HYPOTHESIS

THE NEWSLETTER OF THE RESEARCH SECTION OF MLA

HYPOTHESIS. The Newsletter of the Research Section of MLA

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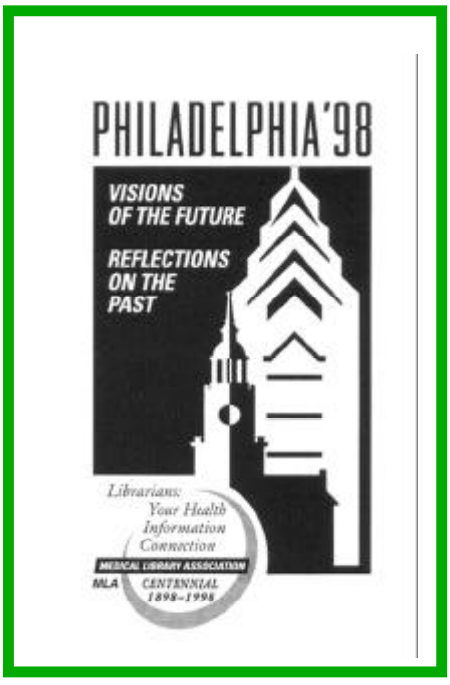

Research Section Chair's Message

by Julie McGowan, PhD

Following MLA's Centennial meeting, the Research Section will be co-sponsoring an exciting symposium to help set a collaborative research agenda for the next century. Following is part of the announcement:

Health Informatics Research Agenda for the 21st Century

MLA's Research Section and the American Medical Informatics Association (AMIA) will hold a joint one-day symposium at the conclusion of the MLA Centennial Celebration and the beginning of the AMIA Spring Congress. Knowledge is the constant in the work of both medical librarians and medical informaticians. There are commonalities of interest. However, the approaches to knowledge creation, management and dissemination have frequently been different. With health care emphasizing a team-based approach to medical management, this Symposium will offer participants the opportunity to frame a collaborative health informatics research agenda for the next century.

The theme of the AMIA Spring Congress is "Bringing Knowledge to the Point of Use." In years past, this knowledge was passed from teacher to pupil as oral tradition. With the widespread availability of printing, medical libraries became the repository of this accumulated understanding and librarians gradually assumed the duties of gathering, collating and organizing an increasingly complex wealth of learning. Clinicians traveled to the library to study and assimilate the information there, returning to their duties with expanded awareness and better understanding. Patients were passive recipients of the judgements and directions of the clinician.

Since research and clinical science are the disciplines that mold the knowledge that is managed by both medical librarians and medical informaticians, the Joint Research Symposium will offer the opportunity for new ways of looking at issues of common interest. The goal of the Symposium is to develop a Health Informatics Research Agenda for the next century and establish areas in which the two disciplines can begin to collaborate to advance knowledge. The morning session will consist of nationally recognized invited speakers.

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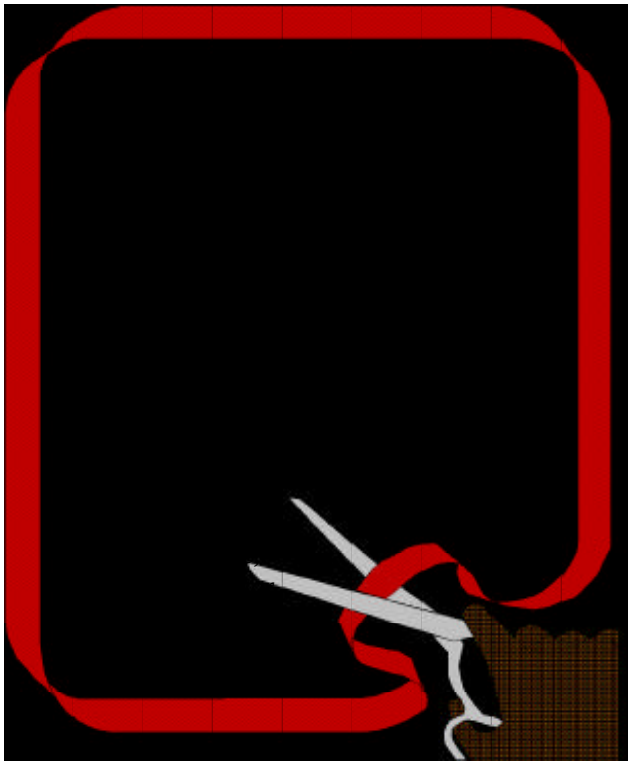
The afternoon will be devoted to small group sessions focusing on topics of mutual interest. The first part of the afternoon will consist of panels with contributed and invited papers about the specific topics. The second part of the afternoon will give participants the opportunity to craft future directions for collaborative research. The Symposium will conclude with summary position papers which will provide a framework for future research directions.

Examples of topics which will be examined are: the "Virtual Library" and access to knowledge [Will Medline as we know it survive in the 21st century?], Decision support in clinical information systems [Can we afford it; can we afford not to?], Consumer education and shared medical decision-making [asset or pipe dream?], Informatics education of health care providers [Who is responsible and what needs to be taught?], The Internet as a Virtual consultation room [Does telemedicine portend the future for everyone?].

This is an opportunity for the entire section to actively participate in setting one of the most dynamic research agendas for the future. I hope that everyone will watch for the call for papers and will submit abstracts targeting one or more of these topics, or, as the Symposium suggests, collaborate with others in your institution to work in one of these areas. In addition, for those who do not wish to present, please consider extending your stay in Philadelphia to take part in this exciting program and work with your colleagues to craft a collaborative research agenda for the next century.



HYPOTHESIS. The Newsletter of the Research Section of MLA

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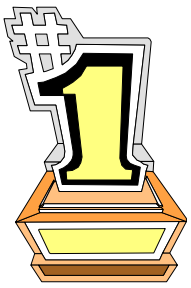

First Annual SCC Research Award

A team of librarians from the UT Southwestern Medical Library from Dallas received the first annual SCC Research Award during the October 1997 South Central Chapter of the Medical Library Association's Annual Meeting in Albuquerque.

Kathryn S. Connell, Mitchel Walters, Nancy Gotcher, Lucy A.Vasquez, and Eric Zeidler won the SCC Research Award for their contributed paper "Measuring the Quality of Service in Document Delivery". The researchers employed the SERVQUAL survey technique that involves a "gap analysis" between customer expectations and customer perceptions. The researchers are among the first to employ SERVQUAL in an academic health sciences library environment, although SERVQUAL has been used widely in commercial enterprises.

The judges ranked this contributed paper highly on all four major evaluation categories: design, reliability, presentation, and validity. The judges specifically praised this paper on its relevance to other health sciences librarianship, the quantitative methodology , the visual aspects of the project, and the degree of honest objectivity of the researchers in assessing specific problem areas identified by the results.

The judges included Ann Brooks, Dottie Eakin, Eileen Stanley, Robert Wood, and Jon Eldredge. All judges were members of the SCC Research Committee, chaired this year by Ann Brooks. In presenting the award, Jon Eldredge expressed the hope that the Research Award will generate interest in research among SCC members, grant recognition to the high-quality research projects in the region, and meet MLA's sixth priority of encouraging research.

Although the judges had difficulty selecting a final winner, they made every effort to focus their attention upon the content rather than the form of the presentation. Jon Eldredge praised all poster session and contributed paper participants for offering an excellent array of projects.

Inquiries or comments about this project should be directed to Connell (kathryn.connell@email.swmed.edu) or Walters (mitchel.walters@email.swmed.edu). The judges' evaluation form will undergo minor revision during the year ahead, but interested readers may obtain a copy of the form used at SCC 97 from Jon Eldredge at the UNM Health Sciences Center Library in Albuquerque (email: jeldredg@biblio.unm.edu). The SCC Research Committee welcomes inquiries and encourages SCC members to consider submitting research reports at SCC 1998 in Fort Worth.

... submitted by Jon Eldredge, PhD,
UNM Health Sciences Center Library

MLA Research, Development and Demonstration Project Grant

Doing Research?

Need Funding?

Grants in the range of $100 to $1000 are available from the Medical Library Association (MLA) Research, Development and Demonstration Project Grant Jury; more than one grant may be offered in a year.

Grants provide support for projects that promote excellence in health sciences librarianship. Applications must show established methodology and viable research design. Applicants must hold a graduate degree in library science, be a practicing health sciences librarian with at least two years professional experience, and be a citizen or permanent resident of the United States or Canada; MLA individual members are preferred. Completed applications, including three references, are due December 1.

For further information contact Beth Ruddy, MLA, at (312) 419-9094 or mlapd@mlahq.org; or Trudy Landwirth, Chair, Research, Development, and Demonstration Project Grants Jury, University of Illinois at Chicago, Library of the Health Sciences (Peoria), at (309) 671-8488 or trudyk@uic.edu.

... submitted by Marion Sabella

Evidence-Based Librarianship
A Commentary for HYPOTHESIS

by Jon Eldredge, PhD

The term "Evidence-Based Librarianship" recently has crept into the vocabulary of medical librarians with an interest in research. Some refer to the term wistfully while others who view it merely as a passing fad refer to it with cynicism. Yet, have we even defined Evidence-Based Librarianship? MLA President Rachael Anderson referred to librarians needing to develop their own version of "evidence-based practice" (1) in her May 1997 inaugural speech, thereby elevating its prominence. President Anderson's reference, however, certainly serves as an implicit challenge to MLA members, particularly those active in the Research Section to clarify the meaning of "EBL" and to point the direction for implementing this ambitious challenge.

Origins of Evidence-Based Medicine (EBM)

Evidenced-based librarianship obviously traces its origins to the slightly more established concept of "Evidence-Based Medicine" or "EBM". In 1992, its originators offered the following core definition for EBM:

Evidence-based medicine de-emphasizes intuition, unsystematic clinical experience, and pathophysiologic rationale as sufficient grounds for clinical decision making and stresses the examination of evidence from clinical research (2). Librarians naturally have been called upon to lend their expertise to assist physicians in finding the evidence needed to support EBM. This early contact at the beginning of a new movement in medicine probably made it inevitable that librarians would seek to incorporate an adapted version of EBM into their professional repertoire.

Most medicine, until relatively recently, was not Evidence-Based Medicine. Whenever my library receives an old medical textbook from any era ranging from the 1800s to the 1960s, I am struck by the fact that much of medical practice in those early days was based primarily upon the physician author's cumulative experience. Beginning in the 1940s and 1950s, though, one starts to find more scientific approaches described in the leading medical journals such as *JAMA* or the *New England Journal of Medicine*.

During the early days methodologies were largely descriptive. In medical textbooks and major journals one reads precise descriptions relating mainly to pathology, anatomy, histology, and basic lab analyses. Single clinical case studies predominate. One author reported on his experience with "Removal of over 1300 foreign bodies from a stomach"(3) which makes for interesting reading but reflects little methodological rigor. Some creative authors would link a series of case studies (n=25) together to increase their power of generalization.

Although current trends in medicine point toward increased EBM approaches, it would be incorrect to characterize medicine as a pure EBM discipline. In this regard, researchers in at least one specialty have documented the dearth of rigorous EBM approaches found in articles published within their core journals (4).

Three factors seem to have contributed to the evolution of medicine toward EBM. First, a variety of new imaging, laboratory, and surgical technologies encouraged fresh inquiries. Second, peer review containing a heavy dose of scientific skepticism may have increased the quality of articles published in the most widely-read medical journals. Third, and most importantly, we can observe the integration of the scientific method into approaches toward testing propositions previously based mainly upon physicians' cumulated experiences.

Evidence-Based Librarianship (EBL)

There are many parallels between the development of EBM, as observed through historical patterns in the medical literature, and trends currently unfolding in medical librarianship. Although we can share a chuckle with our physician colleagues while reviewing the limitations of our research endeavors in our respective disciplines, we need to recognize that the medical profession has positioned itself far better since the 1970s than has professional medical librarianship. The reasons for our disadvantaged position may have far less to do with our lack of numbers or money—explanations that the reader probably already has started to formulate while reading this commentary.

The major contrasts between EBM and the current situation in medical librarianship appear to be related primarily to differences in our professional values. First, clinical medicine, in spite of perhaps its rudimentary efforts at the descriptive level during previous eras, has placed great value upon research. This emphasis has found its most concrete application in the many journals published within medicine. Even physicians who never conduct research still appreciate and benefit from the results reported by their research colleagues. Second, clinical medicine repeatedly returns its attention to questioning old "truths". Some researchers in clinical medicine actually seem to relish in revising or even dispensing of these old "truths" when they can find enough contrary evidence. In this way, clinical medicine forever re-invents itself.

Evidence-Based Librarianship (EBL) therefore cannot simply consist of grafting the word "librarianship" onto the core definition of EBM. Let me first address the immediate issues of the greater numbers of physicians and money available to clinical medicine. These variables actually appear to explain little in our situation. Our numbers as librarians may be relatively small compared to medicine but, then again, so is the scope of our work compared to that of physicians. While the medical profession may value research, we need to recall that only a minority in that profession actually generate the bulk of research outcomes. We thus appear to need only recruit a comparable *proportion* of our profession into conducting research for us to have a significant impact. There also appears to be no compelling reason why we cannot conduct the necessary research with resources potentially available to us now. In this connection, two recent studies from the fields of Psychiatry and Emergency Medicine suggest that the majority of reported research in leading journals in these specialties were, in fact, unfunded (5-6).

We need to explore alternative models of collaborating with non-librarian colleagues as means for accessing currently untapped financial resources (7). Funding also may be available from unexpected sources such as a recently-established research grant program for members of MLA's South Central Chapter sponsored by the South Central Academic Medical Libraries (SCAMeL). In addition, have we explored the many avenues of private sector joint ventures for conducting mutually advantageous research projects? Could mainstream NLM grant projects also contain research components or even research expectations of completed research?

MLA Centennial Celebration

The Medical Library Association (MLA) will be celebrating the organization's 100th anniversary in 1998. Events promoting the theme "Librarians: Your Health Information Connection" will occur throughout the centennial year beginning at the Annual Meeting, May 22-27, 1998 in Philadelphia, PA, site of MLA's first meeting in 1898. The festivities will continue until MLA '99 which will be held in Chicago, IL, home of MLA's headquarters. Updates on activities can be found on the Centennial Web Page of MLANET at http://www.kumc.edu/MLA/mla100.html.

Sometimes we fall into the trap of viewing all research through a dichotomous lens so that we simplistically see only "bad research" or "good research". Instead, we need to remember that research viewed along a continuum offers a more versatile perspective. Rigor in methodology can be appreciated along a continuum from qualitative (e.g., focus groups, ethnographic approaches, historic) to case to descriptive studies to the more analytical or quantitative approaches. Research designs also can be viewed along a continuum, as well can the degree of relevance of a research project. The framework of a continuum can enable us to attach relative values to specific research projects. A research focus in a specific subject area seems to follow an evolution from less rigorous toward the more rigorous. For example, a qualitative or descriptive study can generate hypotheses essential for conducting more methodologically rigorous research. We should aspire to test hypotheses and employ the most rigorous methods appropriate, but that cannot

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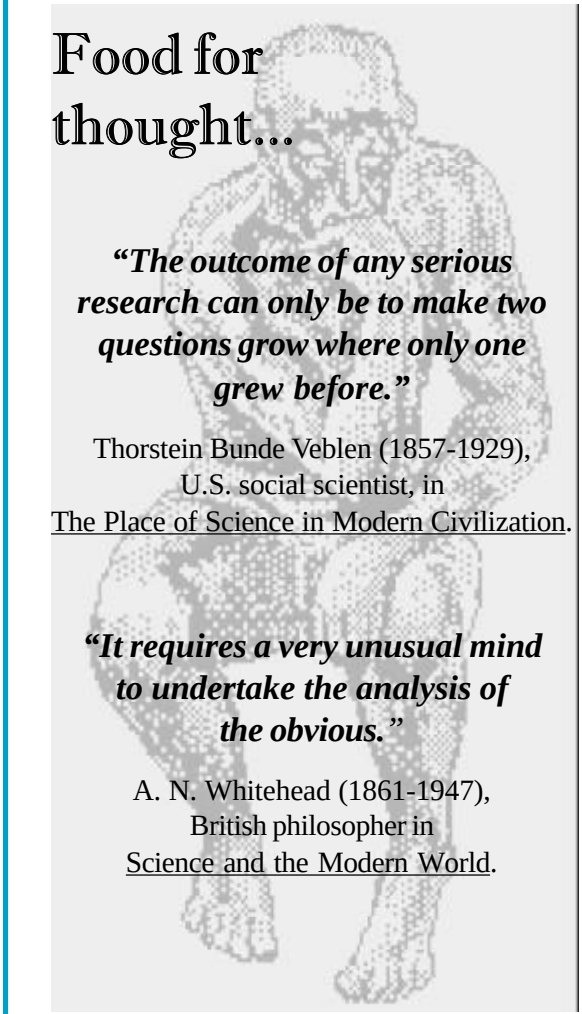

always happen until completion of essential descriptive research. Research that simply validates the existing knowledge base or that even documents a failed project also serves the advancement of our profession. Publishing one's results, whether redundant or counterintuitive, also may avoid distorting our understanding of reality through publication bias (8). In short, all legitimate research has inherent value.

Future Directions

As already noted, we cannot hope to graft librarianship to the core EBM definition. At least, not yet. We can begin by establishing research-friendly values in our profession. First, we can question the ground upon which we stand as far as "principles" or "truths" of medical librarianship. Second, we can highlight and reward research efforts of colleagues. Third, we can communicate the results of our findings. The following recommendations are based upon promoting these values:

Question every "truth" in our field that seems remotely questionable. Many old "truths" or "principles" are based upon previous technology and assumptions that may no longer apply. We need a firmer, research-derived foundation for our professional practice.

Recognize that there is no shortage of research subjects. If you need ideas, simply contact the author since he dreams up a new one at a rate of about one per a week.

Demonstrate to decisionmakers that sound research does not constitute an ivory tower activity, but rather it can contribute to sound management.

Recognize the importance of research at our individual institutions by building a research project into the annual goals of each librarian.

Rank AAHSL libraries according to their contributions to our knowledge base through publications (not just those journals indexed), contributed papers, or posters that report research.

Promote the MLA Research Awards and adhere to rigorous evaluation criteria that others will respect.

Recognize the special workplace environmental concerns and incentive systems in hospitals through a separate research award category for hospital librarians.

Establish research awards for the best research project as reported in a contributed paper or poster at annual meetings of each MLA chapter. The South Central Chapter recently presented its first annual SCC Research Award which may serve as a model.

Recognize first-time efforts by researchers with a special award category.

Communicate through any vehicle to report research findings. Rather than concentrate on just the major journals in our field such as the *Bulletin of the Medical Library Association*, *Health Libraries Review*, or *Medical Reference Services Quarterly*, publish brief reports in *Hypothesis*, your library's newsletter, a vendor's newsletter, or any other publication that people may read.

Avoid "Salami Science" (9) or publishing in the "Least Publishable Units" (10) by not reporting the same research in several publications. This restraint will assist future researchers when they survey the literature.

Offer a convenient means for readers to communicate with you (e.g., email) when you do publish

so the brevity your report can be elaborated upon and discussed with interested colleagues in greater detail.

If a reported research project does not agree with your own research, email the author to initiate a dialogue. Or, even better, write a letter to the editor to share your own findings with readers.

Reports on small-scale research projects at your library may be more valuable than you think, and worthy of sharing with your colleagues.

Respect one another and support even the most modest efforts. A collegial atmosphere will encourage others to take important risks. All sound research moves us ahead.

Jon Eldredge, PhD
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Research Connections

by Katherine Stemmer-Frumento,
Bridgeport Hospital, Bridgeport, CT

How many times have you either read an article in a professional publication or attended a contributing paper session at the local, regional or national level and thought to yourself "I've been doing that for years, I should have written that paper" or "I didn't think that project was worth writing about. I could have written a better paper". Well, you **should** have written that paper and guess again, that project **was** well worth writing about. However, "should have", "could have" and "would have" are exactly that, past tense. It is time to start thinking in the present tense as in "I am going to write about (fill in the blank) and SUBMIT IT FOR PUBLICATION. I know what you're thinking, "Yeah, right, easier said than done." It doesn't have to be, if you follow that old saying "How do you eat an elephant? - One bite at a time." How do you write a paper? One step at a time. In fact, you can write a paper in ten steps.

Step one - the idea or concept you are going to write about. Problems or projects you are currently tackling are worthy topics, along with WHAG's (Wild Hairy A-- Guesses). Don't dismiss anything! You will be amazed at the seemingly simple ideas which have yet to be explored and evaluated. Still undecided? Talk to your peers and colleagues. Not only will they probably cheer you on, you might find someone who is interested in co-authoring the paper.

Step two - an outline and a deadline. An outline may seem elementary and a self-imposed deadline rigid, however both are necessary. The outline will provide the roadmap. You may have already done much of the research, but how will you know this without the outline? A deadline is needed to keep you honest. Actually, you may want to think about more than one deadline, e.g., one for completing the research, the next for completing

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the first draft, the third for... you get the picture. Just don't make too many of them and make sure they are met. If an incentive is needed, be accountable to a friend. Let her know when your deadline is so that she can "keep you honest".

Step three - the literature search and the research. Explaining the need for a literature search would definitely fall under the "Preaching to the Choir" category, so I won't. Conducting the research requires (among many things) organization. Keep all relative paper work in a separate folder, box, drawer, etc. It also might not be a bad idea to also include a blank pad and/or a tape recorder in the same folder to immediately capture ideas before they are lost.

Step four - the first draft. The first draft provides an opportunity to get everything down on paper or computer disk. Do not aim for perfection the first time around! Before you write the first draft, you need a quiet place to write and uninterrupted time, both of which may be difficult to find and manage. However, without both time and quiet, the first draft, let alone the final paper, will never be completed. Be realistic about the time. Think about the time of day when you are most creative and take an hour of it to write. More than an hour would be ideal, less than an hour is not ideal, but at least you're writing. Remember the elephant.

Step five - take a break. After the first draft is completed, put it away for a day or two. Give it to a colleague for review with the promise of not returning it for a couple of days.

Step six - Revision time. Remember that chunk of creative time? Use it now to sit down with a critical eye and begin the revisions, taking into consideration your colleague's critique. Do not think there is something wrong with you if the paper requires more than one revision. It could take several - that's okay!

Step seven - Proofread, proofread, proofread. And when you have finished, give it to your colleague to proofread. You will be amazed at what you can miss.

Step eight - Submit it for publication. Choose your journal for submission by the audience who will most benefit from the information. Take into consideration the interests and emphasis of the journal and its editors. "Instructions to authors" should be read and read again. Don't take the chance of being rejected because of a line spacing requirement.

Step nine - Celebrate! You did it! Give yourself a pat on the back and do or buy something special for yourself. You've earned it. Also, do not forget to thank your very supportive friend for his/her help and support.

Step ten - Do not despair if you are rejected by your journal of choice. Rejections vary; the reason may be right subject, wrong time; the editor was in a bad mood that day; who knows. Pick yourself up and try again. Perseverance is the key. Many, many authors were rejected many, many times before they were published. (Dr. Seuss, Theodore Geisel, was rejected by 20 publishers before he finally had his first book published.) *Good luck and happy writing!*

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Editor's Note: Eric D. Albright and James Shedlock received the Best Research Poster Award from The Research Section Awards Committee at the 1997 Medical Library Association Annual Meeting in Seattle, Washington. Their poster was entitled *"Give it away and buy it back: exploring the double cost of research at a private medical school."*

Eric received his education at The University of Chicago with a B.A. in History of Science (1986), an M.A. in Divinity and an M.A. in Library Science (1990). He also began his library career there during graduate school as Weekend/Evening Supervisor at the John Crerar Library, then Circulation Supervisor at the D'Angelo Law Library, and finally back at John Crerar Library as Head of Lending Services. Following graduation he took a position at Northwestern University's Galter Health Sciences Library as a Medical Reference Librarian and then as Collection Development/ Special Collections Librarian. In May of this year, Eric and his family (wife, Karin, and 18-month-old daughter, Hannah) moved to Durham, NC, where he is Head of Information and Education Services at Duke University Medical Center Library.

Eric is a Senior Member of AHIP and a member of Beta Phi Mu International Library Science Honor Society. He is active in MLA, has served as a Board Member of the Midwest Chapter, and currently serves as Webmaster for the Collection Development Section. He also chaired the Content subgroup for HealthWeb. Eric is a Journal Reviewer for *JAMA*, as well as a Book Reviewer for *Library Journal*, *Bulletin of the Medical Library Association*, and *Resource Sharing & Information Networks*.

Research Spotlight

Eric D. Albright

My current research is centered on the common question of budgets and journal prices. Librarians are very familiar with the cost of information resources to support the local research enterprise. Information costs exceed the national rate of inflation, and this causes much frustration to librarians, especially when they recall how much money is spent on the local research effort. Librarians have often complained that they must "buy back" the faculty's research effort when it is "given away" to publishers at the end of a research cycle. I have wondered, how much a library actually spends to buy back that material. I thought that this might be a niche for an interesting study if I could design a small project to measure the library's cost.

As both an undergraduate and a graduate student at the University of Chicago, I had classes in research design that I could fall back on to address this question. I also had practical motivation. If I produced an interesting enough project, perhaps it would be accepted for a poster and I could get my library to pay to send me to MLA! (It worked.) I started with the hypothesis that libraries waste a significant amount of the journal collection budget by buying back their own faculty research output. I was proved wrong, at least at Northwestern University (NU).

The first question was to decide how to measure the cost to the library of paying for research done at our own institution. How would I identify and quantify the cost of NU sponsored research articles and then compare this to the overall journal budget?

Because of the breadth and scope of Medline and because the Galter Library used inclusion in Medline as a major collection development criterion, I thought I could use it as my source for identifying Northwestern produced publications. I picked the year 1995 because it was the most recent complete year. I then did an Ovid Medline search for Northwestern in the institution field and reviewed every citation looking for "false drops," citations to other institutions with the word Northwestern in the title.

This method of identifying the institutionally-sponsored research is not fool-proof. Research where the primary author is affiliated with another institution or research which is published in journals not indexed in Medline will be excluded.

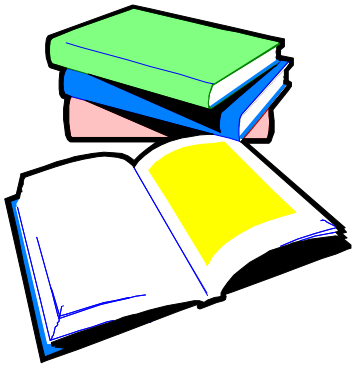
I compiled a list of valid citations and identified the total number of pages in each journal which were written by NU authors. The next step was to identify the total number of pages published in that journal for the year 1995. My co-author of the poster, Jim Shedlock, helped a great deal in the dreary work of going through the stacks and totaling the number of pages published in all of the issues or volumes for 1995. I then used a spread sheet to calculate the percentage of the journals which reported research sponsored at NU. I then went through our records to find out how much we spent on each of these titles and applied the following formula:

$$(J\$ \div TPP) \times FPP = FC\$$$

(J$ is journal price for the year; TPP is total pages; FPP is faculty pages; and FC$ is faculty output as the cost to the library.)

The totals from all of the journals were totaled for a final figure. The result of this study was that the total cost to the library to buy back research was $945.71, or less than one-tenth of one percent of the library's materials budget. The buy back costs were not significant.

I am doing a similar study at Duke, where I am currently employed, and hope to confirm my results. It may be interesting in the long-term to widened the study to include a larger number of medical libraries. If anyone is interested in learning more about this project please feel free to contact me at Eric.Albright@duke.edu.



Literature Review

Prepared by Ruth E. Fenske, PhD

Dilevko, Juris and Roma M. Harris. Information Technology and Social Relations: Portrayals of Gender Roles in High Tech Product Advertisements. Journal of the American Society for Information Science. 48(8):718-727, August, 1997.

This study looks at portrayals of men and women in advertisements for computer-based products in English-language business, computer science, and library and information journals, having high circulation.

Content analysis was used to classify advertisements, in three journal titles from each subject area, into nine categories. The mean inter-rater agreement for three raters was 93.1%. Men appeared in the advertisements much more frequently than women. However, in library and information science advertisements women were portrayed more frequently. Within library and information science, American Libraries and Library Journal portrayed women more frequently than did Online/Database. When looking at what individuals were actually doing in advertisements, in all areas, women were performing lower level activity than men. Women were shown doing simple tasks, like pushing a button, whereas men might be shown contemplating the future. One exception is that women are more likely than men to be seen endorsing a product in American Libraries and Library Journal than in the other seven journals studied. In Online/Database, "women's relationship to technology is often presented as one of simple-mindedness." Men are presented as "powerful action figures or complex thinkers who will lead librarianship into the future through their skillful manipulation of technology."

One could ask similar questions about the portrayal of women in journals directed to health professionals, including health sciences librarians.

Onwuegbuzie, Anthony J. Writing a Research Proposal: The Role of Library Anxiety, Statistics Anxiety, and Composition Anxiety. Library and Information Science Research. 19(1):5-33, 1997.

Subjects were eighty-one graduate students from non-statistical disciplines, expected to write research proposals in an introductory research methods course. The majority of the subjects were female. This article would seem to apply to graduate nursing and library science students taking research methods.

At the first class meeting, all students completed Bostick's Library Anxiety Scale, Cruise and Wilkin's Statistical Anxiety Rating Scale, and the author's Composition Anxiety Rating Scale. Observation of the students during the semester, journal entries, student class notes, and the scores on the research proposals also served as data. Both quantitative and qualitative methods were used.

Students writing research proposals experienced library anxiety, statistics anxiety, composition anxiety, and research process anxiety. Components of library anxiety associated with low research proposal scores were lack of confidence in ability to use the library, lack of familiarity with the library, lack of comfort with the library, mechanical anxiety, fear about asking a librarian for help, and anger about lack of resources identified. Statistics anxiety arose from fear of application of statistics knowledge, fear of asking for help, and fear of statistics language. For composition anxiety, problems with writing; problems with format and organization, particularly in formulating the references; problems with keyboarding and printing; and fear of negative evaluation. Finally the research process itself created anxiety.

Although this study certainly shows that various types of anxiety are correlated with poor research proposal writing, many other factors, such as general academic ability and personal circumstances could also influence both anxiety levels and performance. The journal entries concerning library anxiety are revealing.

Lanier, Patricia, Carson, Paula Phillips, et al. What Keeps Academic Librarians in the Books? Journal of Academic Librarianship. 23(3):191-197, May, 1997.

Authors of this study are three professors of management at one university and one librarian at another university.

Seventy-one academic staff librarians belonging to all southeastern state library association provided demographic information and answered questions about their line of work. Perceptions about their employing organizations and jobs were assessed through a seventy-seven item questionnaire, which is given in an appendix. The seventy-seven items were drawn from previously developed and validated measures of continuance organizational commitment, affective organizational commitment, career entrenchment, career commitment, career planning, job satisfaction, career satisfaction, job involvement, and career withdrawal cognitions, and job withdrawal cognitions.

First, scores on continuance organizational commitment and job satisfaction were used to divide respondents into mobile-discontents, mobile-contents, immobile-discontents, and immobile-contents. Group sizes varied from twelve mobile-discontents to twenty-eight immobile-discontents. Then a one-way ANOVA followed by a Duncan's Multiple Range Test was done to assess the relationship between group membership and each of seven dependent variables.

Results are generally significant and are discussed on a group by group basis. Comparisons are made to related studies in library and information science and other fields and implications of the findings are discussed.

None of the results are particularly startling and nothing was found to show librarianship is any different from other lines of work.

Childers, Thomas A. Using Public Library Reference Collections and Staff. Library Quarterly. 67(2):155-173, April, 1997.

In this exploratory study, fifty-five users of a public library were interviewed. Ethnographic methods were used. The study looked at both mediated and unmediated use of the library. Each person was asked eight questions concerning what they were looking for, help received, sources consulted, and perceived completeness and usefulness of the information. Questions asked are included in the text. From the answers, the author develops a model, which needs further testing.

The most interesting aspects of this study are his list of "nagging thoughts" or "budding research questions," given at the end. Several related studies, one in a medical setting, are cited.

One is left with the feeling that there is more left to be done in this area.

Coleman, Vicki, Xiao, Yi (Daniel), et al. Toward a TQM Paradigm: Using SERVQUAL to Measure Library Service Quality. College & Research Libraries. 58(3):237-251, May, 1997.

Total Quality Management, now popular in libraries, demands evaluation based on customer perception. In this study, service quality was defined as the different between the minimum, perceived, and desired performance. Research questions having to do with customer (user) definition of service quality, how service can be improved, and what dimensions of quality are important to users, were posed.

Surveys were sent to a stratified random sample of faculty, staff, graduate students, undergraduates, and community users of a large university library. There was a 38% response rate.

The SERVQUAL instrument measures reliability, responsiveness, assurance, empathy, and tangibles. Each is defined in the article. There was also one open-ended question at the end. Detailed instructions for calculating scores are included. Each dimension is graphed, question by question. A copy of the questionnaire is included.

Reliability was ranked as the most important dimension of service. It was also the lowest ranked dimension.

The authors conclude that the survey provided answers to their research questions. An interesting observation is that users look at library service as a whole, rather than at any individual unit of the library.

This study could easily be replicated in a health sciences library.