of subscriptions tend to report high numbers of titles. Some individual library figures may be questionable until the processes for implementing the new definition are standardized from institution to institution over the coming years. Overall, though, ARL is collecting serials data from more institutions, which indicates a shift in the right direction.

Modern technologies have made information so abundantly available that the size of a research library's collection is no longer the primary measure of quality that it used to be.² The vetted, scholarly, and authoritative information that the library provides, matched with the ability to deliver it effectively at the appropriate time and place, is one of the key elements that makes a research library distinct, effective, and relevant today. Being able to manage serial titles effectively by eliminating unnecessary duplication and enabling integration into library discovery tools is part of the process of enhancing the library experience for faculty and students as they engage in research, teaching, and learning. This new way of counting serials should help ARL libraries more accurately describe their contributions in the 21st century.

For more information about the ARL Statistics or to download the data files or a PDF of the publication, visit <http://www.arl.org/stats/arlstat/>. To order print copies of the publication, send e-mail to ARL Publications pubs@arl.org.

¹ See the ARL Statistics 2006–07 mailing materials, especially the FAQ and the instructions, <http://www.arl.org/stats/annualsurveys/arlstats/07statmail.shtml>; see also the ARL Statistics Webcast: Counting Serial Titles, December 10, 2008, <http://www.arl.org/arldocs/stats/statsevents/2008webcast/121008ARL.html>.

² Martha Kyrillidou, "Reshaping ARL Statistics to Capture the New Environment," *ARL: A Bimonthly Report*, no. 256 (February 2008): 9–11, <http://www.arl.org/bm~doc/arl-br-256-stats.pdf>; see also, Martha Kyrillidou, "The Impact of Electronic Publishing on Tracking Research Library Investments in Serials," *ARL: A Bimonthly Report*, no. 249 (December 2006): 6–7, <http://www.arl.org/bm~doc/arlbr249serials.pdf>.

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ARL Calendar 2009

<http://www.arl.org/events/calendar/>

March 11–12	Scholarly Communication Outreach: Crafting Messages that Grab Faculty Attention Seattle, Washington
March 16–20	Service Quality Evaluation Academy New Orleans, Louisiana
April 6–7	CNI Spring Task Force Meeting Minneapolis, Minnesota
April 24	Google Analytics Workshop Washington DC
May 19–22	ARL Board & Membership Meeting Houston, Texas
July 13	LibQUAL+® Share Fair Chicago, Illinois
July 13	Working Effectively with LibQUAL+® Chicago, Illinois
July 27–28	ARL Board Meeting Washington DC
August 17	LibQUAL+® at Northumbria International Conference on Performance Measurement Florence, Italy
October 13–16	ARL Board & Membership Meeting Washington DC
December 14–15	CNI Fall Task Force Meeting Washington DC

2010 Meetings

April 27–30, 2010	ARL Board & Membership Meeting Seattle, Washington <i>Note new dates</i>
July 12–14, 2010	National Diversity in Libraries Conference Princeton, New Jersey
October 12–15, 2010	ARL Board & Membership Meeting Washington DC
November 8–9, 2010	SPARC Digital Repositories Meeting Baltimore, Maryland

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The Web site is also where you may sign up for alerts of new releases of *Research Library Issues* and learn about submitting ideas for articles.

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