
Enabling, empowering, inspiring: research and mentorship through the years*

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The interrelationship between research and mentorship in an association such as the Medical Library Association (MLA) is revealed through the contributions of individuals and significant association activities in support of research. Research is vital to the well-being and ultimate survival of health sciences librarianship and is not an ivory tower academic activity. Mentorship plays a critical role in setting a standard and model for those individuals who want to be involved in research and, ultimately, for the preparation of the next generation of health sciences librarians. Research and mentorship are discussed in the context of personal experiences, scholarship, and problem solving in a practice environment. Through research and mentorship, we are enabled to enhance our services and programs, empowered to look beyond our own operations for information puzzles to be solved, and inspired to serve society by improving health.

INTRODUCTION

Wayne Peay's 1998 Doe Lecture introduced a wonderful book, *Undaunted Courage: The Story of Lewis and Clark* [1]. Along the way during my preparation for this talk, I felt a little like Lewis and Clark—exploring uncharted territories and finding things not necessarily as I expected or remembered them to be.

For more years than I care to admit, I have sat where you are now sitting listening to previous Doe lecturers. This honor is truly very special and enormously challenging. How does one prepare a lecture that is not only witty but meaty, practical, inspiring, and, above all, not boring—in the eloquent words of Doe lecturer, Gerry Oppenheimer, “a lecture that will keep you in your seats for an hour in a state not approaching somnolence?” And, how can one possibly find an important topic that has not been comprehensively addressed by previous Doe lecturers? All of these thoughts, and others, flashed through my mind when

I received word of my selection. And, little did I know at the time of my selection, that my family and I would be moving in the middle of my work on this lecture! Not only were my lecture notes and reprints scattered across two offices at the university, but also across two houses and many boxes.

The theme that I have chosen to talk with you about today is research and mentorship as a vital warp and weft in our profession. As some of you know, I am a fledgling weaver, drawn to weaving by the myriad of patterns one can paint with threads. The analogy of research and mentorship as interwoven strands in our profession kept coming back to me during my reading. Though I am neither a philosopher nor an historian, in preparing this lecture I have very much enjoyed reviewing the writings of our previous Doe lecturers, revisiting publications from the *Bulletin* and elsewhere, and dusting off some of my favorite quotes. Further, as an eclectic reader (from science fiction to murder mysteries, biographies, history of science, and travel accounts), I have enjoyed filtering my leisure reading through the lens of my chosen topic. Thus, you will also hear me quote from some of my favorite authors beyond our field. Through an exploration of the contributions of individuals as well as association activities in support of research, I hope to show: that (1) research is not just for a few ivory tower academic

* The Janet Doe Lecture on the history or philosophy of medical librarianship, presented at the Ninety-ninth Annual Meeting, Medical Library Association, Chicago, Illinois, on May 17, 1999. Dr. Fuller was introduced by the 1998 Janet Doe Lecturer, Wayne J. Peay, director of the Spencer S. Eccles Health Sciences Library, University of Utah, Salt Lake City, Utah.

librarians and library school faculty; (2) it is vital to all of us and to the survival of our profession; and (3) it is closely intertwined with mentorship and the preparation of the next generation of health sciences librarians.

RESEARCH AND MENTORSHIP—SOME PERSONAL NOTES

One of the indulgences that Doe lecturers are allowed is to share some personal aspects of their career—defining events, if you will—relevant to their topic. In fact, I find from previous lecturers that often what I recall most vividly is learning about how they chose their career paths and about mentors who helped them along the way. Therefore, let me share something about my past as it relates to my theme. Although I knew when I was still in high school in Indiana that I wanted to be a biomedical librarian, as a result of the Vietnam War, shortly after I received my master's of library science degree from Indiana University, I instead became a middle school teacher of biology and English in a small town in Mississippi. However, I quickly seized an opportunity that arose to work evenings as the first professional hospital librarian at the Gulfport Memorial Hospital. The hospital administrator was my next-door neighbor and, when she learned of my interest, she immediately requested that I develop a library service. My career as a health sciences librarian, albeit a part-time one, was launched.

Not until several years later, after service as a public librarian in Alaska and Colorado, was I appointed to my first full-time professional health sciences librarian position, as an information analyst in the Brain Information Service (BIS) at the University of California, Los Angeles (UCLA) Biomedical Library. Pat Walter, associate director of the BIS, was my first boss and mentor. Through Pat, I learned about the process of scientific research and had the opportunity to work collaboratively with some of the nation's leading neuroscience and sleep researchers—a very heady experience for a recent library school graduate! I attended national scientific conferences, helped edit conference proceedings and newsletters, and indexed scientific research reports using very early minicomputers. In addition, one of my favorite duties was scanning (literally page by page) *all* of the journals the UCLA Biomedical Library received for articles relevant to BIS databases and publications.

I learned three very important things from this invaluable experience: (1) collaborations between librarians and research scientists can be very productive and fun; (2) computers remove a lot of drudgery from routine tasks, giving me an early inkling that they might be an important part of my future; and (3) inspiring and patient mentors, like Pat Walter and Louise Dar-

ling (then director of the UCLA Biomedical Library), are invaluable to a beginning librarian.

A second defining moment in my career came several years later when I was a librarian in public services at the Norris Medical Library at the University of Southern California (USC). A cancer researcher came to me with a search request. I do not recall the specific topic, although I know it was a request for some subset of "the best" (his words) cancer clinical trials. I remember vividly his negative reaction to the quality of my MEDLINE search (at the time, I thought I was a pretty good searcher). The researcher, John Weiner, M.D., demanded to know what my criteria for article selection were. I described the search strategy (MeSH headings, keywords in title, and so on) and he proceeded to lecture me at great length regarding the difference between relevance and quality and about his own research into improving the representation of and access to quality reports of clinical research. Although in awe of Dr. Weiner, I was hooked. For the next ten years at USC, I worked with Dr. Weiner and others, including Nelson Gilman, director of the Norris Medical Library, on techniques for quality filtering reports of clinical research and using the data tables from those reports to develop concept maps to describe relationships among research topics. Along the way, Dr. Weiner encouraged me to go back to graduate school, arguing that the world needed more librarians doing research on the scientific literature, not just on how to manage libraries better.

From these experiences I have learned: (1) collaborations between research scientists and librarians can be invigorating; (2) mentors are invaluable; and (3) being a "working" librarian as well as a research collaborator is possible and, in fact, very rewarding and synergistic of each role.

DEFINING RESEARCH

Now, I can imagine what many of you in the audience are thinking: yes, research is okay for library school faculty or some academic health sciences librarians, but what has research to do with me? In response, let me talk about the meaning and components of the research process. According to the *American Heritage Dictionary*, research is "a process to study something thoroughly so as to present it in a detailed, accurate manner" [2]. Estelle Brodman, who has had much to say about research over the years, describes it as "nothing more than codified common sense" [3].

Although there are many variations, what is most often thought of as research relates to the application of the scientific method, an approach that has evolved over several centuries. First, information, or data, is gathered by careful observation of the phenomenon being studied. On the basis of that information, a preliminary generalization or hypothesis is formed and

this hypothesis leads, by deductive logic, to a number of implications that may be tested by further observations and experiments. All of the activities of research are characterized by a scientific attitude that stresses impartiality. Measurement plays an important role and, when possible, the researcher attempts to test theories by carefully designed and controlled experiments that will yield quantitative rather than qualitative results. Although these methods and attitudes are generally shared by researchers, they do not provide a guaranteed means of discovery; other factors, such as intuition, experience, good judgment, and sometimes a little luck, also contribute to new developments [4].

Research is not a tidy process. Anyone who has tried to do research knows that it is, in general, a highly inefficient endeavor. Exploration of the unknown cannot be planned with great precision.† Nevertheless, some investigators are far more effective than others and make fewer wrong decisions at the innumerable crossroads reached daily during the course of a typical research problem. Wilson, author of an excellent introduction to research, says, "Many scientists owe their greatness not to their skill in solving problems but to their wisdom in choosing them" [5]. Why should one choice be better than another? One of the most important criteria is that the problem should interest the investigator strongly. Research is *not* a routine process. An uninterested researcher is unlikely to produce new ideas. In addition, many believe that the problem being studied should be important in the larger picture of the researcher's view of the world. I will say more about this in a little while.

Wilson also talks about the need for careful selection so that one can actually observe the interrelationships among factors. He points out that a forest can be observed as a forest but not easily as ten thousand individual trees. A tree can also be observed as a whole but not easily as thousands of leaves and twigs. The powers of observation are limited and it is necessary to limit what is to be observed to a portion of the universe small enough to be studied. An unwise choice yields items so remotely connected that no amount of study would ever determine their interrelationships [6]. Then, there is the question of bias. Regardless of the research methods employed, bias is one of the most problematic issues in ensuring quality outcomes. It is impossible for anyone to be completely free of preconceived prejudices or bias. However, having some hypothesis in mind before making an observation is vital; if this condition is not so, how would one know what to observe? On the other hand, it is equally important to arrange the conditions of obser-

vation and data collection so that the observer's bias will not distort the observations [7].

Finally, in research, there is the element of what we may call "leaps of logic or faith" or some call "sheer craziness." To illustrate, in a *Scientific American* article entitled "Innovation in Physics," Nobel Prizewinning Physicist Freeman Dyson reports on an incident involving fellow Nobel Laureate Niels Bohr. Bohr had been in attendance at a lecture in which Wolfgang Pauli (also a Nobel laureate physicist) proposed a new theory of elementary particles. Pauli came under heavy criticism, which Bohr summed up to him: "We are all agreed that your theory is crazy. The question which divides us is whether it is crazy enough to have a chance of being correct. My own feeling is that it is not crazy enough." To which Dyson adds:

When the great innovation appears, it will almost certainly be in a muddled, incomplete and confusing form. To the discoverer himself it will be only half understood: to everybody else it will be a mystery. For any speculation which does not at first glance look crazy, there is no hope. [8]

Lest you think that this story applies only to physics research, I would point out that many believed at the time that Eugene Garfield's theory that bibliographic citations could provide powerful new approaches to information retrieval was crazy. In fact, Garfield built a multimillion dollar, highly respected, company off of this "crazy" idea!

An appreciation for the elements of the research process is very important to those who would undertake such work. From the prevention of bias to the identification of a topic of vital interest to you and of importance in the larger scheme, the wise selection of a target problem and the development of an appropriate strategy for attacking the problem, the process draws upon numerous problem-solving skills and requires an ability to think creatively and strategically.

SCHOLARSHIP AND THE PROFESSIONS

But, you say, I am just a practitioner! As Sue Hegyvary, former dean of the School of Nursing at the University of Washington, states,

Listen to a promotion and tenure committee in a research university and you will hear one dominant word—scholarship. Listen to a group of professional practitioners and you will hear a different dominant word—practice. Are those two words mutually exclusive windows to different worlds? [9]

Hegyvary thinks not. She "believes that it is essential that scholarship and practice be compatible and reciprocal." Quoting Ernest Boyer, she describes four types of scholarship: discovery, integration, application, and teaching, and views scholars as those who are always

† As Lewis and Clark quickly learned!

pushing the edges of knowledge derived from multiple sources [10]. Hegyvary says that “the essence of scholarship is the questions we raise . . . Scholarship is not,” she believes, “the rote application of current knowledge or the preservation of beloved theories and methods or simply doing work.” Scholarship, according to Hegyvary, depends on what we do with today’s knowledge:

how we use it for the continuous improvement of practice, how the questions in practice spur further research, how teaching that knowledge conveys and challenges both the known and the unknown . . . All the parts—discovery, integration, application, and teaching—are interdependent. They create the whole of a professional discipline. [11]

APPLYING RESEARCH TO PROBLEM SOLVING IN LIBRARY PRACTICE

We do not have to do original research in order to apply wisely the results of research by others to improve our practice. How many times have we heard and agreed with these statements? “Six hours in the library may save six months in the laboratory?”; or Westheimer’s Discovery: “A couple of months in the laboratory can frequently save a couple of hours in the library”; or Runyon’s Corollary: “A couple of hours on the Internet can frequently save a couple of minutes in the library” [12]. All of these observations relate to the temptation to believe that no others could ever possibly have had this particular problem or that if they have worked on the problem, they probably have not done the work as carefully as we would. Have we ever thought that it may apply to librarians, not just to the scientists at whom it seems to be directed? That, perhaps, a few hours reading the library literature may save many more hours as we design a new library service or program or attempt to solve an administrative problem?

Library practice research is frequently disparaged; however, potential solutions to problems we face, even in an online era, are rooted firmly in the history of the practice of librarianship. The principles of information organization—indexing, collection management, archiving, and user needs analysis—can be applied to the current problems we face. We have a very rich heritage of research and practice to draw upon, and just because work has been done in a past era before computers and just because it is not accessible via the Web, does not mean the work has become irrelevant. The technical tools at our disposal may be more capable and more precise, however, our intellectual heritage is strong, and we should not deliberately go about reinventing wheels. As Betsy Humphreys said in an editorial in the *Bulletin*:

Many practicing health sciences librarians should find research both possible and rewarding, but others will have neither the opportunity nor the inclination to engage in research. Choosing not to conduct research may be both reasonable and appropriate. Failing to use the results of research is another matter. Judicious application of research results should be a hallmark of the health information professional. Opinions, recommendations, and decisions backed by research data command greater respect—and deserve it. Even when there is no definitive “answer” in the research knowledge base, consideration of what has been revealed by related research can foster more effective practice decisions . . . More and better research would be welcome, but we already have more interesting research results than we have used effectively. [13]

Lest we think that statements regarding the importance of health sciences librarians applying research have only recently been made, let me quote from an unsigned editorial entitled “A Plea for Research in the Medical Library,” published in the *Bulletin* in 1954:

It may be argued that libraries are not set up to handle research problems. For example, it is often said that a library is an organization whose main purpose is operations and not research. As such, it is not equipped to cope with possibly nonproductive work: it does not have the manpower “cushions” to release staff members from other duties, it does not have the space, and frequently it does not have the people trained in the techniques of experimentation . . . Even granting that all this is true, however, it is still possible to do research in an ordinary medical library . . . What is important is the logical fashioning of the questions to be asked in the research and the reasoned ordering of the circumstances in the experiment so that the questions asked will be answered unequivocally. Just as good medical research is carried out in small clinical centers, so good library research can be carried out in small hospital libraries. What is needed is not size but vision. Surely medical librarians have this! [14]

Speculating about who might have written this editorial is fun, and given my reading of signed articles on this topic from this period and later, there are any number of individuals who could have said this. But if I were a betting person, I would point toward Estelle Brodman as the anonymous author.‡

An even earlier statement along similar lines regarding research by health sciences librarians was made by Edith Dernehl, then librarian of the Marquette Medical School in Milwaukee, who presented a

‡ In response to my observation, Dr. Brodman said the following: “I was the editor of the *Bulletin* then and therefore could have written it, but since I cannot remember doing so I wonder if it might not have been written by another member of the then Editorial Committee or written by one of them and then revised by the others. From the style of the quotation I would guess it might have been Janet Doe herself who wrote it, but I cannot be sure.”

paper at the Medical Library Association (MLA) annual meeting in 1941. She said:

Search and research are closely interwoven, but there is always a fundamental distinction between them. Research has as its object the exploration of uncharted fields, while search leads only into domains previously explored. Whereas the object of search is to compile, that of research is to analyze and evaluate. The research worker strives to find the solution to some problem which he has set for himself. He must examine and test his hypothesis from all angles, must discard the dubious and must test the favorable through thoughtful analysis . . . The library should be equipped to serve the demands of both the searcher and the research worker . . . Contrary to the belief held by many, research is not a domain limited to the genius and the highly gifted. It is a field of endeavor open in a greater or lesser degree to any individual in whom curiosity is aided by a resourceful and inquiring mind. The ability to solve the problems of our individual libraries is within the scope of each librarian. [15]

Brodman, in the introduction to her landmark chapter on research in health sciences libraries in the *Handbook of Medical Library Practice*, highlights five reasons why research may be undertaken in health sciences libraries:

1. Research satisfies the desire for knowledge. Just as Dernehl points to the importance of an inquiring mind, Brodman states that "curiosity about the world and the effect of change is not confined entirely to small children or to scientists."§ Brodman goes on to say that such curiosity about the world "is the basis alike for library research and personal gossip collecting. The intellectual pleasure of solving problems and answering questions which have a basis in social need should not be denigrated."
2. "Research relates actions to changes in the world . . . enabling management to make rational decisions . . . [And,] moreover, in a period when libraries are expected to account publicly for the resources given to them . . . *research can establish why certain resources are required and the benefits that society can expect from the decisions made about the use of these resources*" [emphasis added].
3. Research provides broad perspective. "Unless health sciences librarians are able to go from facts to their interpretation they may become bogged down in a plethora of undigested facts until finally they retreat into an intellectual corner and do nothing."
4. Research keeps staff alert and willing to take risks.
5. Research attracts inquiring minds to the field. Brodman says

§ In fact, my daughter Heather's first sentence and most repetitive question for the first years of her life was an exuberant "Oh, wow, what's that?" while pointing enthusiastically at anything and everything.

H.G. Wells assumed that everyone in the world shared his delight in biological research and in his utopian novels he always portrayed a society in which the ability to study the problems of biology was offered to everyone . . . Just as it is obvious that not everyone wishes to spend their time breeding *Drosophila* so not every health sciences librarian wishes to perform research . . . But if enough health sciences librarians feel that research is fun, they may be able to leaven the whole group, and the very existence of such people doing research may cause others with inquiring minds to enter the field of health sciences librarianship and to remain in it long enough to add to the knowledge in the field. [16]

Of all of the research methods, books, and papers I have studied over the years, I find that Brodman's chapter in the fourth edition of the *Handbook of Medical Library Practice* is the best and most effective overview of research methods for librarians that I have found. And it is as useful today as when it was authored in 1982. As can be seen from the various quotes, Brodman has a sense of humor and uses it effectively to make important points. For those taking their first steps into research, in my opinion, there is no better place to start. Brodman more than achieves her stated goal in this chapter—to convince health sciences librarians that research is neither frightening nor difficult to conceive and carry out [17].

ASKING WORTHY QUESTIONS AND FINDING USEFUL ANSWERS

According to an anonymous source, "there's no comfort in the accurate measurement of the irrelevant."** Unfortunately, we, as a profession, have spent a lot of time engaged in enumerating things and reporting numbers that are never used again. It is vital in contemplating a research study that we ask the "so what?" question up front. If we successfully conduct the research and unequivocally answer the question, will anybody else care? Will our work make any difference?

Virginia Holtz in her Doe lecture asked us to think about the following scenario:

The information user, rather than the library, and information per se, rather than the instruments which carry information, have become the central concerns of our discipline . . . In this scenario, the volume as a measure of the intellectual content as well as size of the library's information resources has been, in large part, replaced by the concept of units of information . . . The focus of this new information-based science is the investigation of basic attributes of information and information carriers, uses, and users and their needs. The practical application of this science involves finding best matches among users, carriers, and information

** This saying was framed above the desk of one of my former statistics professors.

based on known characteristics. There is close integration of the research and practice environments. [18]

At the heart of the matter is that we all want to know that what we do makes a difference. This desire is why many of us choose health sciences librarianship in the first place—we truly believe that by providing excellent access to quality health information for educators, clinicians, researchers, and consumers, we can improve health.

In the late 1980s, I served on the MLA Board of Directors who worked on our mission and values statements as part of our strategic planning process. It was not an easy process.^{††} But we arrived at the following statement of values: “We believe that the Medical Library Association serves society *by improving health* [emphasis added] through the provision of information for the delivery of health care, the education of health professionals, the conduct of research, and the public’s understanding of health” (MLA Strategic Plan) [19]. In fact, this statement echoes one by Scott Adams in his presidential inaugural address in 1967 about the partnership between MLA and the federal government. Adams identified the common goal as: “not better libraries as libraries, not just better trained and better paid medical librarians, not mechanization for mechanization’s sake, but better health for the American people” [20].

Therefore, I believe that a fundamental underlying goal of our research should be to seek to answer the question of whether the services we provide “improve health” and to test and implement strategies for creating services that achieve this vital goal. This task is daunting but I would like to point to two studies undertaken by health sciences librarians in recent years that have laid the foundation to begin addressing these questions. The well-known studies are the Chicago study and the Rochester study.

In the first, a study was conducted in eight hospitals in the Chicago area as a quality assurance project. A total of 176 physicians, nurses, and other health professionals requested information from their hospital libraries related to a current case or clinical situation. The health professionals were asked to assess the quality of the information received, its cognitive value, its contribution to patient care, and its impact on case management. Nearly two-thirds of the respondents asserted that they would definitely or probably handle their cases differently as a result of the information provided by the library. Almost all rated the librarians’ performances and responses highly [21].

The Rochester study, which, admirably, built upon the Chicago study, was initiated by a group hospital

librarians at a time when requirements for hospital libraries were being dropped as an accreditation requirement in New York State and nationally. The hospital librarians in Rochester, New York, responded to this challenge by developing a research project that explored the impact of library services on clinical decision making. A systematically sampled group of 448 physicians in the Rochester area agreed to participate in the study. As a result of the information provided by the library, 80% of the physicians indicated that they probably or definitely handled some aspect of patient care differently than they would have handled it otherwise. As the author of a report on the study and key participant, Joanne G. Marshall summarized:

In addition to confirming earlier research findings that information provided by hospital libraries is perceived by physicians as having a significant impact on clinical decision making, the results increase our store of scientific knowledge about the specific nature and extent of the impact of information provided by the hospital library. [22]

These two research studies demonstrate important characteristics well beyond their significant findings. First, they have been led by a group of librarians. Collaborative research, I predict, will be the hallmark of much of our future research. It is difficult today to undertake research as an individual: however, groups of individuals working across a single institution or multiple institutions can bring to bear intellectual capital and resources to conduct large ground-breaking studies that a single individual simply could not begin to undertake. Increasingly, health sciences research projects, in general, are being done as multi-center studies. We should look at this model for future studies of our own. Also, we need to ensure that as we create research teams, we consider the inclusion of individuals with a variety of types of expertise relevant to our research questions. Biostatisticians and evaluation experts are increasingly indispensable members of library and information research teams. It is vital, however, that the design of the research study from the beginning include all members of the team and not just involve them when it comes time to do the statistical analysis at the conclusion of the study.

The second important characteristic is that the Rochester study built upon the methods and findings of the Chicago study. Science progresses to the extent that it is cumulative and builds upon what has gone before. We must, likewise, ensure that our own work is solidly based on prior work and that we learn from what has gone on before us—both what has worked as well as what has not worked well.

Third, these studies tackle the societally important question of the impact of information from the library on clinical decision making. Over the years as a practitioner working with clinicians, one of the most frus-

^{††} I am reminded of the observation about the similarities between making sausage and making laws—one does not want to look too closely at either process.

trating issues to me has been not knowing whether what we do actually makes a difference to the conduct of care. As a result of these studies, we now know that at least in these instances, the answer is "yes." Finally, these studies provide us with important methodologies on which to build future studies of the impact of information on decision making.

LEARNING TO DO RESEARCH

Many of us have had to take a research methods course during our graduate work—either offered by the library school or another graduate program. I suspect that experience convinced many of us that research was not for us. Too often research methods courses, not only in library school programs but also in other graduate programs, fail to inspire interest or enthusiasm for research. Quite the contrary, such courses manage to convince many of us that research requires a very high level of mathematical competence and that without statistical expertise, we could never hope to understand the results of research published in the literature, let alone conduct the research ourselves. Nothing could be further from the truth. As I have said repeatedly, the key is choosing an important topic and asking the right question(s).

Designing the research methods, including the appropriate statistical design and evaluation, is only one part—and the part for which it is, in fact, easiest to find individuals who can provide assistance. In most universities and colleges, the biostatistics program faculty, staff, and graduate students offer assistance to individuals, both in the design of the research as well as in the application of appropriate statistical methods. Similarly, reading reports of research (whether library research or reports of scientific research) requires that we, first of all, understand the question that is being studied, whether it is applicable to the problem at hand, and whether the methods employed are appropriate. We do not have to understand how to do a chi-square test to recognize that a study design is flawed by bias in the selection of subjects or that the data collected are irrelevant to the hypothesis of the study. It is simply a matter of applying common sense!

What about library schools and the teaching of research methods at the master's degree level? Thomas Keys of the Mayo Clinic in 1939 in a paper titled "Medical Librarianship: Looking Toward 1970" states:

Another thing to come for medical librarianship will be a graduate school for research and for the training of medical librarians. This might well be under the sponsorship of the Medical Library Association. It should be a special school or department of one of our leading universities . . . To the profession a graduate school might mean a chance for the assimilation of the knowledge of medical librarianship. It would also give the profession a great opportunity for concerted research efforts. [23]

Sixty years later, we are not much closer to the vision that Keys describes. The research process taught in library schools tends to focus on those preparing for doctorate programs. Master's degree courses in research, if they exist, often focus on the mechanics of research with an emphasis on statistical analysis and not on generating excitement about research or how one can incorporate research into everyday practice. Many health sciences librarians who may otherwise like to undertake a research study feel ill prepared to do so based on their academic preparation. Fortunately, some library schools, including the University of Washington, are beginning to revise their curricula with regard to the teaching of the research process and its application in the practice setting.

MENTORS AND MENTORING

Mentors can play a critical role in assisting those who would like to contribute to a research study. I have already mentioned several mentors who have had an important impact on me. What is a mentor? The word "mentor" comes from a character named Mentor in Homer's *Odyssey*. Odysseus had been away many years and his son, Telemachus, was thus deprived of a father figure who could serve as a role model. The goddess, Athena, disguised herself as Mentor, a former companion of Odysseus. Mentor befriended Telemachus and provided him with a role model and encouragement, thus providing a term and role that are greatly respected in the professions today.

Baldwin, a physician, describes mentoring this way:

All of us, at some time in our careers, have been exposed to someone who has influenced us in some way, either personally or professionally. In some cases this may have been in a negative sense, but usually it is positive. It may have been casual but in some cases it may have been profound. Early in our lives this may have been a family member or family friend. Later it may have been a teacher, coach, professor or religious leader. Usually it was someone older and wiser who commanded our respect. For those with special influence we often reserve the title of mentor. [24]

As professionals most of us can look back and identify people who have had an influence on our choices and our career path decisions. The true meaning of the word mentor is a wise, loyal advisor. Our mentors change as we grow and develop, and eventually we have the opportunity to mentor others. Learning to be a good mentor is very much like learning to be a good parent. It does not just happen by accident. You have to work hard at it but it is well worth the effort.

I challenge all of us to seek out opportunities to be mentors or to seek a mentor if we are embarking on work in a new area. In some cases, this opportunity exists within our circle of coworkers and colleagues. Often, it can be found within our chapters, sections,

and MLA committees. In an era of e-mail, it is possible to serve as mentor or to be mentored by those we rarely see. In fact, the Research Section provides a research mentoring service that matches those seeking research mentors with individuals willing to provide guidance and help.

As Baldwin says about mentoring of young physicians by more senior physicians,

There may never be a book written about your relationship with these young, eager, dedicated individuals but the rewards will be with you for a lifetime. Remember that these same individuals will someday pass on the lessons you have imparted to them and so the great cycle of life goes on and you will have made a difference. [25]

MLA AND RESEARCH

As I have indicated, MLA members have, for over seventy years, attested to the importance of research to health sciences librarianship; however, formal recognition of research within MLA has evolved over the past twenty years. Goal 4 in the 1996 revision of the MLA Strategic Plan is devoted to research:

MLA promotes the research role of the health sciences library and information professional. The association:

- fosters development of an infrastructure to support the research activities of the profession;
- fosters, identifies, and publicizes opportunities for research support of multiple kinds; and
- promotes research results through publishing and awards for excellence.

The path of MLA's development of a research platform has been recounted by Robert Braude in an excellent history of the Research Section—from its birth through its toddler years, adolescence, and, now seventeen years later, its maturity [26]. Braude traced MLA's active involvement in research back to 1978 with the vision of Erika Love, then president of MLA. Love appointed the Ad Hoc Committee to Study MLA's Role in Library-Related Research. Nancy Lorenzi served as chair. Two years later, as a result of the excellent work of the ad hoc committee, the MLA Board of Directors approved the formation of the Research and Evaluation Committee as a new standing committee of the association. Love became the first chair of this new committee. The Research Section of MLA was, according to Braude, "born out of the infant Research Committee, by way of the strategic planning initiative with Erika Love as midwife." Braude was appointed by Love as chair, pro tem, to lead the organizational meeting of the Library Research Section with thirty interested MLA members in attendance in Anaheim on June 16, 1982. The first elected officers of the new section were: Gwendolyn Cruzat, chair; Anna

Cleveland, chair-elect; and Dottie Eakin, secretary. From the beginning, the section sponsored very successful special sessions at MLA including a session on "Evaluation in Health Sciences Libraries" in 1989 and a symposium on the "Research Process" in 1991. Jacqueline D. Bastille, during her presidency, continued an emphasis on research and appointed a Think Tank on Research to identify opportunities and strategies for increasing the emphasis on research within the association.

As an association, we have prominently emphasized in our strategic plan that MLA promotes the research role of the library and information professional. What I believe is missing is the rationale, that is, *why* do we need to do this?

CONCLUSION

As Erika Love says in her Doe lecture, "the quandary in the information society is an overabundance of data and information and a lack of the thinking ability—the research talent—to sort it all out." Critical thinking, problem solving ability, and intellectual curiosity are the most important skills for coping in this information age. Love cautions us that unless we accelerate our own approach to knowledge and information, our profession is in danger of becoming extinct or, at best, a servant of other disciplines. She also suggests that we should take a fresh look at the Regional Medical Library (RML) program as a potential arena for enhancing librarian research skills. As Love says, "the RML program has consistently addressed two important issues—service and education. What if a research component were added? What if support were offered to foster research skills among practicing librarians" [27]?

I have been interested to note during my review of past Doe lectures, the excellent ideas that have been identified by these lecturers and those ideas that bore fruit in later years. Love's promotion of research through the RML program is one of those ideas whose time seems to have arrived. Ten years after Love has pointed us in this direction, librarians led by Cathy Burroughs at the Pacific Northwest Regional Medical Library in Seattle have been moving in this direction with funding from the National Library Medicine and advice from a national panel of experts from many fields. They have undertaken the development of an outreach planning and evaluating guide and series of teaching tools. The idea for this project was initiated in discussions with Elliott Siegal and Fred Wood of the National Library of Medicine in recognition that what we do most often as librarians, especially as librarians in the regional offices of the National Network of Libraries of Medicine, is *outreach*. But we recognized that with each new outreach project—whether to underserved populations, physicians in rural practice, nursing faculty in our own institutions, or health

consumers—we started afresh without a tried and true research methodology aimed at understanding our target population. Without this methodology, we could not intervene in a scientific and reproducible manner with rigorous protocols for evaluating outcomes. We thus set out to draw from all of the relevant academic domains the best methods and to distill those methods into a practical handbook and set of tools and courses to assist those individuals developing outreach programs. This work is currently underway and you will hear more about it at this meeting as well as at the Vancouver meeting next year. Thus, an idea first articulated by Love in her Doe lecture is now taking shape.

Merlin, one of my favorite literary heroes and perhaps the penultimate role model for mentors, advised young Arthur:

The best thing for being sad is to learn something. That is the only thing that never fails. You may grow old and trembling in your anatomies, you may lie awake at night listening to the disorder of your veins, you may miss your only love, you may see the world about you devastated by evil lunatics, or know your honor trampled in the sewers of baser minds. There is only one thing for it then—to learn. Learn why the world wags and what wags it. That is the only thing which the mind can never exhaust, never alienate, never be tortured by. Never, never fear or distrust, and never dream of regretting. Learning is the thing for you. [28]

As I close my Doe lecture, I am reminded of Lois Ann Colaianni's wonderful quote that while Doe lectures are looked forward to with enthusiasm, a "done Doe" is also to be welcomed [29]. My Doe is done. I thank you for the opportunity and the honor of sharing my thoughts with you. Through research and mentorship, we are *enabled* to enhance our services and programs, *empowered* to look beyond our own operations for information puzzles to be solved, and *inspired* to serve society by improving health. To paraphrase Merlin, scholarship—that is, studying the work of others, creating new knowledge, and serving as mentors—is the "thing for us" as health sciences librarians. It renews and enriches us and ensures that our profession will continue to grow and thrive.

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Thanks also to Alison Bunting, 1996 Doe lecturer,

who, upon learning of my selection as the Doe lecturer for 1999, sent me her working set of all of the past Doe lectures. In addition, she published a wonderful review of Doe lectures that provided a forum for my own work. I shall pass my set of reprints with their now multi-colored highlights on to my successor, Judy Messerle, the Doe lecturer for 2000.

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