
This paper explores the involvement of public health librarians in the deposit of student literature (e.g. theses, journal publications, posters) into university-based institutional repositories. While there is literature about institutional repositories and the roles that librarians can fill related to them, there is limited data as to the actions of librarians in this context. This paper addresses this gap, particularly as it pertains to public health librarians. Twenty-two librarians identified as library liaisons or library contacts for public health students at large, research universities completed a survey on this topic. Overall, the survey results indicate active involvement or interest by public health librarians in the preservation of student scholarly content and imply collaboration with institutional repositories to do so. Further research is needed to determine the extent of librarian involvement in such efforts as well as the degree to which this involvement extends to other groups of librarians.

Headings:

Institutional repositories.

Academic libraries -- Services to graduate students.

Students -- Public health.

Librarians -- Public health.

Survey -- Public health librarians.
GAUGING INVOLVEMENT: AN EXPLORATORY SURVEY OF PUBLIC HEALTH LIBRARIANS, STUDENT LITERATURE, AND INSTITUTIONAL REPOSITORIES

by

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Introduction

Institutional repositories are spaces that preserve and make accessible the scholarly and intellectual works of a university. In acting as a collecting ground for university-produced materials, institutional repositories also serve as a portfolio of a university's research and academic output. In this role, repositories are dependent on ingest of materials from the university community in order to fulfill their role as a repository. As such, when repositories find themselves unable to target constituents within the university community and acquire content, an exploration of pre-existing collaborative efforts can potentially encourage productive interactions with members of the academic community.

Collaborations with other university departments are often cited as ways to increase visibility of the repository and support the deposit of intellectual and scholarly content. Librarians in particular provide services (e.g. research support) that place them in a position to encourage deposit of university research into the institutional repository. Their interactions with university students, who are active producers of scholarly work while at the university, are especially conducive to promoting the repository.

The purpose of this research is to explore the role of librarians, specifically those who serve public health student populations, and their involvement in the deposit of master of public health (MPH) student literature into institutional repositories. Literature regarding institutional repositories and the potential roles that librarians can fill related to them is a well-visited topic, however there is relatively no data as to what librarians are actually
doing related to deposit efforts. In addition, the literature surrounding student contributions to repositories is even more limited. This paper addresses that gap, particularly as it pertains to public health librarians and their involvement with university institutional repositories and the deposit of MPH student literature.

**Literature Review**

*Institutional repositories and universities*

The purpose of institutional repositories is to act as a place for the intellectual and scholarly output of universities. University-based repositories offered a solution to the scholarly communication crisis and have the potential to provide additional services for their community members, some of which include publishing, licensing, and preservation (Crow, 2002; Lynch, 2003; Bankier & Smith, 2010). Clifford Lynch defines university-based institutional repositories broadly 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). Similarly, Raym Crow describes institutional repositories 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…” (Crow, 2002). Both of these definitions provide the foundation for this paper's understanding of institutional repositories.

In addition to collecting materials, institutional repositories also act as a discovery tool for scholarly materials developed in the university. This discovery can occur within the university or more globally through the use of existing standards and protocols that allow for dissemination of a repository's content. This can occur through methods such as the harvesting of metadata, the use of persistent identifiers, and the establishment of full-
text indexing in search engines (Buehler & Boateng, 2005; Bankier, Foster, & Wiley, 2009). In such ways, repositories provide accessibility and permanence for the intellectual works of the university community.

Key targets for these materials include works produced by faculty and students as they relate to research or teaching materials produced through the university (Crow, 2002; Lynch, 2003; Buehler et al., 2005). As the primary producers of these types of materials within the university community, it is essential to have faculty and students as active contributors to institutional repositories. The contributions of these groups provide an institutional repository with its key component – content. Without the scholarly and intellectual works for which they were created, institutional repositories do not have leverage to contribute to the growth and development of the university they serve. The difficulty of obtaining content is acknowledged as a chief problem of institutional repositories, one that can severely inhibit a repository's growth and render it, essentially, useless (Hixson, 2005; Salo, 2008; Bankier et al., 2010).

Librarians and institutional repositories

Librarians can fill many roles in regards to institutional repositories including: providing guidance in defining collections, creating metadata standards tailored to individual collections, reviewing submissions for quality control, and training authors and other university users in how to use the repository (Allard, Mack, & Feltner-Reichert, 2005). Involvement in institution-wide policy making, preparation of digital products, and setting of repository goals are additional actions that librarians are identified as being able to perform in relation to institutional repositories (Chang, 2003). However, these roles and services all revolve around an institutional repository having content to define,
to quality control, and to make discoverable for community users. Due to this, recruiting content and donators is a key role that librarians can fill in the formation and the sustainment of a university institutional repository.

The collaborative means available to librarians to recruit content and donators usually emerge through their interactions with library patrons and the information needs of their community. On a university campus, the primary patrons of libraries are students and faculty and by interacting with these populations, librarians have a sense of the types of research conducted and, ultimately, the content produced (Bell, Foster, & Gibbons, 2005; Jenkins, Breakstone, & Hixson, 2006; Bankier et al., 2010). Being in this position allows librarians to bring university services, such as the institutional repository, to the attention of these patrons; librarians can act as "first contact" for these populations and provide initial information about (and direction to) the institutional repository. This type of involvement also allows librarians to work "upstream" and suggest deposit of research components (e.g. datasets, interview data) as they are produced rather than focusing solely on the final product for deposit (Palmer, Teffeau, & Newton, 2008).

Speaking specifically to the role of liaison librarians, Carole L. Palmer, Lauren C. Teffeau, & Mark P. Newton state:

…librarians who assume roles as collaborators are much closer to the front lines of research and thus better positioned to demonstrate the value of a repository at different stages of the research process, as well as provide more direct support for workflow issues that may be involved in the deposit of data or documents (Palmer, Teffeau, & Newton, 2008).

To give an example of direct support, a common deposit practice when authors submit materials to an institutional repository is known as "self-archiving". Self-archiving gives the author a key role in the deposit process by allowing them to choose what materials to
deposit and what metadata to attach to these materials (Allard et al., 2005; Bell et al., 2005). This process encourages collaboration between the repository and its depositors, but it can also act as a roadblock. Bell et al. (2005) found in observing faculty use of institutional repositories that many faculty members were concerned about factors such as copyright and did not participate in self-archiving as a result. Another reason raised for lack of participation was uncertainty about what metadata to include in the deposit of materials. In these instances, librarians have been identified as resources to help in the deposit of literature and can address questions that may arise during this process (Allard et al., 2005; Bell et al., 2005).

The involvement of librarians is consistently seen as a key factor in the success of institutional repositories. The collaboration that takes place through librarian involvement, as liaisons or contacts for researchers within universities, serves internal and external goals of university-based institutional repositories. Internally, a repository experiences an increase in content due to librarian recruitment of contributors. Externally, this repository is able to demonstrate its impact and realize its purpose of serving as a portfolio of the university's intellectual and scholarly output (Markey et al., 2009). The participation of librarians in this context also speaks to goals of university libraries and is demonstrative of yet another way that librarians serve the academic community.

Focus on student literature

This paper focuses on ingest of student literature in particular because of its underrepresented presence in the literature surrounding repository ingest. Much of student-contributed content in institutional repositories consists of theses or dissertations (Pickton & McKnight, 2007; Nolan & Costanza, 2006). Clifford A. Lynch & Joan K.
Lippincott, in their 2005 survey of 124 individual higher education institutions and 81 liberal arts colleges, found that the majority of the surveyed institutions collected theses and dissertations with only 9 current institutions and 14 planned institutions (at the time of survey) collecting alternative types of student papers. In 2007, Cat S. McDowell revisited areas of the Lynch & Lippincott (2005) survey and found that an estimated 41.5% of the repositories surveyed contained "student work" - which consisted almost entirely of electronic theses and dissertations. An offered explanation for the prevalence of theses and dissertations in institutional repositories is that they are "low hanging fruit" with guaranteed deposits occurring each year (McDowell, 2007). In many cases, this type of student literature provides a foundation for repositories and, according to Salo (2008), is a "perfectly reasonable [form of content] to spur development of an institutional repository". However, considering additional forms of student literature, along with the existing theses and dissertations, widens the scope of potential materials to be deposited into an institutional repository and recognizes students as productive members of research processes at universities.

Overall, students express interest in depositing various types of literature into repositories including theses, dissertations, presentations, and journal articles. According to a 2006 study of research students at Loughborough University in the United Kingdom, the only area in which students demonstrated higher resistance to contributing was the deposit of datasets. Reasons given for this resistance included concerns over "confidentiality, ethical issues,…use of group-rather than individually-collected data, the expense of collecting data, and…desire to [further] use their data…” (Pickton & McKnight, 2006). Further engagement with student depositors can elucidate on whether
these reasons continue to be pertinent in decisions of whether or not to deposit datasets into institutional repositories.

However, when Pickton & McKnight (2007) assessed the role of students in relation to an institutional repository, they found that students were enthusiastic about disseminating their scholarly work as well as receiving feedback related to their research early on in their careers. Students were also intrigued by the repository's ability to promote discoverability of their work and initiate their move into the world of scholarly communication and academic publishing (Nolan & Costanza, 2006). Finally, promotion of deposit with these university constituents can help in further encouraging other populations, such as faculty, to participate in the process.

**Methodology**

*Initial Sample*

The preliminary sample for this study was identified using "The Carnegie Classification of Institutions of Higher Education". This classification system is part of the Carnegie Foundation for the Advancement of Teaching – an independent policy and research center, founded by Andrew Carnegie in 1905 and chartered by Congress in 1906. The Carnegie Classification was published in 1970 - updated in 1976, 1987, 1994, 2000, 2005, and 2010 - and includes accredited, degree-granting colleges and universities in the United States that are included in the National Center for Education Statistics Integrated Postsecondary Education Data System (IPEDS) (Carnegie Foundation, n.d.). The center collects data in order to identify comparable institutions based on a set of criteria. The system is broadly used in studies of higher education and in designing
research studies to attain an adequate and representative sample of the constituents of a university.

Universities were selected based on their level (4 year or above) and their research activity ('very high'). In addition, due to the focus on research in the health sciences, specifically public health, universities were chosen based on having comprehensive doctoral programs (medical/veterinary). Applying these criteria resulted in a list of 68 universities.

Operationalization

Following their initial identification, these universities were then evaluated to determine whether they had an institutional repository and an accredited MPH program. Institutional repositories were identified through an advanced Google search consisting of: [University name] (institutional OR digital repository). In addition, the repositories had to be open to deposits of student content and be comprised of the research and scholarly output of the university in question. Accreditation of the MPH programs was checked through use of the Council on Education of Public Health (CEPH) website. The CEPH is a non-profit, independent agency that accredits schools of public health and public health programs offered in alternative settings (e.g. departments in other schools at universities). As a result of this process, 48 universities were identified as having both an institutional repository and an accredited MPH program.

After identifying these universities, library liaisons or library contacts for the school or department of public health were identified through perusal of university libraries' publicly available websites. Forty-four library liaisons were identified through their university libraries' webpages with some libraries associating more than one librarian
with public health. Fourteen universities did not have discernible public health library liaisons or contacts and were contacted via email in order to determine the appropriate contact for the public health librarian position.

Data Collection

A Qualtrics survey was created for the purposes of assessing the involvement of public health liaison librarians in the deposit of MPH student literature into their affiliated institutional repositories. The survey consisted of four to five questions (see Appendix). The recipients were given three to four weeks to respond. The responses were anonymously collected through use of the Qualtrics software. The University of North Carolina at Chapel Hill Institutional Review Board deemed this research exempt.

Results

The survey was sent to 52 librarians at the selected universities who were identified as being library liaisons or contacts for public health students. The survey was completed by 22 of the 52 librarians (42%) and had an 88% completion rate (22/25). Eight of the chosen universities did not receive the survey: two were sent an inquiry email about their public health librarian(s) and never responded, four universities did not have library emails publicly available on their websites, and two universities responded to the inquiry email that they did not have identified public health liaisons or contacts for their libraries.

At the time of survey, 18% (4/22) of the identified librarians had participated in efforts to deposit MPH student literature into their university's institutional repositories (see Figure 1).
Figure 1: Have you participated in efforts to deposit MPH student literature into your university's institutional or digital repository?

Of these four librarians, 50% worked with theses, 50% with journal publications, 50% with presentations (e.g. PPT slides), 50% with posters, and 25% with "Other" described as "Capstones and Dissertations" (see Figure 2).

Figure 2: What kind(s) of MPH student literature have been deposited into your university's institutional or digital repository as a result of this effort?

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¹ Five responses were entered for this question and the following question on the survey (Figures 2 & 3). One response was dropped due to entry error.
Areas of study within the field of public health that the MPH student literature came from included: Biostatistics (25%), Epidemiology (50%), Global Health (75%), Health Behavior (50%), Health Policy & Management (100%), Maternal & Child Health (25%), and "Other" (75%) areas described as "Gerontology, Preventative Medicine, Environmental Health, Exercise Science, Prevention & Community Health, and Leadership" (see Figure 3).

![Figure 3: What areas of study within the MPH program does the student literature come from?](image)

Of the librarians surveyed, 82% (18/22) had not participated in efforts to deposit MPH student literature into their university's institutional repository at the time of the survey (see Figure 1). Thirty-three percent (6/18) had plans to participate in efforts to deposit MPH student literature into their university's institutional repository while the remaining 12 (67%) had no plans to do so (see Figure 4).
Figure 4: Do you have plans to participate in efforts to deposit MPH student literature into your university's institutional or digital repository?

According to those individuals with plans to participate\(^2\), 60% planned to work with theses, 40% with journal publications, 20% with presentations, 40% with posters, and 20% with "other" materials described as "data from research: theses/dissertations/articles" (see Figure 5).

Figure 5: What kind(s) of MPH student literature will be deposited into your university's institutional or digital repository as a result of this effort?

\(^2\) Five responses were entered for this question and the following question on the survey (Figures 5 & 6).
Areas of study within the field of public health that the MPH student literature would come from included: Biostatistics (60%), Epidemiology (80%), Global Health (80%), Health Behavior (60%), Health Policy & Management (80%), Maternal & Child Health (60%), Nutrition (40%), and "Other" (40%) described as "Health Promotion" (see Figure 6).

![Figure 6: What areas of study within the MPH program will the student literature come from?](image)

The survey also inquired about the interest level of the selected public health librarians in participating in efforts to deposit MPH student literature into institutional repositories. Of those librarians that had participated or had plans to participate in deposit efforts, 40% (4/10) were "very interested" in working with MPH students to deposit their literature into university institutional repositories, 40% (4/10) were "somewhat interested", and 20% (2/10) were "neutral" (see Figure 7).
The 12 librarians that had not participated, and had no plans to participate, in efforts to deposit MPH student literature indicated various levels of interest as well. 50% (6/12) were "very interested" in working with MPH students to deposit their literature should the opportunity present itself, 25% (3/12) were "somewhat interested", 1% (1/12) were "neutral", and 17% (2/12) were "somewhat uninterested" (see Figure 8).
Discussion

Based on the survey, the results indicate that there is active involvement and interest of librarians in the deposit of student literature into institutional repositories – particularly in relation to the field of public health. While no additional information was collected through the survey, as to how or why librarians became involved or interested in depositing efforts, it can be assumed that collaboration occurs between students, librarians, and repository staff at some point during the process of depositing into the institutional repository. These results confirm discussions in the literature that identify librarians as having a role to play in, not only recruiting, but guiding members of the scholarly community to institutional repositories in an effort to preserve and provide access to the research generated within the university (Bell et al., 2005). The form that this collaboration takes is an interesting point for further study.

Another element to consider is the types of literature that librarians reported working with in the survey. As the available literature discusses, students are willing and interested in contributing their research to university collections of scholarly works (Pickton & McKnight, 2007). Generally, this research comes in the form of theses and dissertations, however the survey indicates that journal publications, posters, and presentations are also frequently contributed materials. One survey response to the "Other" option indicated that data from student research was also being deposited. This is encouraging in terms of adding to the diversity of student-generated content that is contributed to and exists in institutional repositories.

A final observation to make related to the survey results is that of the reported interest levels of the public health librarians. As discussed in the Results section, the majority of
the responders were "very interested" or "somewhat interested" in participating in efforts to deposit MPH student literature into their university's institutional repository. Several others expressed a "neutral" interest, but only 2 of the 52 librarians surveyed responded as "somewhat uninterested" in these efforts with no librarians reporting as "very uninterested". Though the sample may be subject to limitations, this response indicates an overall interest that can perhaps grow through exposing librarians to specific processes and ways in which they can contribute to the preservation and accessibility of university scholarly content, particularly as it pertains to student literature. This would involve explicit discussions of roles to fill and types of action to be taken by librarians within the larger library system of a university.

Limitations

This study is primarily limited by the sample size of public health librarians who received and responded to the survey. As described, the sample consisted of 52 librarians from 40 of the 48 universities that were initially identified for the purposes of this study. Having less than 50% of the librarians contacted respond to the survey needs to be taken into consideration when evaluating the outcomes of the research. The survey results yielded enough data regarding the activity of these librarians to allow for generalizations and interpretation, however a stronger response rate would reveal more of the activities of public health librarians in depositing efforts.

To combat this limitation in the future, methods of follow up, such as reminder emails, should be employed. Individual follow up emails were not sent out in this study due to potential compromise to the anonymity of those surveyed. An alternative approach was considered - this approach was to email the entirety of the public health librarians
surveyed again in order to remind those who had yet to take the survey to do so, however there was a risk of miscommunication through email and duplicate responses were a potential side effect of this approach so that method was rejected. In retrospect, sending the initial survey email out to librarians through Qualtrics, which is a function of the software, rather than through personal email might have alleviated this problem. However, overall, the data results collected and presented in this paper were considered sufficient to analyze.

**Conclusion**

This research contributes to a gap in the literature surrounding the actions of librarians in efforts to deposit student literature into institutional repositories. Based on the survey results, there is an indicated involvement and interest on the part of the public health librarians surveyed in adding student literature to repositories. This involvement shows public health librarian participation in these efforts as well as provides insight into types of literature being deposited and from what areas of public health. Additionally, the interest level of the librarians surveyed was taken and the levels indicated imply potential for future growth in librarian contributions to this area of scholarship.

The implementation of this research offers several opportunities for future study and expansion on the topics considered in this paper. While involvement and interest has been established through the survey results, the extent of librarian involvement in deposit efforts is one area in particular that can benefit from additional research. Further information about aspects such as time spent and actions performed would flush out the potential roles of librarians in regards to institutional repositories and also inform others in the profession about the realities and expectations of being involved in these efforts.
Additionally, the sample of librarians surveyed could be extended to other disciplines. Public health has a variety of concentrations and specializations that students can emphasize in when receiving their master of public health degree. Those with MPH degrees are trained to be practitioners in specific fields and this reality could contribute to the diversity of types of literature as well as subject areas that are deposited in institutional repositories as indicated by the survey results. However, in order to make this claim with any sort of confidence, the research of this paper – specifically the methods - would have to be extended to other disciplines to determine librarian involvement, types of literature deposited, and subject areas of the deposited literature. After this information is collected, further analysis of librarian involvement can occur.

This paper provides a foundation for continued exploration into the roles of librarians in relation to university-based institutional repositories. In efforts to increase and promote the content of institutional repositories, collaborations and partnerships must be sought out and cultivated in order to ensure that the scope of the repository is indicative of the scholarship that is taking place at a university. Librarians can serve as collaborators and partners for institutional repositories and, through their interactions with university members, can encourage the contribution and dissemination of repository content. In order to do so, librarians must consider potentially novel roles and actions to undertake – some of which may fall outside traditional understandings of librarianship. Further exploration into this area of research will shed light on the practicality and sustainability of projected librarian roles and actions related to institutional repositories. In turn, continued examination of this topic will ideally result in advances in the relationships between institutional repositories, librarians, and university communities at large.
References


Appendix - Survey questions and format

Survey title: Exploratory survey of public health librarians and institutional or digital repositories

1) Have you participated in efforts to deposit MPH student literature into your university's institutional or digital repository? (single answer)
   a. Yes (survey will skip to #3)
   b. No (survey will skip to #2)

2) Do you have plans to participate in efforts to deposit MPH student literature into your university's institutional or digital repository? (single answer)
   a. Yes (survey will skip to #4)
   b. No (survey will skip to #9)

3) What kind(s) of MPH student literature have been deposited into your university's institutional or digital repository as a result of this effort? (multiple answers)
   a. Theses
   b. Journal Publications
   c. Presentations (e.g. PPT slides)
   d. Posters
   e. Other (please describe) – text entry
   *survey will skip to #5

4) What kind(s) of MPH student literature will be deposited into your university's institutional or digital repository as a result of this effort? (multiple answers)
   a. Theses
   b. Journal Publications
   c. Presentations (e.g. PPT slides)
   d. Posters
   e. Other (please describe) – text entry
   *survey will skip to #6

5) What areas of study within the MPH program does the student literature come from? (multiple answers)
   a. Biostatistics
   b. Epidemiology
   c. Global Health
   d. Health Behavior
   e. Health Policy and Management
   f. Maternal and Child Health
   g. Nutrition
   h. Other (please describe) – text entry
   *survey will skip to #7
6) What areas of study within the MPH program will the student literature come from? (multiple answers)
   a. Biostatistics
   b. Epidemiology
   c. Global Health
   d. Health Behavior
   e. Health Policy and Management
   f. Maternal and Child Health
   g. Nutrition
   h. Other (please describe) – text entry
   * survey will skip to #7

7) Overall, what is your interest in working with MPH students to deposit their literature into your university's institutional or digital repository? (single answer – Likert scale)
   a. Very Interested
   b. Somewhat Interested
   c. Neutral
   d. Somewhat Uninterested
   e. Very Uninterested
   * survey ends

8) If presented with an opportunity, how interested would you be in working with MPH students to deposit their literature into your university's institutional or digital repository? (single answer – Likert scale)
   a. Very Interested
   b. Somewhat Interested
   c. Neutral
   d. Somewhat Uninterested
   e. Very Uninterested
   * survey ends