Evidence-Based Librarianship:
Opportunity for Law Librarians?*

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Should librarians consult empirical research when making day-to-day operational decisions? Ms. Lerdal describes the concepts and methods of evidence-based librarianship, suggesting that this approach may provide opportunities for law librarians to increase their credibility in the eyes of those who fund and use their libraries.

¶1 Librarians regularly make decisions concerning the operation of their libraries. But how many are based on sound research? Where do librarians find evidence to help make these decisions? Are they able to evaluate whether a research study is valid, reliable, and relevant in helping to make effective decisions? Is it practical to make operational decisions based on research findings?

¶2 Librarians are often lauded for their research skills and for helping others find and evaluate information. However, they seem reluctant to utilize this expertise to create and use research data that could contribute to improving the practice of librarianship. Such data could also be very useful in providing parent organizations with empirical evidence of the value of the library to the organization and the cost-effectiveness of its resources and services.

¶3 Librarians have identified many obstacles to using research in decision making: lack of time, information overload, limited access to information resources, poor quality indexing, poor quality of the evidence base itself, difficulties in finding research that addresses practical workplace problems or that is presented in a way that is easy to understand and apply. However, librarians and information professionals in the health-care field have begun to address these obstacles. They are developing an evidence-based approach to making decisions that affect their daily practice.

¶4 Why should law librarians care about developments in another sector of librarianship? A recent survey conducted by the *American Lawyer* reveals that

> librarians now spend more time doing advanced research—often in support of the firm's marketing or information technology departments. Survey respondents report that their

staffs spent 29 percent of their time in 2004 researching nonlegal information compared to 26 percent on legal research. "Law firms are acting more like businesses," says [the chief librarian of a major law firm].[1]

This emphasis on the business side of law practice, as well as other indications of a growing interest in empirical and evidence-based research in legal scholarship and practice, are good reasons to explore the concept of evidence-based librarianship. By doing so, law librarians might enjoy increased credibility in the eyes of those who fund and use their libraries, as well as find opportunities for professional growth and development, collaboration, and other interdisciplinary activities.

¶5 Evidence-based librarianship (EBL) is a relatively new movement[2] currently involving mainly librarians in the health sciences in the United States, Canada, and the United Kingdom. EBL grew out of the participation of health sciences librarians in the movement known variously as evidence-based medicine (EBM) or evidence-based health care (EBHC). In EBM and EBHC, "a librarian helps health care professionals to formulate an answerable question, determine where they may best find the answer to that question, and use effective literature searching to find the evidence. The health care professionals can then critically appraise the literature and apply it to their practice."[3]

¶6 EBL incorporates the decision-making framework, the basic process, and many of the same research methods as EBM in an attempt to improve library practice.[4] That is, EBL uses the best available evidence from research in library science and other fields to make effective decisions about practical problems in librarianship. When considering EBL, it is important for law librarians to make the distinction between research related to library operations (to which EBL applies) and legal research (to which it does not).

¶7 EBL focuses on finding solutions to daily problems in the library by combining experience and research. The EBL process helps librarians integrate research findings into their daily practice.[5] By giving priority to higher levels of evidence (that is, those using more quantitative methods) in determining the best available evidence for answering a particular question, EBL "pursues the dual goals of encouraging research that exhibits both methodological rigor and relevance to practical situations in librarianship."[6] EBL encourages librarians to produce, consult, and utilize research results in their professional practice and day-to-day decision making.

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1. Heather Smith, *Don't Count Them Out*, Am. Law., July 2005, at 67, 67.
2. EBL first appeared in the literature in 1997. *See* Jonathan D. Eldredge, *Evidence-Based Librarianship: A Commentary for HYPOTHESIS*, Hypothesis: Newsl. Res. Sec. MLA, Fall 1997, at 4.
3. Denise Koufogiannakis & Ellen Crumley, *Evidence-Based Librarianship*, 48 Feliciter 112, 112 (2002).
4. Jonathan D. Eldredge, *Evidence-Based Librarianship: An Overview*, 88 Bull. Med. Libr. Ass'n 289, 290 (2000).
5. Koufogiannakis & Crumley, *supra* note 3, at 112.
6. Eldredge, *supra* note 4, at 290.

Status of Library and Information Science Research

¶8 Historically, the bulk of library literature has consisted of studies and articles based on such research designs as case studies, surveys, and a limited number of qualitative approaches.[7] The following brief discussion of the current state of library and information science (LIS) research may provide a helpful framework within which to consider evidence-based librarianship.

¶9 Wallace and Van Fleet[8] studied the editorial process for journals in LIS and described various assessments that have been made of the LIS literature. In an assessment made in 1942, one author described publications in LIS as containing "glad tidings, testimony, and research" and determined that the first two categories were numerous but not very useful, while there were very few articles in the last category.[9] A similar assessment of the literature in 1992 identified the problems of "sad tidings, lamentation, and antiresearch," with a large quantity of articles in all categories.[10]

¶10 Van House evaluated LIS research and reported that in 1991 the quantity of articles was increasing but the proportion of research-related articles was decreasing.[11] She also observed that, while there was some indication that LIS research had improved in recent years, it was frequently criticized, including many complaints about the simplicity of the methods used, misuse of statistics, lack of currency, and other weaknesses.[12] Van House also observed that many researchers believe that the major reason for the increase in LIS publications is the pressure on academic librarians to publish, but this requirement is often imposed with no institutional support or training.[13]

¶11 Van House found that 50% of the "research" articles in her study consisted of applied research (or what she calls "action research").[14] She believes that this type of research has a limited applicability beyond the local library because:

- it usually addresses single, short-term problems;
- minimal cross-library comparisons are rarely done;
- studies are rarely replicated;

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7. Jonathan D. Eldredge, *Inventory of Research Methods for Librarianship and Informatics*, 92 J. Med. Libr. Ass'n 83, 83 (2004).

8. Danny P. Wallace & Connie Van Fleet, *Qualitative Research and the Editorial Tradition: A Mixed Metaphor*, 46 Libr. Trends 752 (1998).

9. *Id.* at 753 (quoting R.A. Beals, *Implications of Communications Research for the Public Library*, *in* Print, Radio, and Film in a Democracy 159, 165 (D. Waples ed., 1942)).

10. *Id.* (citing Connie Jean Van Fleet & Danny P. Wallace, D. P., *Beals Revisited: Sad Tidings, Lamentation, and Antiresearch*, 31 RQ 301 (1992)).

11. Nancy A. Van House, *Assessing the Quantity, Quality, and Impact of LIS Research*, *in* Library and Information Science Research: Perspectives and Strategies for Improvement 85, 90 (Charles R. McClure & Peter Hernon eds., 1991).

12. *Id.*

13. *Id.* at 91.

14. *Id.* at 89.

- conclusions consist primarily of "unproven (often unprovable) conjecture or correlations confused with causality";
- use of earlier LIS research is often hit or miss;
- even less use is made of research from other disciplines and professions; and
- most studies are strictly limited to current library practice, rendering them rapidly obsolete.[15]

¶12 Finally, Van House identified a number of challenges affecting research in LIS.[16] These include a lack of funding,[17] the need for improved education and training, the need to clarify the role of the practitioner in research, the need for more cumulative research, and a need for more good researchers.

¶13 In another study published in 1992, Powell and others tried to answer the following questions[18] about LIS practitioners and research:

- To what extent do LIS practitioners read the research literature?
- Do LIS practitioners apply the results of research to their practice?
- Do LIS practitioners conduct their own research?
- Are LIS practitioners interested in LIS research?
- What are LIS practitioners' attitudes toward research?
- How do LIS practitioners assess their research skills?

¶14 The researchers surveyed randomly selected members of four major professional associations: American Library Association (ALA), American Society for Information Science and Technology (ASIST), Medical Library Association (MLA), and Special Libraries Association (SLA).[19] The majority of those surveyed read one or two journals on a regular basis. When asked why they did not read research-based articles, practitioners said that such articles were not relevant to their jobs, they preferred to read essay or opinion pieces, they did not have enough expertise in research methods, or they did not have enough time.[20]

¶15 The study found that approximately half of the respondents occasionally apply research results to their practice[21] and that, of those who do research, 84% had *not* published their results.[22] While a little more than half thought their MLS

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15. *Id.* at 93.
16. Van House, *supra* note 11, at 95–98.
17. For more information about the decline of funding for LIS research, see Herbert S. White, *Library Research and Government Funding—A Less than Ardent Romance*, Publishing Res. Q., Winter 1994–95, at 30; Libraries for the Future, Library Research: 1983–1997, at 7–8 (containing key findings regarding funding for library research), *available at* http://www.ed.gov/offices/OERI/PLLI/LibraryResearch/iffnew2.pdf (last visited Sept. 30, 2005).
18. Ronald R. Powell et al., *Library and Information Science Practitioners and Research*, 24 Libr. & Info. Sci. Res. 49, 53–54 (2002).
19. *Id.* at 54.
20. *Id.* at 57.
21. *Id.* at 60.
22. *Id.* at 58.

program adequately prepared them to read and understand research-based publications, only 30% thought their MLS program adequately prepared them to conduct original research.[23] The authors believe that the difference between these two assessments is partially due to the perception that it is more difficult to perform original research than it is to read research reports.[24]

¶16 The authors of this study found that the results were mixed. While they concluded that a substantial number of practitioners do engage in and care about research, they recommended that librarians, library schools, and employing organizations give more attention to this critical activity.[25]

¶17 In 2001, Turner[26] investigated the perceptions of information professionals in New Zealand regarding applied LIS research. Project participants were asked to indicate the amount of their research use, their motivations for and against consulting the research, and their opinions about the relationship between LIS research and practice and how it might be improved. She found that (1) research use by information professionals is low,[27] (2) applied research that attempts to resolve operational concerns best met the requirements of information professionals,[28] and (3) the perceived inadequacy of research to address practical workplace problems was a major reason that research was not consulted.[29] The participants were also asked to express their opinion of various strategies identified in the literature for improving collaboration and understanding between researchers and practitioners. The participants ranked the strategies in the following order: (1) encourage research publications that include practical guidelines for applying results in the workplace; (2) encourage columns in library or information newsletters or online discussion lists that identify, index, and summarize recent research projects; (3) encourage staff to attend and present papers at conferences and professional meetings; (4) encourage staff to enroll in courses that develop their research skills; and (5) encourage practitioners to participate in the research process.[30]

¶18 In a 2003 study, Park looked at the inclusion of research methods in LIS curriculums by examining Web-based catalogs of fifty-two of the fifty-six ALA-accredited LIS programs in the United States and Canada to determine if they required research methods.[31] The purpose of this study was to compare research

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23. *Id.* at 61.

24. *Id.* at 71.

25. *Id.*

26. Kathlyn J. Turner, Do Information Professionals Use Research Published in LIS Journals? paper presented at 68th General Conference of the International Federation of Library Associations and Institutions, Glasgow, Scot. (Aug. 20, 2002), http://www.ifla.org/IV/ifla68/papers/009-118e.pdf.

27. *Id.* at 3.

28. *Id.* at 4.

29. *Id.*

30. *Id.* at 8 tbl. 9.

31. Soyeon Park, *Research Methods as a Core Competency*, 44 J. EDUC. FOR LIBR. & INFO. SCI. 17, 18 (2003).

methods courses across LIS programs and to compare LIS research methods with requirements of other graduate and professional programs within the same institution. The author also compared schools to the rankings reported in *U.S. News & World Report*. Finally, he examined Web sites at the same institutions to explore research methods requirements in other professional schools.[32]

¶19 One of the first things this study revealed is that there is no standard definition of what constitutes "research methods"—courses varied from comprehensive coverage of both quantitative and qualitative methods to cursory treatment of simple survey methods.[33] Park also found that many LIS programs did not require research methods courses, including those ranked highly by *U.S. News & World Report*. Thirty-two programs required research methods; twenty did not. (Three of these twenty did not even offer a research methods course.)[34]

¶20 Looking at other professional schools, Park found that research methods are required in the accreditation standards for MBA and social work programs. Patterns similar to LIS were found in education and instructional technology programs—some institutions require methods and others do not.[35]

¶21 Like others who have studied the state of LIS research, Park concludes that the profession needs to pay more attention to research, particularly to providing education in research methods. He asserts that LIS should adopt core competencies common to all accredited programs, that research methods should be required as one of these core competencies, and that the LIS curriculum should be compatible with similar disciplines in the academy.[36]

¶22 Park offers a two-tiered approach that others studying the field of LIS research have also recommended. Individuals holding an MLS degree should be expected to be competent in research methodology at two levels: the consumer level and the contributor level. At the consumer level, practitioners would regularly review published research and be competent to evaluate the methodology used and applicability of the results to theory and practice. At the contributor level, individuals would be competent to conduct research using a particular methodology and would publish study results.[37]

¶23 In 2004, Haddow and Klobas examined the recurring theme in LIS literature of flawed communication between researchers and practitioners, identifying eleven forms of the gap between research and practice.[38] They concluded that research suggests that of all the proposed methods for improving the communication of research to practitioners, only one is likely to be effective: inclusion of

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32. *Id.*
33. *Id.* at 20.
34. *Id.*
35. *Id.* at 20–23.
36. *Id.* at 24.
37. *Id.*
38. Gaby Haddow & Jane E. Klobas, *Communication of Research to Practice in Library and Information Science: Closing the Gap*, 26 Libr. & Info. Sci. Res. 29, 31 (2004).

research reports in newsletters and other publications frequently read by librarians in the field. Yet, this approach has not been widely adopted.[39]

¶24 The results of these studies of LIS research are probably not surprising to most librarians. Many would probably agree with Booth, a proponent of EBL, who observed in 2002, "Ironically, librarians are regarded as experts in searching for evidence to support the practice of other professionals but are very unlikely to do the same for their own practice."[40]

Evidence-Based Librarianship: A Definition and Conceptual Framework

¶25 Evidence-based librarianship attempts to solve some of the problems identified in these studies of library and information science research. As noted earlier, the core characteristics of EBL are adapted from evidence-based medicine (EBM). Traditionally, medical practice relied on "expert opinion" and "standard practice." Eventually, practitioners began to recognize that these were insufficient because they often lagged behind current research.[41] EBM evolved to replace the traditional model of expert authority with a scientifically based, pragmatic model.

¶26 As a relatively new concept, the definition of EBL is still being formulated. Interestingly, three different definitions of EBL have come from each of the three geographical areas where EBL is being championed. Each definition highlights the aspect of EBL in which the proponent is most interested.

¶27 In the United States, Jonathan D. Eldredge has defined EBL as

> seeking to improve library practice by utilizing the best available evidence in conjunction with pragmatic perspectives developed from librarians' working experiences. The best available evidence might be produced from either quantitative or qualitative research designs, depending upon the specific posed EBL question. EBL nevertheless encourages using more rigorous over less rigorous forms of evidence, when appropriate, while making decisions.[42]

Eldredge is principally interested in improving the evidence base of librarianship and information science.

¶28 In Canada, Ellen Crumley and Denise Koufogiannakis have proposed that EBL is "a means to improve the profession of librarianship by asking questions, [then] finding, critically appraising, and incorporating research evidence from library science (and other disciplines) into daily practice. It also involves encouraging librarians to conduct research."[43] These authors are

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39. *Id.* at 39.

40. Andrew Booth, *Mirage or Reality?* HEALTH INFO. & LIBR. J., Mar. 2002, at 56, 56.

41. Eldredge, *supra* note 4, at 291.

42. Jonathan D. Eldredge, *Evidence-Based Librarianship: What Might We Expect in the Years Ahead?* HEALTH INFO. & LIBR. J., June 2002, at 71, 72.

43. Ellen Crumley & Denise Koufogiannakis, *Developing Evidence-Based Librarianship in Canada: Six Aspects for Consideration*, HYPOTHESIS: NEWSL. RES. SEC. MLA, Fall 2001, at 9, 9.

most interested in implementing EBL to improve the practice of librarianship, particularly by making the LIS research literature more accessible to practicing librarians.

¶29 In the United Kingdom, Andrew Booth defines EBL as "an approach to information science that promotes the collection, interpretation, and integration of valid, important and applicable user-reported, librarian-observed, and research-derived evidence. The best available evidence, moderated by user needs and preferences, is applied to improve the quality of professional judgments."[44] Booth's definition notes that evidence should be informed by user needs and also incorporates the library user as a provider of evidence.

¶30 When a new field is developing, almost everything is in flux. Booth believes that EBL is a "narrow-focused specialty"[45] and advocates the broader, more multidisciplinary term "evidence-based practice." This is the term Booth and Anne Brice chose for the title of the first book to be published on the topic,[46] so perhaps it will eventually replace EBL in popular use.

¶31 In the years since the idea of EBL was first articulated, its proponents have worked to construct a conceptual framework, principles, and processes that will help information professionals understand EBL and enable them to incorporate it into their professional practice. Eldredge offered the following as a conceptual framework for EBL:

1. EBL seeks to improve library practice by utilizing the best available evidence combined with a pragmatic perspective developed from working experiences in librarianship;

2. EBL applies the best-available evidence, whether based upon either quantitative or qualitative research methods;

3. EBL encourages the pursuit of increasingly rigorous research strategies to support decisions affecting library practice;

4. EBL values research in all its diverse forms and encourages its communication, preferably through peer-reviewed or other forms of authoritative dissemination;

5. EBL represents a global approach to information seeking and knowledge development, involving research but not restricted to research alone;

6. EBL supports the adoption of practice guidelines and standards developed by expert committees based upon the best available evidence, but *not* as an endorsement of adhering to rigid protocols;

7. In the absence of compelling reasons to pursue another course, EBL adheres to a hierarchy (or levels) for using the best available evidence, lending priority to higher levels of evidence from research.[47]

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44. Andrew Booth, *From EBM to EBL: Two Steps Forward or One Step Back?* MED. REFERENCE SERVICES Q., Fall 2002, at 51, 53.

45. Andrew Booth, *Where Systems Meet Services: Towards Evidence-Based Information Practice*, 33 VINE: J. INFO. & KNOWLEDGE MGMT. SYSTEMS 65, 66 (2003).

46. ANDREW BOOTH & ANNE BRICE, EVIDENCE-BASED PRACTICE FOR INFORMATION PROFESSIONALS: A HANDBOOK (2004).

47. Eldredge, *supra* note 4, at 291.

Levels of Evidence

¶32 EBL focuses on using higher levels of evidence than those traditionally used in LIS research: descriptive surveys, case studies, and other qualitative methods. While these methods have value, they are not as effective in removing or reducing bias as are higher level quantitative methods.[48]

¶33 Eldredge first proposed a hierarchy of evidence for EBL in 2000 that was virtually identical to the levels of evidence used in evidence-based medicine.[49] But, demonstrating the evolving nature of a new field, in 2002 Eldredge proposed a new levels-of-evidence table to replace the hierarchical list proposed in 2000. This new approach recognizes that in librarianship one hierarchy of evidence may not be applicable to all types of questions or studies. Eldredge distinguished three categories of research questions.

¶34 *Prediction questions*, and the studies used to answer them, "seek to predict an outcome under similar circumstances. The classic single research design for answering such questions has been the cohort study. The cohort study design involves a defined population, an exposure to some phenomenon suspected of causing a change in the population, and observed outcomes."[50] An example of this type of question is: "Which print journal subscriptions are best to retain in the collection when an electronic version is available?"

¶35 *Intervention questions* "seek to compare different actions in terms of efficacy in attaining intended goals or outcomes."[51] In this method, investigators compare alternatives to determine which is better. An example of this type of question is: "Which Web pages on a library Web site are most usable?"

¶36 *Exploration questions* "begin typically with the word 'why?' or imply a 'why' inquiry."[52] Examples of studies used for answering these types of questions include focus groups, in-depth interviewing, Delphi techniques, observation, and historical analyses. An example of this type of question is: "Why do potential users, who are presently nonusers, not use their library?"

¶37 Like its predecessor, Eldredge's new levels of evidence approach encourages the use of higher levels of evidence to reduce possible bias. However, it also recognizes the role that qualitative research designs play in answering exploration questions. Eldredge proposes the systematic review as the highest level of evidence for all three of these categories.[53] That is, results are greatly improved by analyzing the findings of many similar studies. Systematic review is a highly structured process in which similar studies, identified from a comprehensive

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48. *See* Jonathan D. Eldredge, *Evidence-Based Librarianship Levels of Evidence*, Hypothesis: Newsl. Res. Sec. MLA, Fall 2002, at 10, 10.
49. Eldredge, *supra* note 4, at 292.
50. Eldredge, *supra* note 48, at 11.
51. *Id.*
52. *Id.* at 12.
53. *Id.* at 10.

search of numerous databases, are summarized in an easy-to-read graphical or tabular form. Then their overall conclusion is presented along with implications for practice and future research.[54] Legal researchers may find some similarities in approach with the Honigsberg Grid[55] and similar methods used to compare legal research results.

¶38 Proponents of EBL believe that library and information science research using higher levels of evidence will have an inherently greater credibility to decision makers and possible allies, permit greater integration of librarianship into the larger research domain, and provide opportunities for multidisciplinary collaboration.

Formulating the Question

¶39 One of the most important parts of the EBL process is formulating an effective research question[56] (often called an "answerable," "well-built," or "focused" question by proponents of EBL). The premise is that precision, in terms of the clarity and scope of the question, will lead to a more efficient search for the needed evidence.[57]

¶40 Koufogiannakis and Crumley have adapted the PICO structure[58] borrowed from evidence-based medicine to help librarians formulate effective questions:[59]

P = Population, target, group, problem being addressed
I = Intervention or exposure
C = Comparison intervention (if necessary)
O = Outcome of interest

They provide this example of using the PICO structure to formulate a research question in librarianship:[60]

P = Among university undergraduate students doing research for a term paper
I = does training from a librarian
C = versus no training
O = affect the quality of references used in the paper?

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54. Andrew Booth & Margaret Haines, *Room for a Review?* 100 Libr. Ass'n Rec. 411, 411 (1998).

55. *See* Peter Jan Honigsberg, *Organizing the Fruits of Your Research: The Honigsberg Grid*, 4 Perspectives: Teaching Legal Res. & Writing 9 (1996).

56. For more information on question formulation, see Andrew Booth, *Turning Research Priorities into Answerable Questions*, Health Info. & Libr. J., June 2001, at 130; Ellen Crumley & Denise Koufogiannakis, *Developing Evidence-Based Librarianship: Practical Steps for Implementation*, Health Info. & Libr. J., June 2002, at 61.

57. Jonathan D. Eldredge, *Evidence-Based Librarianship: Formulating EBL Questions*, 22 Bibliotheca Medica Canadiana 74, 75 (2000).

58. *See, e.g.*, Oxford Centre for Evidence-Based Medicine, Focusing Clinical Questions, http://www.cebm.net/focus_quest.asp (last visited Sept. 30, 2005).

59. Koufogiannakis & Crumley, *supra* note 3, at 113.

60. *Id.*

Domains of Research

¶41 Koufogiannakis and Crumley also propose that each research question can be assigned to one of six domains (another structure that has a parallel in evidence-based medicine) which they developed based upon the major areas librarians deal with in their daily practice:

- *Reference/Enquiries*—providing service and access to information that meets the needs of library users.
- *Education*—finding teaching methods and strategies to educate users about library resources and how to improve their research skills.
- *Collections*—building a high-quality collection of print and electronic materials that is useful, cost-effective, and meets user needs.
- *Management*—managing people and resources within an organization.
- *Information Access and Retrieval*—creating better systems and methods for information retrieval and access.
- *Marketing/Promotion*—promoting the profession, the library and its services to both users and non-user.[61]

¶42 Koufogiannakis and Crumley hypothesize that putting a research question into one of these domains will help librarians determine where the answers to the questions might be found and thus improve their search for information. Following a content analysis of the LIS literature published in 2004, Koufogiannakis and others suggest adding "Professional Issues—exploring issues that affect librarianship as a profession"[62] to the taxonomy and eliminating Marketing/Promotion as a domain or structuring it as a subset of Management (since their analysis found very little research was being done on this topic).[63]

¶43 One of the difficulties in doing LIS research is that evidence in librarianship comes from many disciplines. In addition to the LIS literature, evidence to answer questions in librarianship might come from research findings in education, psychology, economics, and business. As Crumley and Koufogiannakis point out, "The widespread nature of library evidence means that there is a lack of standardized indexing and terminology, numerous databases to search, as well as no standardized way to assess quality of literature from various fields."[64] They believe that the first step to overcoming these problems is to assign questions to the domains they have set forth. They propose that the next step would be to work on creating standardized indexing and publishing terminology.[65]

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61. Crumley & Koufogiannakis, *supra* note 56, at 63.
62. Denise Koufogiannakis et al., *A Content Analysis of Librarianship Research*, 30 J. INFO. SCI. 227, 233 (2004).
63. *Id.* at 232.
64. Crumley & Koufogiannakis, *supra* note 56, at 64.
65. *Id.*

Tools and Methods

¶44 In addition to developing theoretical concepts for the practice of EBL, its proponents are committed to developing tools and practice guidelines for librarians.

¶45 The Evidence-Based Librarianship Implementation Committee of the Medical Library Association has recommended a format for structured abstracts to report health library research.[66] Structured abstracts were introduced into medical research journals in the mid-1980s. Since then, they have been widely used in medical and scientific contexts.[67] Structured abstracts typically contain subheadings or subsections, such as "background," "aim(s)," "method(s)," "results," and "conclusion(s)," and these features are highlighted by the typographical layout of the abstract. Hartley reviewed the research on structured abstracts and found that they are typically longer than traditional abstracts, but they are also judged to be more informative, accessible, and useful.[68] He recommended that the editors of social science journals consider adopting them.[69]

¶46 Another project of the EBL Implementation Committee is to identify the most important research questions currently facing the profession.[70] The committee began the process by soliciting questions from medical librarians. It plans to refine, consolidate, and prioritize these questions. While some of the questions it received are specific to health sciences librarianship, many of them are questions in which law librarians would also be interested. For example:

- "At which stage can print subscriptions be discarded if alternatives (e.g., JSTOR) are available?"[71]
- "What are the implications of electronic journals and other resources for cooperative collection development and interlibrary lending?"[72]
- "Can we prove that librarians are more effective at answering reference questions and running literature searches than library technicians?"[73]

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66. Liz Bayley et al., *Evidence-Based Librarianship Implementation Committee Research Results Dissemination Task Force Recommendations*, HYPOTHESIS: NEWSL. RES. SEC. MLA, Spring 2002, at 6, 6.

67. The *Bulletin of the American Society for Information Science and Technology* includes structured abstracts of articles from the *Journal of the American Society for Information Science and Technology*, particularly those that might be of interest to practitioners. *See, e.g.*, *What's New: Selected Abstracts from JASIS&T*, BULL. AM. SOC'Y FOR INFO. SCI. & TECH., April/May 2005, http://www.asis.org/Bulletin/Apr-05/whatsnew.html.

68. James Hartley, *Current Findings from Research on Structured Abstracts*, 92 J. MED. LIBR. ASS'N 368, 370–71 (2004).

69. James Hartley, *Is It Appropriate to Use Structured Abstracts in Social Science Journals?* 10 LEARNED PUBLISHING 313, 317 (1997).

70. Jonathan D. Eldredge, *The Most Relevant and Answerable Research Questions Facing the Practice of Health Sciences Librarianship*, HYPOTHESIS: NEWSL. RES. SEC. MLA, Spring 2001, at 9, 9.

71. *Id.* at 9.

72. *Id.* at 10.

73. *Id.* at 17.

- "How do we apply outcomes-based evaluation to services in order to realistically demonstrate the impact of what we do?[74]
- "How do we identify/measure competencies for library job roles so that new posts can be assessed with regard to salary grades?"[75]
- "Do student employees at service desks . . . provide effective and efficient service when compared to the time needed to hire, train, and supervise them?"[76]

It is also important to note that the American Association of Law Libraries has developed its own list of important research questions.[77]

¶47 The EBL Implementation Committee has also recommended that the Medical Library Association develop practice guidelines, which describe how best to perform specific processes or services, based on best available evidence or higher evidence-based practices if available in the library literature and from other reputable sources.[78]

¶48 In the United Kingdom, the Critical Skills Training in Appraisal for Librarians (CRISTAL) Project was conducted to determine whether continuing education could reduce the obstacles librarians encountered in critically evaluating research.[79] The project included developing and evaluating a critical appraisal tool, including checklists specific to types of research studies that can be used to appraise research papers. CRISTAL demonstrated that the appraisal tool and associated workshop did help participants improve their understanding of research methods and their ability to use research to help them make decisions.[80]

¶49 Work has also been done in the United Kingdom on the feasibility of using systematic reviews in LIS research.[81] As noted above, because this is a systematic and reproducible process, it eliminates the subjectivity and possible bias that comes from selectively including or personally interpreting research findings. Systematic review also increases the likelihood that the findings can be generalized.

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74. *Id*. at 13.
75. *Id*.
76. *Id*. at 14.
77. *See* Am. Ass'n of Law Libraries, AALL Research Agenda (Nov. 4, 2000), *reprinted in* 2005–2006 AALL Directory & Handbook 517 (2005), *available at* http://www.aallnet.org/committee/research/agenda.asp.
78. Andrew Booth et al., *Evidence-Based Librarianship Implementation Committee Task Force on Practice Guidelines: Recommendation/Position Statement*, Hypothesis: Newsl. Res. Sec. MLA, Summer 2001, at 7.
79. Andrew Booth & Anne Brice, *Clear-Cut? Facilitating Health Librarians to Use Information Research in Practice*, Health Info. & Libr. J., June 2003 Supp. 1, at 45.
80. *Id*. at 50.
81. *See* Anne Brice, *International: Research Reviews*, Hypothesis: Newsl. Res. Sec. MLA, Summer 2000, at 11; Booth & Haines, *supra* note 54.

¶50 Librarians interested in EBL have also established journal clubs[82] and discussion groups,[83] developed a Web site,[84] and convened three conferences[85] on the subject. All of these activities, as well as those discussed earlier, are attempts to close the gap between research and practice, to increase the application of research to practice, and to improve decision making in the daily operation of libraries.

Empirical and Evidence-Based Research in the Law

¶51 Why should law librarians care about EBL and its focus on improving library practice through better research? One reason is that EBL is finding its way into other sectors of librarianship beyond the health sciences. Of most interest to law librarians might be SLA's emphasis on evidence-based practice.[86] And there is indication of a growing interest in developing more empirical and evidence-based research in legal scholarship and practice.

¶52 At least one legal consultant predicts that "evidence-based law" is on the horizon. In a recent online forum on the future of the practice of law, Ron Friedman, a legal consultant, stated:

> Following the trend in health care, the legal market will adopt "evidence based law."
> General counsels will finally put bite behind the bark for lower costs and better service.
> They or their agents will systematically analyze how lawyers work (for example, by analyzing the data generated by e-billing) and develop best practices. Key among these best practices will be formal project management, which will be a requirement for any sizable matter. The imperative to reduce costs and improve outcomes will drive this.[87]

Friedman has also suggested on his blog that, because lawyers use evidence to prove a case, they should also apply it to the practice of law itself. As an example, he suggests using empirical data (as opposed to "uninformed reactions," such as

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82. *See generally* Liz Doney & Wendy Stanton, *Facilitating Evidence-Based Librarianship: A UK Experience*, Health Info. & Libr. J., June 2003 Supp. 1, at 76 (describing a journal club for Nottingham health librarians).

83. *See generally* Denise Koufogiannakis et al., *Facilitating Evidence-Based Librarianship: A Canadian Experience*, Health Info. & Libr. J., June 2003 Supp. 1, at 73 (describing a discussion group for health sciences librarians from the University of Alberta); Archives of Evidence-Based-Libraries@jiscmail.ac.uk, http://www.jiscmail.ac.uk/lists/EVIDENCE-BASED-LIBRARIES.html (last visited Sept. 30, 2005).

84. Evidence-Based Librarianship, http://www.eblib.net (last visited Sept. 30, 2005).

85. *See* Jonathan D. Eldredge, *First International Evidence-Based Librarianship (EBL) Conference*, Hypothesis: Newsl. Res. Sec. MLA, Fall 2001, at 1; Kathy West, *The Librarianship Conference Report: Convincing Evidence*, Info. Outlook, Dec. 2003, at 12; Evolution of Evidence: Global Perspectives on Linking Research with Practice, 3rd International Evidence Based Librarianship Conference, http://conferences.alia.org.au/ebl2005 (last visited Sept. 30, 2005).

86. *See* Joanne Gard Marshall, *Influencing Our Professional Practice by Putting Our Knowledge to Work: A Look at SLA's Evidence-Based Practices*, Info. Outlook, Jan. 2003, at 40; SLA Research Statement (June 2001), *reprinted in* Info. Outlook, Oct. 2003, at 18, *available at* http://www.sla.org/content/resources/research/rsrchstatement.cfm.

87. John C. Tredennick, Jr., *Looking to the Future: What Changes Do You See Coming in the Next Twenty Years?* Law Prac. Today, Dec. 2004, http://www.abanet.org/lpm/lpt/articles/mgt12041.html.

"we have not done that in the past") to determine the most cost-effective way to review documents in litigation.[88]

¶53 Evidence-based practice has been increasing in the field of sociology. This has resulted in a growing interest in evidence-based policy and law making. In a paper discussing the role of research in the policy development process, McDonald describes the growing demand in the public sector for evidence-based decision making and accountability. Sounding a refrain familiar to librarians, she identifies the challenges of making research an integral part of the policy-making process: "(1) how to bring academic research into the policy process at strategic points; and (2) how to encourage academics to undertake research that is relevant to emerging issues."[89]

¶54 Petrosino and others[90] identify another challenge that sounds familiar to librarians: the quality of the evidence base. To meet this challenge, practitioners and researchers have created the Campbell Collaboration (based on the precedent established in health care by the international Cochrane Collaboration) which prepares, maintains, and makes accessible systematic reviews of research on the effects of social and educational interventions, including criminal justice. The Campbell Collaboration hopes to improve the quality of the evidence base through mechanisms such as rigorous quality control, electronic publication, and world-wide coverage of the literature.

¶55 The following paragraphs describe a number of recent examples of the trend toward evidence-based policy making.

¶56 A recent report by the National Council on Disability[91] is a systematic, multidimensional review of existing research that provides a broad-based foundation for understanding what is and is not known about children and youth with disabilities who are at risk of delinquency or who have already entered the juvenile justice system.

¶57 The National Institute of Corrections has developed a manual[92] for developing staff skills as a critical component of organizational change in community supervision. This manual provides a good explanation of how evidence-based research findings can be applied in practice.

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88. Ron Friedman, Evidence-Based Law, Strategic Legal Technology, http://www.prismlegal.com/wordpress/index.php?p=253&c=1 (Feb. 17, 2005, 12:50 p.m.).

89. Susan E. McDonald, *Learning and the Law: Research and Policy Directions*, in CANADIAN ASSOCIATION FOR THE STUDY OF ADULT EDUCATION, TWENTY-FIRST ANNUAL NATIONAL CONFERENCE, TORONTO, ONTARIO: PROCEEDINGS 177, 180 (2002), *available at* http://www.oise.utoronto.ca/CASAE/cnf2002/2002_Papers/mcdonald_s2002w.pdf.

90. Anthony Petrosino et al., *Meeting the Challenges of Evidence-Based Policy: The Campbell Collaboration*, 578 ANNALS AM. ACAD. POL. & SOC. SCI. 14 (2001).

91. NAT'L COUNCIL ON DISABILITY, ADDRESSING THE NEEDS OF YOUTH WITH DISABILITIES IN THE JUVENILE JUSTICE SYSTEM: THE CURRENT STATUS OF EVIDENCE-BASED RESEARCH (2003), *available at* http://www.ncd.gov/newsroom/publications/pdf/juvenile.pdf.

92. NAT'L INSTITUTE OF CORRECTIONS, U.S. DEP'T OF JUSTICE, TOOLS OF THE TRADE: A GUIDE TO INCORPORATING SCIENCE INTO PRACTICE (2004), *available at* http://www.nicic.org/pubs/2004/020095.pdf.

¶58 A group called the Forensic Panel is developing the Depravity Scale,[93] an evidence-based guideline for judges and juries to use in the sentencing phase of trials. Many states allow judges and juries to assign more severe sentences to crimes deemed "heinous," "depraved," and other words that mean evil. But there is no standardized definition for these legal terms, and jurors are often left to decide on the basis of their emotions. The Depravity Scale is a standardized scale to determine with scientific certainty which aspects of a crime represent depravity. Since the scale addresses the crime rather than the individual criminal, the Forensic Panel believes that the Depravity Scale is blind to race and socio-economic status and promotes fact-finding in resolving questions of depravity.

¶59 In the United Kingdom, an evidence-based approach was taken to evaluate the effectiveness of two recent shifts in government policy: a decision to replace legal safety duties with voluntary guidance to persuade companies to change the way they deal with safety, and a new strategy of moving away from using formal enforcement mechanisms (like inspections, investigations, and prosecutions) to a focus on voluntary compliance. A comprehensive review of the available published research[94] was undertaken to determine what the evidence reveals about the effectiveness of these policies.

¶60 In a recent study on information seeking by lawyers,[95] Wilkinson analyzed more than 150 interviews of practicing lawyers. Because prior research on the information-seeking behavior of lawyers has tended to focus on legal research, it is usually thought of as the defining information-seeking activity of lawyers. Wilkinson took a broader approach and concluded that legal research should not be considered information seeking. Her perspective is that, if law is seen as essentially an information profession (an expert dispensing information to a client for a fee), legal research becomes more of a verification of information already known, rather than an information-seeking activity.[96] The lawyers identified other tasks, such as management of their practices, as problem-solving activities in which they needed to seek information to assist them in making decisions.[97] More research in this area might demonstrate a need for the introduction of an evidence-based practice approach to the practice of law.

¶61 Similar to the situation found in LIS research, recent publications reflect an interest in improving and increasing empirical research in legal scholarship and practice. Introducing a recent symposium titled "Empirical and Experimental Methods in Law," McAdams and Ulen observe:

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93. Forensic Panel, The Depravity Scale, http://www.depravityscale.org (last visited Sept. 30, 2005).
94. Courtney Davis, Making Companies Safe: What Works? (2004), *available at* http://www.corporateaccountability.org/dl/courtreport04/makingcompaniessafe.pdf.
95. Margaret Ann Wilkinson*, Information Sources Used by Lawyers in Problem-Solving: An Empirical Exploration*, 23 Libr. & Info. Sci. Res. 257 (2001).
96. *Id*. at 259.
97. *Id*. at 266.

> Empirical methods are still rare in legal scholarship: very few law professors buttress their arguments by appeal to tests of statistical significance or even with descriptive statistics. Similarly, courses in quantitative methods in the law are rare. The systematic organization of data and its presentation in revealing ways may be a routine part of many scholarly disciplines, but it is not yet a routine part of legal argumentation. . . . Still, there are signs that empirical and experimental methods are becoming more common in legal scholarship.[98]

¶62 Papers included in this symposium discuss the need for empiricism in the study of law and the contributions that empirical and experimental methods have already made and can continue to make; provide explanations of the various empirical and experimental techniques suitable for studying law; and survey and criticize the application of empirical methods in diverse areas of public and private law, including suggesting how experimental and empirical work might help shed light on important doctrinal and other issues in each substantive area.[99]

¶63 In another recent symposium,[100] Epstein and King conclude that "the current state of empirical legal scholarship is deeply flawed."[101] Their review of the legal literature revealed that there was little awareness of, much less compliance with, the rules of inference that guide empirical research in the social and natural sciences.[102] Epstein and King attempt to clarify these rules of inference by adapting them to the special needs, theories, and data in legal scholarship and by explaining them with illustrations from existing research. They also suggest how the infrastructure of teaching and research at law schools might be reorganized so that it could better support excellent empirical research without compromising its other objectives, such as training lawyers.[103]

¶64 In one of several articles included in a symposium on empirical research[104] in a recent issue of the *Journal of Legal Education*, Jackson[105] describes the course he teaches at Harvard Law School that covers a variety of analytical methods, including decision analysis, game theory, accounting and finance, microeconomic analyses of the law, and statistical analysis.

Conclusion

¶65 EBL is still in a formative stage and there is no empirical research to date to indicate that its wide implementation would lead to better dissemination and application of research to the practice of library and information science. Nevertheless, law librarians might find that adopting some of the elements of EBL could be

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98.   Richard H. McAdams & Thomas S. Ulen, Introduction, *Symposium*: *Empirical and Experimental Methods of Law*, 2002 U. Ill. L. Rev. 791, 791.

99.   *Id*. at 792.

100.   *Exchange: Empirical Research and the Goals of Legal Scholarship*, 69 U. Chi. L. Rev 1 (2002).

101.   Lee Epstein & Gary King, *The Rules of Inference*, 69 U. Chi. L. Rev. 1, 6 (2002).

102.   *Id*. at 17–18.

103.   *Id*. at 114.

104.   Symposium, *On Empirical Research*, 53 J. Legal Educ. 311 (2003).

105.   Howell E. Jackson, *Analytical Methods for Lawyers*, 53 J. Legal Educ. 321 (2003).

useful in improving decision making, increasing credibility among library users and funding bodies, and providing more opportunities for collaboration and interdisciplinary activities.

¶66 For example:

- AALL could publish reports of LIS research (perhaps using a structured abstract format) in *Law Library Journal* or *AALL Spectrum.*
- AALL and its chapters and special interest sections could offer continuing education in research methods and other relevant topics.
- Chapters and special interest sections might also consider sponsoring journal clubs, discussion groups, or forums to help participants become more familiar with evaluating research publications.
- AALL could enlarge the charge of the Research Committee to include not only encouraging research but working to disseminate research through publication or other methods. The committee could also work with similar groups in other professional organizations to improve access to, and dissemination of, LIS research literature.

¶67 Becoming more familiar with research and applying it to the daily practice of librarianship could positively affect the future of our profession. Respected professor and librarian Herbert White puts it bluntly:

> A profession that turns its back on its own educational component in carrying out a research function, that insists that academic programs can only train or perhaps even that they can be supplanted by in-house training, that fails to demand research support within its own budget with the same level of insistence with which it clamors for operating support, will ultimately earn the perception that what it does is routine, clerical, and ultimately dispensable.[106]

Appendix
Evidence-Based Librarianship: An Annotated Bibliography

Bayley, Liz. "Evidence-Based Librarianship Implementation Committee Report." *Hypothesis: The Newsletter of the Research Section of MLA* 15 (Summer 2001): 6–7.
> The author reports on a project of the Research Results Dissemination Task Force of the Evidence-Based Librarianship Implementation Committee of the Medical Library Association to propose a format for structured abstracts for the reporting of health library research. The task force found that structured abstracts are required or recommended by a number of biomedical journals as well as some journals in other fields. The task force concludes that, for the users of research, structured abstracts can enhance retrieval, comprehension,

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106.   White, *supra* note 17, at 36.

and an assessment of applicability to their own setting; for the creators of
research, they can add a level of rigor to the process and to the reporting of
their findings.

Bayley, Liz, and Jonathan D. Eldredge. "The Structured Abstract: An Essential
Tool for Researchers." *Hypothesis: The Newsletter of the Research Section of
MLA* 17 (Spring 2003): 1, 11–14.

> The authors discuss how preparing structured abstracts can help the researcher,
> beginning with envisioning the research question, progressing through the
> research itself, and culminating in its final reporting. An appendix provides a
> short list of articles that include structured abstracts illustrating approaches for
> different types of research.

Bayley, Liz, Jean Maragno, and Lois Wyndham. "Structured Abstracts—They
Really Work!" *Hypothesis: The Newsletter of the Research Section of MLA* 17
(Spring 2003): 4.

> The authors report on the success of requiring structured abstracts for all
> papers and posters submitted for the 2002 Canadian Health Library Association
> Conference.

Bayley, Liz, Addajane Wallace, and Anne Brice. "Evidence-Based Librarianship
Implementation Committee Research Results Dissemination Task Force
Recommendations." *Hypothesis: The Newsletter of the Research Section of
MLA* 16 (Spring 2002): 6–8.

> Recommendations of the task force reported in this article include requiring
> structured abstracts for all articles submitted to health library journals and for all
> contributed papers and poster sessions at health library conferences that report
> research activities; investigating the possibility of creating a database of health
> library research structured abstracts, which would be Web accessible and search-
> able; and surveying members to determine their interest and involvement in
> research and their ideas for the encouragement of research activities and the use
> of research in their practice. Includes a suggested format for structured abstracts
> for various types of research studies.

Booth, Andrew. "Bridging the Research-Practice Gap? The Role of Evidence
Based Librarianship." *New Review of Information and Library Research* 9
(Dec. 2003): 3–23.

> Booth discusses the long preoccupation of librarianship with the research-prac-
> tice gap. He maintains that proposed solutions have not been successful because
> they did little to challenge the prevailing culture of librarianship. He asserts
> that a shift in paradigm to evidence-based practice is required. He then surveys
> developments and outputs from evidence-based librarianship, focusing primarily
> on health sciences-specific literature augmented by a wider survey of materials
> outside the health domain.

Booth, Andrew. "Evidence-Based Librarianship: One Small Step." *Health Infor-
mation and Libraries Journal* 19 (2002): 116–19.

> Booth discusses the Evidence-Based Librarianship Conference held in 2001
> in the United Kingdom; describes the UK context and contributions to EBL,

particularly in the development of technical skills in systematic reviews and critical appraisal; and advocates phasing out the term "EBL" in favor of a more enduring concept: "the unique contribution of information professionals to evidence-based practice" (p. 119).

Booth, Andrew. "From EBM to EBL: Two Steps Forward or One Step Back?" *Medical Reference Services Quarterly* 21 (Fall 2002): 51–64.

Booth discusses obstacles to be overcome by the emerging evidence-based librarianship (EBL) paradigm, reviews and synthesizes three definitions of EBL, explores issues around the potential domains to be populated by research findings, and briefly considers the contribution that critical appraisal skills can make to an evidence-based profession. He concludes that EBL is a self-limiting label and encourages health information professionals instead to promote the contribution of librarianship to evidence-based practice, a role for which they are uniquely qualified.

Booth, Andrew. "In Search of the Evidence." *Health Information and Libraries Journal* 20 (2003): 116–18.

Using an example from information access and retrieval (one of the six domains of evidence-based librarianship), Booth describes systematic reviews (including some of the uncertainty that surrounds them) and how they can be used to answer a research question.

Booth, Andrew. "Mirage or Reality?" *Health Information and Libraries Journal* 19 (2002): 56–58.

Booth discusses some of the overarching themes of evidence-based librarianship raised by the Evidence-Based Librarianship Conference held in 2001, including implications for continuing education, skills required to conduct practice-based research, the nature and quality of research in librarianship, and current research priorities. He also discusses some of the barriers to the adoption of evidence-based practice in librarianship.

Booth, Andrew. "Rave Reviews?" *Health Information and Libraries Journal* 21 (2004): 134–37.

Booth identifies three publications providing helpful reviews of research for use by health information professionals: (1) a research article providing a systematic review of information-seeking behavior in physicians, (2) a report from the United States Council on Library and Information Resources (CLIR) providing an overview and analysis of research studies on use and users of electronic library resources, and (3) a review from the Australian Centre for Clinical Effectiveness concerning the information-finding and assessment methods of various healthcare professionals.

Booth, Andrew. "Testing the Lore of Research." *Library Association Record* 100 (1998): 654.

The author describes Library-LORE (Literature Oriented Reviews of Effectiveness), a feasibility study conducted in the United Kingdom to detail the practicalities of identifying and systematically reviewing the library literature, and describes the ten phases required of a systematic review.

Booth, Andrew. "Turning Research Priorities into Answerable Questions." *Health Information and Libraries Journal* 18 (2001): 130–32.

> Noting the failure of researchers in library and information science to address questions of direct relevance to practitioners, Booth discusses several activities and techniques aimed at solving this problem: the MLA-sponsored initiative to develop a list of "relevant and answerable" questions for the practice of health sciences librarianship, distinguishing between foreground questions and background questions, and focusing the question.

Booth, Andrew. "Where Systems Meet Services: Towards Evidence-Based Information Practice." *VINE: The Journal of Information and Knowledge Management Systems* 33 (2003): 65–71.

> Booth provides an introduction to the concept of evidence-based information practice, observations from a recent conference in Canada, and recommendations for further development of this paradigm.

Booth, Andrew, and Anne Brice. "Clear-Cut? Facilitating Health Librarians to Use Information Research in Practice." *Health Information and Libraries Journal* 20, suppl. 1 (2003): 45–52.

> Booth and Brice describe the UK-based Critical Skills Training in Appraisal for Librarians (CRISTAL) Project undertaken to determine whether continuing education could reduce the barriers to greater librarian participation in critical appraisal of research. The project included development and evaluation of a critical appraisal tool, including checklists specific to types of research studies that can be used to appraise research papers. The project demonstrated that the appraisal tool and associated workshop did help participants improve their understanding of research methods and their ability to use research to aid in their decision making.

Booth, Andrew, and Anne Brice. *Evidence-based Practice for Information Professionals: A Handbook.* London: Facet Publishing, 2004.

> The editors and contributors offer comprehensive overview chapters providing current thinking on evidence-based practice with a special focus on the implications for those in the information professions. They also offer practically oriented "how-to-do-it" chapters outlining the process of evidence-based information practice from initiation to evaluation and review. Finally, they explore each of the domains of evidence-based librarianship (identified by Crumley and Koufogiannakis)[107] to demonstrate the application of evidence-based information practice to practical decision making. While acknowledging that most evidence-based information practice has been done in the health-care sector, the editors contend that this model is equally valid for any sector of information practice.

Booth, Andrew, and Anne Brice. "Research." *Health Information and Libraries Journal* 18 (2001): 175–77.

> Booth and Brice describe the UK-based Critical Skills Training in Appraisal for Librarians (CRISTAL) Project which demonstrated that a tool to appraise

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107. *See supra* ¶¶ 41–43.

library-related literature, delivered in a workshop format, helped participants improve their understanding of research methods and their ability to use research to aid their decision making.

Booth, Andrew, and Jonathan D. Eldredge. "Editorial." *Health Information and Libraries Journal* 20, suppl. 1 (2003): 1–2.

Introducing a special issue devoted to EBL, the authors stress the importance of international collaboration and describe the contributions to EBL from various countries.

Booth, Andrew, and Margaret Haines. "Room for a Review?" *The Library Association Record* 100 (1998): 411–12.

Booth and Haines explore two concepts useful in reviewing research literature: (1) systematic review, a process by which similar studies, identified from a comprehensive search of numerous sources, are summarized in easy-to-read graphical or tabular form and then their collective message is presented, along with implications for practice and future research; and (2) critical appraisal skills, which complement the systematic review process by assisting a practitioner to understand and interpret the findings of a single research process.

Booth, Andrew, Molly Harris, Jessie McGowan, and Suzetta Burrows. "Evidence-Based Librarianship Implementation Committee Task Force on Practice Guidelines: Recommendation/Position Statement." *Hypothesis: The Newsletter of the Research Section of MLA* 15 (Summer 2001): 7.

The task force recommends that the Medical Library Association develop practice guidelines that describe how best to perform specific processes or services, based on best available evidence or higher evidence-based practices, if available in the library literature and from other reputable sources. It further recommends the steps that should be taken to develop these practice guidelines.

Brice, Anne. "International: Research Reviews." *Hypothesis: The Newsletter of the Research Section of MLA* 14 (Summer 2000): 11–12.

Brice reports on Library-LORE (Literature Oriented Reviews of Effectiveness), a feasibility study conducted in the United Kingdom to: (1) present a systematic search of the literature for research comparing end user and intermediary information retrieval and behavior, (2) outline the main characteristics of this literature, and (3) detail the practicalities of identifying and systematically reviewing this literature. The article includes a brief description of the study's findings and recommendations for further action.

Brice, Anne, and Andrew Booth. "Consider the Evidence." *Library + Information Update* 3 (June 2004): 32–33.

In a review of their new book *Evidence-based Practice for Information Professionals: A Handbook*,[108] Brice and Booth assert that evidence-based information practice is fundamentally a model of information management addressing two problems: (1) information overload and (2) the slow dissemination of research findings into routine practice. They respond to the most com-

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108. Booth & Brice, *supra* note 46.

mon of several objections to evidence-based practice: a perceived lack of time. They conclude that time spent looking at research before making decisions is time saved.

Crumley, Ellen, and Denise Koufogiannakis. "Developing Evidence-Based Librarianship in Canada: Six Aspects for Consideration." *Hypothesis: The Newsletter of the Research Section of MLA* 15 (Fall 2001): 9–10.
    Crumley and Koufogiannakis examine the development of EBL in Canada. They offer a definition and set forth six key aspects that need to be addressed for EBL to advance: (1) development of domains, (2) development of methodology, (3) clarification of librarians' role, (4) better access to research, (5) continuing education for librarians, and (6) increased communication among librarians.

Crumley, Ellen, and Denise Koufogiannakis. "Developing Evidence-Based Librarianship: Practical Steps for Implementation." *Health Information and Libraries Journal* 19 (2002): 61–70.
    Crumley and Koufogiannakis outline practical steps for the implementation of evidence-based librarianship, focusing on using a "well-built question" process; assigning research questions to one of six domains specific to librarianship; and utilizing evidence from a number of other disciplines including health sciences, business, and education. They propose a "core-centered" approach to reflect the best types of evidence for library research rather than relying on the medical model of evidence hierarchy.

Doney, Liz, and Wendy Stanton. "Facilitating Evidence-Based Librarianship: A UK Experience." *Health Information and Libraries Journal* 20, suppl. 1 (2003): 76–78.
    Doney and Stanton describe the formation of a journal club for health librarians in Nottingham, UK, setting forth its benefits, challenges, and next steps.

Earl, Martha. "Chapter Research Committees Report." *Hypothesis: The Newsletter of the Research Section of MLA* 17 (Summer 2003): 3–4, 11.
    Earl reports on the activities of the chapter research committees of the Medical Library Association, which include awarding grants for research projects, developing a research agenda, holding forums on research topics, providing a research mentoring service, highlighting ongoing research on the chapter Web site, giving cash awards for annual presented papers and posters exhibiting research quality, including a "Research Spotlight" column in the chapter newsletter, and specifically including research paper and poster presentations at regional conferences.

Eldredge, Jonathan D. "Cohort Studies in Health Sciences Librarianship." *Journal of the Medical Library Association* 90 (2002): 380–92.
    Eldredge sets forth the components of the cohort study design and discusses its strengths and weaknesses. He reports that a literature search reveals that the cohort design has been applied to answer a wide array of theoretical or practical research questions in the health, social, behavioral, biological, and management sciences, as well as in health sciences librarianship. He concludes that this design has further potential for answering research questions in health sciences librarianship, particularly evidence-based librarianship, although the potential has not been fully explored.

Eldredge, Jonathan D. "The Challenges Ahead for Evidence-Based Librarianship." *Bibliotheca Medica Canadiana* 23 (Winter 2001): 57–60.

> While asserting that emerging trends suggest that EBL will continue to expand and thrive, Eldredge describes various challenges to its implementation: time; money; toys (fads or devices that distract focus from the most important questions of library practice); sibling rivalry (continuing debate over whether qualitative or quantitative research should dominate library practice); and parochialism (among nations, dogmatic adherents alienating the mainstream, or the majority of librarians rejecting the principles of EBL).

Eldredge, Jonathan D. "EBL Implementation Committee." *Hypothesis: The Newsletter of the Research Section of MLA* 14 (Summer 2000): 7.

> Eldredge outlines the objectives of the newly established EBL Implementation Committee of the Medical Library Association, whose goal is to foster evidence-based librarianship and to integrate its principles into the practice of health sciences librarianship. The objectives relate to relevant research questions, research results dissemination, research incentives, practice guidelines, internal communication, and external communication.

Eldredge, Jonathan D. "Evidence-Based Librarianship: A Commentary for HYPOTHESIS." *Hypothesis: The Newsletter of the Research Section of MLA* 11 (Fall 1997): 4–7.

> In the first appearance of "evidence-based librarianship" in the library literature, Eldredge compares and contrasts EBL to evidence-based medicine, from which EBL traces its origins. He recommends a number of activities that can be undertaken to (1) question the "truths" or "principles" of medical librarianship, (2) highlight and reward research efforts of librarians, and (3) communicate the results of research findings.

Eldredge, Jonathan D. "Evidence-Based Librarianship: An Overview." *Bulletin of the Medical Library Association* 88 (2000): 289–302.

> This narrative review essay demonstrates how the core concepts of both evidence-based medicine and evidence-based health care can be adapted to health sciences librarianship. It outlines a preliminary conceptual framework for EBL, and discusses the process, question formulation, and levels of evidence. An extensive bibliography is included.

Eldredge, Jonathan D. "Evidence-Based Librarianship: Formulating EBL Questions." *Bibliotheca Medica Canadiana* 22 (Winter 2000): 74–77.

> Eldredge offers suggestions on how health sciences librarians can improve their services and resources by focusing on the first step of the EBL process: formulating a clearly defined, answerable question. He discusses the basics, the context, and the refinement of EBL questions.

Eldredge, Jonathan D. "Evidence-Based Librarianship Levels of Evidence." *Hypothesis: The Newsletter of the Research Section of MLA* 16 (Fall 2002): 10–13.

> Demonstrating the evolving nature of EBL, Eldredge presents a new levels-of-evidence table to replace the hierarchical list proposed in 2000. It serves as a guide for distinguishing between the relative weights that should be assigned to

different types of evidence. The levels of evidence are described for three different types of questions or studies: prediction, intervention, and exploration. This table continues to emphasize the better performance by the higher levels of evidence in reducing possible bias, but acknowledges that the qualitative research design plays an important role answering exploration questions.

Eldredge, Jonathan D. "Evidence-Based Librarianship: Searching for the Needed EBL Evidence." *Medical Reference Services Quarterly* 19 (Fall 2000): 1–18.

Eldredge discusses the challenge of finding the evidence needed to implement EBL: designing systems to track and provide access to needed evidence. Currently, database coverage is uneven; search strategies that employ specific subject terms to locate needed higher level EBL evidence rarely yield satisfactory results, and the grey literature of library science might contain supplemental forms of evidence, but this area needs further exploration.

Eldredge, Jonathan D. "Evidence-Based Librarianship: What Might We Expect in the Years Ahead?" *Health Information and Libraries Journal* 19 (2002): 71–77.

Eldredge predicts the possible accomplishments of the EBL movement by the years 2005, 2010, 2015, and 2020 by drawing upon recent events, relevant historical events, and anecdotal accounts to detect evidence of predictable trends. He concludes that by 2020 EBL will have become indistinguishable from mainstream health sciences library/information practice.

Eldredge, Jonathan D. "First International Evidence-Based Librarianship (EBL) Conference." *Hypothesis: The Newsletter of the Research Section of MLA* 15 (Fall 2001): 1, 3, 8–11.

Eldredge reviews the program of the first EBL conference held in 2001 in Sheffield, UK, providing structured abstracts summarizing some of its noteworthy papers and posters.

Eldredge, Jonathan D. "Inventory of Research Methods for Librarianship and Informatics." *Journal of the Medical Library Association* 92 (2004): 83–90.

Eldredge presents a compilation of research methods from a variety of disciplines, highlighting the relevant applications of each methodology to the field of librarianship. Each entry in the inventory includes a definition and description for the particular research method. Some entries include references to resource material and examples.

Eldredge, Jonathan D. "The Most Relevant and Answerable Research Questions Facing the Practice of Health Sciences Librarianship." *Hypothesis: The Newsletter of the Research Section of MLA* 15 (Spring 2001): 9–13, 14.

Eldredge discusses a project of the Medical Library Association's Evidence-Based Librarianship Implementation Committee to identify the most important contemporary research questions facing the profession. An initial compilation of questions submitted by practitioners is presented, arranged by broad subject categories: resources, library skills education, searching, clinical librarians, role/impact of the medical librarian, and management.

Eldredge, Jonathan D. "The Randomised Controlled Trial Design: Unrecognized Opportunities for Health Sciences Librarianship." *Health Information & Libraries Journal* 20, suppl. 1 (2003): 34–44.

> Eldredge discusses the essential components of the randomized controlled trial (RCT) and its major variations, describes less conventional applications of the RCT design found in the health sciences literature with potential relevance to health sciences librarianship, and discusses the limited number of RCTs within health sciences librarianship. He concludes that the versatile RCT design offers the potential answer to far more evidence-based librarianship questions than has been addressed by the design to date and encourages librarians to increase their use of this design.

Gorman, G. E. "Evidence-based Information Practice Comes of Age." Emerald Library Link (Apr. 2004), http://hermia.emeraldinsight.com/vl=991496/cl=32/ nw=1/rpsv/librarylink/info/curves/curves2.htm (last accessed Oct. 3, 2005).

> Gorman, a professor of information management at the University of Victoria at Wellington, New Zealand, asserts that evidence-based information practice is spreading from the health sector and health sciences librarianship to the information professions generally and predicts that the profession is about to experience a "sea-change" in the way librarianship is practiced. He describes what evidence-based information practice is, how it is practiced, and how it is likely to affect the working environment of librarians.

Grant, Maria J. "Journal Clubs for Continued Professional Development." *Health Information and Libraries Journal* 20, suppl. 1 (2003): 72–73.

> The author describes the formation of journal clubs in Nottingham (UK) and the University of Alberta (Canada).

Grefsheim, Suzanne. "Librarians and Collaborative Research: Toward a Better Scientific Base for Information Practice." *Bulletin of the Medical Library Association* 84 (1996): 433–36.

> In this editorial, Grefsheim discusses the benefits of collaborative research for health sciences librarians, sets forth some noteworthy characteristics gleaned from examining three successful research projects involving health sciences librarians, and advocates applying results of research to practice.

Hartley, James. "Current Findings from Research on Structured Abstracts." *Journal of the Medical Library Association* 92 (2004): 368–71.

> Structured abstracts were introduced into medical research journals in the mid-1980s. Since then they have been widely used in medical and scientific contexts. Structured abstracts typically contain subheadings or subsections, such as "background," "aim(s)," "method(s)," "results," and "conclusion(s)," and these features are highlighted by the typographical layout of the abstract. Hartley summarizes the major findings of research about structured abstracts and discusses some of the limitations of this research. He found that structured abstracts are typically longer than traditional ones, but they are also judged to be more informative, accessible, and useful. He concludes that the findings generally support the notion that structured abstracts can be profitably used by research journals, although some arguments for this have more research support than others.

Hartley, James. "Is It Appropriate to Use Structured Abstracts in Social Science Journals?" *Learned Publishing* 10 (1997): 313–17.

> After reviewing a selection of studies carried out by the author and his colleagues, Hartley finds that structured abstracts written for social science journals are more informative, easier to read, and easier to search than their traditional equivalents. He asserts, therefore, that structured abstracts are appropriate for social science journals and recommends that the editors of these journals consider adopting structured abstracts.

Hartley, James, Mathew Sydes, and Anthony Blurton. "Obtaining Information Accurately and Quickly: Are Structured Abstracts More Efficient?" *Journal of Information Science* 22 (1996): 349–56.

> Structured abstracts have replaced traditional abstracts in most medical journals. Findings from two studies support the hypothesis (notwithstanding certain caveats) that it is easier for readers to search structured abstracts than it is to search traditional ones. (The authors utilize a structured abstract in reporting their findings.)

Koufogiannakis, Denise, and Ellen Crumley. "Evidence-Based Librarianship." *Feliciter* 48 (2002): 112–14.

> Koufogiannakis and Crumley provide an introduction to EBL, focusing on its conceptual and practical frameworks. They define six domains of research in library and information science: reference/enquiries; education; collections; management; information access and retrieval; and marketing/promotion.

Koufogiannakis, Denise, Marlene Dorgan, Ellen Crumley, and John W. Scott. "Facilitating Evidence-Based Librarianship: A Canadian Experience." *Health Information and Libraries Journal* 20, suppl. 1 (2003): 73–75.

> The authors describe the formation of a librarian discussion group at the University of Alberta and its connection to evidence-based librarianship.

Koufogiannakis, Denise, Linda Slater, and Ellen Crumley. "A Content Analysis of Librarianship Research." *Journal of Information Science* 30 (2004): 227–39.

> The authors conducted a content analysis of LIS literature to determine its characteristics and test the six domains (or subjects) of research previously developed by Crumley and Koufogiannakis (reference; education; collections; management; information access and retrieval; and marketing/promotion).[109] They also attempted to identify what, if any, correlation exists between the research method used and the domain. They examined 2664 journal articles and classified 30.3% of them as research. For the period studied, descriptive research was published far more frequently than any other type. The domain of information access and retrieval had the highest number of research articles, followed by collections, management, education, and reference. Because a number of articles fell into the domain of professional issues, they are adding this domain to Crumley and Koufogiannakis's taxonomy. The authors found very little evidence of research being done in the domain of marketing and promotion. Finally, the authors found

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109. *See supra* ¶¶ 41–43.

that *LISA* (*Library and Information Science Abstracts*) provides the best coverage of the top ten LIS journals identified in this study.

Schneider, Elizabeth. "The Campbell Collaboration: Preparing, Maintaining, and Promoting the Accessibility of Systematic Reviews of the Effects of Social and Educational Policies and Practices." *Hypothesis: The Newsletter of the Research Section of MLA* 16 (Fall 2002): 1, 4, 13.

> Schneider presents a brief history and overview of the Campbell Collaboration, which aims to create, update, and disseminate systematic reviews of the best available evidence for the effectiveness of various social interactions in three major areas: crime and justice, education, and social welfare.

West, Kathy. "The Librarianship Conference Report: Convincing Evidence." *Information Outlook* 7 (December 2003): 12–14.

> West, an academic business and economics librarian, discusses how her attendance at the second Evidence-Based Librarianship Conference in Edmonton changed her impression that EBL seemed to apply only to health sciences librarians. She discusses a number of conference sessions that convinced her of EBL's relevance for all areas of librarianship, including academia.