University Library Materials   University Archives

3-9-2015

Report on Resource Needs for the EMU Institutional Repository

Julia K. Nims
Eastern Michigan University, jnims@emich.edu

Report on Resource Needs for the EMU Institutional Repository

Presented to the University Library Faculty on March 12, 2015

Prepared by Julia K. Nims

Scholarly Communications Librarian and Curator, DigitalCommons@EMU

March 9, 2015

What is an Institutional Repository?

The Association of Research Libraries (ARL) defined an institutional repository, or IR, as "a digital archive of the intellectual product created by the faculty, research staff, and students of an institution and accessible to end users both within and outside of the institution, with few if any barriers to access." (Crow, 2002, p. 16) Clifford Lynch, executive director for the Coalition for Networked Information, added a service dimension to the standard definition of an institutional repository, when he described an IR as, "…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." (Lynch, 2003, p. 2) Framing the institutional repository both as an archive and as a service encourages librarians to recognize the IR as a collection that requires management as well as a service that necessitates a focus on the needs of the communities libraries serve.
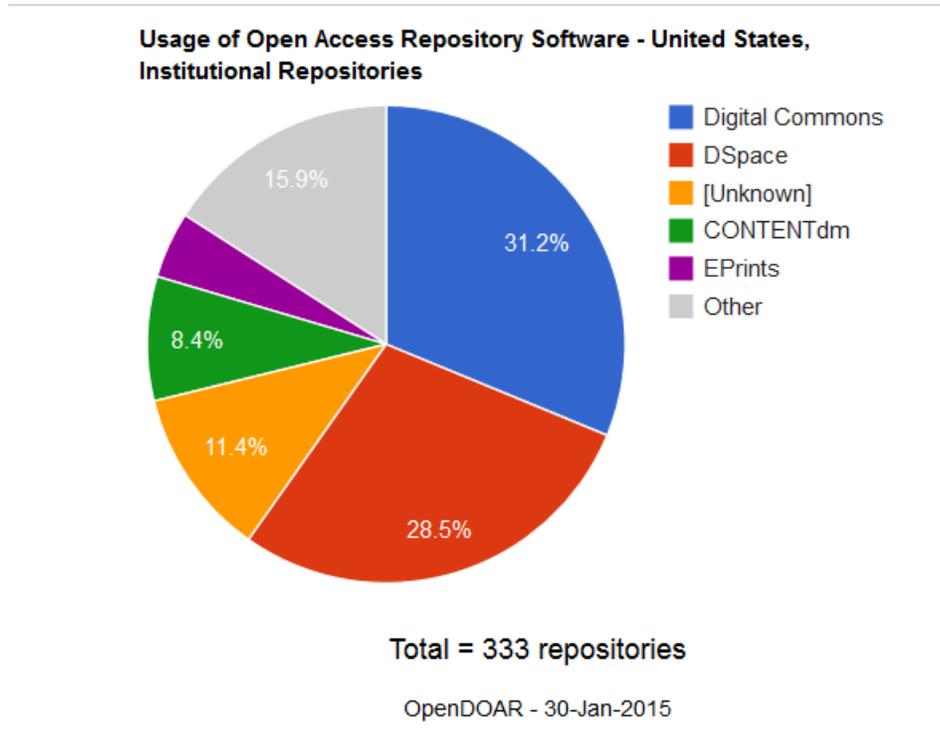
Background of Institutional Repositories

The first repositories of research and scholarly materials were discipline-based. Created to share and store pre-prints of journal articles, these repositories permitted researchers to learn of recent research before it appeared in a journal article. The first disciplinary repository, ArXiv.org, was established in 1991 to share materials in physics. arXiv.org was quickly followed by other disciplinary repositories, such as EconPapers for economics and CogPrints for cognitive psychology. (Burns, Sehan, & Budd 2013; Cullen & Chawner 2010; Tananbaum 2013)

The rising costs of journal articles and academe's subsequent interest in Open Access (OA) initiatives intersected with technological innovations in 2002. That year, MIT introduced DSpace, its open source software for institutional repositories (IRs) while publisher bepress debuted Digital Commons, its hosted repository platform, with the University of California. Unlike disciplinary repositories that were created to collect materials on a limited area of research, institutional repositories were developed to gather and share materials from all members of a university. (Burns, Sehan, & Budd 2013; Shearer 2003; Tananbaum 2013)

According to the Directory of Open Access Repositories (DOAR), there are currently 333 institutional repositories in the United States. The most commonly used IR platforms listed were Digital Commons (31.2%), followed by DSpace (28.5%), other software (15.9%), unknown platforms (11.4%); CONTENTdm (8.4%), and Eprints (4.6%). (See Chart 1)

Chart 1. Usage of OA Repository Software by Institutional Repositories in the United States

Usage of Open Access Repository Software - United States, Institutional Repositories

- Digital Commons — 31.2%
- DSpace — 28.5%
- [Unknown] — 11.4%
- CONTENTdm — 8.4%
- EPrints
- Other — 15.9%

Total = 333 repositories

OpenDOAR - 30-Jan-2015

Benefits and Challenges

<u>Benefits</u>

An institutional repository can highlight the intellectual accomplishments of the university's faculty and students, increasing the school's reputation and prestige. The results of faculty and student scholarly endeavors are dispersed among hundreds of books, journals, conference proceedings, and other publications, making it extremely difficult to determine the intellectual output of any school. Institutional repositories, which collect the results of the scholarly work in one online location, illuminate the depth and breadth of the research and other scholarly activities produced by the institutions' faculty members to stakeholders such as state legislators and funding agencies, potential students and faculty, as well as the public. (Davis 2011; Jantz 2008; Tananbaum 2013)

Benefits extend to individual faculty members. Institutional repositories, which are routinely indexed by major search engines such as Google and Google Scholar, increase the discoverability of faculty work by other scholars, often resulting in additional citations. (Gargouri, et al., 2010) Also, practitioners who are not researchers and the public have access to high-quality research, which they may find useful even if they do not produce publications that cite the materials. (Davis, 2011) Statistics, such as number of full-text downloads, can demonstrate interest in the material, as well as its relevance.

In the majority of institutions, the IR is a service of the Library and administered by librarians. Librarians have the expertise and skills to collect, describe, and organize institutional repository collections. They also have established relationships with faculty and other stakeholders whose support is crucial to populating the IR. Librarians are well positioned to guide faculty and students through the changing publication landscape, and utilize the institutional repository to its fullest. "As the so-called information revolution has taken shape, libraries have also demonstrated broader leadership in bringing their intellectual and service missions to bear on the issues raised." (Lougee, 2002, p. 1)

<u>Challenges</u>

One of the greatest challenges for an institutional repository is determining how to judge its success. Currently, there are no benchmarks or standards IRs can use to determine their performance. Westell (2006) and Shearer (2013) review possible indicators of success, such as number of contributions, the number of deposits, the range of disciplines making deposits, satisfaction of the depositors with their decision to contribute to the IR, and the satisfaction of those who use the IR. Until the ways to assess institutional repositories are formalized, each institution will need to determine if its IR is meeting or surpassing its needs and expectations.

The second major challenge is ensuring faculty contributions to the IR, presumably the greatest source of content. With a few notable exceptions such as the IRs at University of Nebraska-Lincoln and Bond University in Australia, the majority of institutional repositories lack

contributions from faculty. (Thorn, 2009) Low faculty participation rates are due to any number of reasons, such as concerns about peer review, plagiarism, and copyright; beliefs that the institution's administration can use the IR to monitor faculty scholarship; preferences for depositing in materials in disciplinary repositories; doubts about the potential benefits; and a reluctance to add new activities into their usual workflows. (Armstrong, 2014; Cullen & Chawner, 2010; Foster & Gibbons, 2005; Lynch, 2003; Xia & Shun, 2007)
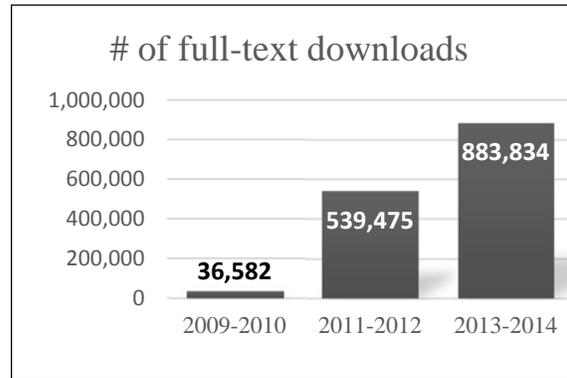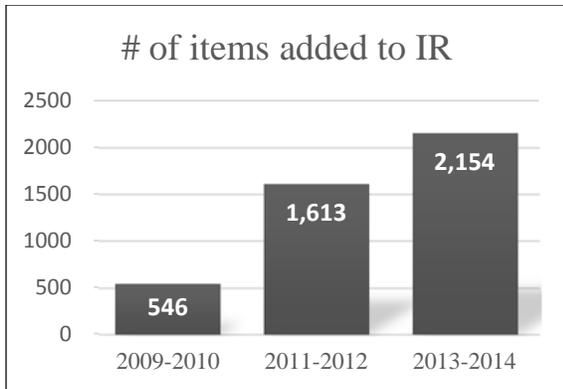
EMU's Institutional Repository

In 2005, the EMU Library launched its first institutional repository to increase the visibility of faculty and student research, raise the prestige of EMU, enhance research workflows, and capture vital institutional communications and records. Called EagleSpace, the IR used the DSpace open source platform, and preserved and disseminated EMU's collection of digitized theses and dissertations. Due to the cost of the platform in terms of librarian and staff time as well as the expense of hardware, the Library migrated to the hosted platform Digital Commons by bepress in 2009. In Fall 2011, a librarian assumed the role of Institutional Repository Curator to help it reach its full potential.

At the end of 2014, there were 3,631 items in DigitalCommons@EMU. They included 591 master's theses or doctoral dissertations, 412 honors theses, 24 faculty papers and presentations, 4 journals/peer-reviewed series, 4 books, 9 proceedings, 8 other works from graduate students and 14 archival collections.

The last five years have witnessed an explosion in the use of the collections in DigitalCommons@EMU.

Year	# of items added to IR	#full-text downloads
2009-2010	546	36,582
2011-2012	1,613	539,475
2013-2014	2,154	883,834
	4,313	1,459,891

# of items added to IR

Year	Items
2009-2010	546
2011-2012	1,613
2013-2014	2,154

# of full-text downloads

Year	Downloads
2009-2010	36,582
2011-2012	539,475
2013-2014	883,834

Although EMU's institutional repository has grown both in terms of number of items added and number of downloads, the IR has not reached its potential. The scenarios described below offer alternative means to expand the collections in EMU's institutional repository and utilize the Digital Commons platform to its fullest.

Each scenario outlines the materials collected or added to EMU's institutional repository, and the anticipated need for staffing, SSM funding, facilities, and technology. Perhaps due to the relative newness of institutional repositories, no single repository contains examples of all scenarios. However, links to examples of collection levels and materials are included with each scenario. Additional information about personnel and technology options is available on page 14.

Current Activities

Collect student materials mandated for addition to the IR, such as theses, dissertations, honors theses, as well as current journals already in EMU's institutional repository.

Add collections from the EMU Archives, such as Board of Regents Meeting materials, *Normal New*s, *Aurora Yearbooks*, and telephone directories.

Pros

- Gives student work global exposure.
- Makes EMU's archival collection discoverable and usable to researchers and the public.
- Allows the EMU Archives to distribute digitized collections to fulfill researchers' requests.

Cons

- Fails to utilize the IR to its full potential.
- Is dependent on the preferences and availability of staff volunteers.
- Requires large amounts of storage to back up the materials.

Personnel*

- 1 Librarian, Faculty (1/4 time) – $17,500 + 39% benefits ($6,825)
- 1 Half Time CS05- $23,500(?) + 39% benefits ($9,165) **(currently held by Provost's Office)**
- staff from other areas of the library to upload theses and some archival collections
- **(there are currently no staff volunteers to scan materials)**
- Archives student employees (in Digital Conversion Lab), when available for special projects
- Wayne State University and University of Michigan graduate student interns (in Digital Conversion Lab), when available for special projects

SSM
- None in regular budget, but funds are available for some projects/costs through the Leona Berry Fund

Current Activities (con't)

<u>Facilities</u>

- Digital Conversion Lab (Halle Library, G18)

<u>Technology</u>**

- Digital Commons Institutional Repository Platform – $32,000/yr. (paid by EMU Library)

*See "Notes on Personnel and Technology" on page 14 for a more information.
***We estimate the cost of the Digital Commons Institutional Repository Platform will increase 4-5 %
annually.,*

Total Annual Cost to University $88,990

Scenario 1: Addition of Open Access Materials

Collect Open Access (OA) versions of EMU faculty work.

Note: EMU's institutional repository does include some OA versions of faculty work. However, it is difficult to garner faculty participation to populate the IR beyond a few papers in select collections. Also, the current staffing level makes it difficult to solicit contributions and add them to the repository.

<u>Pros</u>

- Increases the likelihood that faculty work would be cited by other researchers.
- Encourages the public to access and read faculty work because all materials in the IR are available full-text to all visitors.

<u>Cons</u>

- Requires cooperation of a large number of faculty to get the versions of their work.
- Does not reflect the scope or depth of work by faculty because it omits all mention of books, articles, and other intellectual output unless the Library has access to an Open Access version.
- Makes it nearly impossible to include work from creative disciplines.
- Fails to take full advantage of the IR to collect and promote institutional scholarship.

<u>Examples</u>

- Georgia State University - http://scholarworks.gsu.edu/communities.html
- University of Nebraska Lincoln - http://digitalcommons.unl.edu/communities.html

<u>Personnel</u>*

- 1 Librarian, Faculty (1/4 time) – $17,500 + 39% benefits ($6,825)
- 1 Half Time CS(05) - $23,500 + 39% benefits ($9,165) (currently held by Provost's office)
- **Liaison Team members to help locate potential contributions**
- **Student worker (in Digital Conversion Lab) (10 hrs/week, 30 weeks) - $2,445**
- Archives student employees (in Digital Conversion Lab), when available
- Wayne State University and University of Michigan graduate student interns (in Digital Conversion Lab), when available

Scenario 1: Addition of Open Access Materials (con't)

SSM
- None in regular budget, but funds are available for some projects/costs through the Leona Berry Fund

Facilities
- Digital Conversion Lab (Halle Library, G18)

Technology**
- Digital Commons Institutional Repository Platform – $32,000/yr. (paid by EMU Library)
- **Server space, secure backup and redundancy of materials - $10,000/yr.**

See "Notes on Personnel and Technology" on page 14 for a more information.
**We estimate the cost of the Digital Commons Institutional Repository Platform as well as the costs of secure backup will increase 4-5 % annually.

Total Annual Cost to University $101,435

Scenario 2: Additions of Citations to IR

Add citations to all EMU faculty work (journals, books, chapters in books, and other works that would be included in faculty annual activity reports) and link to the full-text/catalog entry if an Open Access version is unavailable to the Library.

Pros

- Captures the entire range of scholarly and creative work by faculty.
- Establishes the IR as the single place to see a complete list of all scholarly/creative activity by faculty.
- Increases discoverability of materials and makes it likely the materials will be cited more frequently.
- Does not require the assistance/cooperation of faculty to get citations to their work (use RSS feeds from databases, searches of faculty and department webpages).

Cons

- Requires a tremendous amount of work (citation verification, data entry) to add citations to IR and update entries.

Examples

- Boise State University - http://scholarworks.boisestate.edu/uar/
- Framingham State University- http://digitalcommons.framingham.edu/bio_facpub/

Personnel*

- 1 Librarian, Faculty (1/4 time) – $17,500 + 39% benefits ($6,825)
- **3/4 Time PT/CS(06) - $35,250 + 39% benefits ($13,748)**
- **¼ Time Temporary Lecturer (10 hrs/week, 30 weeks) - $8,400**
- Liaison Team members to help locate potential contributions
- Student worker (in Digital Conversion Lab) (10 hrs/week, 30 weeks) - $2,445
- Archives student employees (in Digital Conversion Lab), when available
- Wayne State University and University of Michigan graduate student interns (in Digital Conversion Lab), when available

Scenario 2: Additions of Citations to IR (con't)

<u>SSM</u>

- None in regular budget, but funds are available for some projects/costs through the Leona Berry Fund

<u>Facilities</u>

- Digital Conversion Lab (Halle Library, G18)

<u>Technology</u>**

- Digital Commons Institutional Repository Platform – $32,000/yr. (paid by EMU Library)
- Server space, secure backup and redundancy of materials - $10,000/yr

*See "Notes on Personnel and Technology" on page 14 for a more information.
**We estimate the cost of the Digital Commons Institutional Repository Platform as well as the costs of secure backup will increase 4-5 % annually.

Total Annual Cost to University $126,168

Scenario 3: Expand Content of IR (RECOMMENDED SCENARIO)

In addition to the collection activities in Scenario 2, expand the IR collections to include reports and white papers, videos of lectures, online exhibits and tours, links to data sets, and other forms of scholarship.

Pros

- Provides exposure to valuable intellectual work that is produced outside traditional publishing venues, and, consequently, is easy to overlook.
- Expands the available "space" for archival displays and exhibits.

Cons

- Requires a tremendous amount of work to contact institutes and offices that are not involved with the library's liaison/subject specialist program.

Examples

- Bond University (Globalisation and Development Centre) http://epublications.bond.edu.au/gdc/
- Southern Illinois University Carbondale - http://opensiuc.lib.siu.edu/communities.html
- "Sam Shepard Collection" - http://engagedscholarship.csuohio.edu/sheppard/
- Lincoln Center Feature Display http://demo.fordhamlaw.bepress.com/lincoln_ctr_displaycase/

Personnel*

- **1 Librarian, Faculty (1/2 time) – $35,000 + 39% benefits ($13,650)**
- **1 Full-time CS06 – $47,000 +39% benefits ($18,330)**
- **1 Half-time Permanent Lecturer - $17,500**
- 1 **Scanning/Digitizing Specialist (PT08) - $50,349 + 39% benefits ($19,636**)
- Liaison Team members to help locate potential contributions
- **Student workers (in Digital Conversion Lab) (20 hrs/week, 30 weeks) - $4,890**
- Archives student employees (in Digital Conversion Lab), when available
- Wayne State University and University of Michigan graduate student interns (in Digital Conversion Lab), when available

Scenario 3: Expand Content of IR (con't)

<u>SSM</u>

- **$1,000 (for accounts with Vimeo for video, Timetoast account for timelines)**
- Funds are available for some projects/costs through the Leona Berry Fund

<u>Facilities</u>

- Digital Conversion Lab (Halle Library, G18)

<u>Resources</u>**

- Digital Commons Institutional Repository Platform – $32,000/yr. (paid by EMU Library)
- Server space, secure backup and redundancy of materials - $10,000/yr
- **Additional 3 journal structures*** - $4,500 (one time purchase)**

*See "Notes on Personnel and Technology" on page 14 for a more information.
**We estimate the cost of the Digital Commons Institutional Repository Platform as well as the costs of secure backup will increase 4-5 % annually.
***The Digital Commons platform comes with 5 journal structures. Additional journal structures cost a one-time $1,500 fee. We currently are using 4 journal structures.

Total Annual Cost to University $253,855

Notes on Personnel and Technology

<u>Personnel</u>

Note: Some authors have advocated having faculty and other researchers "self-archive," meaning that the faculty themselves upload their materials and input the metadata describing the items. Several studies have documented that most faculty fail to self-archive because doing so is not part of their research routine. Kurtz (2010) found that faculty who self-archived frequently made significant errors with their metadata when adding the material type, abstract, publisher, and subject tags, errors that impede the discoverability of the items.

In "Institutional Repositories: Exploration of Costs and Value," Burns, Lana, and Budd (2013) surveyed IR managers about their staffing. Most respondents reported having professional staff, including librarians, IT professionals, and administrators work on the IR rather than clerical staff or student workers, suggesting that most activities in the IR are considered high-level and not yet routine.

Librarian

- lead the planning, development, and supervision of the repository
- draft policies and procedures for creating and then populating digital collections
- provide user support and training to library staff and end-users
- conduct evaluations, and program and policy analysis
- advocate and promote the use of the institutional repository
- review and analyze statistical reports, and recommend changes and improvements as necessary
- define and manage the digital collections
- supervise institutional repository and Digital Conversion Lab staff

Staff (Institutional Repository)

- maintain permissions files (copyright, embargoes)
- locate and harvest faculty-authored content and related metadata from subject-specific repositories, databases, and other Internet sources
- analyze copyright status of published content and research publisher policies
- prepare materials for students to upload to the IR
- perform quality control on materials
- administer journal issues, communities, and series, using the administrator side of IR
- perform batch uploads of materials using admin side of IR
- run and statistical reports (knowledge of Microsoft Excel™)
- supervise student employees

- assist in developing and improving workflows, polices, and processes

Staff (Digital Conversion Lab)

- digitize printed and photographic materials
- perform metadata entry including item level research
- perform quality control checks of digitized materials
- maintain scholarly communications web presence, such as the scholarly communications and digital conversion lab research guides
- develop web-related access to archival collections and exhibits
- supervise student employees and graduate student interns in the Digital Conversion Lab

Students (Institutional Repository)

- complete submission forms to upload materials to IR
- post materials to IR

Students (Digital Conversion Lab)

- prepare materials for digitization
- digitize printed and photographic material

Technology

bepress' Digital Commons offers to deliver quarterly the content of an IR on their platform (free for Digital Commons subscribers).

bepress also has a private LOCKSS network for Digital Commons subscribers to store each other's content for added security. Participation does require a LOCKSS membership at approximately $10,000/year (and a probable 5% increase in subsequent years).

ScholarWorks, a bepress product that facilitates creating IR pages for individual researchers, is available for $10,000/year (and a probable 5% increase in subsequent years). At this time, ScholarWorks is not recommended. Schools that do have this product have a difficult time populating it with faculty work, making it hard to justify the expense. If the EMU Library decides to subscribe to ScholarWorks in the future, whatever faculty content that is in the IR can be moved into the ScholarWorks structure without any change in url or loss of download usage.

Sources Consulted

Armstrong, M. (2014). Institutional repository management models that support faculty research dissemination. *OCLC Systems & Services, 30*(1), 43-51. http://dx.doi.org/10.1108/OCLC-07-2013-0028

Bailey, Jr., C.W. (2005) The role of reference librarians in institutional repositories. *Reference Services Review, 33*(3), 259-267. http://dx.doi.org/10.1108/00907320510611294

Bankier, J., & Gleason, K. (2014*). Institutional Repository Software Comparison*. Retrieved from http://unesdoc.unesco.org/images/0022/002271/227115E.pdf

Burns, C., Sehan, A. L., & Budd, J. M. (2013). Institutional repositories: Exploration of costs and values. *D-Lib Magazine, 19*(1/2). http://dx.doi.org/10.1045/january2013-burns

Crow, R. (2002).*The case for institutional repositories: A SPARC position paper*. Washington, DC: Scholarly Publishing & Academic Resources Coalition, 2002. Retrieved from http://www.sparc.arl.org/resources/papers-guides/the-case-for-institutional-repositories

Cullen, R. & Chawner, B. (2010). Institutional repositories: Assessing their value to the academic community. *Performance Measurement and Metrics, 11*(2), 131-147. http://dx.doi.org/10.1108/14678041011064052

Davis, P.M. (2011). Open access, readership, and citations: A randomized controlled trial of scientific journal publishing. *The FASEB Journal, 25*(7), 2129-2134. http://dx.doi.org/10.1096/fj.11-183988

Foster, N.F. & Gibbons, S. (2005, January). Understanding faculty to improve content recruitment for institutional repositories. *D-Lib Magazine 11*(1). http://www.dlib.org/dlib/january05/foster/01foster.html

Gargouri, Y., Hajjem, C, Lariviere, V., Gingras, Y., Carr, L., Brody, T., & Harnad, S. (2010). Self selected or mandated, Open Access increased citation impact for higher quality research. *PLoS one*, 5(10). http://dx.doi.org/10.1371/journal.pone.0013636

Jantz, R.C. & Wilson, M.C. (2008). Institutional repositories: Faculty deposits, marketing, and the reform of scholarly communication. *Journal of Academic Librarianship 34*(3), 186-195. http://dx.doi.org/10.1016/j.acalib.2008.03.014

Kurtz, M. (2010). Dublin Core, DSpace, and a brief analysis of three university repositories. *Information Technology and Libraries, 29*(1): 40–46. http://dx.doi.org/10.6017/ital.v29i1.3157

Lougee, W. P. (2002). *Diffuse libraries: Emergent roles for the research library in the digital age. Perspectives on the evolving library*. Washington, DC: Council on Library and Information Resources. Retrieved from http://files.eric.ed.gov/fulltext/ED471954.pdf

Lynch, C. A. (2003, February). Institutional repositories: Essential infrastructure for scholarship in the digital age. *ARL: a Bimonthly Report on Research Library Issues and Actions from ARL, CNI, and SPARC, 226*. Retrieved at http://www.arl.org/storage/documents/publications/arl-br-226.pdf

Open DOAR – Charts - Worldwide. (2015). Retrieved from http://www.opendoar.org/ find.php?format=charts

Salo, D. (2008). Innkeeper at the roach motel. *Library Trends*, *58*(2), 98-103. http://dx.doi.org/10.1353/lib.0.0031

Shearer, K. (2013, October). Institutional repositories: Towards the identification of critical success factors. In *Proceedings of the Annual Conference of CAIS/Actes du congrès annuel de l'ACSI*. Retrieved at http://www.cais-acsi.ca/ojs/index.php/cais/article /viewFile/408/578

Tananbaum, Greg. (2013). Institutional repositories: The promises of yesterday, the promises of tomorrow." In P. Bluh & C. Hepfer (Eds.), *The institutional repository: Benefits and challenges* (pp. 1-12). Chicago, IL : Association for Library Collections & Technical Services, American Library Association.

Thorn, S., Morris, S. & Fraser R. (2009). Learned societies and open access: Key results from surveys of bioscience societies and researchers. *Serials, 22*(1), 39-47. http://dx.doi.org/ 10.1629/2239

Westell, M. (2006). Institutional repositories: Proposed indicators of success. *Library Hi Tech*, *24*(2), 211-226. http://dx.doi.org/10.1108/07378830610669583

Xia, J. & Sun, L. (2007). Assessment of self-archiving in institutional repositories: Depositorship and full-text availability. *Serials Review, 33*(1), 14-21. http://dx.doi.org/doi:10.7282/T3NC5ZJF