The Librarian as Researcher:

Support for Research and Modeling a Research Mindset

I remember the revelation quite clearly. I was on the phone with my mother, describing the events of the preceding weekend. I had been invited to speak before a group of publishing executives at the National Press Club in Washington, D.C. The invitation had come somewhat last minute, so I had not had the time to really think about what I was getting myself into, or to let it sink in. In truth, it was my first experience with complimentary airfare – the very concept that someone would fly me in just to hear me talk was completely foreign! And then there was the hotel – a far cry from the usual budget hotels I was used to staying in at conferences. Feeling more than a little like a fish out of water already, I was honored – and slightly terrified – to find that I would be sitting next to the Acting Surgeon General of the United States of America. And speaking right after him! How do you make small talk with the surgeon general? How do you follow up the surgeon general's plea for greater access to medical information for all mankind with a talk on institutional repositories?

If I had thought too much about these things at the time, I might have spent the whole day hiding in the bathroom. But I was focused on my mission at the time, and my relief afterward. It wasn't until my mother asked a simple rhetorical question on the phone that day that I really began to reflect on the meaning of it all. "Cat," she said, "how many 28-year-olds do you know who have spoken at the National Press Club, following the surgeon general on the program?"

The truth is, I didn't know any. I didn't really know anyone in my profession who had received so many great opportunities at such a young age. Why was that, I wondered? Why did I have a full dance card of speaking engagements lined up all over the country, when so many young librarians are happy to attend even a regional event? While tempted to chalk it up to my own abilities, dedication, and efforts, I soon realized that the highlights of my career were really not much of my own doing. In reality, none of it would have been possible without the support of my supervisor. He got a ball rolling that didn't stop at the door to the library, or the edge of campus, or a regional event, or even the National Press Club. That ball, and my career, have the momentum to keep on moving uphill, thanks largely to him.

The Beginning, or Hiring Practices for the 21st Century Library

I came to the University of North Carolina at Greensboro as the University Libraries' first Digital Projects Coordinator in October 2005. The position, which reported to the head of Electronic Resources and Information Technology, was something of an enigma to me, since my employment in similar positions elsewhere had always been in archives. Being neither a librarian nor an IT specialist (I hold an MA in Public History with a concentration in Archival Administration), it was an unusual fit to begin with. And because it was a new position for the library, there was no precedent for what I would be doing – only a vague paragraph in a job description and the hopes that whoever was hired would know what "digital projects people" do.

In hindsight, I am very thankful that UNCG was willing to think outside the box a bit when it came to hiring me. As colleges and universities increasingly create interdisciplinary programs which blur the lines of traditional academic disciplines, so too are academic libraries becoming a place where customary, well-defined fields and functions are blended, stretched, and rethought. The same is occurring in library schools, where curricula now regularly incorporate courses in information science, instructional technology, and all manner of technical skills, while providing training in emerging cross-disciplinary niche fields such as metadata, digital curation, scholarly communications and digital publishing, assessment, usability, data services, and repository architecture. Rather than requiring an MLS degree or demonstrated coursework in computer science, UNCG sought a digital projects coordinator with a particular skill set, regardless of whether those skills were acquired in school, on the job, or just "picked up", and regardless of whether past experience was in cataloging or acquisitions or systems or archives.

More importantly, as I learned later, my future employer put a premium on character and personality, purposely advertising a job that was largely free of specific skill and experience requirements so as to cast a wide net. Demonstrated aptitude, ability and eagerness to learn new things, flexibility, accomplishment, and proven mastery of something – even in an ancillary field – were seen as critical for new professional library hires. They were characteristics which would translate well to any library position, and will become increasingly crucial as rapidly changing technology dictates changes in

library operations. As libraries face an uncertain future, one in which it is hard to predict what we might be doing next semester, let alone next decade, it makes sense that tomorrow's leaders will be those that have a solid foundation of knowledge, talents, competence, and initiative with which to embrace the new services, technologies, and challenges that will surely come.

My employer acknowledged that character is sometimes a better indicator of job performance than years of experience, and that the right fit for a position may have more to do with teamwork mentality, enthusiasm, and creativity than a checklist of qualifications that might be obsolete tomorrow. In particular, my supervisor later confided that chemistry is probably the most important quality he looks for in applicants. "A great working environment," he notes, "leads to higher productivity in the long run."

Secondly, I am grateful that I was able to further tailor what was a somewhat vague description of my duties to my particular interests and skills. As a new position in a cross-departmental field, the intentionally generic job description left the day-to-day details to be fleshed out by the new hire. My supervisor then gave me the latitude and even encouraged me to pursue activities and research in areas of personal interest to me, even if they were not specifically noted in my official responsibilities.

The Boss, or Characteristics of a Great Manager

It did not take much time to realize that the head of Electronic Resources and Information Technology and assistant director of the library – my supervisor – was different from most of my bosses in the past. His approach to leadership and to managing library resources was decidedly distinctive. For one thing, he frequently included the whole department in decision-making. There were many times we would all sit around a table and discuss a new initiative that the library administrators were contemplating, or a service some other library department was considering. He would ask for brainstorming on the strategic direction of the library, or feedback on a new technology or hot topic in the library world and how it might affect UNCG. We regularly got summary reports of his meetings with other administrators and were kept apprised of campus-wide technology initiatives. To be certain, there was no information hoarding, and he always gathered as much concrete information and as many informed opinions as possible before making an important decision.

Who is he? Tim Bucknall, a librarian, woodwright, chef, artist, soccer player, and "mover and shaker" – at least according to the *Library Journal* in 2006. Tim is well-known in certain circles as a forward-thinking, innovative technologist, librarian, and administrator, and his efforts have put UNCG on the map. Among other achievements, Tim is the inventor of Journal Finder, a home-grown integrated search interface and link resolver that competes with commercially-created products like Serial Solutions. After successfully implementing Journal Finder at UNCG, he shared it with others, with over 40 colleges in 6 states now subscribing to the service. Tim regularly mines aggregated Journal Finder usage data for information which could be relevant to library operations,

including subscription purchases, improvement of the interface, or streamlined functionality.

Bucknall is also the brains behind the Carolina Consortium, a group of 60 libraries in the Carolinas convened to leverage their combined buying power. The deals negotiated with publishers by Tim for the consortium saved members a combined $80 million dollars in 2005 alone. Begun as a group of 12 schools participating in 4 deals, the Carolina Consortium now functions as one of the nation's most efficient "Big Deal" negotiators, with the work of less than 1 full time employee – himself – resulting in savings currently upwards of $100 million a year. Tim pours over every detail of every deal and crunches all the numbers so as to get the best total product for the best price. The result of this work, according to Bucknall, is a project that "exceeded far beyond expectations in all measures of volume," and continues to do so.

These two most heralded projects, as well as many of the smaller, lesser known ones, have several important things in common. They all spring from Bucknall's desire to take a data-driven approach to decision-making, his belief in the value of metrics and assessment, and his embrace of new technologies and inevitable change. Time and time again, I have seen him analyze data sets, looking at usage statistics and dollar amounts, making graphs and charts, seeking concrete evidence of trends. If it can be quantifiably measured, Tim wants to see the data before coming to a conclusion. If the best way to address the results means going against the grain or suggesting major adjustments to the status quo, any fear of change always yields to his drive for improvement and efficiency.

Tim's advocacy of "the facts, just the facts" has made him a popular speaker. A perusal of the 90-some publications and presentations he has authored in the last fifteen years reveals titles such as "Cost-per-use Data for Electronic Resources," "Responding to the Results of the Journal Finder Usability Test," "Getting More Out of your Electronic Collections Through Studies of User Behavior," "Evaluating the Effectiveness of Sharing E-Journals via a Consortium," and "Data-Driven Approach to E-Journal Acquisitions." His evidence-based approach, still a leading edge concept in the library world, has had important ramifications for those of us fortunate enough to work for him.

The Numbers, or The Rise of Assessment and Evidence-Based Librarianship

Although use of measurements and statistics is a hot topic in the library and academic realms, it is still somewhat of a new trend, and one that is rarely utilized to its full potential. Simply put, Tim was espousing assessment long before it became a buzzword in higher education or academic librarianship. According to the libraryassessment.info blog, the term encompasses "any activities that seek to measure the library's impact on teaching, learning and research as well as initiatives that seek to identify user needs or gauge user perceptions or satisfaction, [with] the overall goal [being] the data-based and user-centered continuous improvement of our collections and services."[1]

The concept of quantifiably measuring and benchmarking libraries and their services has a history that dates back at least to 1908, when James Gerould began collecting statistics,

and became more visible in the 1960s when the Association of Research Libraries (ARL) began publishing his data and created its own Statistics and Measurement Committee. In 1994, the ARL committed to having in-house capability for collecting and analyzing statistics and hired its first full-time Statistics and Measurement employee. The practice of library assessment saw a huge boost with the introduction of the SERVQUAL survey by ARL in 1999. The following year, plans were made for its successor, LibQUAL, with the symposium's announcement of this new tool prophetically entitled "The New Culture of Assessment in Academic Libraries." By 2003, over 308 institutions were participating in the survey, and in 2007, the 1000th library used LibQUAL to quantitatively measure library services. The success of LibQUAL and the growing popularity of assessment has led to the creation of DigiQUAL, a project which repurposes the existing protocol to specifically address the services provided by digital libraries.[2]

Of course, the ARL has been a leading force in the push to "measure the continuing and the emerging realities of the modern research library."[3] Initiatives of the ARL Statistics & Measurements department include annual member surveys addressing more traditional measurement of collections, expenditures, staffing, and salaries; SPEC surveys; the Measuring the Impact of Networked Electronic Services (MINES) online survey, and, in 2005, the launch of the Effective, Sustainable, and Practical Library Assessment service, in which Visiting Program Officers Steve Hiller of the University of Washington and Jim Self of the University of Virginia perform on-site consultations for a small fee. The year 2006 also saw the commencement of an annual library assessment conference and a companion blog, both supported by the ARL.

Closely related to the rise of library assessment is the emergence of evidence-based librarianship, or EBL. In a movement concurrently arising with the ARL's launch of LibQUAL and announcement of a "new culture" in libraries in 2000, a call for greater evidence-based librarianship was issued by the Medical Library Association (MLA), which that year created an Evidence-Based Librarianship Implementation Committee (EBLIC). The practice of EBL was soon adopted by librarians of all types, and defined as "a means to improve the profession of librarianship by asking questions as well as finding, critically appraising and incorporating research evidence from library science (and other disciplines) into daily practice. It also involves encouraging librarians to conduct high quality qualitative and quantitative research."[4] In 2001, a group of primarily health science librarians held the first EBL conference in Sheffield, UK, with a fourth biennial conference convened at the University of North Carolina in 2007 to meet the "increasing interest in using the best available evidence to improve library and information practice in all types of libraries."[5] In 2006, *Evidence Based Library and Information Practice* was launched, the first journal dedicated to EBL and "how it affects the decisions we make, how we look at and perform research, and how it allows us to make more informed decisions based on the best available evidence."[6]

The approaches described above are clearly reflected in what I observed from my supervisor. From him, I learned that the tools of library assessment could be applied not only to information literacy learning outcomes and goal-oriented strategies, but also to larger issues of accountability, transparency in expectations and performance, and return

on investment. I watched as he compiled research that could help direct the library's strategic future, its planning for and use of physical space, its financial allocations, and its concrete goals for improvement of the library's physical and virtual resources. I saw his commitment to assessment as part of an essential ongoing process, not just a biannual study done in a vacuum. I witnessed concrete examples of evidence-based librarianship at work – and I liked it.

The Study, or My Experience in Evidence-Based Librarianship

My observations of Tim's data-driven approach and his management style were a formative influence on my career. Although as a lawyer's daughter, rational decision-making based on hard evidence was somewhat pre-programmed in me, seeing first-hand how effective quantifiable measurements, documentation, and statistical data could be in libraries was simultaneously eye-opening and totally predictable. In an environment in which some librarians still use assumptions, presumptions, politics, gut feelings, and a copycat mentality to make decisions, it was refreshing to know that under Tim Bucknall, there was reason, and a reason, behind the rhyme.

So when I was appointed to the library's Institutional Repository (IR) Task Force in late 2005, it seemed only natural to me that this group would approach IR implementation at UNCG in a similar manner. I was assigned to the task force primarily because IRs are by definition digital, and I was the digital projects coordinator, and also because I had some previous experience in open repositories and metadata. There was never any intention of

the IR becoming a digital project which I would manage; many members of the task force were aware even then that the most crucial elements an IR – content recruitment and description – probably were best handled by the library liaisons, catalogers, and the scholarly communication officer.

Nevertheless, as an IT department representative on the committee, I delved into whatever research I could find on the more technical aspects of IR implementation. As I looked at specifications of potential platforms – operating systems, supported file formats, interoperability, authentication and administrative access control, metadata, storage and backup requirements, and the like – I realized I really needed more data on which to base a recommendation. I wanted to find out what current users thought about those specifications and how they rated certain functions. In fact, I wanted to know just how many people were implementing these IRs in the first place, and who they were. So I went looking for answers in true evidence-based fashion.

In Fall 2005, discussion of IRs usually revolved around three applications: the open source platform DSpace, from Hewlett Packard and MIT; free software GNU Eprints, developed at the University of Southampton, UK; and Digital Commons from commercial vendor ProQuest (now managed by bepress). I decided that my research would begin with the compilation of a list of users for each; before I could start contacting implementers to find out what they thought, I first had to figure out who they were. Perusing the websites of each of these applications, it did not take long to find lists of subscribers or user groups, and patterns quickly emerged. Eprints user institutions

were largely located in Europe and the British Commonwealth. The list of DSpace implementers included more American libraries but was surprisingly short. Likewise, Digital Commons subscribers seemed to be largely smaller American institutions, and there were far fewer of them than I had expected.

My interest was immediately sparked. Despite repeatedly hearing about how IRs were the new "it" thing for libraries, reading about their importance in literature, and essentially operating under the widely held impression that "everybody was doing it," even a cursory look at OpenDOAR[7] or lists of libraries using specific open access (OA) repository platforms revealed that this really wasn't the case – at least in America. I wondered where these ideas I kept hearing were coming from, and what concrete evidence one could gather to document the true status of IRs in the U.S. Although originally seeking only a list of contacts who might answer questions about their chosen IR platform, I realized that this list might also be used in other ways, including as a measure of the popularity, or lack thereof, of institutional repositories in America.

Thus, from a small question – what IR platform should we use? – sprang a larger, much more difficult question: why should we have an IR at all, if they aren't succeeding as everyone seems to think they are? I knew that for our IR task force, and especially for my supervisor, answering this question meant making a persuasive argument based on data and documentable facts. I also knew that to take a data-driven approach to this decision we were going to need a lot more data than a simple list of IRs in the U.S. We needed to know more about the schools that had them, and to look for trends in who had them and

why. We needed to know how many items were in IRs, and what types of materials they tended to be. Put simply, we needed to know a lot of things that fell outside the scope of my duties as a digital project coordinator or my responsibilities with the IR task force.

To be honest, I spent a considerable amount of time those first few days formulating my study and researching the initial data before informing Bucknall of my activities. As a new employee, I was unsure about whether or not this kind of research was an acceptable on-the-clock activity for a non-tenure-track faculty member, especially since it was not an assigned project and could be viewed as irrelevant to my daily duties. But more importantly, it was largely because I found the research so engrossing that I forgot about almost everything else, including letting my supervisor in on what was going on. I knew he would be interested in and supportive of what I had already done, but was less sure what he might say about the future of my little project. Because I had a much bigger vision for what that little project might become.

It should have come as no surprise that my supervisor shared my vision. When discussing the activities of the IR task force with Bucknall, he immediately shared his hunch that many American library administrators were basing their enthusiasm for IRs on anecdotal information and hearsay, caused partially by the dearth of applicable "real data" to go on. We each suspected that the success and popularity of institutional repositories in Europe was being applied universally, since there was virtually no literature specific to America. What did exist seemed to apply mainly to MIT, a school with which we at UNCG had

little in common. The remainder of American authors primarily addressed very general topics such as what IRs were and the theoretical benefits of having one.

One highly notable exception, however, was a recent article by Clifford Lynch and Joan Lippincott, both from the Coalition for Networked Information, which reported the results of a survey sent to 205 American colleges and universities the previous winter. Published in the September 2005 issue of *D-Lib Magazine*, "Institutional Repository Deployment in the United States as of Early 2005" reported, among other things, the existence of only 41 IRs (mainly in large research universities), tracked the types of content currently contained in them, acknowledged "confusing relationships at many institutions among digital libraries, digital research collections, and…institutional repositories," and called for analysis of repository size as a evaluative metric.[8] The article seemed to validate our hunch that perhaps IR success in America was being overestimated, that perhaps European efforts were not necessarily germane to IRs in American academe, where OA mandates didn't exist and where faculty culture seemed more entrenched in traditional publishing models. The article undoubtedly helped me understand the pressing need for more research and just how much data was out there waiting to be gathered.

I knew I wanted to be the gatherer. Instead of counting IRs by sending out surveys in the manner of Lynch and Lippincott, I wanted to go hunting for them – every single one of them. I wanted to decrease the potential for confusion over what was or was not an IR by creating and applying my own definition. I wanted to know what, if anything, these IR

implementers had in common, and I wanted to know exactly how many items were in their repositories. Fortunately for me, Tim did too. He immediately and unquestionably saw the value of this type of research not only for our university's IR Task Force, but for libraries all over the country faced with the same decisions. Wanting to "weigh the potential costs of an IR against the probability of success," he wholeheartedly encouraged me to go in search of any statistical data which might serve as predictors of success.

The Students, or Reasons to Use Research Assistants

In hindsight, I vastly underestimated the amount of time this research would take. Starting with IRs that I found on web pages for DSpace and Digital Commons, I had already created spreadsheets listing all the institutions using each. However, finding all the data I wanted about these institutions quickly proved problematic. And then there was the issue of tracking down institutional repositories running on different platforms or simply not listed on the various platform websites. Worse, the list of criteria with which to compare institutions with IRs was growing. My simple spreadsheet listing the total student body size, number of faculty, ARL membership, and *US News and World Report* ranking of universities soon grew to include additional categories such as physical location, number of undergraduate and graduate students, Carnegie Foundation classification, and American Association of Universities membership. My initial two or three day estimate for this data-gathering phase was rapidly becoming untenable. Realizing that I wasn't going to get this research done without help, I returned once again to Tim Bucknall. Grateful that he had allowed me to begin this research in the first place,

and that he believed in its value, I was hopeful that letting my undergraduate student assistants double as research assistants for a few days wouldn't be out of the question, and it wasn't.

I absolutely could not have completed this project without the help of my student assistants. Hired primarily to scan unique archival documents and photographs, they threw themselves into this new project with enthusiasm. Counting the number of items in an IR didn't seem as tedious for the students as I had found it to be, and they came to look forward to an "IR day" as a welcome break from their usual routine. Several students were publicly credited for their work on the project, a nice addition to any recent graduate's resume. Even more importantly, I was proud that they came to feel very personally involved in the project, discussing amongst themselves which universities were "lame" because they hadn't added items since the last count, and exclaiming praise or surprise over those that posted large growth. The student assistants asked increasingly thoughtful questions and progressively demonstrated critical thinking about the data they were gathering. I would overhear them discussing potential explanations for universities that were statistical outliers or pointing out a trend amongst a small group of colleges.

When asked what they learned from participation in the project, I was surprised that several of my research assistants mentioned open access and new models of publishing, a cause and theme which always framed the study, but ones I was not aware my students were picking up on. Another answer, and a more expected one, revolved around research methods. Several noted what they learned about "how to conduct research" and "sources

and technologies available when doing a project like this," skills which hopefully will prove useful in future classroom assignments. Finally, and somewhat humorously, at least one student commented on what she learned about "time frames involved in project planning" – perhaps because this particular project seemed always to require more time than was initially planned for.

I am fortunate that my boss felt that having students do some of this work for me, even if it wasn't in their job descriptions, was justifiable. He could have pulled the plug on the project at any point, deciding enough library time and expense had been put into research unrelated to digital projects, but he didn't. He could have asked for a firm time estimate or cut-off date, but he didn't do that either. What he did do is remain supportive as my one-time-only data gathering project evolved into a year and a half of monthly data mining, requiring several students to devote a full day every month to the project. The project had grown to include examination of incremental growth rates which could only be documented by multiple item counts of every IR in America, as well as the prevalence of specific formats among these items, which similarly required tedious and time-consuming analysis of IR contents.

The Reward, or Benefits of Research Projects

As word about my study spread throughout the library community, it was generally greeted with both curiosity and enthusiasm. Some wondered why I would undertake such a project, since I was not tenure-track and thus didn't have to. Some simply wanted to

know more about what IRs were and why they were being talked about so much at library conferences and workshops. Others wanted to know how soon I could report my findings so they could "save the date," a response which both terrified and flattered me.

Once again, much credit has to be given to my colleagues in the Electronic Resources and Information Technology department, all disciples of our leader Tim Bucknall, for spreading the word about my forthcoming data set. I was quickly put on the program at the Charleston Conference, a large gathering of librarians and vendors known for introducing fresh ideas and producing lively discussion. Despite being a complete unknown, I was given my own session and assigned to a room with a 100-person capacity – and all of this before any part of my data set had been analyzed. That would have to wait until a week before the conference, in order to have a full twelve months of numbers to report.

I must admit I was very pleased with the capacity crowd that attended that first presentation. I surely benefited from all the buzz surrounding IRs in fall 2006, and also from all the promotion of my session by my many UNCG colleagues in attendance. In the end, most of my data did not shed a favorable light on the IR deployment in America up to that point, which I feared might deem me *persona non grata* for the rest of the conference. I was also concerned that 45 minutes of charts, graphs, and numbers would be excruciatingly boring and mind-numbing to the poor unwitting souls who attended.

Instead, my presentation was met with overwhelming enthusiasm and interest. Many positive responses came from those who had always suspected the trends I reported, but were grateful for evidence to take back to their own libraries. Some were stunned and even angry that the reality of IRs did not match with the hype, while others, including IR proponents, were at least curious to hear more about IR metrics and benchmarking. A line of people formed, waiting to ask questions and find out what more I could tell them. I left that conference room in Charleston with a stack of business cards and invitations to do just that.

From that point forward, each event or presentation spawned a request for another. From an attendee at the Charleston Conference came the National Press Club event invitation. After that, I went on to the International Open Repository Conference in San Antonio, where I met Chuck Thomas and Robert McDonald, who were involved in a research project that related closely to mine. From that meeting came a two-part article summarizing our findings, which, like the article that first opened my eyes, was published in *D-Lib Magazine*.[9] News of that forthcoming article led to presentations in California, Texas, and throughout my home state of North Carolina, where I enjoyed a reputation as a leading expert on IRs and was unanimously elected chair of a statewide advisory committee on their deployment.

Once again, I must give credit to the library administration at UNCG, which generously supported this extensive travel. For invited engagements, reimbursement for expenses not covered by honorariums was supplemented by my library's travel fund. My supervisor

and the University Librarian have both showed a tremendous commitment to funding travel for any employee on a conference program, regardless of the presenter's status as support staff, non-tenure track professional, or tenure-track librarian. This generous financial support allowed me to personally present my research all over country, long before it was made freely accessible to anyone in the world through publication in an OA journal. By September 2007, when my many of my statistics were finally made available through publication, I had made a something of a name for myself as well.

Epilogue

In the end, Bucknall decided that, given my statistics, the chances that UNCG could recruit a sufficient quantity of IR contents to justify a substantial commitment of resources were not promising. Instead, he proposed creating another home-grown application as part of a consortium of peer institutions, something that could be done much more economically than implementing any of the platforms I originally set out to evaluate, and something which could be easily scaled up if our IR program was met with great success. My article on IRs was one of the first submissions to that repository.

For me, however, the decisions concerning institutional repository deployment were less important than how those decisions were made. Through my research, I knew that I had given my supervisor, and others like him around the country, reliable data on which to evaluate current and future IR initiatives. I knew that I had given my student assistants a learning opportunity which would serve them well in future classroom or office

environments. And I knew that I personally had been exposed to people and places which would provide the basis of a network from which have come other projects, invitations, and opportunities. I also know that most of the credit for all of this lies with a supervisor who inspired me, encouraged me, and supported me through the project that got me on the map, at the library for which he did the same.

NOTES

[1] http://libraryassessment.info, quoting from Pam Ryan, "EBL and Library Assessment: Two Solitudes?" *Evidence Based Library and Information Practice* 1, no. 4 (2006) 78.

[2] More information is available at from http://www.libqual.org/ and http://www.digiqual.org/.

3 ARL Statistics and Assessment Committee web page, http://www.arl.org/stats/aboutstats/statscmte.shtml.

[4] Ellen Crumley and Denise Koufogiannakis, "Developing evidence-based librarianship: practical steps for implementation," *Health Information and Libraries Journal* 19, no. 2 (2002) 61–70.

[5] EBLIP4 home page, http://www.eblip4.unc.edu/index.html

[6] Lindsey Glynn, Editorial, *Evidence Based Library and Information Practice* 1, no.1 (2006) 1.

[7] The Directory of Open Access Repositories, www.opendoar.org.

[8] Clifford Lynch and Joan Lippincott, "Institutional Repository Deployment in the United States as of Early 2005" *DLib Magazine* 11, no. 9 (Sept. 2005), http://www.dlib.org/dlib/september05/lynch/09lynch.html.

[9] Chuck Thomas, Robert H. McDonald, and Cat S. McDowell, "Repositories By The Numbers," *DLib Magazine* 13, no.9/10 (Sept. 2007) http://www.dlib.org/dlib/september07/mcdonald/09mcdonald-overview.html.