

March, 2010

Digital Repositories at a Crossroads: Achieving Sustainable Success through Campus-wide Engagement

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Jean-Gabriel Bankier, President and CEO
Berkeley Electronic Press
jgbankier@bepress.com

Courtney Smith, Outreach
and Scholarly Communications
Berkeley Electronic Press
csmith@bepress.com

Abstract:

Repository initiatives were, at the outset, driven by two noble desires: to remove barriers to access; and, to begin to address the scholarly communications crisis. For universities across the globe, this specifically meant a focus on collecting peer reviewed journal articles. As we discovered together, neither faculty nor other campus constituents were impelled to invest or take ownership in the endeavor and the failure rate among digital repositories was very high.

Over the past few years a new model for the institutional repository has begun to emerge. To guarantee the long-term viability of the institutional repository (IR), the IR must be made integral to units on campus beyond the library. By working closely with Senior Administrators (like Provosts, Deans, and Department Heads), as well as faculty and students, librarians are offering valuable, targeted services that meet constituents' needs and fulfill the goals of the repository. With this approach, the scope and value of the IR transcend a limited administrative or library function to fundamentally change the role of the library on campus.

Introduction

Repository initiatives were, at the outset, driven by several noble desires: to preserve the intellectual output of the institution; to remove barriers to access; and, to begin to address the scholarly communications crisis. For libraries across the globe, addressing crisis initially meant focusing on collecting peer-reviewed journal articles into open access institutional repositories (IRs); they collected post-prints where possible, and pre-prints otherwise.

These institutional repositories needed faculty participation in order to develop content, yet the IR was generally known to suffer from a lack of faculty engagement. This problem stemmed from a failure to consider the scholar's position. In focusing the message on crisis (and therefore, implicitly, access), libraries failed to frame the IR in a way that resonated with faculty.

Divorced from the "crisis" itself, faculty continued to have access to the majority of content they need via subscription services and so have little incentive to engage with the IR simply to solve what is for them a "non-issue." In examining reasons for faculty's non-use of Cornell's DSpace implementation, Davis and Connolly (2007) found that, "While some librarians perceive a crisis in scholarly communication as a crisis in access to the literature, Cornell faculty perceive this essentially as a non-issue." Traditional methods of accessing content were, for faculty, still in place. As such, for faculty, access and crisis were just not compelling concerns.

As Dorothea Salo (2007) described in her now canonical "Innkeeper," these "Roach motel repositories, in which materials fixed in their final form are the only acceptable content, *hold no value for many faculty*, which inevitably means such repositories *have no access to most faculty-created content*."

The library's common approaches to gathering content for the IR were not ones that met the needs of faculty on faculty's terms. Salo (2007) also noted that IRs were generally developed and managed without a "user-centered understanding" and "have been *slow to align development with needs*." As the saying now commonly goes, "We built it and they didn't come." Librarians and developers remained ignorant of faculty needs in the service of their own and, for the most part, their institutional repositories languished.

Access and the rising cost of journal subscriptions are neither fundamental concerns to faculty nor fundamental to the mission of the university. Further, a strict focus on post-prints, even through mandate, fails to accentuate the library's centrality to scholarly life on campus. Repositories managed by those criteria largely failed and, in the first half of the decade, most IRs remained a library thing. They did nothing to weave the library back into the fabric of campus.

To compound the threats, the library has, over this time, lost relevance amongst its campus constituents. Schonfeld and Housewright (2008) found that in the first half of the decade, the perception of university library importance fell amongst faculty. Between 2000 and 2006, we saw libraries become increasingly disintermediated from the scholarly research cycle.

The narrow focus on collecting copies of previously published scholarly articles reinforced library isolation instead of aligning it with the practices and goals of its constituents. The singular focus did not ask the question, What else is valuable to, but inaccessible by, the local community and global network of current and future scholars? What services does the academy need?

How are IRs Currently Trying to Solve this Problem?

In response to the engagement problem, some approaches have emerged.

Adding mandates

To this day, many traditionalists still believe in the post-print driven approach. Stevan Harnad, the “archivangelist,” recently argued that the “main *raison d’être*” of the IR is to capture the institution’s own “institutional refereed research journal article output” (Harnad, 2009). To solve the engagement problem, these traditionalists espouse mandates as the only viable solution.ⁱ

Some mandates have seen fair success. Queensland University of Technology, the mandate frontrunner in Australia, had a participation rate of slightly over 50% after the first year (Cochrane and Callan, 2007).ⁱⁱ And mandates at globally-recognized institutions like Harvard do increase faculty awareness of open access issues and institutional repositories. But mandates are very rare in the United States, and even around the world. At 43 institutional mandates *across the globe* (ROARmap, September 10th, 2009, <http://www.eprints.org/openaccess/policysignup/>), mandate adoption rate is slow.

Mandates may help the library to address crisis and access, but they also represent the continuation of the narrow focus on post-print collections and therefore do little to increase the value of the IR to faculty and other stakeholders. In terms of position, mandates also imply limited reach and scope of the library.

Measuring research output for assessment and funding

The IR has emerged, particularly in the UK and Australia, as a research-reporting tool, serving to determine government funding. Thomas and McDonald (2008) identified the “administrative utility” of such a tool “for academic administrators, who typically must struggle time and again to compile meaningful statistics for periodic demands such as regional accreditation assessment in the U.S. or research assessment exercises in the U.K. and Australia.” In this sense, the IR is able to increase the range of constituents it serves, as it is seen as giving value to senior administration.

The use of the IR as a research-reporting service enables the library to extend its reach on campus by providing some metrics to administrators and government agencies. It should be noted, however, that this approach, while increasing the number of parties served, does not increase the scope of content represented. In most cases, using the IR as a research-reporting service continues to limit the IR to post-prints, or even to a citation database.

By repurposing the IR as a research-reporting tool, its “administrative utility” is confirmed. Yet, its interaction with faculty is one of “policing” and “requiring” rather than one of “serving.” The research-reporting focus misses critical opportunities to fully embed itself within the scholarly infrastructure of the institution and fails to consider fully the skill set and interests of the library staff. Additionally, the library runs the risk of losing control to extra-library groups that are often not concerned with providing services to faculty.

Many feel there must be more. As Stuart Basefsky (2009) recently reflected: “The larger question should have been, ‘Is that all the value that we can extract from an IR?’ ... From my perspective and those of my colleagues at the Catherwood Library of the ILR School (School of Industrial & Labor Relations) at Cornell University, this is not nearly enough.”

Through our experiences with over 120 Digital Commons institutions, we find that the IR has the potential to provide a collection of services that fits better with the role of the library, delivers more value, and increases the reach of the library on campus.

An Emerging Solution: Serving the needs of stakeholders on campus

In tight budgetary times, the library must be able to justify the value of its services and software to stakeholders beyond the library. Amongst Digital Commons-subscribing institutions in North America, Australia, and Ireland, IR managers have begun to consider administrators’ and scholars’ perspectives in conjunction with their own. The IRs we consider in this paper deliver the most value when they are managed in the service of the mission and business of the university, and successfully impact scholarly life on campus by providing opportunities for new knowledge production.

These IRs strategically achieve widespread value by expanding the range of stakeholders the IR serves and increasing the scope of content the IR collects, moving beyond post-prints to consider the entire continuum of scholarly content. Where this occurs, we observe greater IR uptake amongst faculty and students, and greater support from senior administration. With this approach, the scope and value of the IR transcend a limited administrative or library function to change fundamentally the role of the library on campus. As a result, the library is also able to address its initial concerns of crisis and access by directly and indirectly increasing visibility of and participation in the IR.

Critical to the development of the ideas we present in this paper was research done by Karen Markey et al. (2009) on repository success across several IR platforms. Markey et al’s cross-platform research has shaped our understanding of a new model for IR success.

Many previous frameworks for IR success have generally focused on internal indicators – such as number of objects or metadata services (Thibodeau, Westell, etc). These existing frameworks for success consider content input and service-provisioning to be key.

Those internal indicators, while necessary, are no longer sufficient for evaluating success. In addition to traditional internal indicators (content input, service-provisioning), Markey et al. found that the five IRs in their study evaluate success based upon an indicator absent in much of the literature: external impact. External impact is predicated not just upon “outputs” (traditional quantitative indicators like number of objects) but also on “outcomes” (external, qualitative indicators). Specifically, the library judges external impact by looking for “a change in the perception of the library and its role in scholarly communication on campus” and the

way in which the library has inserted itself “into the scholarly workflow,” including the library as network hub and the library as publisher. Markey et al. summarize these measures of success under the heading of “some new type of interaction with scholarly life on campus.”

From our observations, libraries that strive to create this “new type of interaction” see great uptake amongst stakeholders campus-wide. By surveying Digital Commons repositories, we found that this new type of interaction falls in line with those examples described by Markey et al.: library as publisher, network hub, and facilitator. We also discovered ways in which the IR is used in the creation of new knowledge and scholarship on campus, improving collaboration, and functioning to unite diverse units and groups. We place all of this under the rubric of *impacting scholarly life on campus*, which we address in more detail further on.

Still, we felt this neglected an essential aspect of the IR’s external impact: its success in *serving the mission of the university*, and by virtue, the Office of the Provost. (Throughout this paper, the usage of the “Provost” can be considered analogous to “Vice-Chancellor” and generally applicable to any senior administrative role, like that of dean or department chair.) We observe libraries successfully moving to serve the mission of the university by aligning the institutional repository with the mission of the provost.

In the rest of this paper, we identify and describe cases from across Digital Commons implementations in which the repository has come to effectively serve the mission of the university and impact scholarly life on campus. We considered looking at quantitative measures, but concluded that quantitative assessment fundamentally contradicts the vision of success described by Markey et al., in which “outcomes” take precedence over “outputs.”ⁱⁱⁱ Like Markey et al, we use qualitative assessments drawn from specific implementations and examples. These come from librarians across the Digital Commons subscriber base, our own observations, and observations from other campus stakeholders. These assessments are rooted in a historical understanding of the scholarly communications crisis, threats to library relevance and standing, the ongoing transformation in scholarly communications, and the recent push toward library services supporting publishing activities.

Serving a key university mission

We see a trend amongst Digital Commons libraries to align repository services with the mission of the university. Where the IR is able to align its services with the mission of the university, it is able to better attract the support and participation of senior administration. Through an IR that accepts a wide scope of content, the library is able to provide a service that demonstrates the value of university programs and scholarship to both senior administration as well as the local and global communities. This transcends the limited research-reporting function to give greater access and visibility to the entire continuum of scholarly output on campus and at the same time serve administration’s needs. In this way, the IR provides valuable scholarship to scholars, researchers, and other members of the institution’s local and global communities and amplifies the university’s community outreach and global impact.

Most, if not all, universities have a stated mission to distribute institutional knowledge to the public, both local and global. Senior administrators like deans, provosts and vice-chancellors, are concerned with fulfilling this mission by demonstrating and returning value to the communities in which the university operates and from which it draws funding.

The 2009 Call to Action, published jointly by the Association of American Universities (AAU), Association of Research Libraries (ARL), Coalition for Networked Information (CNI), and National Association of State and Land Grant Colleges (NASULGC), describes the mission of the academy. “*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” (our italics, 2009).

David Shulenburger, Vice President of Academic Affairs for the Association of Public and Land-grant Universities, echoes these thoughts in his work on “research distribution strategies.” A research distribution strategy allows a university to return the fruits of its research to the communities that support it. For the library that implements this strategy, a research distribution strategy also “represents a shift from a passive role in research distribution to an active one” (Shulenburger, 2007).

As an example, the University of Nebraska – Lincoln has a strong agricultural focus, and finds that some of its most popular repository content is beef cattle reports, wildlife damage management research, and tractor test report archives beginning in 1915 and continuing to this day. Traffic to this content comes from across the state, with concentrations in urban centers Lincoln and Omaha, but with significant usage from rural Nebraskan farming communities. The IR manager at University of Nebraska – Lincoln described this as, “Some of those little red dots you see across the state are not much more than 40 cows and a general store, but they’re finding us and using the resources” (Royster 2009, p. 74). Upon publication in the IR, the beef cattle reports, wildlife damage management reports, and other regionally-relevant content have shown great value to the local community and the repository.

Beef cattle reports are by no means the traditional peer-reviewed post-prints one might expect to find in the IR, and yet they are works produced by expert scholars at the university. This content, once ineligible for traditional publication, can now, through digital publication in the IR, see a greater realization of value. The mission of the university is fulfilled when the local community and the scholarly community are served.

Additionally, by interacting with faculty and departments through these publications, the library increases IR visibility and awareness across campus. The IR manager at University of Nebraska – Lincoln reports that he receives content monthly from return depositors who have received monthly usage reports and would like more content posted for dissemination.

As we discussed in Bankier, Smith, and Cowan (2009), many Digital Commons repositories are moving forward to capture such valuable regionally-relevant and community-oriented material. Often, this material is some of the most frequently read in the repository. Rather than be dissuaded by a concern of “quality,” the publication

of this content attracts faculty to the service, particularly when shown the amount of traffic that might be drawn to their own work.

We have used Google Analytics to look at traffic origination and find that material that seemed to be of only regional relevance actually attracts global traffic. At Texas State University San Marcos, the applied research projects from the Masters of Public Administration program get significant traffic, only two-thirds of which comes from in state. In fact, more than 10% of the traffic to this regionally-oriented work comes from out of North America. This graduate student scholarship is accessible, understandable, and open, increasing institutional visibility by drawing readership from local government officials, citizens, and practitioners. Both the director of the program and the students have received inquiries and citations from across the globe.

Confirming the global appeal of regionally-oriented content, the IR manager at University of Nebraska Lincoln, recently fielded a request from a Finnish tractor club asking for permission to translate a certain tractor report available through the repository.^{iv}

The University of Massachusetts Amherst Library has leveraged its IR, ScholarWorks, to publicly and digitally align itself with the university mission of community engagement. The repository captures the campus-wide work that contributed to its recent Carnegie elective classification in Community Engagement.

With encouragement from the library and investment from the Vice Provost for Outreach, the university chose to use the IR to showcase the 50-plus exemplar outreach projects contributed by faculty. One such community engagement project is taking place in partnership with Cape Cod Cranberry Growers Association (CCCCGA). Cranberry Station brings research-based outreach to local farming communities, particularly in Southern Massachusetts, where cranberries are the largest agricultural enterprise.

The Community Engagement collection is made up of work produced by faculty and students, is often not well-suited to traditional print publication, and has never before been published as a collection. The individual pieces in the collection are a mix of previously-published and never-before-published work. The ability to include multimedia and provide usage feedback attracts scholars to participate. Again, rather than dissuade faculty, it actually attracts more scholarly work, particularly work unsuitable for traditional publication like that which incorporates multimedia or multiple content types.

As Shulenburger (2008) explained, “The job of digital repositories is to ensure that the extremely valuable scholarly or creative products that have been paid for by the public or by donors are ultimately accessible to them, as well as to students, faculty and researchers everywhere.” In addition to providing access to this work, the IR acts as a mechanism to demonstrate the function of the university within its local community, and the quality of the institution’s teaching and research output, positioning it within the global community of higher education institutions (HEIs).

Serving the business of the university

The Office of the Provost is equally concerned with being able to *demonstrate* the quality of its institution's scholarly and creative works. By capturing the gamut of research, ideas and creative works generated on campus, the IR demonstrates significant utility beyond research-reporting, and becomes an effective tool in furthering promotion, development and recruiting efforts.

Specifically, the university and its administration can leverage the IR to better position the university's work and expertise within the global digital community. We see many IRs highlighting a variety of collections – including, special collections, multimedia, student work, and faculty work – in areas of institutional expertise.

As an example, the Cornell School of Industrial and Labor Relations (Cornell ILR) repository includes, in addition to faculty content and a peer-reviewed journal, government documents and labor-related materials that make it one of the main sources for labor-related research and primary documents on the internet. Here, the IR has a very high faculty participation rate because its relevance and use as a research tool has increased faculty awareness and interaction. One of the IR managers at Cornell ILR's Catherwood Library reports that “two-thirds of ILR Faculty are participating [in the IR]” – and this is without a mandate.^v

In many instances, particularly those of professional schools, libraries are highlighting the special expertise and collections of their institutions. The law schools of Maryland and Georgetown both showcase and preserve the congressional testimony of faculty in their respective IRs. The library at Babson College, a leader amongst business schools in the field of entrepreneurship, showcases this expertise in the IR, featuring collections like STEP (Successful Transgenerational Entrepreneurship Practices) and the well-known publication, *Frontiers of Entrepreneurship*, a compilation of conference proceedings and the top papers presented at the annual Babson College Entrepreneurship Research Conference.

The University of Georgia School of Law's library faculty have written on the topic of promoting the law school by showcasing the “intellectual activity” on campus (Watson and Donovan, 2008). For example, the Law Library captured the full record of U.S. Supreme Court Justice Clarence Thomas's 2003 commencement speech. The transcript of the speech lives within the same context as the video recording, the press release, and related news articles. The library worked with the public relations office to “preserve the record of the event” and in turn gained a new stakeholder. The PR department now subscribes to an IR RSS feed in order to be alerted to new content, which they can then immediately use in press releases.

Not surprisingly, the University of Georgia Law Library actively continues to pursue capturing the ideas and creative works generated on campus. Recently, the Law Library captured the record of a discussion between former Secretaries of State Henry Kissinger, James Baker III, Warren Christopher, Madeleine Albright and Colin Powell, sponsored by the Dean Rusk Center and the Southern Center for International Studies. Included in this record are press releases, video, bibliography, and transcript of the discussion.

The IR managers at the University of Georgia School of Law remarked in “Behind a Law School's Decision to Implement an Institutional Repository” (Donovan and Watson, 2008) that the presence of this content in their IR “raises the awareness of the institution’s achievements among consumers of the now-discoverable content, a population likely to be meaningful to the institution’s other goals such as fundraising and reputational rankings.” By providing supporting services for fundraising and promotional efforts, the library increases its value to stakeholders, particularly administrative, across campus. This requires an expanded role and content scope from the IR, one not permissible in a post-print-only approach.

We also see the IR forming new partnerships with academic and non-academic units to increase its campus-wide value. The result of this is the engagement of new stakeholders and the addition of further content for IR deposit.

The IR staff at California Polytechnic State University San Luis Obispo (Cal Poly San Luis Obispo) work hard to create partnerships, many of which pay off with further opportunities. Most notably, the library began a collaboration with the Public Relations Office by making its archive of press releases ADA-compliant and posting them to the open access repository. These initial conversations gave way to talk about journal publishing, and later to image handling and display. Now, in addition to collecting the press release archives, the Cal Poly library uses the IR to support Public Relations in publishing the electronic version of the Cal Poly alumni magazine and manages two collections of often-requested images.

While this may be a far cry from the original narrow scope of post-print-only repositories, the approach has served the objectives of the library at Cal Poly San Luis Obispo well. By serving academic and non-academic units on campus, the library has widened its range of partners and stakeholders, increased campus awareness, and begun to build a comprehensive collection of both institutional scholarly assets and historical assets.

As the Cal Poly IR manager explains, “The preservation of research is a key role of the repository, but preservation of the history of the institution, of the campus itself – that is just as relevant and important.”

Where members of the Office of the Provost have invested in the IR, they remark about its utility in helping them to stay apprised of the scholarship and ideas generated at the institution, and aid in discovering key pieces of research that resonate with major donors.

The IR is a valuable tool that provides administrators the ability to access, survey, and showcase comprehensive, timely research and other intellectual assets of the institution. IRs support institutional advancement efforts by making it easier for top-level administrators to review and find research for fundraising purposes, particularly when identifying research that specific donors will find most compelling. In addition, increased transparency into the institution’s scholarly production can help the provost prove to investors that their funding is being used wisely.

Many institutions also find that the IR is instrumental in recruitment efforts, both of faculty and students. The dean of libraries at Cal Poly San Luis Obispo corroborated

this. After the first year of IR operations, he noted that the president found the senior honors projects in the IR very useful. Said Miller, “[The president] got excited when he understood that he could point prospects and their parents to the portfolios as examples of what their student can accomplish at Cal Poly.”

Similarly acting as a showcase of teaching and quality of student research, the student publications created in Illinois-Wesleyan University’s repository serve to recruit faculty. Says Robert Leekley, publication adviser and chair of the Illinois-Wesleyan Economics Department: “It’s very rare to have an entire publication generated solely with the work of undergraduates. We’ve actually used it when we recruit faculty. It’s very impressive.”^{vi}

Impacting scholarly life on campus

In the most general sense, we find that the successful IR enables its campus constituents to use its content and services creatively. For senior administration like the provost or vice-chancellor, dissemination and promotion of the products of institutional scholarship to external audiences is crucial. The library raises its position, value, and standing on campus when it is able to provide such services.

We find that the IR serves an internal need as well, one more closely aligned with the creation and production of scholarly works on campus. Specifically, the IR serves the needs of scholars by offering new opportunities for knowledge production, thereby impacting scholarly life on campus.

Amongst the Digital Commons repositories we studied, we found that when the library is able to embed itself early in the production of knowledge, it is able to both increase its value to its scholars and fill its own goals of capturing the spectrum of intellectual output of the institution. These observations conform to research documented by Palmer et al. in “Identifying Factors of Success in CIC Institutional Repository Development – Final Report” (2008). It was noted in the report that one approach to IR development allows the library to “[work] ‘upstream’ instead of only focusing on the final products of scholarship.” Working “upstream” offers the further benefit of collecting at the time of knowledge production and avoiding the inconsistencies of retrospective collection.

This emerging role for the IR as venue for knowledge production and publication comes at a much needed time for the library. In the last several years, opportunities for faculty to publish have decreased (Candee and Withey, 2007) despite a continuing need to publish for tenure. There has been a pursuant upswing in library-based publishing services amongst major research libraries in North America. Karla Hahn addresses this in the 2008 ARL report, “Research Library Publishing Services: New Options for University Publishing.” Hahn states, “The question is no longer whether libraries should offer publishing services, but what kinds of services libraries will offer.” From our observations, this trend toward offering publishing services extends across mid- and small-sized libraries as well and includes peer-reviewed student publications at four year undergraduate institutions.

Because Digital Commons repositories have an embedded peer review publishing system, institutions that use the Digital Commons platform are able to offer their faculty and students editorial management and peer review publishing services

through the IR. Currently, over 150 journals, many peer-reviewed, are published within the Digital Commons subscriber base, and over 75% of Digital Commons repositories publish journals, conference proceedings, or both, upon their first anniversary. Digital Commons-using institutions employ the embedded editorial and review workflows to manage not just journals, but also conference proceedings, electronic theses and dissertations, and, sometimes, other types of content.

Lack of publication venues is an acute problem for scholars in fields in which traditional publication is no longer financially viable – particularly, niche fields, interdisciplinary fields, and in many cases, the humanities in general. While the IR certainly runs up against the “traditional model” of commercial print publishers, in many cases, scholars welcome any publication opportunity that offers the rigors of peer review and the access and dissemination of online publishing.

As Walters (2007) concludes, libraries are becoming “active producers, publishers, and broadcasters” of institutional content, utilizing the IR to “[position] themselves as major digital publishers in the scholarly world.” We find this to be true and have described in greater depth the publishing trends observed across Digital Commons implementations in Bankier and Perciali (2007) and Bankier and Smith (2008).

By providing scholars on campus with the tools needed to publish original content, the library is able to serve its scholars and its own needs by inserting itself into the scholarly workflow earlier on. We see this as a beneficial shift in IR scope and management as it increases the involvement of the library in the creation of scholarship on campus. In this model, the library becomes the “go to” place, rather than an afterthought.

This “active” IR *requires* contact between librarians and scholars. It offers the opportunity to the library to converse with faculty and learn about content that would benefit from being online.

For example, *The Dictionary of Invertebrate Zoology*, one of the most consistently popular works in the University of Nebraska – Lincoln repository, was originally accepted for publication by a large press then cancelled when the press decided to close its zoology collection. The IR manager, unaware of the dictionary, was speaking with the author one day and noticed the 18-inch (45 cm) thick typescript in his office. Hearing the story, he offered to publish the dictionary in the IR. The author accepted. Within the first month, the dictionary received 1200 downloads and continues to receive around 1000 downloads a month.

An unexpected but appreciated outcome of creating and publishing original content and other institutional works is that more opportunities for content creation and collection are revealed. Conversation, and a certain penchant for visiting and speaking with people, brings unique and popular content to the IR, opening up pathways to new opportunities. We consistently hear about content like this, discovered in the course of conversation about something else. The content, once put in the IR, often demonstrates its value in immediate downloads.^{vii} Once faculty receive feedback, particularly in the form of impact assessments like readership reports, they often return with more work to contribute.

As part of its services, the University of Nebraska – Lincoln repository publishes out-of-print books or never-before-published books. Many of these works are valuable within specific fields, but are not readily available, having gone out of print and the publisher not seeing enough value in reprinting. Those for which copyright has expired are digitally published through the repository and see a renewed life.

Publishing this content is favorably regarded amongst faculty. As an example, the University of Nebraska – Lincoln repository features a large collection of works by an eminent ornithologist and professor emeritus. Works of his published through the repository include books that have gone out of print and for which the publisher's copyright has expired, books that were not able to be print-published due to the burdensome costs of printing large sets of accompanying artwork, and work that was never previously published because the publisher viewed it as lacking financial viability. This professor recently commented,

"Because of [the IR manager's] interest and willingness to undertake some large projects, I have been able to make freely available on-line five book-length manuscripts that would never otherwise have been published in my lifetime, have updated two previously published books, and have also made available four of my out-of-print books and over 30 of my published papers and articles that originally often had very limited circulation."^{viii}

This professor emeritus also commented that the IR gave him a venue to publish works he would have otherwise never completed, having thought they would be unpublishable for financial or other reasons. The University of Nebraska – Lincoln Love Library is continuing to impact scholarly life on campus by providing a venue for work to be published and discovered. The IR ensures that the ideas and scholarship produced at the institution have the opportunity to realize their full value through digital publication or re-publication.

The IR managers we speak with find that one content collection leads to others. Often, content outside of the narrow post-print collection comes first, with other work to follow. We described this in Bankier and Smith (2008), with regard to the *Landscapes of Violence* conference conducted at University of Massachusetts Amherst (UMass Amherst), in which we wrote, "UMass Amherst Professor of Anthropology Ventura Perez and [Scholarly Communications and Special Initiatives Librarian] Marilyn Billings collaborated to [bring] Perez's conference, *Landscapes of Violence*, online. Soon, he decided to also start a journal of the same name, *Landscapes of Violence*." The journal will publish its inaugural issue in early 2010.

Similarly, at UMass Amherst, the digitization of the journal *Contributions in Black Studies (CiBS)* (published intermittently from 1977-1997) prompted discussions with the Afro-American Studies Department about creating a "sibling journal," to carry on the work of the no longer published *CiBS*. At this university, the IR has effectively impacted scholarly life on campus by enabling knowledge production in ways traditional publishing channels and a rigorous post-print only approach could not.

The earlier a work is released the sooner it is able to be used both on and off campus in the production of further knowledge. Pacific University captures its conference presentations, proceedings, and other original content in the IR.

Recently, the IR saw a large spike in traffic to a specific article from the Vision Ergonomics Research Group. The traffic numbered over 8,000 visits in one day, and occurred on a Saturday, traditionally one of the lowest traffic days for the IR. Upon investigation, it was found that this specific study was cited on a discussion board thread about the efficiency of a specific type of eyeglasses.

We find that university conferences, workshops, and studies created on campus are often not well-tracked and rarely become part of the corpus of scholarship managed and preserved by the institution. The ability to utilize the IR to do this ensures the preservation of the scholarship, serves to increase exposure for the work of the scholars in question, and validates the relevance and importance of the repository services provided by the library to its stakeholders. Authors of the study published through the repository at Pacific University commented that the number of unique views and downloads was much higher than they ever would have expected, even from a traditional print journal.

The IR manager at Pacific University describes his perspective, stating that the Library should “be involved in the entire continuum of research/scholarly activity on campus – from the original genesis of ideas, to the actual research, to the publication and dissemination of that work in a variety of forms.” He further explains that he would like to use the IR to “get [the library] out of the tiny box of “that’s where you go to do a lit review” and expand [the] scope.”

Since it was launched one year ago, the event-handling in Digital Commons is used by over 30% of subscribing institutions to capture conferences, symposia, and other on-campus events in the repository. The majority of Digital Commons institutions capture some type of conference proceedings from on- or off-campus.

Users have reported significant interest from faculty and departments, which often don’t have a way to capture and preserve the schedule or presentations from on-campus events. Macalester College has used the events-handling capabilities for both its 2009 and 2010 Library Technology Conference. Conference organizers manage the full lifecycle of scholarship through the repository, from initial proposal submission to publication of schedule and presentations. They report better participation and deposit rates, and are able to provide their presenters with improved dissemination services and impact assessments through readership and site traffic reports.

Facilitating the production of research further “upstream” clearly pays off for the library. Capturing at creation removes the “headache” from retrospective collection and engenders new knowledge production by allowing for more and faster reuse of the work. Again, by creating better access to content across the continuum of scholarship, the library is able to support and become integral to the creation and business of scholarship on campus.

Finally, we see programs and departments urge students to incorporate work from repository collections into their current education. Some programs incorporate the review of previous honors or masters projects into the education and writing process of current students. Other programs have utilized primary source documents in the research and scholarship produced by students.

Illinois Wesleyan University and SIT use the IR to support student learning and research, directing students to past projects for review. Previously, these existed on campus in print, but were not as widely accessible to students as they now are in digital form.

The new opportunity to publish work creates a perceptible improvement in student work. At Texas State San Marcos, where the final works for the Masters of Public Administration (MPA) program garner some of the most attention and traffic of any content in the repository, the director attributes the success to the simple fact that this work is open and in the IR. As the director of the program has commented, "There is an incentive for the best to be better and the worst to rise to a different standard." We described this same effect in Bankier, Smith and Cowan (2009):

"This review process affords the students the opportunity to learn from past research, and almost acts as a 'measuring stick' against which students and faculty can assess the quality of their work, and a mirror to reflect upon and improve research."

By facilitating an open access publication opportunity for the institution's graduate students, the IR has served to improve the quality of teaching and research at the institution, thereby strongly impacting scholarly life on campus. The success of the open access works from the MPA program at Texas State has even inspired MPA programs at other institutions to make the move to open access publication of graduate work. We see a similar effect with undergraduate student journals including CUREJ at University of Pennsylvania and six student publications, some peer-reviewed and some faculty-reviewed, at Illinois-Wesleyan University. Publication in the IR also offers participants the opportunity to publish related content, particularly multimedia.

Students at Bryant University recently used a found collection of alumni letters as primary documents in their independent study coursework and research. The research they produced was presented at a national undergraduate research conference in Las Vegas and can be found in the repository next to the primary documents themselves.

The primary documents in question were a collection of letters written by Bryant alumnae serving in Europe during WWII. The library director at Bryant University and a student together discovered a box of these letters in a basement of the university during September of 2008. The box had been sitting unidentified since the campus move in the early 1970s.

The library alerted a history professor on campus who specializes in WWII communications. This professor soon after gave a presentation about the letters to the vice-provosts. Around the same time, the Public Relations department got involved, notifying the local paper and working with Alumni Relations to contact the letter writers and bring them to campus.

The library began to digitize the letters and display them in the repository, with transcriptions done by community volunteers. The alumni came to campus in a

special event, and students – as part of an independent study with the professor who specializes in WWII – worked with these alumni and with the letters to write related social histories.

Bryant's IR now captures an extensive amount of the collection's discovery story, and showcases the scholarship conducted by current Bryant students right alongside the letters that were primary source and inspiration.^{ix} In this way, visitors are drawn into not just an isolated piece of scholarship, but into a tightly woven web of related pieces of the story.

The Bryant story corroborates the predictions of Walters (2006) that “the ‘growth industry’ for IRs may very well depend upon identifying and implementing creative ways for researchers, students, and other campus professionals to use the scholarly information these repositories contain.”

One librarian describes the entire experience as having “enabled us to encapsulate Bryant's legacy, memorialize our alumni, and show how Bryant has grown.” Another librarian describes this as “great PR” for the library, and an opportunity to “build relationships.” All agree that the WWII letter collection has helped to further unify the campus, and has placed the library at the hub of the experience. By engaging scholars across campus, the IR is also able to engage other stakeholders, better weaving the library into the business and creation of scholarship on campus.

Conclusion

The IR must serve the needs of its campus, or else it will contribute to its own demise. We might even suggest that to the extent that the IR fails to be successful, so may the library fail to be relevant.

At its core, the institutional repository provides access to content. It begs the questions, What content belongs in the IR? What content makes the IR most valuable? Across Digital Commons repositories, we see proof that scholarship and other creative works *from across the entire continuum of scholarly content* make the IR important to stakeholders on campus. The IR is at a critical juncture. It cannot limit its scope to post-prints when it holds the potential to be relevant to so many other people.

In our experience supporting the Digital Commons user community, we find that the most successful IRs are those that strive to engage a diverse set of groups across campus, specifically liaising and serving both academic and non-academic units, accepting a wide scope of content, aligning repository services with the mission of the university, and facilitating new opportunities for knowledge production and publication. These libraries effectively serve the mission of the university, the business of the university, and impact scholarly life on campus, and use the IR as both tool and demonstration of their renewed role.

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ⁱ "The (only effective) way to encourage faculty to deposit is to adopt a deposit mandate." (Stevan Harnad, liblicense listserv post, September 25, 2009).

ⁱⁱ Interestingly enough, Cochrane and Callan comment that success came primarily by reducing barriers to adoption and meeting faculty on faculty's terms.

ⁱⁱⁱ Markey et al discuss outcomes rather than outputs as one impact measure of their case study libraries.

^{iv} Personal communication, Bankier/Smith.

^v Personal correspondence, Bankier.

^{vi} http://www2.iwu.edu/CurrentNews/newsrelease07/stn_Tributaries_507.shtml

^{vii} This story is told more extensively in "Publishing Original Content" (Royster 2007)

^{viii} Personal correspondence, Smith.

^{ix} See http://digitalcommons.bryant.edu/bryant_goes_to_war/ for more information