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## The IR has Two Faces: Positioning Institutional Repositories for Success

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## **The IR has Two Faces: Positioning Institutional Repositories for Success**

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### **Abstract**

This article will describe ongoing efforts at University of Nevada, Las Vegas (UNLV) Libraries to evolve the role of the institutional repository (IR) and to effectively position it within the context of the Libraries' collections, research support, and scholarly communication services. A major component of this process is re-examining the fundamental aims of the IR and aligning it to the Libraries and the campus strategic goals. The authors situate UNLV Libraries' experience within the context of the current literature to provide background and reasoning for our decision to pursue two, at times conflicting, aims for the IR: one for scholarly communication and another for research administration.

### **Keywords**

institutional repositories, research information management, strategic planning, university libraries

### **Introduction: Dialectical origins of the IR**

In the introduction to *Making Institutional Repositories Work*, Clifford Lynch (2016) revisits arguments he made in his seminal article "Institutional Repositories: Essential Infrastructure for Scholarship in the Digital Age" (Lynch, 2003): "I tried to make the case that such services [i.e., the institutional repository] most essentially provide a framework (often, perhaps, of last resort) to manage, provide access to, and preserve new forms of digital scholarship otherwise at risk, to nurture innovation in forms of scholarly communication, and to facilitate the preservation and reuse of evidence underlying scholarly work" (Lynch, 2016, p. xi). He contrasts his definition with another vision for institutional repositories that cast them "first and primarily as mechanisms

to support a transition of the traditional scholarly journal literature to open access models” (Lynch, 2016, p. xi). Lynch calls these competing aims for the IR an unresolved dialectic. Dialectic is a term from philosophy, describing a “method of philosophical argument that involves some sort of contradictory process between opposing sides” (Maybee, 2016). T. Scott Plutchak and K.B. Moore (2017), in a published presentation for the 2016 NASIG Vision Session entitled “Dialectic: Aims of Institutional Repositories,” defined Lynch’s dialectic model by stating that Lynch articulated one aim for IRs in his seminal work, and Raym Crow (2002) articulated a different aim in his paper “The Case of Institutional Repositories: A SPARC Position Paper” (Crow, 2002). Taken together, Plutchak argues that Lynch and Crow represent the thesis and antithesis of the dialectical aims for the institutional repository.

Lynch’s 2003 paper provides his oft-quoted definition of an IR: “in my view, a university-based institutional repository is a set of services that a university offers to the members of its community for the management and dissemination of digital materials created by the institution and its community members.” (p. 328). By calling an IR a service, Lynch (2003) moves the discussion of IRs beyond software to an organizational responsibility to steward an institution’s digital assets. Named IR services include long-term preservation, organization, access and distribution of digital content (p. 328). If libraries concentrate on these services, faculty can focus on creating scholarship rather than diverting their energies by having to learn tasks like maintaining web pages or migrating content to a new platform. In Lynch’s (2003) view, a focus on stewarding scholarship in digital form acknowledges a 21st-century scholarly ecosystem in which “the intellectual life and scholarship of our universities will increasingly be represented, documented, and shared in digital form.” (pp. 328-329).

Though Lynch (2003) does recognize the potentially revolutionary impact IRs may have on the scholarly communication ecosystem circa 2003, he believes that this impact is secondary to the

mission of the IR to capture digital content that falls outside the traditional publishing scheme. Examples of this digital content include data, gray literature, or as yet conceived digital objects that will, more and more, become the way researchers disseminate their scholarship. The dissemination of this digital content can supplement, or run parallel with, existing modes of scholarly communication, such as traditional journals and monographs. In fact, Lynch states that it “dramatically underestimates the importance of institutional repositories to characterize them as instruments for restructuring the current economics of scholarly publishing rather than as vehicles to advance, support, and legitimize a much broader spectrum of new scholarly communications” (p. 333).

Crow provides the antithesis to Lynch’s thesis in the dialectic. In “The Case of Institutional Repositories” Crow (2002) asserts that IRs “provide a critical component in reforming the system of scholarly communication” (p. 1). Regarding disseminating scholarship, Crow and Lynch agree that the current system of scholarly communication could do a better job of providing better access to research and expanding readership (p. 3). Crow writes as a representative of SPARC (Scholarly Publishing and Academic Resources Coalition), an organization dedicated to “changing the structure of the scholarly publishing model,” and his view of the IR as a tool aligns with SPARC’s mission (p. 4). For Crow, IRs are agents of change that will usher in a new scholarly publishing paradigm, in which the current publisher monopoly is replaced by one “constructed by the scholars themselves” (p. 2). Crow’s aim emphasizes the IR’s potential to disrupt and transform the scholarly communication landscape while Lynch’s aim for the IR sustains an already-in-place system.

The underlying aims a library hopes to achieve with its IR establishes the activity and marketing of the IR with respect to scholars. For adopters of Crow’s aim, libraries will establish an IR because it is “the logical convergence of faculty-driven self-archiving initiatives, library

dissatisfaction with the monopolistic effects of the traditional and still-pervasive journal publishing system, and the availability of digital networks and publishing technologies” (p. 1). Idealistically, this convergence sparks a grassroots movement among faculty to participate in the IR as they realize that they can better control the scholarly communication ecosystem that currently exploits their efforts. Libraries are financially committed to this takeover, for instead of contributing dollars to a publishing system with subscription increases that outstrip inflation, they can instead devote dollars and time to a publishing ecosystem that supports the aim of their parent institution at a fraction of the cost. To create a paradigm shift in scholarly communication then, libraries must advocate for the deposit of scholarly content into IRs that would traditionally be disseminated by existing publishers. Marketing and outreach to faculty by libraries must concentrate on getting scholarly content. An adversarial role between publishers and libraries is inherent within this aim, for advocating for a paradigm shift threatens the profits and business models of existing publishers.

Lynch’s (2003) aim is broader in scope, and followers of this aim have a lot more play in how they define and market an IR. For Lynch, “institutional repositories will succeed precisely because they are responsive to the needs of campus communities, and advance the interests of campus communities and of scholarship broadly” (p. 332). Rather than assume that faculty will arrive at a logical conclusion to self-deposit, libraries in this view need to talk with faculty to discover what they need in this new digital environment. Lynch believes that libraries, and universities in general, have “poorly served” faculty who produce scholarship that does not fit into traditional models. Supplementing, rather than transforming, the current scholarly communication ecosystem becomes a priority. Preservation and access become paramount services for the IR in this view, for universities cannot depend on traditional publishers to curate and disseminate this material. Without a steward, this wealth of digital scholarship is at risk of being lost forever. This risk, and the desire to provide a complementary dissemination path for

digital objects, is the main reason to establish an IR. Experimentation also seems inherent in this model, for it will be difficult for universities to determine not only what to capture, but how best to capture it. Lynch concludes his paper by highlighting the potential for change IRs can engender if successful. Though what this change looks like and what this means for faculty, libraries, universities, and publishers remain undefined.

### **Tensions in the Dialectic**

In the years immediately after Crow and Lynch published their articles, many academic institutions established IRs for their campus. Despite the myriad motivations for starting an IR, many articles shared the same insight: faculty are not contributing to IRs at levels many repository managers anticipated. Reasons varied, from disciplinary differences (Kingsley, 2008) to ineffective marketing (Foster and Gibbons, 2005) to a lack of perceived benefit, to a rewards system that did not value OA (Kingsley, 2008). The article that best articulates the frustration of repository managers and advocates at that time is Dorothea Salo's (2008) "Innkeeper at the Roach Motel."

In "Roach Motel," (2008) Salo argues that the current landscape finds repository software developments slow to develop user-centered innovations that benefit faculty while repository staff themselves are over-worked and under-supported within their institution. For Salo, open access pitches and promises of preservation or metadata support do not resonate with faculty; instead, faculty "stayed away from institutional repositories in droves because repository software and services offered nothing they valued" (p. 99). Roach motel repositories, for Salo, are ones in which "materials fixed in their final form are the only acceptable content, hold no value (especially contrasted with formal publication) for many faculty, which inevitably means such repositories never receive most faculty-created content" (p. 111). What faculty want are help with versioning documents, sharing earlier versions of drafts with colleagues at other

universities, control over the access and management of their work, and a place to store a variety of digital learning objects. Instead, faculty encounter an IR system in which the purpose of the IR is ideologically-driven rather than serving their needs.

Decades after Crow and Lynch published their aims, the reasons for establishing and maintaining an IR remain fragmented. In the metaphor of the dialectic, progress occurs when the thesis and antithesis “are reconciled to form a new proposition,” or synthesized (Schnitker and Emmons, 2013, p. 978). After Lynch and Crow, another aim for the repository emerged – an administrative one (Kingsley, 2008). Since the competing goals for the IR have not cohered into a compelling vision for an IR, the current situation has led to disillusionment, a sense of stagnation, and soul-searching among repository managers. The literature after Salo’s article varies among themes of rethinking the purpose of IRs, repositioning the IR in the scholarly ecosystem, or of letting IRs perish.

### **What is Next for IRs?**

Let IR RIP. That is the startling title of Eric Van de Velde’s blog post on July 24, 2016. For Van de Velde, the IR is obsolete and “its flawed foundation cannot be repaired” (Van de Velde, 2016). Provided examples of institutional repository shortcomings include a lack of enthusiasm around IRs, poor usability, low use, high cost, a lack of social interaction, fragmented control, and the privileging of IR managers of local over global concerns. This blog post, appearing eight years after Salo’s (2008) article, is a logical extension of the argument that IRs fail to satisfy faculty’s needs on their terms. For Van de Velde, other alternatives like personal or disciplinary repositories and social networks can do what IRs could do, but better.

Van de Velde (2016) mentions that IRs are built on a flawed foundation, but he refrains from articulating what this flaw could be. We argue that this flawed foundation is, in essence, the

aims for IRs set forth by Raym Crow (2002). Crow believed that IRs would disrupt the scholarly communication ecosystem by enabling faculty (and by extension universities) to control the production, sharing, and preservation of research. Open access to scholarship, then, was the key to unlock the stranglehold of monopolistic publishers in the current scholarly communication ecosystem. Logically, faculty would recognize the benefits of open access, be excited to create a new scholarly communication paradigm, and rush to participate in IRs. But as Salo (2008) and Van de Velde point out, faculty have stayed away, leaving IRs sparsely populated and an ineffective mechanism to change the scholarly communication landscape. Van de Velde ends his post with hopes open access can thrive beyond the IR: “the IR is not equivalent with Green Open Access. The IR is only one possible implementation of Green OA. With the IR at a dead end, Green OA must pivot towards alternatives that have viable paths forward: personal repositories, disciplinary repositories, social networks, and innovative combinations of all three” (Van de Velde, 2016).

If IRs are about green open access and disrupting the scholarly communication ecosystem, then IRs may be truly dead. Green open access is when an author publishes in a non-open access journal but self-archives it in an open access repository, for example an IR (Harnad et al., 2008). Harnad et al. studied the green open access landscape and discovered that “only about 10–20% of articles have been self-archived” (Harnad et al., 2008, p. 36). There is not much evidence to suggest that this percentage has improved since 2008. In 2016, The Chronicle of Higher Education published an article about the University of California’s self-archiving statistics. In 2013, the University of California voted to “make research articles produced by faculty members...freely available” (Basken, 2016). Even with this mandate, however, the Chronicle found that “only about 25 percent of professors system wide are putting their papers into a state-created repository that allows free outside access” (Basken, 2016).

It seems, then, that the aims of the IR have synthesized around Lynch's view that they support new forms of scholarship in digital format and thus support a broader spectrum of scholarly communication. In this view, we have taken steps forward in defining what an IR can be in this scholarly communication environment. But nearly 15 years after Lynch wrote his seminal article on IRs the landscape has changed, leading repository managers to rethink the aims of IRs.

Returning to Plutchak's vision session at NASIG, he articulates a future of the IR more in-line with Lynch than Crow. A big section of his speech is critical, or at least questioning, of the aims of green open access as it relates to IRs. In the section "Institutional Repositories and Open Access," he details how green open access is a model that is "fundamentally parasitic on traditional journals," a relationship Salo also described in her 2008 article (Plutchak and Moore, 2017, p. 30; Salo, 2008, p. 103). Thinking through this metaphor, IRs are dependent on traditional journals as a "host" for their success; supplanting or creating a new relationship with their host goes counter to the success of the green open access model. A flawed foundation indeed! Another limitation of green OA is the proliferation of copies that exist for an article (Plutchak and Moore, 2017, p. 30). We agree with Plutchak that as authors and librarians, we want to use and direct scholars to the "best version" of the article, which is the actual version of record (p. 31). Some access is better than no access, Plutchak admits, and green OA can give scholars from around the world access to content barrier free. However, green OA takes journal articles out of the traditional publication cycle, so it is hard to know if there are retractions or corrections associated with the copy. Plutchak also worries that advocates of open access, like SPARC, take a "legislative, adversarial, [and] confrontational role" towards publishers (p. 28). Later in his speech, Plutchak bluntly states "we all know that the point of green OA is to push the publishers out," a point that counters Plutchak's professional ethos to "ask questions, to look for partners, and to try to see how we can do the best job moving forward" (pp. 30, 28).

Plutchak also questions the value of IRs as the single mechanism to highlight institutional research. Plutchak notes that when Crow envisioned the IR “demonstrating the significance of the institution’s research activities,” the IR was perhaps the tool best positioned to accomplish this demonstration (Plutchak, 2017, p. 28). Since Crow’s publication, there have been advances in research management systems, like Elsevier’s Pure or Symplectic’s Elements, that can do a better job of tracking this content. Add this to an environment where tools like ORCID, altmetrics, and VIVO exist, Plutchak argues one can highlight faculty research activities without an IR. These tools lack full-text access, however, so “using an institutional repository to supplement one of these systems” might be an effective path forward for IRs (pp. 29-30).

Plutchak ends his speech with a message of synthesis and a potential way forward for IRs. Plutchak urges IRs to reduce duplications of OA versions and point to the best possible version, or version of record if possible. Instead of pursuing green OA initiatives, repository managers should “focus on material that is outside the formal publishing program” (Plutchak and Moore, 2017, p. 31). Data storage, access, and preservation are examples he provides. Plutchak does not forego the institutional impact aim of IRs but places the IR as a component in a system that demonstrates this impact. In the question and answer section, Plutchak mentions the success of including electronic theses and dissertations into the IR, which like data, falls outside formal publishing programs. Beyond these few paths, Plutchak ends on a reflective note:

I think it's reasonable for us now to step back, see what's worked, see what hasn't, reshape some of our focus, and really use those institutional repositories to pursue innovation, and most important of all, to allot more work on building this network of open repositories so that we really are providing a system across institutions to provide access to all of that material in very effective ways. (pp. 31-32).

Recently, Clifford Lynch has reflected and reevaluated the role of IRs in two arenas: the first in his guest editorial article for February 2017 issue of *College and Research Libraries* (C&RL) entitled “Updating the Agenda for Academic Libraries and Scholarly Communications” and the second at the April 2017 CNI Executive Roundtable on the topic “Rethinking Institutional Repository Strategies.” In the C&RL article, Lynch cuts to the chase by stating “the linkage between journal article open access and institutional repository agendas has been a mistake and one that has resounded to the detriment of both agendas” (Lynch, 2017, p. 127). Achieving comprehensive green OA to scholarly journal literature in an IR is unrealistic in Lynch’s view, for libraries do not have the resources to accomplish this, funder mandates do not require this, and it may not even be desirable, for green OA takes an article out of the context of its published environment. Lynch is also skeptical of institutions that try to “maintain a local comprehensive record of their scholarly output” through an IR (p. 217). This is expensive, likely to be spotty, and may be of little value in the long run in his view.

Instead, Lynch argues that “IRs can play a huge role in facilitating and expediting the transition to scholarly communication that is genuinely designed for the digital environment” (Lynch, 2017, pp. 127-128). Repeating themes from his 2003 article, Lynch sees value for the IR in preserving and curating digital scholarship at risk of being lost because it is not captured by traditional commercial scholarly publishers. Lynch cites formats like “video, data, software OA journals, websites, blogs, perhaps preprint servers” that are at risk of being lost. The preservation of these materials via IRs is an important role then. IRs can also be the place to “develop appropriate new genres of scholarly communication for the digital environment,” which is again a place not currently supported in the traditional scholarly communication ecosystem (p. 130).

## **A New Dialectic for the IR**

After reading the literature and a self-examination of our repository situation, we believe a new role exists for the IR - a research administrative one. The authors were inspired to think of such a role after reading Lorcan Dempsey's blog post on Research Information Management Systems (RIMS) (2014) and Danny Kingsley's (2008) article "Those Who Don't Look Don't Find: Disciplinary Considerations in Repository Advocacy."

Dempsey's (2014) post highlighted an overlap between RIMS and the IR that places the IR in a research administrative space. To understand that overlap it is necessary to understand the concept and aims of RIMS. Dempsey defines RIMS as systems that provide integrated management of information about the research life-cycle and of the entities which are party to it. He states the aim of RIMS is "to synchronize data across parts of the university" and "an outcome is to provide greater visibility onto institutional research activity. Motivations include better internal reporting and analytics, support for compliance and assessment, and improved reputation management through more organized disclosure of research expertise and outputs" (Dempsey, 2014). The authors recognized that in UNLV's landscape the IR is well situated to fulfill some of these RIMS functions, in particular increasing the visibility of research and providing a more organized and systematic workflow for providing access to and discovery of UNLV research outputs.

Kingsley's (2008) article reinforced the authors' thinking on the IR in the administrative space. Though her article focused on how disciplinary differences can affect outreach and repository advocacy, in her introduction, she asks the reader to reflect who the end-user for their repository is: "an institution, an academic researcher, a practitioner or the general public" (Kingsley, 2008, p. 204). Later in her article, Kingsley states "there is no doubt that institutional repositories are potentially a useful tool for many aspects of an institution's administration, from offering a

method for collating all the output from an institution to reporting to funding bodies” (p. 207). She alludes to arguments made by Foster and Gibbons (2005), who argue that faculty are hesitant to participate in an institutional repository, for, due to nomenclature and marketing, the IR seems to support the needs and goals of the institution and not those of the individual researcher. Kingsley’s article, though, does not go into specific detail what an IR that serves an institution (which we call an administrative role) would look like, for this aspect was beyond the scope of her article.

At UNLV, we have defined this administrative role for the institutional repository as supporting initiatives from the Office of Faculty Affairs and the Division of Research and Economic Development. Faculty Affairs is the entity on campus responsible for hosting and maintaining Digital Measures, the system in which faculty input their annual achievement report. Research and Economic Development are involved with pre- and post-award management, compliance, and reporting. To satisfy both, UNLV Libraries is positioning the IR to be the public expression of Digital Measures, providing public access to the output of the institution, allowing administration to track faculty scholarship and accomplishments, and measure its impact. UNLV’s implementation of Digital Measures does not provide these publishing features and thus does not fulfill this administrative need.

We argue that this administrative role creates a new dialectic, or two faces, in which the purpose of an IR for Lynch and Crow are in contrast to this administrative purpose. For both Lynch and Crow, the IR serves as a publishing vehicle to capture, distribute and preserve the scholarship of an institution’s researchers. Though the reasons for capturing this scholarship is where both authors differ, the benefits to the individual researcher and the scholarly community are the same in that scholarship is made accessible and saved for future generations. Contrast this with an administrative purpose for the IR, where the end-user in mind is not the faculty, but

the institution. In this role, the institutional repository serves campus goals and operates in the reporting and impact space. For Lynch and Crow, participating in the IR is a bottom-up movement, where faculty engage with repository activities out of self-interest to promote and preserve their work; an administrative role for the IR is a top-down movement, for the institution populates the IR to create a comprehensive list of its researcher's activities.

Moving forward, UNLV has chosen to pursue goals that satisfy both sides of the dialectic. In other words, we are working to create an IR that functions both in the scholarly communication and the reporting and impact space. What follows is how UNLV Libraries is pursuing each half of the unresolved yet equally compelling dialectical roles for the IR.

### **First dialectic - UNLV's IR in the Scholarly Communication Space**

This section describes how UNLV's IR functions in the scholarly communication space. Even though the goals and emphasis of the IR have evolved, we will show that in 2017, UNLV's IR is still fulfilling key scholarly communication functions.

UNLV established its institutional repository, Digital Scholarship@UNLV (DS@UNLV), in 2009 on bepress' Digital Commons platform. The goals were closely aligned with the rationale and aims articulated by Crow (2002) in his paper "The Case of Institutional Repositories: A SPARC Position Paper." Facilitating Green OA and situating the IR as a publishing alternative were the primary goals of UNLV's IR at conception. Outreach focused on the mission of collecting the full-text of the scholarly outputs of the university, most prominently faculty-authored articles, and making them available to a worldwide audience. To facilitate these Green OA goals and to encourage faculty participation, UNLV Libraries mediated IR deposits through a workflow in which staff accepted faculty CVs, searched SHERPA/RoMEO on the faculty's behalf to determine copyright permissions, created metadata records of scholarship or creative works,

and worked with faculty to obtain post-prints. As Salo (2008) and other writers have mentioned, repository managers struggle to populate IRs with faculty works. Mediating deposits and entries into the IR, as opposed to having faculty self-deposit their work, was critical for recruiting content and getting faculty to participate by merely submitting a CV.

Despite focusing on obtaining Green OA versions of faculty works, a broad approach to content acquisition was taken at start-up. This broad approach was a deliberate decision, designed to “seed” the IR with content so that faculty and campus partners could understand the features, functionality, and potential of the IR. Early content ingested included scanned material such as programs from UNLV School of Music student recitals, minutes from UNLV’s student government and course catalogs. This material was relatively easy to acquire as the Libraries held much of it in hard copy formats. In 2009, the Libraries established a partnership with the Graduate College and began a program to ingest electronic theses and dissertations (ETDs) and professional papers into the IR. In addition, the Libraries published open access journals created and edited by faculty. Journals published built on programmatic strength (*UNLV Gaming Research & Review Journal*) and featured UNLV specific work (*PSI Sigma Siren*, a journal featuring papers authored by UNLV undergraduate and graduate students).

In 2013, four years after the IR’s inception, the Dean of Libraries undertook a review of the IR in response to internal concerns raised about workflows, policies, communication, and direction. In its scope, this examination was years ahead of Plutchak’s advice in 2017 to “step back, see what’s worked, reshape some of our focus, and really use those institutional repositories to pursue innovation” (Plutchak and Moore, 2017, pp. 31-32). The Dean’s review enabled a reshaping of focus and provided clarity on future strategic directions. These strategic directions were formally articulated in the Libraries’ 2015–2017 strategic plan, underscoring the importance of, and organizational commitment to the continued success of the IR.

The broad approach to content acquisition, while achieving the goal of populating the IR was also confusing library staff as to the mission and purpose of the IR. Librarians from across the organization, not just the IR administrator were involved in outreach and messaging to campus. If UNLV Libraries staff were unable to articulate the rationale for determining types of content to collect for the IR, then they could not share a clear or consistent message about the IR with our campus partners. Additionally there was a lack of clarity on who was and should be making decisions about content. The IR advisory board, the IR administrator, liaison librarians and the UNLV community were all named as content decision makers by those who the Dean surveyed.

A first step was to develop an intentional approach to digital content acquisition through an IR collection development policy. The mission of the IR, “to capture, preserve, and share the intellectual output of UNLV faculty, staff, students” remained, but was expanded upon, as described below, to enable a more explicit and articulated understanding of collecting for the IR (Digital Scholarship@UNLV, 2017):

- Showcase, preserve and make accessible the digital intellectual and creative output of UNLV scholars, departments, and research centers.
- Support new forms of creative and research outputs in digital format by working with faculty to explore, produce, make accessible, and preserve scholarship not captured within the traditional publication landscape.
- Display research and impact of UNLV scholars.
- Provide and support open access through the free, immediate, online availability of research works coupled with the rights to use this research fully in the digital environment (from SPARC web site).
- Provide a stable, permanent URL (web address) for authors and researchers to cite and access scholarship.

The policy makes clear the role of the IR in collecting content beyond faculty-authored articles and allows the IR to inhabit a space of preserving and making accessible UNLV produced “non-traditional” content types. Managing this digital material is in line with what Lynch (Lynch, 2017, pp. 128-129) sees as an integral direction for IR’s: preserving and curating scholarship that is not captured by traditional scholarly publishing workflows. By collecting this digital work, making

it discoverable and accessible, we are also increasing its visibility and expanding the impact and reach of UNLV research. These outcomes are in alignment with UNLV's strategic goals, and the result has been the successful acquisition of several non-traditional digital files for the IR. A step to add additional clarity to content acquisition decisions was to establish the Scholarly Communications Initiatives (SCI) department, a unit that now manages the IR and acts as the final decision maker in cases of content acquisition. Formalizing this role empowers the department to make precedent-setting decisions that the collection development policy did not cover or anticipate.

One such example is the Solar Decathlon project. The Solar Decathlon is an international competition held by the U.S. Department of Energy that challenges collegiate teams to design and build full-size, solar-powered houses. At the time of this writing, UNLV is currently participating in the Solar Decathlon, and the Libraries are working with UNLV project team leads to transfer their digital documents to the Libraries after the competition ends. These materials document the process of designing and building the solar house and include photos, architectural drawings, computer-generated simulations of the house, interviews with team participants and presentations and reports about the project. Once the competition ends, the Libraries' Special Collections division and the repository managers will work together to create an IR page where we will host and make accessible this content to our global community.

As the Libraries' defines its mission of preserving and curating scholarship not captured in traditional publishing workflows, one area of investigation is the IR's role in supporting the research data management needs of UNLV faculty. The Libraries is working to survey faculty practices and needs, as well as documenting the available options for storage and access on

campus, and in disciplinary and national repositories. Once this is complete, it is expected that we will have a fuller understanding of the landscape for UNLV researchers and can position the IR appropriately.

The Dean's review also identified the areas of strength and success for the IR. As an outcome, the Libraries has doubled down on those initiatives that have worked. Just as Plutchak noted for other IRs, UNLV electronic theses and dissertations (ETDs) has been a significant success story for our repository (Plutchak and Moore, 2017, p. 34). Beginning in 2009, the Libraries' IR has provided access to the ETDs and professional papers produced by UNLV graduate students. Working with the Graduate College, the IR is now part of the ETD submission workflow, and the success in the access, description, and preservation of these critical university records has allowed us to streamline processes, including the elimination of print submissions beginning in 2017. As trusted partners in the ETD process, the Libraries worked with the Graduate College in 2016 to reduce embargo periods while simultaneously promoting the benefits of open access for ETDs in graduate student workshops. ETDs, as a group, have the most downloads per item in the IR, and repository staff often use ETDs as an example of the visibility and impact IRs provide through the free and open sharing of UNLV unique scholarship with our community.

To expand on the ETD success, UNLV Libraries purchased digital copies of theses and dissertations derived from ProQuest microfilm. In this agreement, the Libraries acquired over 3100 digital files, spanning from 1977-2008, of unique UNLV scholarship. Before this purchase, these theses and dissertations were only available in print or microfilm. We have two goals for purchasing these files. First is to preserve these works in a digital format for the long-term

future, which is in-line with the UNLV Libraries digital preservation strategy. Second, the Libraries wants to make these digital files available open access via the institutional repository. Since ETDs are the most downloaded series in terms of aggregate numbers and downloads per item, it is an obvious strategy for us to expand and enhance this collection.

Another identified success that we are expanding upon is the support and creation of open access journals in the IR. The bepress platform has functionality that supports journal publication, and this feature is one of the reasons UNLV Libraries chose bepress as its IR platform. Currently, the Libraries hosts ten open access journals in the IR. After the Dean's review, the Libraries evolved its relationship for new journals, away from being designated as a publisher to offering hosting services. Before this change, the Libraries did not require a memorandum of understanding (MOU) from faculty to create a journal. This situation made the Libraries the publisher by default, and when faculty leave, the journal can cease to publish. In a change of practice, the Libraries now require another entity, either a College or a department, but not an individual faculty member, to be the publisher. The role of host allows the Libraries to be an advocate and partner in OA journal publishing but not assume the intensive duties of a publisher that we cannot support. The Libraries worked with General Counsel to develop an interdepartmental MOU, in which the roles and responsibilities of the publisher and the Libraries as host, are listed. In addition to crafting an MOU, the Libraries also defined the process by which a journal is evaluated as suitable for hosting in the IR, a process that better ensures that future hosted open access journals align with the programmatic strengths of our campus.

One final area of reevaluation prompted by the Dean's review centered on the workflows used to ingest faculty publications. The Dean's report noted that with both mediated and unmediated

mechanisms in place to ingest faculty content, there was little clarity on which method was the preferred method of ingest, which method should be promoted to faculty, and who made those decisions. Mediated deposits garnered more faculty participation but also required considerably more staff time to complete CV review. With only a small staff assigned IR duties, this latter method resulted in backlogs and highlighted the competing demands of facilitating content acquisition versus efficiency in workflows. When evaluating the Dean's review and implementing changes and new directions based on it, it was essential to keep what was working. Although time-consuming, we consider mediated deposits to be a positive return on investment for the IR. Working with submitters provided not only a valued service to the UNLV community, but it also allowed the Libraries to develop relationships and connections with faculty and enabled the Libraries to control the consistency and quality of metadata records in the IR.

### **Challenges in the Scholarly Communication Space**

Despite expanding the collecting scope of the IR, the Libraries is not stepping away from its role in educating the university on the purpose and value of open access and providing support and tools to facilitate OA. These are core strategic directions. But the Dean's report highlighted the need to refocus our OA and scholarly communication emphases. The SCI department does not have the available staff time to dedicate to achieving comprehensive Green OA. We are aligned with Lynch's thoughts that this is an unrealistic goal (Lynch, 2017, p. 217) and that the Libraries staff time and skills may prove more beneficial and impactful in pursuing UNLV materials that have no traditional published home. Moving towards capturing non-traditional digital scholarship in the IR has been a paradigm shift, for collecting previously-published, faculty-authored content to further open access initiatives was a foundational rationale for establishing a local IR. Some Libraries' staff believe that this shift dilutes the Green OA mission and message. If the Libraries is not prioritizing faculty authored traditional publications, then it signals a lack of support for OA, undermining previous Libraries' efforts and established campus relationships.

An additional challenge to note is the inevitable overlapping collecting mandate with the UNLV Libraries Special Collections and Archives Division. As the IR increases its collecting of UNLV produced non-traditional scholarship, there is a need to establish workflows to share information on potential acquisitions with UNLV Libraries' Special Collections and Archives (SCA) and to establish what is appropriate for the IR and what falls under the purview of (SCA). Each unit has separate workflows, standards for preservation, and platforms to deliver digital content that will have to be resolved on a case-by-case basis.

### **Second Dialectic - UNLV's IR in the Administrative Space**

UNLV's Top Tier initiative provides a foundational rationale for the Libraries decision to move the IR into the administrative, or reporting and impact, space. The campus' ambitious goal is that "by 2025, UNLV will be recognized as a top-tier public university in research, education, and community impact" (UNLV Top Tier, 2017). The initiative lists five pathways through which UNLV will achieve top-tier status: academic health center; community partnerships; infrastructure and shared governance; research, scholarship, and creative activity; and student achievement. Though all of these pathways impact the SCI department, the research, scholarship and creative activity one resonates most with the IR. The goals of this pathway include increasing research activity across the campus, tracking and measuring the impact of that research, and articulating the value and importance of UNLV research to the Southern Nevada region and Las Vegas community. For the authors, these Top Tier Initiative goals serve as an opportunity to emphasize the Libraries' expertise in tracking and assessing research outputs and the role the IR can play as a tool for aspects of this work.

Moving the IR into the administrative space was a thoughtful and opportunistic process for the UNLV Libraries. The Top Tier initiative has highlighted the need for the institution to be data-

informed and to be able to articulate, measure, and assess the outputs and impacts of its researchers. There is a need to create reports both internally, to track and benchmark UNLV's research, and externally, to create reports for accrediting bodies, regulatory entities, government agencies, media groups, etc. The findings of a Top Tier sub-committee highlighted significant challenges for UNLV in gathering, managing and reporting this data (Day, 2018). They identified that there is no centralized or consistent institution-wide approach, data is siloed across different systems with no interoperability, and there is no clarity on data stewards, data stakeholders and data reporting schedules. The sub-committee recommended a broad campus environmental scan to assess UNLV needs for managing information about its researchers, their work, their outputs and the impacts of those outputs. (Day, 2018, p. 29) and an investigation and review of available systems and tools to support UNLV research information management needs, including existing systems and practices in place.

In this current landscape the authors took the opportunity to position the IR in the administrative role and identified potential paths to enable some RIMS functionality for campus while it undertakes its investigation of needs and available systems. In particular the authors were intrigued by the idea that the IR could be a hub in which authoritative information could be gathered and displayed to the public and administrators in a user-friendly interface; simultaneously, the authors hoped that data input into the IR could be repurposed by faculty and administrators to satisfy data requests.

UNLV has been using Activity Insight's Digital Measures since 2011 to manage faculty annual activity reporting and promotion and tenure documentation. Digital Measures contains authoritative data about faculty activities but it does not have a public facing element that exposes faculty research, nor does it provide any impact data on faculty research outputs, such as citation metrics for faculty publications. Digital Measures does not provide full RIMS

functionality as implemented, so the authors saw possibilities to position the IR and Digital Measures as linked tools in an evolving campus research information management ecosystem.

To position the IR as a central tool for effective research information management, the Libraries pursued two projects in 2016, creating a UNLV Bibliography and implementing ORCID on campus. The Libraries compiled the bibliography by using faculty self-reported 2015 publication data from Digital Measures. Since this self-reported data contained errors, the SCI department verified and corrected information by manually searching and verifying publisher sources and utilizing our licensed abstract and indexing databases such as Web of Science and Scopus. We aimed to create an authoritative list of faculty scholarship published in 2015. Hosting the bibliography on the IR would make this list a public facing manifestation of the research outputs of the university; simultaneously, we hoped that this authoritative data could be linked and repurposed across campus systems to approximate key functionality needed for effective research information management. To provide insights on the usage of faculty research, the Libraries embedded the altmetrics.com badge within the IR so that authors and visitors can click on the works to see article-level impact of university scholarship.

The Libraries were concerned with faculty response to publishing citations in the IR while simultaneously soliciting them to self-archive their research work. Would faculty object to having bibliographic information about their scholarly and creative works in the IR? Would they be suspicious of the Libraries attempt to centrally track and promote UNLV scholarship? To inform faculty of our project, we established a libguide [http://guides.library.unlv.edu/unlv\\_bibliography](http://guides.library.unlv.edu/unlv_bibliography) and worked with library liaisons to send emails to authors to let them know that their works appear in the IR. The faculty response to our outreach was minimal. While we did receive texts and CVs to place in the IR, faculty objections tended to center on how their names were displayed in the IR or to suppress works the faculty member felt was not “scholarly.” For

example, we honored requests to remove book reviews. In the end, we accepted all faculty requests for changes or modifications and feel emboldened to continue our project.

The Libraries became an institutional member of ORCID to better integrate the IR to other systems participating in the campus information ecosystem. ORCID is a unique persistent digital identifier for researchers and through the participation of members including publishers and funding agencies is integrated into research systems and workflows. Examples include research information management systems, manuscript tracking systems, grant application process, and membership databases. In self-promotional material, ORCID refers to itself as the “plumbing in the research infrastructure,” a metaphor suggesting that ORCID could connect systems supported by the Libraries and the Office of Research and allow them to "pipe" data from one information silo to another (Meadows, 2017). Within the UNLV campus research information ecosystem, we wanted to have faculty or campus administrators enter information in once and have it reused elsewhere.

### **Challenges in the Administrative Space**

Through both our ORCID and UNLV Bibliography experience, we adjusted our focus for the IR by making it the public face, and not the hub, of our campus research information management ecosystem. Initially, the Libraries hoped that the IR could be the source of authoritative bibliographic information. We planned to utilize ORCID and bibliographic databases to automate the pulling in of citations to the IR to populate the bibliography. The bibliography could then be pushed to Digital Measures using ORCID and would aid in minimizing manual entry by faculty. After the first phase of an ORCID pilot, we learned that as of now, ORCID cannot enable the “push” of data from our IR to other systems; in other words, it cannot be the plumbing that would connect our IR to other systems like Digital Measures. For UNLV’s case, the connections between ORCID, our IR, Digital Measures and human resources information are still being

developed. The pilot showed that the most viable and sustainable role for the IR is serving as the public expression of works entered into Digital Measures through the faculty annual activity reporting exercise. The Libraries will focus on taking the publication metadata and making this information, and its altmetric impact, available to any visitor via the IR. This is still a manual process that requires the export of data from Digital Measures into excel and the cleaning of this data before re-uploading it into the IR, but it is necessary to situate the IR in the administrative space. The Libraries will also work with campus to better integrate Digital Measures into future profiling systems and to develop better impact reports from RIM data to inform administrative decision making.

The Libraries has also changed its approach to utilizing its ORCID membership. Now, we are focusing on the benefit to the researcher and not the system integration aspect that was our initial motivation to become members. We are encouraging our UNLV researchers to sign up for an ORCID iD and utilize it in their research workflows. This strategy includes teaching faculty how to enable automatic updates from CrossRef and the Scopus Author Identifier with their ORCID profiles. Encouraging this integration moves researchers closer to having complete and accurate information automatically about their works placed in their profile which can then be re-purposed by the campus when UNLV's ORCID integrations become more fully realized.

### **The Road Ahead**

The scholarly communication landscape is changing rapidly and UNLV, as well as other institutions, will be required to frequently revisit the goals of the IR to ensure that it satisfies the needs of its faculty and the institution. In the scholarly communication space, the UNLV Libraries will have to evaluate the utility and purpose of the IR in light of a growing disciplinary repository space. Will it make sense for faculty to post articles to one or the other, or both? Also, with the UNLV Libraries focusing more on unique, local content, how will repository managers

work with Special Collections and Archives to decide on the processing and delivery of UNLV's unique digital material? Each unit has separate workflows, standards for preservation, and platforms to deliver digital content that will have to be resolved on a case-by-case basis. For open access advocates, the acquisition of bepress by Elsevier is part of a growing trend of consolidation of platforms and services in this digital scholarship space. Along with bepress, Elsevier has also purchased an altmetrics company in Plum Analytics, a preprint service in Social Science Research Network (SSRN), and an academic social network and research platform in Mendeley. Given Elsevier's litigious actions to limit open access, does the purchase of bepress, which hosts UNLV's IR, compromise our goals for the IR in the scholarly communication space?

The concerns of the IR differ in the administrative space. Though Elsevier's purchase of bepress has caused consternation among many repository managers, from an administrative standpoint, it makes sense. With bepress, Pure, and Plum Analytics, Elsevier positions itself to provide a more holistic research information management system in which the reporting, the impact, and display functions can exchange information seamlessly. This consolidation gives rise to the possibility to reduce the administrative burden of administrators and faculty simultaneously. Digital Science, Elsevier's competitor in the research information management space, is also compiling a portfolio of products that will interoperate in a similar fashion. The Libraries does not have a crystal ball to see how or even if, the IR will continue to fit in the administrative model, but the desire to display, measure the impact, and report on our faculty's research will allow us to judge where the IR fits in this space in the future.

## **Conclusions**

Dialectics are an artificial construct used to interpret events, yet they have proven to be a useful metaphor for us to frame the current environment and understand the challenges, expectations,

and opportunities that exist regarding UNLV's IR. We do not anticipate that this dialectic will resolve or coalesce around one specified direction. Shifts in the digital scholarly communication landscape will affect our constructed dialectic of administrative versus scholarly communication roles. Perhaps this change will create a new, unanticipated dialectic that we will pursue and that will afford fresh opportunities and experimentation for the IR and the UNLV Libraries. We cannot predict the future but we are open to the evolving nature and role of the IR, and this will enable us to continue to define relevant and necessary aims for UNLV's IR.

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